

Environmental Monitoring Report

VIE: Strengthening water management and irrigation systems rehabilitation project (ADB5)

Six – month environment monitoring report
(From May to October 2013)

COMPONENTS 2: CONSTRUCTION AND REHABILITATION OF BAC HUNG HAI IRRIGATION AND DRAINAGE INFRASTRUCTURE

Prepared by Southeast Asia Institute for Water Resources and Environment for the Central Project Office (CPO) – MARD and the Asian Development Bank

**MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
CENTRAL PROJECT OFFICE (CPO)**



**Strengthening water management and irrigation systems rehabilitation project
(ADB5)**

**PACKAGE 14
MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL
MANAGEMENT PLAN FOR THE WHOLE PROJECT**

**SIX - MONTH ENVIRONEMENT MONITORING
REPORT
(From May to October 2013)**

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OF BAC HUNG HAI IRRIGATION AND DRAINAGE
INFRASTRUCTURE**

Central Project Office (CPO)

**Consultant firm
Southeast Asia Institute for Water
Resources and Environment**

Ha Noi, 10/2013

CURRENCY EQUIVALENTS

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Currency unit	–	Viet Nam Dong (VND)
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ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Francaise Development
PMU	–	Projects Management Unit
BHH	–	Bac Hung Hai irrigation and drainage system
CBOs	–	Community Based Organizations
CEMP	–	Community Environmental Management Program
CPMU	–	Central Project Management Unit
CPO	–	Central Project Office
EMP	–	Environmental Management Plan
GOV	–	Government
M&E	–	Monitoring & Evaluation
PPMU	–	Provincial Project Management Unit
PRA	–	Public Relative Assessment
EM	–	Environmental Management
SEMP	–	Site Environmental Management Program
TOR	–	Term of References
DONRE	–	Department of Natural Resources and Environment
IEE	–	Initial Environmental Examination
QCVN	–	Vietnam National Environmental Standards

MEASURES UNIT

ha	–	Hectare
kg	–	Kilogram
km	–	Kilometer
m	–	Meter
t	–	Ton

NOTES

In this report, "\$" refers to US dollars otherwise state

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PART1: SUMMARY OF THE PROJECT AND IMPLEMENTATION PROGRESS, SCOPE OF ACTIVITIES

1.1 INTRODUCTION FOR THE PROJECT

Project “Strengthening water management and irrigation systems rehabilitation”, invested by ADB and AFD, includes three components:

- (i) Components 1: Construction of New Educational Facilities for Water Resources University.
- (ii) Components 2: Construction and rehabilitation of Bac Hung Hai irrigation and drainage system infrastructure
- (iii) Components 3: Strengthening capacity of BHH Service Providers.

1.1.1 Objectives of Components 2

Long – term objectives:

To improve water supply and drainage for: Transforming crop-pattern by irrigation and drainages solutions to ensure a stable production and water supply for 100 % residents in the Bac Hung Hai in 2020; agricultural production with drought frequency of 85% in 2020; reducing damages caused by flood in the region, mostly in the area of low-lying agricultural land of Hung Yen and Hai Duong provinces in order to stabilize human life and production activities to push forward an sustainable socio - economic development, protect ecological environmental, and prevent pollution and deterioration of water resources.

Short – term objectives:

- Providing sufficient water for agricultural, aqua-cultural and industrial activities and domestic water supply ;
- Modernizing and improving irrigation-system performance;
- Innovating management practices and improving service quality;
- Strengthening institution for sustainable exploitation of the system to achieve its targets;
- Establishing, strengthening and developing institution for the regional management and exploitation agencies in appropriate, effective and sustainable way;
- Strengthening management and operation practices with community’s participation through education, communication and public consultation.

1.1.2 Main work items of Project

BHH system component consists of the following main work items (Table 1.1):

- Constructing 8 new pumping stations, in which 1 irrigation pumping station and 7 drain pumping stations;
- Rehabilitating and upgrading 2 drain pumping stations.

Table 1. 1: Sub – projects in BHH system

No.	Name of Sub – project	New construction/ upgrading/ renovation	Capacity (m ³ /s)	Notes
1.	Phu My irrigation pump-station	New construction	13,2	<i>At Dinh To - Thuan Thanh, Bac Ninh</i> Taking water from Duong river
2	Lien Nghia drainage pump-station	New construction	25	<i>At Lien Nghia commune – Van Giang district – Hung Yen province.</i> draining water to Red river
3	Nghi Xuyen drainage pump-station	New construction	55	<i>At Thanh Cong commune – Khoai Chau – Hung Yen</i> Structural measures also include construction of 1 regulating works in Cuu An river to enclose the draining catchment. Draining water into Red river.
4	Chua Tong drainage pump-station	New construction	11	<i>Trung Hung commune – Yen My district, Hung Yen</i> Draining water into Kim Son river
5	Kenh Vang II drainage pump-station	Rehabilitation (change machine)	44	<i>Trung Kenh - Luong Tai - Bac Ninh</i> Replace pumps and the auxiliary electric-mechanic equipment, restore pumping capacity to 44 m ³ /s
6	Nhat Trai drainage pump-station	New construction	30	<i>At Minh Tan commune – Luong Tai – Bac Ninh</i> Draining water into Thai Binh river
7	Co Ngua drainage pump-station	New construction	7	<i>Van Giang – Ninh Giang – Hai Duong</i> Draining water into Luoc river
8	Cau Dua drainage pump-station	New construction	17	<i>Van To – Tu Ky – Hai Duong</i> Draining water into Thai Binh river
9	Doan Thuong drainage pump-station	New construction	15.6	<i>Doan Thuong – Gia Loc – Hai Duong</i> Draining water into Dinh Dao river
10	My Dong drainage pump-station	Upgrading (change machine)	22	<i>Tien Phong – Thanh Mien – Hai Duong</i> Draining water into Luoc river

1.1.3 Implementation locations of component 2

Bac Hung Hai System (BHH) is located in the center of the Red River Delta, in the administrative boundaries of four provinces: 2 districts on the southeast of Hanoi, the entire of Hung Yen Province, 7 districts of Hai Duong and 3 districts of Bac Ninh province.

BHH system is enclosed by four major rivers: Duong river in the north, Luoc river in the south, Red river in the western and Thai Binh River in the east. The total irrigation area of the

system is 192,045 ha, of which, 142,479 ha is agricultural land. The total population in the region is 2.8 million people, in which, 2.2 million people working in agricultural production.

BHH system is divided into 10 sub-regions: Gia Lam, Gia Thuan, Chau Giang, Bac Kim Son, Cam Giang - Hai Duong city, An Thi. Binh Giang - Bac Thanh Mien, Tu Loc (Gia Loc-Tu Ky), Southwest of Cuu An, Southeast of Cuu An. Location and general information of these 10 areas are shown in the attached diagram (Figure 1.1).

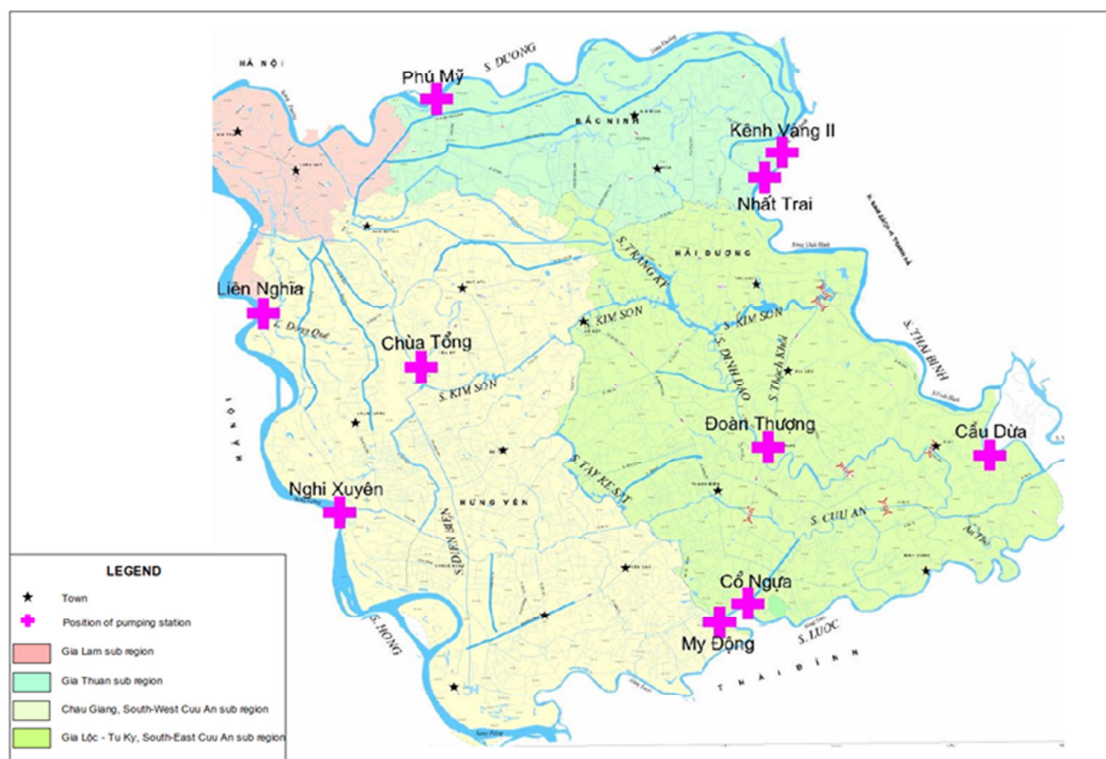


Figure 1.1: Bac Hung Hai irrigation and drainage system

1.2 IMPLEMENTATION PROGRESS OF PROJECT

Implementation progress for items of the sub – projects updated to 30/9/2013 listed in table 1.2:

Table 1.2: Implementation progress of sub-projects

No.	Item/ Package	Date of Signing Contract and Commence cement	Implemen - ting time	Implemented work updated to 30/9/2013	Contractor
I	PMU of Bac Ninh investment and irrigation construction				
1	Phu My irrigation pumping station	Date of signing contract: 1/4/2013	24 months	Contractor is preparing the construction plan, worker camps.	Cooperation between Dong A International Joint Stock Company – Anh Phuong

No.	Item/ Package	Date of Signing Contract and Commence cement	Implemen - ting time	Implemented work updated to 30/9/2013	Contractor
		Date of commence: 19/4/2013		Contractor is preparing earthwork items of excavation, landfill and ground- levelling by machine	construction JSC – Ha Tay Irrigation Construction JSC
2	Kenh Vang II drainage pumping station	Date of signing contract: 4/3/2013 Date of commence: 19/4/2013	24 months	Contractor repaired stilling basin, the bottom. Under construction of roof repairing, discharge tank bank. Contractor is implementing pumping house	Cooperation between Ninh Giang Construction Company Ltd - Tan Thinh Construction Company Ltd - Irrigation Construction Joint Stock Company
3	Nhat Trai drain pumping station	The contract with construction supervision consultant (CSC) was signed. Being in the process of selecting construction contractors			
II	PMU of Hung Yen Department of Agriculture and Rural Development				
4	Chua Tong drainage pumping station	Date of signing contract: 27/1/2013 Date of commence: 18/4/2013	28 months	Contrator has completed the construction of access road, water-diverted canal; grpund leveling and earthworks of water-diverted canal	Hung Yen Irrigation and Dyke Construction JSC
5	Lien Nghia drainage pumping station	Date of signing contract: 20/9/2013 Date of commence: 8/10/2013	24 months	Contractor is preparing the ground and worker camps	Hai Phong Irrigation Construction Joint Stock Company – Hung Yen Irrigation Construction Company

No.	Item/ Package	Date of Signing Contract and Commence cement	Implemen - ting time	Implemented work updated to 30/9/2013	Contractor
III	PMU of Agriculture and Rural Development Works in Hai Duong				
6	Cau Dua drainage pumping station	Date of signing contract: 25/4/2013 Date of commence: 1/6/2013	24 months	Contractor is preparing the ground worker camps and implementing pile foundation at construction site	Cooperation between Thanh Hoa Agricultural Construction and Rural Development Company - Thai Binh Irrigation Construction Joint Stock Company
7	Doan Thuong drain pumping station	Date of signing contract: 10/4/2013 Date of commence: 1/6/2013	22 months	Contractor has completed the ground and access road (Lot A) and is dredging Thach Khoi canal section in front of Doan Thuong CPC (lot B)	Cooperation between Hai Duong (lot A) Irrigation Construction and Electrical Installation Company Thao Nguyen Company Ltd (lot B)
IV	One member Limited Company of exploiting irrigarion works Bac Hung Hai				
8	My Dong drainage pumping station	Date of signing contract: 6/5/2013 Date of commence: 11/6/2013	24 months	Contractor is preparing administration house	Cooperation between Dai An Investment and Construction Joint Stock Company and Construction Joint Stock Company No. 12
V	Central Project Office – CPO				
9	Nghi Xuyen drain pumping station	Date of signing contract: 21/08/2013 Date of commence: 23/9/2013	33 months	The contractor is preparing the ground and worker	<div>Lot A: cooperation between Song Hong Construction JSC – Thanh Hoa Agriculture and Rural Development Company – 6.3 Joint Stock Company</div> <div>Lot B: Hai Phong irrigation construction JSC and Mien Bac electrical investment and development</div>

No.	Item/ Package	Date of Signing Contract and Commence cement	Implemen - ting time	Implemented work updated to 30/9/2013	Contractor
					Company
10	Co Ngua pumping station	In the process of selecting contractors and supervision consultant			

Evaluation of PMU on the construction progress of sub - projects:

- Phu My pumping station sub-project: Construction volume to 30/9/2013 implemented approximately 5% compared with total value of the package, equivalent to 60% compared with plan
- Kenh Vang II pumping station sub-project: Construction volume to 30/9/2013 implemented 40% compared with the total value of the package, timely as schedule; however, being in wait for adjustment of the management house's drawing
- Chua Tong drain pumping station: implemented 60% of construction volume compared with plan
- Cau Dua drain pumping station: Implemented 30% compared with the plan
- Doan Thuong drain pumping station: Construction volume just took approximately 30% compared with plan
- My Dong drain pumping station: construction volume completed as given plan.

Most of construction progress of sub – project were slowly implemented compared with plan because of a lot of rain

1.3 IMPLEMENTATION OF ENVIRONMENTAL MONITORING

Southeast Asia Institute for Water Resources and Environment (called the Consultant) has been selected as independent consultant following consultant contract 14/TV/ADB5 dated 21/11/2012 between Central project Office (CPO) and Southeast Asian Institute for Water Resources and Environment on the implementation package 14 “Monitoring the implementation of the environmental management plan for the whole project” of the project: Strengthening water management and irrigation systems rehabilitation (ADB5). The implementing time of the contract starts from 15/01/2013 to 30/6/2016 (42 months). According to implementation plan described in the contract, the consultant will perform independent monitoring, and generate periodical report 4 times per year (March, May, August, and November). However, monitoring time may be adjusted to appropriate construction progress.

- Consultant started the Contract from 15/01/2013 and completed inception report on 03/2013.
- The first monitoring mission (Components 2) was conducted from 13/05/2013 to 24/5/2013 (2 months delay compared with implementation plan because most of sub – projects had not been constructed in March).

- The second monitoring mission was conducted from 30/09/2013 to 15/10/2013 (1 month delay because of rainy weather, the contractors had to stop their works).

PART 2: SUMMARY OF THE FIRST ENVIRONMENT MONITORING OUTPUTS

2.1 SUMMARY OF THE IMPLEMENTATION CONTENTS IN THE FIRST MONITORING

2.1.1 Implementation of Community Based Monitoring

Interviewing local authorities and people in the affected area about project’s impacts on environment, society, and compliance with the implementation of Environmental Management Plan by PMU and construction contractors

2.1.2 Implementation monitoring of Construction Supervision Consultant (CSC)

- Instructing construction supervision consultant to fill up the Form No.1 and No. 2
- Collect monitoring forms done by Constructors and Construction Supervision Consultants
- Synthesizing the monitoring forms of Construction Supervision Consultant in order to evaluate compliance of construction contractors

2.1.3 Implementation of On-site Inspection

Organize group of specialist to check on the compliance with the implementation of mitigation measures to environmental pollution by construction contractors. On – site inspection are taken on implementation of mitigation measures to environmental impacts and occupational safety of construction contractors via directly interviewing professional staffs, taking photographs, filling information forms.

2.1.4 Implementation of Environmental Sampling

- Taking surface - water samples:
 - + Phu My pump – station sub – project: one location at irrigation canal near culvert under Duong river’s dyke
 - + Chua Tong pump – station sub – project: one location at pump – station’s construction site in Cau Treo river.
 - + Doan Thuong pump – station sub – project: One location at dredged section in Thach Khoi canal
 - + Cau Dua pump – station sub – project: one location in Van To – Quang Phuc canal at pump – station’s construction site.
- Taking air samples:
 - + Phu My pumping station sub – project: one location at pump –station’s construction site
 - + Nhat Trai pumping station sub - project: one location at pump –station’s construction site
 - + Chua Tong pumping station sub – project: one location at pump –station’s construction site

- + Doan Thuong pumping station sub – project: one location at pump – station’s construction site
- + Khenh Vang II pumping station sub – project: one location at pump – station’s construction site
- + Cau Dua pumping station sub – project: one location at pump – station’s construction site
- + My Dong pumping station sub - project: one location at pump – station’s construction site

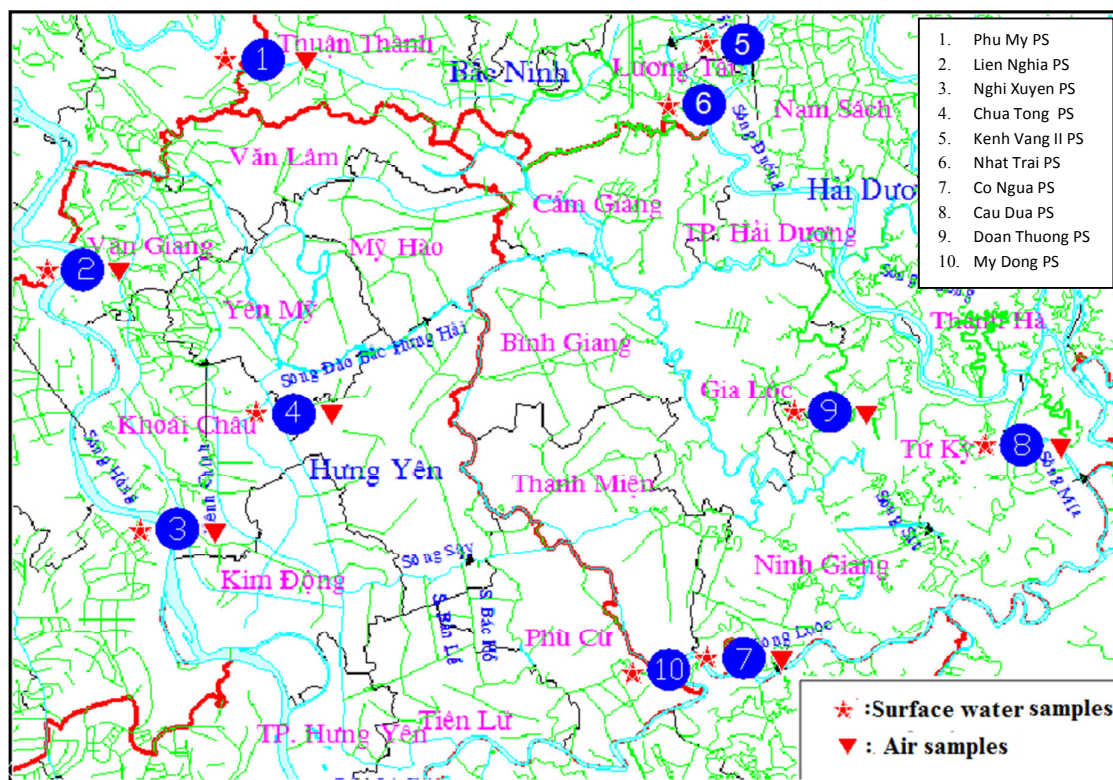


Figure 2.1: Map of taking samples of component 2

2.2 FINDINGS AND RECOMMENDATIONS OF THE FIRST MONITORING

During the first monitoring, environmental safeguard monitoring, Consultant has inspected the implementation environmental management plan of 6 sub – projects, including: Phu My irrigation pumping station, Khenh Vang II drainage pumping station, Chua Tong drainage pumping station, Cau Dua drainage pumping station, Doan Thuong drainage pumping station, My dong drainage pumping station (4 sub – projects have not been implemented because construction has not started). There are some achieved results and remaining problems as following:

2.2.1 The achieved results

- There is an Appendix of environment and quality management (attached to the contract) in the Packages Contract with construction contractors, in which, it stipulates on quality and environment requirements during construction period for each package.

- The operation licenses and registration certificates, which confirm the exhausts within the allowable standards in accordance with Decision no. 249/2005/ QĐ – TTg dated on 10/10/2010 by Prime Minister, are available for all machines and equipments at constructions site.
- The construction’s activities have not affected air and surface - water quality.
- As for My Dong pumping-station sub – project, one has implemented well the following contents:
 - + Information board on execution-time as well as environmental impact mitigation measures of Package at construction site, are available.
 - + Workers at construction site have equipped with the protective clothes and helmets according to the regulations
 - + PMU: Bac Hung Hai Irrigation Management Company informed local authorities on the approval decision, EIA report and the construction schedule
 - + PMU, Contractor, CSC clearly understood some contents in the environmental management plan.
 - + Construction contractors have prepared equipments and medicine cabinet for first aid of workers.

2.2.2 Some pending issues

Except for My Dong pumping-station sub-project, other sub-projects have some pending issues as following:

- PMUs, Contractors and CSC have not been aware and not fully implemented the tasks of environmental management during construction.
- Not yet implemented well the informing practices on the construction progress, mitigation measures to the environmental impacts, resulted in questions and worries of the local authorities and people.
- Contractors have not prepared equipments, medicine cabinet for first aid and early emergency of workers in case of accident; workers at construction site have not been equipped with the protective clothes and helmet according to the regulations.
- Construction-site, traffic-direction and danger-warning signs are not available. Information Board about the executive time, the mitigation measures to environmental impacts of the Package, at construction site, are not available. Only Kanh Vang II pumping station sub – project, the Contractor arranged the construction-site sign but improper and hard to observe.
- Most of the localities have not received announcement of the executive time, the construction progress and the mitigation measures of environment impact during construction period.
- Contractors and CSC have not got report of environmental management plan (EMP) for monitoring and implementation.
- At construction site of Doan Thuong pumping station sub – project, dumped in uncontrolled way, along the road, affected the local people’s activities and production. There were the grievances and conflicts between workers and local people, but these problems have been settled down promptly.

- Regarding the living conditions for workers: All of Contractors, who in construction or in preparation for construction, have not built camps for workers. As Contractor under Kenh Vang II subproject, workers have to temporarily live in water-logged management-house and not be able to ensure environmental sanitation conditions.
- PMU of Hai Duong agricultural and rural development works, PMU of Bac Ninh irrigation construction management, have not sent the approval decision, EIA report and information of sub – projects on construction progress to local authorities.

Table 2.1: Pending problems during the first monitoring

No.	Problems	Recommendations for implementation	Responsibility
1	Environmental Monitoring Plan report has not been sent to stakeholders	Send the EMP to Contractor and CSC to monitor and implement	PMU of sub – projects
2	No information of construction progress is provided	Inform the local authorities on the construction progress (Division of Natural Resources and Environment, CPCs in the the affected area).	PMU of sub – projects Construction contractors
3	No sub-project information board is installed at construction site	Install subproject information board at the construction site	PMU of sub – projects
4	Measures of occupational and traffic safety have not been fully implemented.	- Fully implemented occupational safety measures and traffic safety which are regulated in EMP	PMU of sub – projects Construction contractors
5	Protective clothes for workers are not enough provided No first aid medicine box is provided	- Workers at construction site have to wear fully protective clothes (clothes, helmet, shoes, mask...) - Medicine cabinet must be available to ensure first aid for workers in the case of accident	Construction contractors
6	No regulation board to manage workers is installed	Regulation board is requested for managing workers	Construction contractors
7	No periodical health check is implemented	Periodical health check should be done every 3 months for workers who work in hazardous condition	Construction contractors
8	No barrier separating construction areas from residential areas. Complaints by the locals about waste-dump that obstruct the water drain, prevention of ground subsidence.	- Install the danger-warning sign, the fence isolating the construction area from the residential area, schools, office - Redress the grievance about waste disposal that obstruct the drain, affecting the production, and about prevention of ground subsidence.	Construction contractor of Doan Thuong pumping station sub – project.
9	Monitoring forms have	Fully submitted periodical monitoring-	Construction

No.	Problems	Recommendations for implementation	Responsibility
	not been sent	forms to PMU of sub – projects; Feedback in time in cases of violating occupational safety, environmental safeguard and traffic safety to PMU of sub – projects.	supervision consultant

PART 3: MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLAN – SECOND PERIODICAL MONITORING

3.1 OBJECTIVES, CONTENTS AND IMPLEMENTATION METHODS IN THE SECOND MONITORING

3.1.1 Objectives

The major objectives of the second monitoring of environmental safeguard as followed:

- + Provide support to PMUs in implementing Environmental Monitoring Plan (EMP) based on current regulations and procedures of environment monitoring according to policies of ADB and Socialist Republic of Vietnam.
- + Implement an overall monitoring of environmental changes caused by project activities; the monitoring of compliance with national environment-quality standard related to environmental impacts of project’s activities, as well as possible complaint from affected households from project, level of adaptive design and construction standards.
- + Consultants also support PMUs in implementation of environmental management plan in construction area. Based on environmental safeguard monitoring results implemented by CSC, assessing the compliance with environmental safeguard of construction contractors, ensuring mitigation measures given in EMP will be implemented effectively, on time and cost saving.
- + Related to on community – based monitoring, the consultants will also give recommendation to enhance awareness, community participation, and capacity in environmental monitoring at the community level.

3.1.2 Implementation contents

3.1.2.1 Support to implementation of EMP

- Components 2 consists of 10 sub – projects, however at the time of the second monitoring there are two sub – projects of Nhat Trai pumping station and Co Ngua pumping station in the process of waiting construction. Other sub – projects have been conducted in the second monitoring including: Lien Nghia, Nghi Xuyen, Phu My, Kenh Vang II, My Dong, Cau Dua, Doan Thuong and Chua Tong.
- In the second monitoring, consultants continuously instruct implementation of environmental management for sub – projects which have not been implemented in the first monitoring: sub – project of construction Lien Nghia pumping station, and sub – project of construction Nghi Xuyen pumping station (Lot A: construction of pumping house, diversion canal, management house, intake tank, discharge tank, electrical installation, and other works belonging to complex areas; Lot B: construction of culvert across dyke, discharge canal, and other works not belonging to complex area). Instruction contents are listed as following (showed in table 3.1):
 - + Instructing sub – projects’ PMU to implement environmental management plan (EMP)

- + Instructing construction supervision consults to fill in the form no.1 (1 week/ time) and form no.2 (in case of arising problems)
- + Instructing construction contractors to fill in the periodical health inspection form (form no. 3)
- + Instructing local authorities and communities to reflect information of environmental safeguard (form no.4)

Table 3. 1: Participant and number of participants instructed the implementation of environmental management plan

No.	Sub - projects	Place	Number of participants (person)	Participant
1	Lien Nghia pumping station	People’s Committee of Lien Nghia commune, Van Giang district, Hung Yen	13	<ul style="list-style-type: none"> - PMU of Hung Yen Department of Agriculture and Rural Development - Construction supervision consultant: Cooperation between Bac Bo Investment and Consultant Irrigation Joint stock company — Ha Dong Irrigation consultant and investment JSC - Construction contractor: Hai Phong irrigation construction – Hung Yen Irrigation Construction Company - Representative of Van Giang district People’s Committee, Lien Nghia commune People’s Committee
2	Nghi Xuyen pumping station	PMU’s office of Nghi Xuyen pumping station(Chi Tan commune, Khoai Chau, Hung Yen)	11	<ul style="list-style-type: none"> - Central Project Office (CPO) - Construction supervision consultant: Thuan Phong Construction JSC - Construction contractor: Cooperation between Song Hong Construction company – Thanh Hoa agriculture and rural development Company – Hai Phong Irrigation Construction Company - Chi Tan and Thanh Cong People’s Committee, Khoai Chau district, Hung Yen province

Instruction results:

- Besides instructing PMUs and stakeholders in taking their responsibilities for implementation of EMP, consultants have emphasized the issues which have not been done well such as: information of construction progress, the implementation of measures to limit impacts of construction on agricultural production, people’s daily life: overloaded trucks might break concrete canal, the fall-out rock and soil might block the water-way that affect irrigation in the area; Dumping waste sludge, material

can affect production and people’s daily life; Warning signs have to be available at construction site.

- The participants were fully aware of their responsibilities in the environmental management plan implementation during the construction phase.
- PMUs will send report of environmental monitoring plan (EMP) to construction contractors and construction supervision consultant for monitoring and implementation; PMUs also announce the construction progress, environmental impact assessment report and approved reports of Ministry of Natural Resources and Environment to local management agencies (Division of Natural Resources and Environment, People’s Committee in project’s affected area).
- Construction supervision consultant will record and submit fully periodical monitoring forms to PMU, as well as give feedback promptly and recommend the cases of violation occupational safety, environmental safeguard and traffic safety to PMU
- The contractors committed to strictly implement the approved environmental management plan.
- Representative of CPCs committed to make favourable conditions for the construction contractors and promptly report information about the project's impacts on the environment, society, occupational safety and traffic safety during construction period. Coordinating with contractors to promptly solve the arising problems.

3.1.2.2 Implementation of CSC based monitoring

- Collecting environmental monitoring forms implemented by construction supervision consultant.
- Synthesizing assessment of the implementation of environmental safeguard measures, occupational safety of contractors according to evaluation score.

3.1.2.3 Implementation of on-site inspection

- On – site inspection the implementation of environmental impact mitigation measures:
 - + Assess the Contractor’s capacity in construction environmental management (professional staff’s capacity, implementation plan in environmental mitigation measures)
 - + Inspect the implementation of project’s information works: Project’s information boards at construction site. Environment impact assessment report approved by competent authorities as regulated is posted at construction site;
 - + Inspect the resolution of short-comings in the monitoring phase 1 (6 packages are monitored in phase 1):
 - ✓ Package No. 01/PM-BN: construction of pumping station, management house, operating house, intake tank, discharge tank, electrical installation and other works belonging to Phu My pumping station complex area
 - ✓ Package No. 01/KV-BN: rehabilitation, repairing of pumping station, management house, operating house, intake tank, discharge tank, electrical installation and other works belonging to Kenh Vang 2 pumping station complex area
 - ✓ Package No. 01/MD-HD: construction of My Dong pumping station

- ✓ Package No. 01/CD-HD: Construction of pumping station, discharge tank, intake tank, culvert, canal, management house and electricity installation (high voltage, low voltage, transformer) of sub – project Cau Dua pumping station
- ✓ Package No. 01/ĐT-HD: Construction of Doan Thuong pumping station (Lot A: construction of pumping stationhouse, discharge tank, intake tank, management house, electrical installation, and other works belonging to pumping stationcomplex area; Lot B: constructing culvert across dyke, canal and other works belonging to section behind pumping stationcomplex)
- ✓ Package No. 01/CT-HY: Construction of pumping house, discharge tank, intake tank, gravity drains, canal, management house, construction road combined with electricity management, installation (high voltage, low voltage, transformer) – Chua Tong pumping station.
- + Mitigation measures in excavation
- + Measures to ensure environmental sanitation
- + Mitigation measures in storing materials (sand, stone, cement...)
- + Mitigation measures in during mud dredging process
- + Mitigation measures in pollution transportation
- + Measures to ensure construction safety
- + Inspection of dumping site
- Inspect the implementation of social impact mitigation measures
 - + Manage workers by imposing regulations and inspecting application of the regulations.
 - + Percentage of workers who are local people
 - + Arising conflict between workers and local people
 - + Social negative site: Drugs, prostitution and other social evils
- Inspect the implementation of occupational safety measures
 - + Tools, medicine cabinet, first aid for workers
 - + Equip protective clothes for workers
 - + Camp, environmental sanitation conditions for worker’s accommodation
- Inspect the traffic safety measures
 - + Construction sign board
 - + Sign board for separating traffic lanes during construction
 - + Checking the registration certificate of construction equipments during construction

3.1.2.4 Implementation of Community based monitoring

- Interview local authorities in project area about information related to project, impact of construction on environment, society; resolving and overcoming contradiction problems arising during construction period. Worked with People’s Committee of Dinh To commune (Phu My pumping station sub - project); Trung Kenh commune (Kenh Vang II pumping station sub - project); Tien Phong commune (My Dong pumping station sub - project); Van

To commune (Cau Dua pumping station sub - project); Doan Thuong commune (Doan Thuong pumping station sub - project); Trung Hung commune (Chua Tong pumping station sub - project); Lien Nghia commune (Lien Nghia pumping station sub - project) and Chi Tan commune (Nghia Xuyen pumping station sub - project)

- Interview the family of Mr. Nguyen Thuc Doan (Doan Thuong commune, Gia Loc district, Hai Duong province). During dredging canal section in front of Nguyen Thuc Doan’s family, because his house is located close to canal bank so bank canal erosion and sliding slide may occur and impact on Mr. Doan’s house safety; thus, he requested to consolidate by stone to ensure safety for his house.

3.2 MONITORING RESULTS AND EVALUATION

3.2.1 Evaluating the implementation of the monitoring’s recommendations in the first monitoring

- **For Project Management Unit (PMU):**

- The sub – projects’ PMUs sent the approved environmental monitoring plan to construction contractors and construction supervision consultants for monitoring and implementation
- The PMU of Bac Ninh Irrigation Construction and Investment made announcements on construction progress, environmental impact assessment report, and approved decision of Ministry of Natural Resources and Environment to Division of natural resources and environment of Thuan Thanh, Luong Tai district; CPCs’ Dinh To (Thuan Thanh) and Trung Kenh (Luong Tai) in impacted region of Phu My and Kenh Vang II pumping station sub -projects
- The PMU of Hai Duong Agricultural and Rural Development Works made announcements of construction progress, environmental impact assessment report, and approved decision of Ministry of Natural Resources and Environment to Division of natural resources and environment of Tu Ky – Gia Loc district; People’s Committee of Van To commune (Tu Ky) and Doan Thuong commune (Gia Loc) in affected area of Cau Dua and Doan Thuong pumping station sub - projects
- There were information boards of sub – project, construction progress, construction units and investor at construction site in all sub – project

- **For construction contractors**

- Fully equipped labor protection for workers during working time at construction site: Most of the contractors have not done well about labor protection. Workers work at construction site without protective clothes and helmets as regulated at sub– projects of Kenh Vang 2 and My Dong pumping station.
- Equipped medicine cabinets and tools for the first aid in case of accidents: The contractors are fully equipped with the medicine cabinets such as contractors of sub - project of Phu My, Kenh Vang 2, Cau Dua, My Dong pumping station. However, there have been some contractors who have not complied well such as the contractor of sub - project of Doan Thuong, Chua Tong pumping station
- Generated regulation of worker management; regularly check and remind workers in applying the safety measures in construction. Only contractor of Phu My pumping station sub – project did well

- Almost the contractors installed the signs of construction site and dangers, lights, fences separating construction-areas from residential areas, etc, at the sites. Doan Thuong pumping station sub – project has not set the protective fence along the canal, at the section from Doan Thuong sluice to the cemetery of Doan Thuong commune.
- Construction contractor of Doan Thuong pumping station has addressed the local people’s complaints of blocking the drainage sewers due to waste disposal, preventing the ground subsidence from the construction activities near the households (HHs). The contractor also coordinated with the local authorities and the HHs to make the minutes of pre-construction structure conditions.
- The contractors have arranged the traffic guider at the places with many vehicles carrying material going in and out of the construction site; they have sprayed water and covered material to reduce dust.
- **For construction supervision consultant (CSC)**
 - Recorded and fully submitted the periodical monitoring forms to PMU.
- **For local authorities**
 - Support PMU and construction contractors in land handover, worker management, and promptly address complaints

3.2.2 Environmental monitoring results of construction supervision consultant

3.2.2.1 Collected documents

PMU provided environmental monitoring forms due to CSC implemented as following:

- ✓ Form no.1- collecting information form of environmental monitoring due to implementation of construction supervision consultant (CSC) once per week submitted PMUs on 30/9/2013 (Table 3.1 - Appendix 3)

- ✓ Form no.2- monitoring, management of arising risks

No form has been submitted because none of risks was found.

- ✓ Form no.3- monitoring and inspecting worker health when they participate in construction:

Two construction contractors which implemented these contents are Hai Duong Irrigation Construction Joint Stock (construct Lot A: construction of pumping house, discharge tank, intake tank, management house, electrical installation and other works belonging to pumping station complex area) constructing Doan Thuong pumping station sub – project and the contractor constructs Cau Dua pumping station sub - project.

- ✓ Form no.4 – Give feedback information of community’s environmental safeguard (CEMP)

No form has been submitted to the PMU

3.2.2.2. The regularly monitoring results of environmental safeguard of construction supervision consultant

Construction supervision consultant (CSC) assessed contractors’ environmental safeguard works by giving score for evaluated issues in form no.1. The level of assesement score as following:

- ✓ Score of 1: no implementation
- ✓ Score of 2: sketchy implementation
- ✓ Score of 3 : fully implementation
- ✓ Score of 4 : very good implementation

Table 3. 2: Synthesize environmental monitoring results at sub – projects of PMU of Bac Ninh and Hung Yen implemented by CSC until 30/9/2013

No.	evaluation contents	Phu My			Kenh Vang II			Chua Tong		
		1/5 -30/9/2013			19/4 -30/8/2013			18/4 -30/9/2013		
		Max	Min	Average	Max	Min	Average	Max	Min	Average
1	Arising noise and vibration	4	2	3.2	4	3	3.02	4	2	3.42
2	arising dust and exhaust fumes	4	2	3.08	4	3	3.04	4	1	3.69
3	Waste water impacts on surrounding areas	4	1	2.97	3	3	3	4	1	3.65
4	Arising smell	2	2	2	3	3	3	4	1	3.25
5	Solid waste management	4	3	3.33	3	3	3	4	1	2.97
6	Using harmful substances and managing harmful waste	4	3	3.36	3	3	3	4	1	2.2
7	Safety and health for workers	4	2	3	3	3	3	4	3	3.5
8	Occupational safety	4	3	3.30	3	3	3	4	1	3.1
9	River bank erosion and soil erosion	4	3	3.2	3	3	3	4	4	4
10	Impact on agricultural land surrounding areas	4	3	3.60	3	3	3	4	4	4
11	Temporary closing irrigation and drainage canal	3	3	3	3	3	3	4	4	4
12	Impact on culture	4	3	3.25	3	3	3	4	4	4

Table 3.3: Environmental monitoring results at sub – projects of Hai Duong’s and Bac Hung Hai’s PMU implemented by CSC until 30/9/2013

No.	Sub - projects	Cau Dua			Doan Thuong						My Dong		
		22/7 -30/9/2013			Lot A (01/9 -30/9/2013)			Lot B (26/5 -30/9/2013)			11/6 -30/9/2013		
		Max	Min	TB	Max	Min	TB	Max	Min	TB	Max	Min	TB
1	Arising noise and vibration	4	2	3.3	4	4	4.0	4	2	3.2	4	2	3.1
2	arising dust and exhaust fumes	4	2	3.6	4	1	3.5	4	1	3.5	4	1	3.1
3	Waste water impacts on surrounding areas	4	2	3.3	4	3	3.8	4	1	3.2	4	2	3.3
4	Arising smell				4	3	3.5	4	1	2.8			
5	Solid waste management	4	3	3.5	4	3	3.7	4	1	3.1	4	2	3.0
6	Using harmful substances and managing harmful waste				4	3	3.4	4	1	2.6	4	3	3.3
7	Safety and health for workers	4	2	3.6	4	4	4.0	4	3	3.8	4	2	3.1
8	Occupational safety	4	3	3.5	4	4	4.0	4	2	3.3	4	2	3.4
9	River bank erosion and soil erosion				4	4	4.0	4	2	3.4			
10	Impact on agricultural land surrounding areas				4	3	3.8	4	3	3.8	4	2	2.8
11	Temporary closing irrigation and drainage canal				4	4	4.0	4	2	3.3			
12	Impact on culture				4	4	4.0	4	4	4.0	4	3	3.1

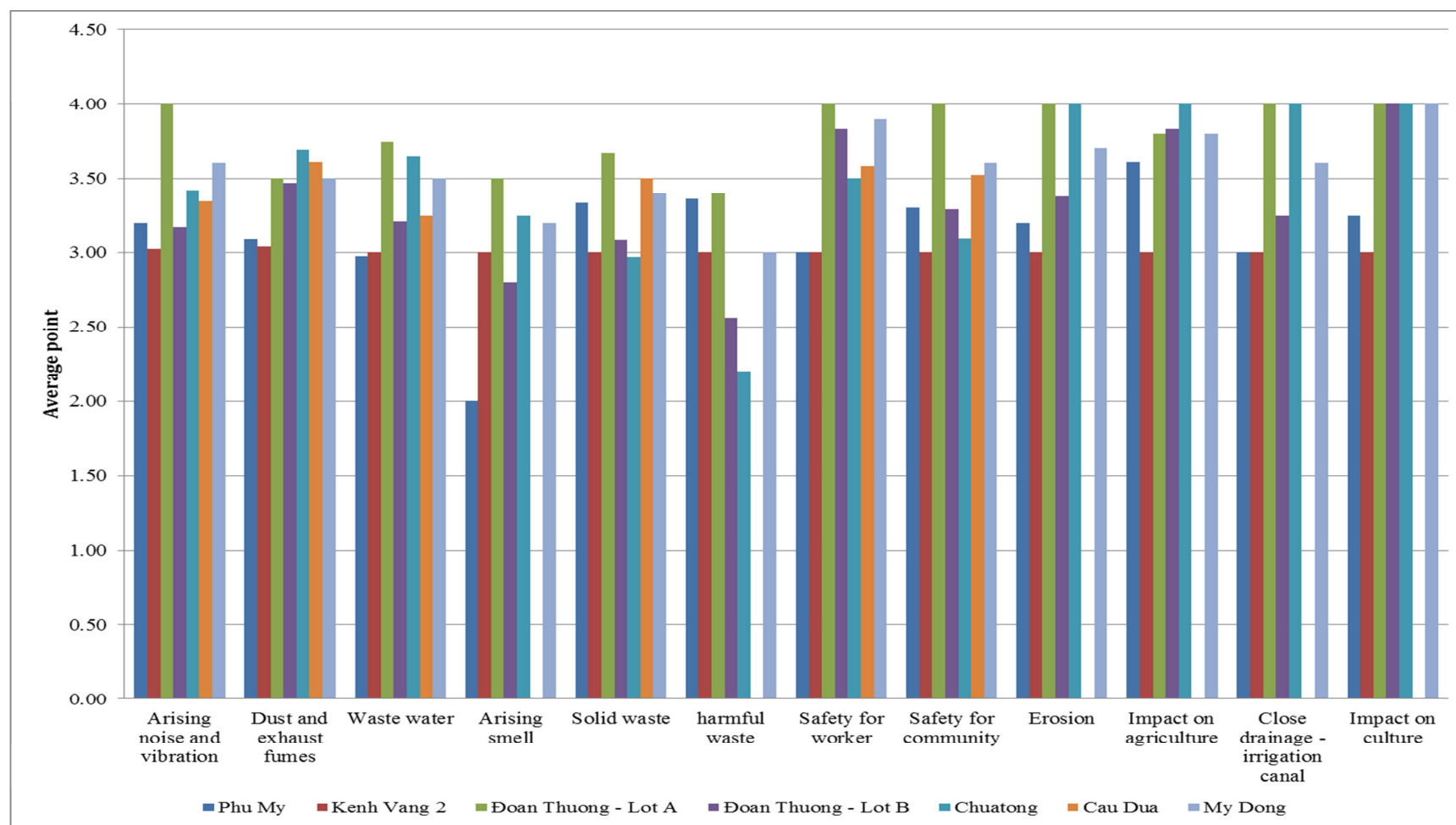


Figure 3. 1: Environmental evaluation score at construction site (average score of monitoring time – phase 2)

Comparison result shows (table 3.2 and 3.3; figure 3.1):

- (i) Phu My pumping station sub-project: The contractor has complied with regulations of solid waste management, use and toxic waste management, safety for community. Impact mitigation measures on agricultural production were complied well by contractors (average score of 3.3).
- (ii) Kenh Vang pumping station sub-project: Most of the contents are evaluated implementing quite well with average score of 3 – 4.
- (iii) Chua Tong pumping station sub-project: Contents of occupational safety and worker health, preventing from river bank and soil erosion, mitigating impacts on the agricultural production in surrounding area are evaluated with the score of 3 - 4.

Solid waste management and toxic waste management have not been implemented well with the average scores of 2.97 and 2.2 respectively

- (iv) Cau Dua pumping station sub-project: contents are evaluated with average score of 3.3 to 3.6. The contents of dust and exhaust fume arising mitigation; occupational safety and ensuring worker health have been done well by contractor (average score of 3.6)
- (v) Doan Thuong pumping station sub-project
 - Lot A: the most of evaluated contents get average score from 3.5 to 4.0. However, mitigation of arising dust and exhaust fume has not been done by contractor.
 - Lot B: the evaluated contents get average score from 2.6 to 4.0. In which, the contents implemented well: mitigation of arising dust and exhaust fume (3.5); labor and health safety for workers; impact mitigation on the agricultural production in surrounding area (3.8); impact on culture (4.0). However, some contents have not been implemented well: toxic substance usage and toxic waste management (2.6); arising smell (2.8)
- (vi) My Dong pumping station sub-project: the evaluated contents get average score from 2.8 to 3.4. The contents have not been implemented well such as mitigation measures for arising dust and exhaust fume which has not been done by contractor.

CSC's monitoring results showed that the implementation of measures to reduce noise, vibration, dust, exhaust fume, waste water, and to enable the safety for workers and community has been many positive changes in all sub – projects.

- The contractors performed quite well including: Cooperation between Dong A international Joint Stock Company – Anh Phuong Construction Joint Stock Company – Ha Tay Irrigation Construction Joint Stock Company (sub – project of Phu My, pumping station); Cooperation between Ninh Giang Construction Company Ltd – Tan Thinh Construction Company Ltd – Irrigation Construction Joint Stock Company (sub – project of Kenh Vang pumping station).
- However, there are still some contents which some contractors have not implemented well such as:
 - Hung Yen dyke and irrigation construction Joint Stock Company (the sub-project of Chua Tong pumping station) has not implemented well toxic waste management.
 - Cooperation of Hai Phong Irrigation Construction Joint Stock Company - Mien Bac Electricity investment and development consultant Company (the sub-project of Doan Thuong pumping station– Lot B) has not implemented

well toxic waste management; smell arising mitigation.

- Cooperation between Dai An Construction Investment Joint Stock Company and Construction Joint Stock Company No.12 (the sub-project of My Dong pumping station) has not implemented well the issues of mitigation for arising smell and exhaust fume.

3.2.3 The inspection results of the implementation of environmental mitigation measures

3.2.3.1. Summary the environmental mitigation measures

(i) Mitigation measures due to arising noisy and vibration:

- Using modern machines, equipments meet the requirement of exhausted fumes and vibration, with certificate of Vietnam regulations, including QCVN26:2010/BTNMT, QCVN27:2010/BTNMT

(ii) Mitigation measures due to arising dust and exhaust fume:

- Machines and equipments are compliance with national standards on emission at Decision no. 249/2005/QĐ-TTg of Prime Minister regulating the emission standard for transportation means
- Trucks carrying construction waste / materials are shielded

(iii) Conflict between workers and local people:

- Remaining the good relationship with local authorities; workers who are not local people have to register temporary accommodation
- Respecting religious and believe of local community

(iv) Safeguard and health for workers:

- Providing toilets/ sanitation condition at construction site
- Ensuring living condition for workers, provide enough fresh water, electricity for all camps

(v) Community safeguard:

- Limiting vehicles speed at crowded residential areas
- Limiting speed of transportation vehicles at dyke areas and crowded residential areas do not exceed 20km/h
- Agree with local authorities about using road for transportation and implementing compensation duty in case of damage

(vi) Impact on agricultural land at surrounding area:

- Construction's activities have been implemented in land clearance boundary
- Locations for storing materials, waste, mixing concrete, toxic substances are far from surrounding agricultural land at least 50m
- Discharging waste, wastewater into agricultural land areas are forbidden at all sub – projects

(vii) Temporarily close irrigation canal and drainage canal

- Construction schedule are generated to avoid rainy season for Co Ngua, Cau Dua and

My Dong

- Ensuring water flow in rainy season and cultivation period need more water;

3.2.3.2. On-site monitoring results

- The sub-project of Phu My irrigation pumping station:
 - ✓ There are enough project-information boards to introduce package: Traffic signs, construction signs at the both entrances of construction site; construction regulations and medicine cabinet at construction
 - ✓ Shortcomings: Drivers haven’t fully worn protective clothes.
- The sub-project of Kanh Vang II drainage pumping station:
 - ✓ The contractors implemented well the regulations of environmental sanitation and occupational safety at construction site, the places which completely constructed were clean and tidy; Warning signs into construction site have been moved to view easily; accommodation of workers has been cleaned up, no longer stagnant water and there are medicine cabinets at construction site
 - ✓ Shortcomings: At the entrance of pumping station, materials have been in a mess, the workers repairing pumping house, have not worn enough the protective clothes
- The sub-project of Chua Tong drainage pumping station:
 - ✓ Camps for workers were clean, construction site was tidy
 - ✓ Shortcomings: the contractors have not implemented well environmental sanitation issue and not overcome the existence problems of monitoring phase 1 such as no medicine cabinet for workers, no direction signboard at construction site.
- The sub-project of Cau Dua drainage pumping station:
 - ✓ Positive point: workers’ accommodation was clean and tidy. There was medicine cabinet for workers and there were enough posters to introduce bidding package as well as construction signboard.
 - ✓ Shortcomings: the workers did not wear enough protective clothes, the information board are small and hard to view, there are not warning signs into construction site
- The sub-project of Doan Thuong drainage pumping station:
 - ✓ The contractors overcame the existence problems of monitoring phase 1 and paid attention to the issue of ensuring environmental sanitation such as there were enough posters to introduce bidding package, construction signboard on main road, overcome widening sluice gate from field to canal. PMU and contractor combined with local authorities to promptly deal with the compensation of lost crop due to construction for local people
 - ✓ Shortcomings: the contractor did not provide medicine cabinets; the construction signs on main road through CPC and school were wrong; there was no warning barrier when dredging canals
- The sub-project of My Dong drainage pumping station
 - ✓ The contractor implemented well the environmental sanitation issues such as registering with commune’s environmental sanitation group for collecting domestic waste of workers. The contractor had a plan to prepare wire barrier,

traffic signs, signal lights when the section from the diversion canal to pumping station was constructed; the contractor trained workers about occupational safety in construction.

- ✓ Shortcomings: Workers did not wear enough protective clothes when construction; there was no safety net when the second floor of executive house was constructed and prohibition notice placed deeply in the construction site
- The sub-project of Nghi Xuyen and Lien Nghia drainage pumping station: the contractors were preparing camps and site plan for construction.
 - ✓ Workers’ accommodation was clean and tidy.
 - ✓ Shortcomings: Workers did not wear enough protective clothes when they construct, there was no poster and sign board at construction site.

3.2.3.3. General evaluation of on-site inspection results

- **The achieved results:**

The training had positive impact on implementation of environmental management plan of sub – projects’ PMU and construction contractors as following:

- ✓ The construction contractors overcome some existence of the monitoring phase 1; the contractor constructing Phu My pumping station is typical contractor.
- ✓ The contractors paid attention to environmental sanitation and occupational safety at construction site such as completely constructed areas were clean and tidy; warning signs placed at conspicuous location;
- ✓ The environmental sanitation around camps have been significantly improved, there were medicine cabinets and tools for first aid in order to prepare when accidents occur
- ✓ Workers were trained about occupational safety and environmental sanitation by contractors before they started to construct at construction site (the contractor constructs My Dong pumping station)
- ✓ The contractor implementing Lot A (Doan Thuong pumping station sub - project) and the contractor implementing Cau Dua pumping station have monitoring board to inspect worker health when they participated in construction (periodical 3 months/ time)

- **The pending issues:**

Besides achieved results, there are still some pending issues at construction site of contractors as following:

- ✓ The workers did not wear protective clothes and helmets mostly at the construction site
- ✓ At the construction of package Lot B (Doan Thuong pump- project): Sketchy signs, lack of safety fence along constructed canal.
- ✓ Some contractors did not overcome thoroughly existing issues of the monitoring phase 1 such as the contractors implementing Chua Tong and Doan Thuong pumping station don’t have medicine cabinet for workers and don’t have enough sign boards.

- ✓ Nghi Xuyen and Lien Nghia pumping station sub – projects haven’t had information boards and construction sign boards.

3.2.4 The results of monitoring on community – based environmental safeguard

Because the construction is far from residential areas, so the construction impact on environment and the living of local people is not significant. The conflict between workers and local people doesn’t occur. There are several achieved results as following:

- ✓ PMUs and contractors sent the Environmental Impact Assessment report to the local authorities; registered temporary accommodation for the workers working at construction site.
 - ✓ Commune authorities collaborated with the contractors to ensure traffic safety issue during the construction of diversion canal to pumping station (My Dong pumping station sub – project).
 - ✓ Doan Thuong commune’s feedback: the crops compensation for local people has been resolved promptly, without complaint; the problem of blocked drainage from the field to Doan Thuong canal was overcome by contractor; when Doan Thuong canal was dredged, the contractor used bamboo pile driving measures to against land slide for Mr. Doan’s household.
- **Some recommendations of localities:**
 - ✓ Doan Thuong commune: due to dredging canal, high embankment impacted on water drainage of fertile field of Doan Thuong commune. The Contractor was requested to place two sewers at the beginning and the end of field
 - ✓ Trung Hung commune (Chua Tong pumping station sub - project): the contractor was requested to dredge soil which was spread on the field due to filling diversion canal.
 - ✓ Chi Tan commune (Nghi Xuyen pumping station sub - project): The contractor was requested to announce to the locality about bidding package implementation plan; to support the localities making concrete road to construction and signing contract with environmental sanitation group to collect workers’ domestic waste

3.3 SUMMARY OF THE ENVIRONMENT MONITORING RESULTS AND RECOMMENDATIONS

3.3.1 Achievement of EMP implementation

- **Environmental monitoring results of construction supervision consultant:**
 - The construction supervision consultants recorded and submitted the monitoring forms to sub – projects’ PMU. Reflecting information of environmental safeguard, occupational safety, traffic safety and arising problems at construction site.
- **Results of community based monitoring**
 - There was closed collaboration between sub – projects’ PMU, construction contractors, construction supervision consultants, local authorities and communities on monitoring environmental safeguard, occupational safety and traffic safety, solving promptly arising complaints.

- The information of construction progress, environmental impact mitigation measures, Environmental Impact Assessment report, Environmental Management Program were sent to stakeholders.
- **On – site inspection results**
 - The construction contractors followed the regulations of environmental protection such as spraying water on roads, covering fine materials when transporting to reduce dust; camps and the toilets for workers are clean, ensuring the sanitation safety; signing contract with the local environmental groups to collect workers’ domestic waste at construction site.
 - Assigning traffic guider at the place with many vehicles carrying material going in and out off the construction site; installing construction-site boards, warning signs, and signal light at construction site.
 - The workers were trained for the occupational safety, the environmental sanitation at the construction site (representative is contractor of My Dong pumping station); the contractor who set the regulations of worker management, regularly inspecting and reminding workers to follow occupational safety measures during construction (representative is contractor of Phu My pumping station).
- **Monitoring results based on the analysis of environmental samples**

Regarding on results of environmental quality assessment stage 1: the construction activities have not impacted on air and water surface quality.

- Construction activities have not impacted on air quality. Dust concentration, noisy, vibration at sub – projects are lower than allowed standards because sub –projects are in the process of preparing site plan, there are not much operation of equipments and machines.
- Construction activities have not impacted on water surface quality. Some monitoring indicators exceed allowed standard due to effect of domestic waste in residential area and production base in area.

3.3.2 The pending issues:

Generally, the existing issues in most of construction contractors’ sub – projects are that protection for workers from noisy has not been equipped. Workers did not wear enough labour protection in sub – projects: Kenh Vang II, Cau Dua, My Dong, Nghi Xuyen, Lien Nghia. Moreover, for each sub – project, there are some existing issues as following:

- Kenh Vang II drainage pumping station: Construction material gathering was not implemented well, untidy, and spread out on the entrance; construction sign board is wrong.
- Chua Tong drainage pumping station: There is no instruction sign board at construction site. There is no medicine cabinet for workers, no station for washing wheels at construction site’s entrance places.
- Cau Dua drainage pumping station: letters on information board for package introduction are too small; no warning sign at construction site.
- Doan Thuong drainage pumping station: no medicine cabinet for workers; Sign board on the main road from Doan Thuong commune People’s Committee and school is

wrong (sketchy). No warning barrier along with dredging canal section and there is no station for washing wheels at construction site’s entrance places.

- My Dong drainage pumping station: No safety net when the second floor of operating house is constructed. The prohibition notice is put deeply inside at construction site and there is no station for washing wheels at construction site’s entrance places
- Nghia Xuyen and Lien Nghia drainage pumping station: information board and signs are not available

3.3.3 Recommendations

- **For PMU of Nghi Xuyen and Lien Nghia pumping station:**

- Send environmental monitoring plan report (EMP) to the construction contractors and construction supervision consultant for monitoring and implementation
- Inform local authorities (Department of Natural Resources and Environment, CPC in the affected area of the project) about construction progress, EIA report and approved Decision of the Ministry of Natural Resources and Environment.
- Arranging information boards to introduce the sub – project, construction progress, construction units, and investor at the construction site
- Remind construction contractor, supervision consultant to submit monitoring forms as prescribed to the PMU.
- Regularly check, remind the construction contractor in implementing measures to minimize environmental impact, occupational safety, traffic safety during construction period.
- Remind construction contractor to perform the remedies of the occurrences such as overloading material transport breaking concrete canal, rock falls causing the flow congestion, the transport of material damaging the electrical system, sludge poured affecting production and people's life.
- Promptly resolve the complaints of construction supervision consultant and local authorities.

- **For construction contractors**

- Fully equip labor protection for workers during working hours at construction site with all construction contractors;
- Construction contractors of Doan Thuong pumping station sub – project and Chua Tong pumping station sub – project equipped medicine cabinet, first aid supplies in case of accidents
- Implement the works of setting washing wheels station at construction site’s entrance places to reduce dust in the case of construction contractors of Doan Thuong pumping station sub – project and Chua Tong pumping station sub – project and My Dong pumping station sub – project.
- Particularly construction contractors of Doan Thuong pumping station sub – project, they should pay attention during construction of Thach Khoi canal with the section going through school and crowded residential areas need to make protection fence along with dredged canal section ensuring the safety of traffic participants. The current traffic sign was replaced by clear and stable another one.

- Construction contractor of My Dong pumping station need to make nets on the second floor of operating house to ensure safety for workers constructing here
- The contractors of Chua Tong, Phu My, Kenh Vang II need to implement periodical health inspection for workers
- **For local authorities and other participants**
 - Give support PMU and construction contractor in land clearance and worker management.
 - Promptly give feedback on the impact of project’s activities on environment and society.
 - Collaborate with sub – projects’ PMU to promptly resolve complaints and arising problems

Table 3.4: Recommendation of EMP action plan

No.	Problems	Resolution problems remaining stage 1/ recommendations for implementation stage 2	Responsibility for implementation	Implementation time
I	Resolve the remaining problems of the first monitoring			
1	Environmental monitoring plan report (EMP)	Sent to construction contractors and construction supervision consultant to implement and monitor	PMU of sub – projects	6/2013
2	Information of execution time and construction progress to local authorities	Sent announcement to local management agencies (Division of Natural Resources and Environment, People Committee of commune in the affected area of project)	PMU of sub – projects	6/2013
3	Information board of sub – projects at construction site	Information board was available and placed at construction site	PMU of sub – projects	6/2013
4	Implementation the environmental impact mitigation measures, occupational safety and traffic safety	<ul style="list-style-type: none"> - Sub – projects’ PMU have regularly inspected, reminded construction contractors to implement: - Construction contractors have implemented regulations of environment protection in construction: <ul style="list-style-type: none"> + Spray water and shield material transporting vehicles to avoid dust; + Camps, toilets of workers are 	<ul style="list-style-type: none"> - PMU of sub – projects - Construction contractor 	6/2013 - 30/9/2013

		<p>clean, ensuring sanitation;</p> <ul style="list-style-type: none"> + Sign contract with local environmental sanitation group to collect domestic waste of workers + Arranged people for traffic instruction at the location where many material transporting vehicles pass construction site 		
5	Regulations for workers’ management	<p>Station had worker management regulations, regularly inspected and reminded workers to implement occupational safety measures in construction</p> <ul style="list-style-type: none"> - The remaining contractors have not implemented 	construction contractors	6/2013
6	Local authority’s recommendations for DoanThuong pumping station sub – project	Overcame recommendations of local authorities regarding dumping waste causing clog drains, affect to production, preventing subsidence from the construction near local people’s houses	Construction contractor of Doan Thuong pumping station	6/2013
7	Recording monitoring forms	<ul style="list-style-type: none"> - Fully submitted monitoring forms periodically to PMU of sub – projects; - Promptly gave feedback the case of violation on occupational safety, traffic safety and environmental safety to sub – projects’ PMU 	construction supervision consultant	6/2013 - 30/9/2013
8	Collaboration with local authorities	<ul style="list-style-type: none"> - Provided support to sub – projects’ PMU and construction contractors in handing over site plan, worker management, promptly resolution complaints. - Promptly gave feedback project’s impact on environment and society 	Local authorities	From 6/2013 to the time of project complete
II	The pending issues in the second periodical monitoring			
1	Environmental monitoring plan report;	Send environmental monitoring plan report (EMP) to construction contractors and	PMU of sub – projects Nghi Xuyen and Lien	10/2013

		construction supervision consultant	Nghia pumping station	
2	Information of project at construction site	- Announce to local management agencies (Division of Natural Resources and Environment, People Committee of commune in the affected areas) construction progress, environmental impact assessment report and approved decisions of Ministry of Natural Resources and Environment - Place sub – project information board at construction site	PMU of sub – project Nghi Xuyen and Lien Nghia	10/2013
3	Medicine cabinet for workers	Equip medicine cabinet for workers to ensure first aid promptly in the case of accident	Construction contractors of Doan Thuong, Chua Tong pumping station	10/2013
4	Protective clothes for workers	Workers at construction site have to wear protective clothes such as clothes, helmet, shoes, mask ...	Construction contractors	10/2013
5	Periodical health inspection	Implement health inspection every 3 months for workers who work in hazardous conditions.	Construction contractors of Chua Tong, Phu My, Kenh Vang II pumping station	3 months/ times
6	Construction sign, barrier separating construction areas from residential areas.	Install warning signs, barrier separating construction areas of Thach Khoi canal to protect residential areas and schools	Construction contractor of Doan Thuong pumping station	10/2013
7	Occupational safety	Contractor need to set immediately net to avoid falling materials when constructing in the second floor of operating house ensuring occupational safety for workers	Construction contractor of My Dong pumping station	10/2013

Conclusion:

1. For environmental monitoring of construction supervision consultant:

The synthesized results of monitoring forms showed that construction supervision consultant recorded and fully submitted the periodical environmental monitoring form to sub – projects’ PMU. They have promptly given feedback on the information of environmental safeguard, occupational safety, traffic safety and other arising problems at construction site.

2. For community based monitoring:

The interviewed results show that local authorities promptly gave feedback the information of impacts of project’s activities on agricultural production, environment, society, occupational safety, and traffic safety during construction to sub – projects’ PMU. They also closely collaborated with sub – projects’ PMU and construction contractors to promptly resolved arising problems.

3. On – site monitoring results

Most of construction contractors have implemented relatively well approved environmental management plan. However, there are still some construction contractors who have not paid attention on occupational safety (workers without labour protection during working hour) and have not implemented well setting sign boards as regulated and implemented sketchily such as construction contractor of Doan Thuong and Kanh Vang II pumping station sub – project.

4. The results of analysing environmental samples show that construction activities have not impacted on air and water surface quality.

The plan for the next monitoring of environmental monitoring consultant (12/2013) will be implemented on beginning of 12/2013 with the following contents:

- Implement on – site inspection
- Synthesize monitoring forms of construction supervision consultant
- Implement community based monitoring
- Implement sampling to evaluate environmental quality

APPENDIX

Appendix 1: Some pictures in the second monitoring

Appendix 2: Plan for the second monitoring

Appendix 3: Tasks of Environmental Monitoring Consultant

Appendix 4: Monitoring time implemented by construction supervision consultant

Appendix 5: List of construction contractors and on – site inspection locations

Appendix 6: Meeting minutes with stakeholders

Appendix 7: The result of environmental sample analysis

Appendix 1: Some pictures in the second monitoring



Consultants worked with stakeholders at Phu My pumping station sub-project



Consultant worked with leader of Dinh To commune, Thuan Thanh district, Bac Ninh



Construction site regulations at Phu My pumping station sub-project



Execution at construction site of Phu My pumping station sub-project



Consultants worked with stakeholders at Kanh Vang II pumping station sub-project



Workers constructing at Kanh Vang II pumping station sub-project without protective clothes



Untidy construction materials - Kenh Vang II pumping station sub-project



Poor sign board - Kenh Vang II pumping station sub-project



Consultants worked with stakeholders at My Dong pumping station sub-project



Workers constructing at My Dong pumping station sub-project without protective clothes



Sign board is at wrong place and too deep - My Dong pumping station sub-project



Untidy storing materials - My Dong pumping station sub-project



Consultants worked with stakeholders at Cau Dua pumping station sub-project



Letters in information board are too small - Cau Dua pumping station sub-project



The workers working at Cau Dua pumping station sub-project are lack of uniform protective clothes



The workers doing steel framework at Cau Dua pumping station sub-project are lack of uniform protective clothes



Consultants worked with stakeholders at Doan Thuong pumping station sub-project



Poor sign board – Doan Thuong pumping station sub-project



No protection fence when constructing near school and CPC's Doan Thuong commune – Doan Thuong pumping station sub-project



Contractors consolidated canal bank by bamboo pile to protect houses– Doan Thuong pumping station sub-project



Interviewed Mr. Nguyen Thuc Doan – Doan Thuong pumping station sub-project



Consultants worked with stakeholders at Chua Tong pumping station sub-project



Poor sign board and wrong place - Chua Tong pumping station sub-project



Sign board is at the place that hard to observation – Chua Tong pumping station sub-project



Consultants worked with stakeholders at Lien Nghia pumping station sub-project



Workers constructing Lien Nghia pumping station sub-project without protective clothes



Contractor didn't arrange protection fence – Lien Nghia pumping station sub-project



Consultants worked with stakeholders at Nghi Xuyen pumping station sub-project



Driver working without protective clothes – Nghi Xuyen pumping station sub-project



Workers constructing without protective clothes– Nghi Xuyen pumping station sub-project

Appendix 2: Plan for the second monitoring

No.	Contents	Location	Implementation time
1	Working with CPO for the monitoring issues in phase 2 and gathering relevant documents	CPO office	27/9/2013
2	Phu My irrigation pumping station sub - project	PMU of Bac Ninh Irrigation investment and construction	1/10/2013
3	Kenh Vang 2 drainage pumping station sub - project		2/10/2013
4	My Dong drainage pumping station sub - project	PMU of Bac Hung Hai irrigation	3/10/2013
5	Cau Dua drainage pumping station sub - project	PMU of Hai Huong agriculture and rural development Works	4/10/2013
6	Đoan Thuong pumping station sub - project		5/10/2013
7	Chua Tong pumping station sub - project	PMU of Hung Yen Department of agriculture and rural development	7/10/2013
8	Lien Nghia pumping station sub - project		8/10/2013
9	Nghi Xuyen pumping stationsub - project	CPO	9/10/2013
10	Submit 1 st draft for CPO sub - project	CPO office	25/10
11	Submit the final report sub - project		1/11/2013

Appendix 3: Tasks of Environmental Monitoring Consultant

Objectives of environmental monitoring

The objectives of environmental monitoring during implementation time for sub - projects ensure compliance with the environmental management plan of the project. Compliance with the environmental management plan would help to mitigate and monitor the potential impacts on environment and sustainable development of the project. Results of environmental monitoring should be recorded and checked to ensure that negative impacts have been detected in the early stages and mitigation measures will be implemented.

Main tasks of consultants

a) Strengthening capacity of environmental monitoring and management for the project

Provide support for PMUs in designing of environmental management program including propose professional environmental staff and environmental management procedures.

Provide support to PMUs in establishing internal monitoring through daily checking and reporting.

Provide support to PMUs in making forms of the periodical monitoring reports and internal monitoring reports.

Instruct PMUs to comply with regulations of occupational safety, fire control, construction-site sanitation, and construction-waste disposal, etc following the issues of environmental management plan.

b) Provide support to PMUs to review the bidding and draft contract documents to ensure the EMP requirements would be incorporated

Provide support in reviewing the construction bidding documents to ensure compliance with EMP requirements.

Provide support to PMUs in reviewing construction contracts to ensure that the full of environmental protection requirements are provided in accordance with each package.

c) Collecting information

- **Consultation with stakeholders**

The stakeholders' consultation (such as PMUs, contractors, local authorities, local people, etc) for the purpose of collecting relevant information to assist monitoring

- **Environmental monitoring by construction supervision consultant**

The consultant will work with PMUs and Construction supervision consultant (CSC) to set up daily record form and monitoring procedure, compliance of contractors under the terms of environment's contents in the approved EMPs. Based on these, CSC will conduct diary check the environmental compliance of contractors which is integrated with the process of construction supervision. The independent environmental monitoring consultants will support the monitoring procedure of CSC through periodical checking and review the noted results, monitoring of CSC.

- **On – site monitoring**

Monitoring the implementation of measures to minimize the negative impacts of the project to environment during the construction time

Consultation of the community’s point of view and relevant agencies

Inspect and detect problems caused by the project on the environment and recommend mitigation measures.

- **Taking samples for assessing environmental quality**

Surveying, taking samples and analyzing environmental quality in order to monitor the impacts of the project on the environment quality in the implementation process of the project.

d) Updating monitoring indicators

Consultants will update monitoring indicators in compliance implementation with activities of the project. The monitoring indicators should be updated during the implementation time of project.

e) Analyzing data

Analysing the collected data from on-site audit, stakeholder consultation, writing document of construction supervision consultant and assessing environmental quality from sampling program to prepare monitoring reports.

f) Monitoring frequency

On-site monitoring: supporting PMUs, Contractors in implementing EMP; monitoring the compliance of PMUs and Contractors with EMP: 2 times per year

On-site monitoring and collecting samples to assess project’s impacts on environment quality: 2 times/ year.

g) Report

Preparing Inception report, Final report and Periodical monitoring reports follow frequency of monitoring (4 times/year in 3 years).

Appendix 4: Monitoring time implemented by construction supervision consultant

No.	Sub – project	Package name	Monitoring time (month)
I	PMU’s Bac Ninh Irrigation Investment and Construction		
1	Phu My irrigation pumping station	01/PM-BN: Construction of pumping station, management house, operating house, discharge tank, intake house, electrical installation and other works under the complex area of Phu My pumping station .	5, 6, 7, 8 and 9/2013
2	Kenh Vang drain pumping station	01/KV-BN: Rehabilitating and repairing of pump-house, constructing management & operation house, rehabilitating intake & discharge tank and other works under the complex area of Kenh Vang 2 pumping station.	4, 5, 6, 7 and 8/2013
3	Nhat Trai drainage pumping station	In the process of waiting constructing	
II	PMU of Hung Yen Department of Agriculture and Rural Development		
4	Chua Tong drainage pumping station	01/CT-HY: constructing the management & operation house, inlet & outlet tank, the gravity drain, combined-construction-managment road, and installing high voltage, low voltage, and transformer.	4, 5, 6, 7, 8 and 9/2013
5	Lien Nghia drainage pumping station	Package no. 01/LN-HY: construction of pumping station	not yet implemented
III	PMU of Hai Duong Agriculture and Rural Development Works		
6	Cau Dua drain pumping station	01/CD-HD: Construction of pump-house, discharge tank, intake tank, culvert across dyke, canal, management house, electrical installation (high voltage, low voltage, transformer)	7, 8, and 9/2013
7	Doan Thuong drain pumping station	Lot A: Construction of pumping house, inlet & outlet tank, management house, the electrical installation and other works under the head-work area Lot B: Construction of culvert across dyke , canal and other works belonging to area after the head-work.	9/2013 5, 6, 7, 8, and 9/2013
IV	One member limited company of Bac Hung Hai Irrigation Works exploitation		
8	My Dong drainage pumping station	01/MĐ-HD Construction My Dong pumping station	7, 8, 9 and 10/2013
V	Central Project Office – CPO		
9	Nghi Xuyen drain pumping station	Package No.1 /NX-HY: Constructing Nghi Xuyen pumping station Lot A: constructing pumping station house, water-diverted canal, management house, inlet & oulet tank, the electrical installation	not yet implemented

No.	Sub – project	Package name	Monitoring time (month)
		(high voltage, low voltage, transformer) and other works belonging to complex area Lot B: constructing culvert across dyke, discharge canal, and other works within the headwork area.	
10	Co Ngua pumping station	In the process of selecting construction contractor and supervision consultant	

Appendix 5: List of construction contractors and on – site monitoring location in the second monitoring

No.	Package	Contractor	Monitoring location
1	Phu My irrigation pumping station(Package 01/PM-BN)	Cooperation between Dong A international Joint Stock Company – Anh Phuong Construction Joint Stock Company – Ha Tay Irrigation Construction Joint Stock Company	Phu My pumping station construction site (Phu My village, Dinh To commune, Thuan Thanh district, Bac Ninh)
2	Kenh Vang II drain pumping station(Package 01/KV-BN)	Cooperation between Ninh Giang Construction Company Ltd – Tan Thinh Construction Company Ltd – Irrigation Construction Joint Stock Company	Kenh Vang II pumping station construction site (Trung Kenh commune, Luong Tai, Bac Ninh)
3	Chua Tong drain pumping station(Package 01/CT-HY)	Hung Yen dyke and irrigation construction Joint Stock Company	Chua Tong pumping station construction site (Trung Hung commune, Yên My, Hung Yen)
4	Cau Dua drainage pumping station (Package 01/CD-HD)	Cooperation between Thanh Hoa agriculture and rural development construction Company – Thai Binh irrigation construction Joint Stock Company	Cau Dua pumping station construction site Van To commune, Tu Ky, Hai Duong)
5	Doan Thuong drain pumping station(Lot A and B)	Lot A: Cooperation between Hai Duong irrigation construction and electrical installation Lot B: Thao Nguyen Company Limited	Doan Thuong pumping station construction site (Đoan Thuong commune, Gia Loc, Hai Duong)
6	My Dong drain pumping station(Package 01/MĐ-HD)	Cooperation between Dai An Construction Investment Joint Stock Company and Construction Joint Stock Company No.12	My Dong pumping station construction site (Tien Phong commune, Thanh Mien, Hai Duong)
7	Nghi Xuyen drainage pumping station	Lot A: Cooperation between Song Hong Construction Joint Stock Company – Thanh Hoa agriculture and rural development construction Company – 6.3 Joint Stock Company Lot B: Cooperation between Hai Phong Irrigation Construction Joint Stock Company - Mien Bac Electricity investmenet and development consultant Company	Nghi Xuyen pumping station construction site (Chi Tan commune – Thanh Cong, Khoai Chau, Hung Yen)

No.	Package	Contractor	Monitoring location
8	Lien Nghia drainage pumping station	Hai Phong Irrigation Construction Joint Stock Company – Hung Yen Irrigation Construction Joint Stock Company	Lien Nghia pumping station construction site (Lien Nghia commune, Van Giang, Hung Yen)

Appendix 6: Meeting minutes with stakeholders

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MEETING MINUTES WITH STAKEHOLDERS

(The 2nd monitoring of the implementation of environmental management plan -
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage
Infrastructure)

1. Sub - Project: Phu My irrigation pumping station

2. Location: Dinh To Commune, Thuan Thanh District, Bac Ninh Province

3. Time: 1/10/2013

4. Participants:

(i) Representative of PMU: PMU of Bac Ninh irrigation investment and construction

Mr: Bui Anh Tu

Position: Environment Official of PMU

(ii) Representative of construction supervision consultant: Constraco JSC

Mr: Cai Viet Tuan

Position: Chief of monitoring

(iii) Representative of Construction Contractor

-Dong A International Joint Stock Company – Anh Phuong Construction Joint Stock
Company – Ha Tay Hydraulic Construction Joint Stock Company

Mr: Tran Van Quy

Position: Chief of construction

(iv) Representative of Local Authorities:

- CPCs:

Mr:

Position:

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and
Environment

Mrs: Vu Thi Thanh Huong

Position: Group's leader

5. Work Contents

*(i) Inspecting construction site of the implementation environmental impact mitigation
measures*

No.	Contents	Result
1	Assessing Contractors' capacity in construction environmental management	Good
2	Inspecting the implementation of project's information works	Yes

3	Inspecting the overcoming of existence in the first monitoring	Yes
4	Earthworking mitigation measures	Yes
5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
7	Mud dredging mitigation measures	Yes
8	Pollution in transport mitigation measures	Yes
9	Construction safety ensuring measures	Yes
10	Inspecting dumping site	Yes

(ii) Inspecting the implementation of social impact mitigation measures

No.	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	Yes
2	Local worker's percentage	
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

No.	Contents	Result
1	Tools, medicine cabinet for first aid service, victims emergency	Yes
2	Equip protective clothes for workers	Yes
3	Camp, environmental sanitation conditions for worker's accommodation	Good

(iv) Inspecting traffic safety measures

No.	Contents	Result
1	Sign board at construction site	Yes
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

SOCIALIST REPUBLIC OF VIETNAM
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MEETING MINUTES WITH STAKEHOLDERS

(The 2nd monitoring of the implementation of environmental management plan - Components 2: Construction and rehabilitation of BHH Irrigation and Drainage Infrastructure)

1. Sub - Project: Kenh Vang II irrigation pumping station

2. Location: Trung Kenh commune – Luong Tai district – Bac Ninh province

3. Time: 2/10/2013

4. Participants:

(i) Representative of PMU: PMU of Bac Ninh Irrigation Construction and Investment

Mr: Bui Anh Tu Position: Environmental, ReseNo.lement officer,

(ii) Representative of construction supervision consultant: Natural Resources and Environment Construction Consultant JSC

Mr: Nguyen Xuan Huu Position: Chief of monitor

(iii) Representative of Construction Contractor

- Contractor no.1: cooperation between Ninh Giang Construction Company Ltd – Tan Thinh Construction Company Ltd – Irrigation Construction Joint Stock Company

Mr: Nguyen Trac Thang Position: construction engineering staff

(iv) Representative of Local Authorities:

- Commune’s People CommiNo.ee:

Mr: Position:.....

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Mrs: .Vu Thi Thanh Huong Position: Group’s leader

5. Work Contents

(i) Inspecting construction site of the implementation environmental impact mitigation measures

No.	Contents	Result
1	Assessing Contractors’ capacity in construction environmental management	Good
2	Inspecting the implementation of project’s information works	Yes
3	Inspecting the overcoming of existence in the first monitoring	Yes (not

		complete)
4	Earthworking mitigation measures	Yes
5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
7	Mud dredging mitigation measures	Yes
8	Pollution in transport mitigation measures	Yes
9	Construction safety ensuring measures	Yes
10	Inspecting dumping site	Yes

(ii) Inspecting the implementation of social impact mitigation measures i

No.	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	Yes
2	Local worker's percentage	20%
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

No.	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	Yes
2	Equip protective clothes for workers	Yes
3	Camp, environmental sanitation conditions for worker's accommodation	ensuring sanitation

(iv) Inspecting traffic safety measures

No.	Contents	Result
1	Sign board at construction site	Yes
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

SOCIALIST REPUBLIC OF VIETNAM
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MEETING MINUTES WITH STAKEHOLDERS

**(The 2nd monitoring of the implementation of environmental management plan -
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage
Infrastructure)**

1. Sub - Project: My Dong drainage pumping station

2. Location: Tien Phong commune - Thanh Mien district – Hai Duong province

3. Time: 3/10/2013

4. Participants:

(i) Representative of PMU: Bac Hung Hai Irrigation Exploitation Company

Mr: Vu Van Phan

Position: Vice Director

(ii) Representative of construction supervision consultant: Bac Viet Construction and Consultant JSC

Mr: Nguyen Cong Nam

Position: monitoring consultant staff

(iii) Representative of Construction Contractor

- Contractor 1: Construction Joint Stock Company no.12

Mr: Tran Hong Tham

Position: Chief of construction

(iv) Representative of Local Authorities:

- CPC: Tien Phong, Thanh Mien, Hai Duong

Mr: Nguyen Gia Long
committee

Position: Chairman of commune People’s

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Mrs: Vu Thi Thanh Huong

Position: Group’s Leader

5. Work Contents

(i) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Assessing Contractors’ capacity in construction environmental management	ensuring requirements
2	Inspecting the implementation of project’s information works	Yes

3	Inspecting the overcoming of existence in the first monitoring	Yes
4	Earthworking mitigation measures	-
5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
7	Mud dredging mitigation measures	-
8	Pollution in transport mitigation measures	Yes
9	Construction safety ensuring measures	Yes
10	Inspecting dumping site	-

(ii) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	Yes
2	Local worker's percentage	-
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	Yes
2	Equip protective clothes for workers	No
3	Camp, environmental sanitation conditions for worker's accommodation	Yes

(iv) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	Yes
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

(iv) Community consultation

Representative of TienPhong commune People's Committee

- The construction site of operation house is implemented a separated area, so environmental pollution has not impacted on local people;

- The commune will collaborate with contractor to ensure traffic safety during construction item of diversion canal to pump-station

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:.....

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MEETING MINUTES WITH STAKEHOLDERS

**(The 2nd monitoring of the implementation of environmental management plan -
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage
Infrastructure)**

1. Sub - Project: Cau Dua drainage pumping station

2. Location: Van To commune - Tu Ky district- Hai Duong province

3. Time: 4/10/2013

4. Participants:

(i) Representative of PMU: PMU of Hai Duong Agriculture and Rural Development Works

Mr: Tran Minh Thang

Position: Vice Director

(ii) Representative of construction supervision consultant: Thai Hung Company

Mr: Nguyen The Hung

Position:

(iii) Representative of Construction Contractor

- Contractor no. 1: Cooperation between Thanh Hoa Agriculture and Rural Development Construction Corporation – Thai Binh Irrigation Construction JSC

Mr: Nguyen Manh Cuong

Position:

(iv) Representative of Local Authorities:

- CPC: Van To commune People’s Committee

Mr: Pham Cong Vinh
committee

Position: Chairman of commune People’s

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Mrs: Vu Thi Thanh Huong

Position: Group’s leader

5. Work Contents

(i) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Assessing Contractors’ capacity in construction environmental management	Good
2	Inspecting the implementation of project’s information works	Yes
3	Inspecting the overcoming of existence in the first monitoring	Yes
4	Earthworking mitigation measures	Yes

5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
7	Mud dredging mitigation measures	Yes
8	Pollution in transport mitigation measures	Yes
9	Construction safety ensuring measures	Yes
10	Inspecting dumping site	Yes

(ii) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	Yes
2	Local worker's percentage	-
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinet for first aid service, victims emergency	Yes
2	Equip protective clothes for workers	Yes , not complete
3	Camp, environmental sanitation conditions for worker's accommodation	assurance

(iv) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	Yes
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

(iv) Community consultation

Representative of Van To commune

- The contractor registered temporary accommodation for workers
- There were no environmental problems, security and social order because construction is far from residential areas.

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:.....

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MEETING MINUTES WITH STAKEHOLDERS

(The 2nd monitoring of the implementation of environmental management plan - Components 2: Construction and rehabilitation of BHH Irrigation and Drainage Infrastructure)

1. Sub - Project: Doan Thuong drainage pumping station

2. Location: Doan Thuong commune – Gia Loc district – Hai Duong province

3. Time: 5/10/2013

4. Participants:

(i) Representative of PMU: PMU of Hai Duong Agriculture and rural development works

Mr: Tran Minh Thang

Position: Vice Director

(ii) Representative of construction supervision consultant: Hai Duong Construction Trading and Service Company Ltd

Mr: Pham Van Phuc

Position: monitoring officer

(iii) Representative of Construction Contractor

- Construction contractor: Thao Nguyen company Ltd

Mr: Tran Van An

Position: Chief of construction

(iv) Representative of Local Authorities:

- CPC: Doan Thuong commune People's committee

Mr: Vu Ngoc Son

Position: Chairman of commune People's committee

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Mrs: Vu Thi Thanh Huong

Position: Group's Leader

5. Work Contents

(i) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Assessing Contractors' capacity in construction environmental management	ensuring requirements
2	Inspecting the implementation of project's information works	Yes
3	Inspecting the overcoming of existence in the first monitoring	Yes, (sketchy)
4	Earthworking mitigation measures	Yes

5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storing of materials (sand, stone, cement, ...)	Yes
7	Mud-dredged mitigation measures	Yes
8	Pollution in transport mitigation measures	Yes
9	Construction-safety ensuring measures	Yes
10	Inspecting dumping site	Yes

(ii) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	No
2	Local worker's percentage	-
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	No
2	Equip protective clothes for workers	Yes
3	Camp, environmental sanitation conditions for worker's accommodation	assurance

(iv) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	Yes (sketchy)
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

(iv) Community consultation

Representative of Doan Thuong commune:

- The contractor implemented placing construction sign board and poster introducing bidding package
- Spraying water measure to reduce dust during construction
- Registered temporary accommodation for workers and officers.
- Crop compensation for farmers implemented completely, no complaint .

- The water drain sluice gate from field to Doan Thuong canal was overcome by the contractor’
- During dredging Doan Thuong canal, bamboo pile driving measure was used to against landslide for Mr. Doan

The Local’s recommendations:

- Due to dredging, high embankment of Doan Thuong canal, so at the beginning and the end of Doan Thuong field can not drain. The contractor was requested to install 2 sewers at 2 positions from field to Doan Thuong canal at the sewage outlet of the beginning and ending of the field.
- The contractor implemented driving bamboo pile to against landslide Doan Thuong canal. The contractor was requested to consolidate canal slope by stone for safety

Signature of stakeholders

Representative of PMU:

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:

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MEETING MINUTES WITH STAKEHOLDERS

**(The 2nd monitoring of the implementation of environmental management plan -
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage
Infrastructure)**

1. Sub - Project: Chua Tong drainage pumping station

2. Location: Trung Hung, Thanh Long commune - Yen My district - Hung Yen province

3. Time: 7/10/2013

4. Participants:

(i) Representative of PMU: PMU of Hung Yen Department of Agriculture and Rural Development

Mr: Nguyen Xuan Chien

Position: Vice Director

(ii) Representative of construction supervision consultant: Cooperation between Urban Environment and construction consultant Company - Infrastructure construction & development investment consultant JSC

Mr: Nguyen Van Tinh

Position: supervision staff

(iii) Representative of Construction Contractor

- Contractor no.1: Hung Yen Irrigation and Dyke Construction JSC

Mr: Le Van Duy

Position: Director

(iv) Representative of Local Authorities:

- CPC: Trung Hung commune People's committee

Mr: Luyen Phuc Thuy

Position: Chairman of commune People's Committee

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Mrs: Vu Thi Thanh Huong

Position: Group's leader

5. Work Contents

(i) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Assessing Contractors' capacity in construction environmental management	ensuring requirements
2	Inspecting the implementation of project's information works	Yes
3	Inspecting the overcoming of existence in the first monitoring	Yes, but not complete

4	Earthworking mitigation measures	Yes
5	Environmental sanitation ensuring measures	Yes
6	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
7	Mud dredging mitigation measures	Yes
8	Pollution in transport mitigation measures	Yes
9	Construction safety ensuring measures	Yes
10	Inspecting dumping site	Yes

(ii) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	No
2	Local worker's percentage	40%
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(iii) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	No
2	Equip protective clothes for workers	Yes
3	Camp, environmental sanitation conditions for worker's accommodation	assurance

(iv) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	Yes
2	Sign board for separate traffic lanes during construction	Yes
3	Checking the registration certificate of construction equipments during construction	Yes

(iv) Community consultation

Representative of Trung Hung commune: the contractor was requested to dredge soil spread out the field of farmer which impact on agricultural production

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:.....

SOCIALIST REPUBLIC OF VIETNAM
Independence-Freedom-Happiness

MEETING MINUTES WITH STAKEHOLDERS

**(The 2nd monitoring of the implementation of environmental management plan -
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage
Infrastructure)**

1. Sub - Project: Lien Nghia drainage pumping station

2. Location: Lien Nghia commune - Van Giang district – Hung Yen province

3. Time: 8/10/201

4. Participants:

(i) Representative of PMU: PMU of Hung Yen Department of Agriculture and Rural Development

Mr: Tran Xuan Thiem

Position: PMU’s officer

(ii) Representative of construction supervision consultant: Cooperation between Bac Bo – Ha Dong Irrigation investment and consultant JSC

Mr: Phu Hai Thanh

Position:

(iii) Representative of Construction Contractor

- Contractor no. 1: Hai Phong Irrigation Construction JSC

Mr: Dao Xuan Ha

Position: engineering staff

- Contractor no. 2: Hung Yen Irrigation construction JSC

Mr: Nguyen Van Giang.

Position: engineering staff

(iv) Representative of Local Authorities:

- CPC: Lien Nghia commune

Mr: Ly Xuan Minh

Position: vice – chairman of People’s committee

(v) Environmental Monitoring Consultant: Southeast Asia Institute for Water Resources and Environment

Ms. Vu Thi Thanh Huong:

Position: Group’s Leader

5. Work Contents

(i) Environmental monitoring consultant instructs stakeholders to implement environmental and social safety measures:

- Instructing PMUs the implementation of environmental management plan and internal monitoring
- Instructing construction supervision consultant to fill in the form No.1 and No.2
- Instructing construction contractors to fill in the form No.3

- Instructing local authorities and communities to fill in the form No.4

(ii) Gathering documents from PMUs, construction contractors and construction supervision consultant including:

TT	Contents	Result
1	Construction progress	Date of signing contract: 20/9/2013 Date of commence: 8/10/2013
2	Check the regulations on environmental management of contracts, bidding documents for construction contractors, construction supervision consultant	Yes
3	Periodical reports sent to CPO and ADB	Yes
4	Project's information to the local and related agencies	No

(iii) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Earthworking mitigation measures	Yes
2	Environmental sanitation ensuring measures	Yes
3	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
4	Mud dredging mitigation measures	Yes
5	Pollution in transport mitigation measures	Yes
6	Check license operation of equipment	Yes
7	Inspecting dumping site	not yet dumping

(iv) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	in the process of generating regulations
2	Local worker's percentage	No
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(v) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	Not Yet

2	Equip protective clothes for workers	Not Yet
3	Camp, environmental sanitation conditions for worker’s accommodation	ensuring sanitation

(vi) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	No Yes
2	Sign board for separate traffic lanes during construction	No Yes
3	Inspecting material transport equipments	No Yes

(viii) Community consultation

Representative of Lien Nghia CPC agrees totally the project

Signature of stakeholders

Representative of PMU:.....

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:.....

- Instructing PMUs the implementation of environmental management plan and internal monitoring
- Instructing construction supervision consultant to fill in the form No.1 and No.2
- Instructing construction contractors to fill in the form No.3
- Instructing local authorities and communities to fill in the form No.4

(ii) Gathering documents from PMUs, construction contractors and construction supervision consultant including:

TT	Contents	Result
1	Construction progress	Date of signing contract: 21/08/2013 Date of commence: 23/9/2013
2	Check the regulations on environmental management of contracts, bidding documents for construction contractors, construction supervision consultant	Yes
3	Periodical reports sent to CPO and ADB	Yes
4	Project's information to the local and related agencies	No

(iii) Inspecting construction site of the implementation environmental impact mitigation measures

TT	Contents	Result
1	Earthworking mitigation measures	Yes
2	Environmental sanitation ensuring measures	Yes
3	The mitigation measures in gathering and storage of materials (sand, stone, cement, ...)	Yes
4	Mud dredging mitigation measures	Yes
5	Pollution in transport mitigation measures	Yes
6	Inspecting operation certificate of equipments	Yes
7	Inspecting dumping site	no yet dumping

(iv) Inspecting the implementation of social impact mitigation measures

TT	Contents	Result
1	Managing workers by generating regulations and inspecting the implementation of regulations	in the process of generating regulations
2	Local worker's percentage	No
3	Arising conflict between workers and local people	No
4	Other social negatives	No

(v) Inspecting the implementation of occupational safety measures

TT	Contents	Result
1	Tools, medicine cabinetn for first aid service, victims emergency	Not Yet
2	Equip protective clothes for workers	Not Yet
3	Camp, environmental sanitation conditions for worker’s accommodation	sanitation ensuring

(vi) Inspecting traffic safety measures

TT	Contents	Result
1	Sign board at construction site	Not Yet
2	Sign board for separete traffic lanes during construction	Not Yet
3	Inspecting material transport equipments	Not Yet

(viii) Community consultation

Representative of Chi Tan CPC recommends :

- The contractor signed contract with the local group to collect workers’ donmestic waste at construction site
- Announce to the local daily construction plan every week
- Worker should not be outside after 10 pm to avoid arising conflict
- Provide support making concrete road from operation house to the construction site

Representative of Thanh Cong CPC recommends:

- During construction, ensuring water drainage for surrounding areas
- During material transport, tarpaulin should be used to ensure environmental sanitation and avoid accidents
- Collaborate with the local authorities to solve promptly arising problems, avoid complaints

Signature of stakeholders

Representative of PMU:

Representative of Environmental Monitoring Consultant:

Representative of Construction Contractor:

Representative of Construction Supervision Consultant:

Representative of Local Authorities:.....

Appendix 7: The result of environmental sample analysis



CONSTRUCTION AND MATERIAL TECHNOLOGY TRANSFER JSC

CENTER FOR CHEMICAL – ENVIRONMENT ANALYSIS

**Address : Building no. 5 – Water Resources University -
Dong Da - Ha Noi - Tel : 04.35640103**

ISO 9001 : 2008

No: 1185/PTMT-CTY

ANALYSIS RESULT

Client: Southeast Asia Institute for Water Resources and Environment

Number of sample: 6

Sample type: Air

Location: Project area of Construction and rehabilitation of BHH Irrigation and Drainage Infrastructure.

Date of sampling: / /2013

TT	Position Monitoring	Noise (dBA)	Vibration (dB)	Dust (mg/m ³)
1	Chua Tong drainage pumping station	68.08	0.213	0.11
2	Doan Thuong drainage pumping station	50.12	0.017	0.14
3	Cau Dua drainage pumping station	30.12	0.011	0.09
4	Phu My drainage pumping station	44.00	0.039	0.12
5	Kenh Vang drainage pumping station	39.40	0.024	0.16
6	My Dong drainage pumping station	38.00	0.025	0.1
	QCVN 05:2009	-	-	0.3
	QCVN 26:2010	70	-	-

Allowed standard according to the following regulations:

(+)QCVN 05:2009/BTNMT National technical regulation on ambient air quality

(+)QCVN 26:2010/BTNMT National Technical Regulation on Noise

(-): No regulation

Ha Noi,

2013

Analysis Staff

Director

Nguyen Van Thanh

Nguyen Thi Hang Nga

Institute for Water and Environment**Department of General Laboratory****Address: 165/2 Chua Boc Str, Dong Da Dist, Hanoi , Viet****Tel: 844-8.539.127 Fax: 844-5.634.809**

Project: Strengthening water management and irrigation systems rehabilitation project (ADB5)
Components 2: Construction and rehabilitation of BHH Irrigation and Drainage Infrastructure

TABLE OF SURFACE WATER SAMPLE ANALYSIS RESULTS
Client: Southeast Asia Institute for Water Resources and Environment

No.	Parameter	Unit	Analysis results				QCVN 08:2008/ BTNMT column B1
			Chua Tong pumping station	Doan Thuong pumping station	Cau Dua pumping station	Phu My pumping station	
1	pH	-	7.7	7.4	7.5	7.5	5.5 – 9.0
2	DO	mg/l	4.32	5.6	7.2	7.36	≥ 4
3	SS	mg/l	18.72	36.58	37.08	40.08	50
4	COD	mg/l	12.96	48	24	11.04	30
5	BOD ₅	mg/l	4.82	16.55	8.96	4.25	15
6	NH ₄ ⁺	mg/l	1.46	1.34	0.84	0.78	0.5
7	NO ₂ ⁻	mg/l	0.02	0.04	<0.01	0.02	0.04
8	NO ₃ ⁻	mg/l	<0.01	0.04	0.01	0.02	10
9	PO ₄ ³⁻	mg/l	0.02	0.04	<0.01	<0.01	0.3
10	As	mg/l	0.00204	0.00703	0.00193	0.00127	0.05
11	Hg	mg/l	0.00050	0.00041	0.00033	0.00029	0.001
12	Pb	mg/l	0.00605	0.00602	0.00632	0.00762	0.05
13	Zn	mg/l	0.152	0.226	0.046	0.065	1.5
14	Grease	mg/l	0.036	0.028	0.040	0.062	0.1
15	Coliform	MPN/100ml	11.000	11.000	4.500	4000	7.500

Notes:

QCVN 08:2008/ BTNMT column B1: *National technical regulation for surface water quality used for irrigation purposes and other uses require the same quality*

On behalf of the analysis team

**Deputy Chief of
General Laboratory**

Ha Noi, June 6th 2013
Institute for Water and Environment

(Signed)

(Signed)

Le Van Cu

Vu Quoc Chinh