



RED RIVER DELTA RURAL WATER SUPPLY AND SANITATION PROJECT

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN

**7 Communes: Giao Chau, Giao Nhan, Giao Ha, Binh Hoa, Hong Thuan,
Hoanh Son Communes in Giao Thuy District and Tho Nghiep
Commune in Xuan Truong District, Nam Dinh Province**

Assignment:

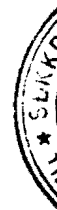
**“CONSULTANT SERVICES: PREPARE INVESTMENT REPORTS, PRIMARY DESIGNS,
BID DOCUMENTS AND OTHER SURVEYS UNDER NAM DINH RURAL WATER
SUPPLY AND SANITATION PROJECT IN 8 COMMUNES (PHASE 4)”**

Submitted to:

**NAM DINH PROVINCE RURAL WATER SUPPLY AND SANITATION PROJECT MANAGEMENT
NAM DINH PROVINCIAL PEOPLE'S MANAGEMENT
WORLD BANK IN VIETNAM**

THUDO Weico in joint-venture with SEI Consultants

Ha Noi –2010





RED RIVER DELTA RURAL WATER SUPPLY AND SANITATION PROJECT

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN

7 Communes: Giao Chau, Giao Nhan, Giao Ha, Binh Hoa, Hong Thuan,
Hoanh Son Communes in Giao Thuy District and Tho Nghiep
Commune in Xuan Truong District, Nam Dinh Province

Assignment:

“CONSULTANT SERVICES: PREPARE INVESTMENT REPORTS, PRIMARY DESIGNS,
BID DOCUMENTS AND OTHER SURVEYS UNDER NAM DINH RURAL WATER
SUPPLY AND SANITATION PROJECT IN 8 COMMUNES (PHASE 4)”

Submitted to:

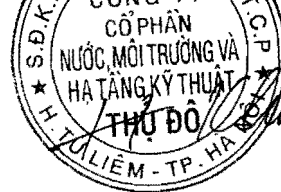
NAM DINH PROVINCE RURAL WATER SUPPLY AND SANITATION PROJECT MANAGEMENT
NAM DINH PROVINCIAL PEOPLE'S MANAGEMENT
WORLD BANK IN VIETNAM

Employer
Nam Dinh rural water & sanitation
Project management unit



GIÁM ĐỐC
VƯƠNG DUY NAM

Key Consultant
Thудо Water, Environment &
Infrastructure Joint-Stock Company



GIÁM ĐỐC
Nguyễn Huy Khôi



RED RIVER DELTA RURAL WATER SUPPLY AND SANITATION PROJECT

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN

7 Communes: Giao Chau, Giao Nhan, Giao Ha, Binh Hoa, Hong Thuan,
Hoanh Son Communes in Giao Thuy District and Tho Nghiep
Commune in Xuan Truong District, Nam Dinh Province

Assignment:

“CONSULTANT SERVICES: PREPARE INVESTMENT REPORTS, PRIMARY DESIGNS,
BID DOCUMENTS AND OTHER SURVEYS UNDER NAM DINH RURAL WATER
SUPPLY AND SANITATION PROJECT IN 8 COMMUNES (PHASE 4)”

Submitted to:

NAM DINH PROVINCE RURAL WATER SUPPLY AND SANITATION PROJECT MANAGEMENT
NAM DINH PROVINCIAL PEOPLE’S MANAGEMENT
WORLD BANK IN VIETNAM

Sub- Consultant

Society, Environment, Infrastructure
Consultants Limited Company



GIÁM ĐỐC
Nguyễn Văn Hoàn

TABLE OF CONTENTS

CHAPTER 1. GENERAL INTRODUCTION	4
1.1. General Introduction about project.....	4
1.2. The purpose of the report is committed to protecting the environment	5
CHAPTER 2. LOCATION PROJECT	6
2.1. Natural conditions.....	6
2.1.1. Geography	6
2.1.2. Hydrology characteristics.....	7
Characteristics of Infrastructure	9
<i>Transportation</i>	10
<i>Housing</i>	10
<i>Electrical energy</i>	10
Status subproject area	11
<i>Status of water supply</i>	11
<i>Present condition of sanitation</i>	15
<i>Status condition of collection, waste treatment and water drainage system</i>	18
Projects area	21
Project content	21
<i>Central water supply system</i>	21
<i>Water supply and sanitation household</i>	21
<i>Improved water supply and sanitation in place</i>	21
<i>Public toilets</i>	22
<i>Map centralized water supply system</i>	22
CHAPTER 3. ENVIRONMENTAL IMPACTS	25
3.1. The positive impact.....	25
3.2. The negative impact.....	25
3.2.1. <i>The negative impacts on environmental related to phase clearance</i>	25
3.2.2. <i>The negative impacts on the environment related to the construction phase</i>	25
3.2.3. <i>The negative impacts on environment and mitigation measures related to operational phase</i>	28

CHAPTER 4. MITIGATION MEASURES NEGATIVE IMPACT	30
5.1. Environmental monitoring program.	37
5.1.1. <i>Monitoring groundwater quality.</i>	37
5.1.2. <i>Surface water quality monitoring:</i>	37
5.1.3. <i>The frequency and method of monitoring water quality:</i>	37
5.1.6. <i>Monitoring of operations.</i>	37
5.2. Planning environmental training / institutional strengthening.	41
5.2.1. <i>Training Objectives.</i>	41
5.3. Assigning responsibility.	41
5.3.1. <i>Responsibilities of project management, supervision consultants and project owners.</i> 41	
5.3.2. <i>The implementation organizations and responsibilities.</i>	47
CHAPTER 6. IMPLEMENTATION AGREEMENT.....	52
THE ANNEX	53
Appendix 1.	53
Appendix 2.	54
Appendix 3.	54
Appendix 4. <i>Chart positions affected</i>	55
Appendix 5. <i>Commitment to environmental protection</i>	55

ACRONYMS

CPC	Communal People's Committee
CPO	Central Project Office
DANIDA	Danish Development Agency
DPI	Department of Planning and Investment
EMP	Environmental Management Plan
MARD	Ministry of Agriculture and Rural Development
MPI	Ministry of Planning and Investment
PFS	Pre - Feasibility Study
PPMU	Province Project Management Units
RRDRWSSP	Red River Delta Rural Water Supply and Sanitation
RP	Resettlement Plan
SEI	Society, Environment, Infrastructure Consultant Company
TCVN	Vietnam Standard
TOR	Terms of Reference
USD	U.S. dollar
WB	World Bank

CHAPTER 1. GENERAL INTRODUCTION

General Introduction about project

Project's name: *Nam Dinh province Water supply and Sanitation Project.*

Investor: *Nam Dinh province Rural Water Supply and Sanitation Project management Unit.*

Address: *No 2, Cua Truong street, Nam Dinh city*

Clean water and sanitation are essential needs in daily life and become urgent demand in healthy protection and domestic condition improvement for everybody, as well as in industrialization and modernization in our country. Now more than 60% of rural population are using unhygienic water and a half of number of rural households haven't got any latrines. Diseases related to water such as diarrhoea, parasitic worms, and digestive diseases are popular and take the highest rate in popular diseases. Building water supply and sanitation construction now is urgent requirement and has large scale during next years.

The main development goal of the National Rural Water Supply and Sanitation Strategy is to put more contribution into living standard improvement, hunger elimination and poverty reduction in rural communities by making investment into sanitation and water supply schemes or other matters related to people's behaviors and attitude changing toward environmental sanitation improvement and capacity enhancement. In particular, the specific objective of the project are:

- *All households could access the concentrated clean water source with the capacity 60l/day - 80l/day.*
- *Environmental conditions could be improved to change the bad sanitary habits of rural people.*
- *Living conditions of rural people could be improved, thereby contributing to poverty alleviation in project's communes.*

The Government of Vietnam and the World Bank have worked closely and designed the Red River Delta Rural Water and Sanitation Project with an aim of improving clean water supply and rural sanitation situation within the Red River Delta area in 12 provinces. The Project is carried out in accordance with following principals:

- **Meeting the demands:** Management policy and level of water supply and sanitation services are defined based on the requirements and the payment availability of customers.
- **Justice:** all the people in the sub-project area could assess the benefits from water supply and sanitation plant.
- **Costs and efficiency:** Water supply and sanitation system will be designed to provide the appropriate services with the acceptable costs.
- **Sustainability:** An appropriate operation and maintenance management policy and an acceptable water price to pay for operation, maintenance, repair and debt collection cost will be obtained.

Phase 1 has been commenced since 2005 until 2010 in 4 provinces: Ninh Binh, Nam Dinh, Hai Duong and Thai Binh.

Nam Dinh province belongs to Northern delta area, bordering to provinces and cities: Thai Binh, Ha Nam and Ninh Binh. Transportation system via land, water way and railway in the area is distributed properly. There are many important national roads running across such as Road No. 21, Road No. 10, Road No. 55 and provincial and district road system. Besides, provincial and district roads have been upgraded, making the transportation and exchange among localities in and outside the province more convenient.

The subproject implemented in Nam Dinh will adequately and substantially satisfy clean water supply demand; help community improve household sanitation conditions and strengthen local capacity at commune levels and local community in planning and managing water supply and sanitation schemes. The project initiated new management method to supply water in locality, especially to help improve people's awareness on clean water, toilets, so that local people will implement new practices and have a better health.

Land use demand

- Works collection and pumping station
level 1: 300m²
- Water treatment station: 15.000m²
- Booster pumping station : 1.715 m²
- Land construction: 250.000m²



The location of water treatment in Giao Tien commune

2. The purpose of the report is committed to protecting the environment

The purpose of making environmental commitments are to:

- Assessment of natural conditions as well as socio-economic conditions of sub-projects.
- Predicting the impacts, negative, direct, indirect, immediate and long-term sub-regional projects.
- Make recommendations on technical and management technologies to mitigate the negative impacts of the project during preparation, construction and operation.
- To provide environmental management and monitoring plan;

Commitment to the environment will be the basis for control and management of environmental protection when implementing projects.

Commitment to environmental protection is also made to the investor base (WB) for consideration and approval of financial assistance for the project.

CHAPTER 2. LOCATION PROJECT

2.1. Natural conditions.

2.1.1. Geography

Giao Chau commune

Giao Chau commune is at the center of Giao Thuy district, 5 km far from Ngo Dong town toward the West. North border of Giao Tien commune, East border of Giao Nhan commune, South border of Giao Long commune, West border of Giao Tien commune. According to survey data at the time of April 2009 the Department of Statistics Department of Labor, Invalids and Social Giao Thuy district, the population of the commune is 8437 persons with 2347 households. Giao Chau commune has a total area of 763.9 ha, of which farming land covers 505 ha.

Giao Nhan commune

Giao Nhan is located at the Southeast of Giao Thuy district. The commune has dense river network, favorable for rice cultivation. The commune has Be market, convenient traffic with 482 road and Tien Hai road run through facilitating cultural exchange, economic - and socia. Boundaries as follows: North border of Hoanh Son commune, East border of Giao Ha commune, South border of Giao Long, Giao Hai commune, West border of Giao Chau. Total natural area land is 603 ha, of which 464 ha is farming land.

Giao Ha Commune

Giao Ha commune is located at the south of Giao Thuy district. North border of Ngo Dong town, Hoanh Son commune, East border of Binh Hoa commune, South border of Giao Hai and Giao Xuan commune, West border of Gian Nhan commune. Total natural area land of this commune is 629.46 ha, of which farming land are 363 ha.

Binh Hoa Commune

Binh Hoa commune is located in Giao Thuy district. Commune's area is 625.98m2. The North Binh Hoa is bordered with Ngo Dong town, The East border of Hong Thuan commune, The South border of Giao Xuan and Giao Lac commune, and Giao Ha commune in the West. There are 15 hamlets in the commune . Total natural area land of this commune is 625.98 ha.

Hong thuan Commune

Hong Thuan is 4km far from centre of the district towards Southeast. The North border of Hong Tien commune, The East border of Giao Thanh commune, The South border of Giao Lac commune, The West border of Binh Hoa commune. Population of this commune in 2009 is 16304 people with 4085 households. Total natural area of this commune are 1443.43 ha, of which farming land are 743 ha.

Hoanh son Commune

Hoanh Son commune is located in Giao Thuy district. This commune is bordered with Ngo Dong town and Giao ha commune in the East, Giao Nhan commune in the South, Giao Tien commune in the West, Xuan Phu and Xuan Truong commune in the North. The commune has 586 ha of natural land, of which 367 ha of farming land. The population in 2009 to date is 9418 people, with 2378 households. There were 17 hamlets in this commune.

Tho Nghiep Commune

Tho Nghiep commune is located at the South and 6km far from Xuan Truong district. It is bordered Xuan Phuong commune in the North, Giao Thuy district in the South, Xuan Phu commune in the East and Xuan Phuong commune in the West. The communal area is 7.08km2. There are 23 hamlets in the commune.

2.1.2. Hydrology characteristics

Except Hoanh Son and Tho Nghiep commune is relatively large rivers flow through, 5 communes in the remaining tranches are no major rivers flow through, only some small river for irrigation work for irrigation. In addition, in the Xuan Truong district has large rivers running through the Ninh Co River with relatively large reserves and existing water plant Xuan Truong is exploited to provide water for Xuan Truong town and 6 communes of Xuan Truong district. Therefore, only research and evaluation of surface water in Hoanh Son and Tho Nghiep commune and surface water in the Red River and Ninh Co River.

Hoanh Son Commune

1. **Lang River:** Derived from the Red River through Cong Cat. The river flows through the communes of Xuan Tan, Xuan Dai with a total length of about 07 km. Length of river flows through a commune of about 2.9 km, the river is located 100m northeast of the commune. Cross the river about 60 - 65m
 - The largest flow of the river flow is 12.1 m³ / s, minimum 4.2 m³ /s.
 - The highest water level of +1.6 m. Lowest water level +0.5 m.
 - This is the largest river in the province, used to irrigate nearly half the area of agricultural cultivation in the commune.
2. **So River:** Derived from the Red River through Ngo Dong sewer. Length of river flows through a commune of about 4 km. The width of the river about 30+35 m, the river is narrow at the downstream.
 - The maximum river water level +1.5 m
 - The minimum river water level + 0.7 m
 - Flow of So river smaller than Lang river, the largest flow of 5.6 m³ / s, minimum 1.6 m³ / s. This is the water drainage to serve the area south of the commune.
 - River influence of tidal regime of the Red River, but when the river salinity of 0.6 to 0.8% will close Ngo Dong sewer, river water should not be nearly as salty.

Lang and So river water quality survey and preliminary evaluation of relatively good and stable. On rainy cloudy water, more water in the dry season. But the river is affected by the tidal regime of the Red River and the salinity was very high. When the sea level rise, the river water quality is affected significantly, it reflected the intensive fields used when river water salinity which were quite severe, many crops die.

Commune also has a large river is the Red River, but as it is analyzed Red River was contaminated with salt water whenever heavy tide. So the Red River can not be used as water sources for water supply systems of the seven communes.

In addition to the main river above, in the Hoanh Son commune have some small inland rivers such as Tai river, Thuan Thanh river is responsible for irrigation combined (mainly drainage) for the area west of the commune. The flow usually small, unstable and shallow in the dry season.

Natural water quality of Tai river, Thuan Thanh river through the survey results and evaluation, were quite serious pollution caused by waste water, agriculture, farming and animal husbandry.

Tho Nghiep Commune

The most significant sources of surface water in Tho Nghiep commune is Cat Xuyen river. Cat Xuyen river derived from Red River through the Cho Cat sewer, is the only surface water can be exploited in the commune. But the river is the main task for agricultural irrigation, so the river water quality is

affected greatly by the organic contamination by residents living on both sides is discharged directly into the river and the toxic chemicals from leaching surface overflowing river whenever there is rain.

River water quality

Water sources are expected to use mainly from the Ninh Co River. The quality of river water flowing through the local Xuan Ngoc commune, Xuan Truong district, km5 + 224, through surveys and preliminary evaluation is relatively good and stable. According to hydrological data Ninh Co River which it collected Consulting Ninh Co River has large reserves and stability. Ninh Co River is a source of raw water for water plants Xuan Truong. Water turbidity average is 400-500NTU, the largest flood turbidity can be up to 1000 NTU. Currently Ninh Co River water is not polluted.

- ✓ The highest water level: +3,7m
- ✓ The lowest water level: - 0,94m

In the round of 11/2009 and 3 / 2010, consultant has conducted field survey of water sources in Ninh Co River. To have a basis for selection of water sources, Consultant has conducted surface water sampling Ninh Co 2 times, once in dry season and a rainy season. Place the water flows through a Xuan Ngoc commune, Xuan Truong district, km5 + 224.

- On 05/11/2009 has conducted surface water sampling at Ninh Co river the first time (wet season).
- On 08/03/2010 has conducted surface water sampling at Ninh Co river the second time (dry season).
- Sample of the Environment Institute of Technology, Center for Development of High Technology in Hanoi and made the only analysis and microbial digestion. The results of analysis of water samples are presented in the following table:

Table 1: The results of analysis of water Ninh Co river.

(Water samples taken on 05/11/2009)

STT	Targets analysis	Unit	Results of analysis	Maximum limiter enabled
1.	pH		7,18	6,5 - 8,5
2.	Turbidity	NTU	21	2
3.	Color	TCU	28	15
4.	Total suspended solids (SS)	mg/l	18	-
5.	Total dissolved solids (TDS)	mg/l	89	1000
6.	Total hardness	mg/lCaCO ₃	76	300
7.	NO ₂ ⁻	mg/l	0,002	3
8.	NH ₄ ⁺	mg/l	0,08	1,5
9.	Fe total	mg/l	0,67	0,5
10.	Mn total	mg/l	0,02	0,5
11.	COD	mg/l	2,6	-

Note: Maximum limits permitted under applicable hygienic standards for drinking water 1329/2002/BYT/QD Decision of the Minister of Health issued on 18/04/2002.

Conclusion: The sample do not meet sanitary drinking water in terms of physical and chemical (turbidity, color, total iron content).

Table 2: The results of analysis of water Ninh Co river.

(Water samples taken on 08/03/2010)

STT	Targets analysis	Unit	Results of analysis	Maximum limiter enabled
1	pH		7,84	6,5 - 8,5
2	Smell		No strange smell	No strange smell
3	Turbidity	NTU	39	2
4	Color	TCU	49	15
5	Total suspended solids (SS)	mg/l	36	-
6	Total dissolved solids (TDS)	mg/l	138	1000
7	Total hardness	mg/CaCO ₃	113	300
8	NO ₂ ⁻	mg/l	0,163	3
9	NO ₃ ⁻	mg/l	3,9	50
10	Cl ⁻	mg/l	21	250
11	NH ₄ ⁺	mg/l	0,12	3
12	Fe total	mg/l	0,46	0,3
13	Mn total	mg/l	0,02	0,3
14	COD	mg/l	2,6	-
15	Asen	mg/l	<0,005	0,01

Note: Maximum limits permitted under applicable hygienic standards for drinking water 1329/2002/BYT/QD Decision of the Minister of Health issued on 18/04/2002.

Conclusion: The sample countries do not meet sanitary drinking water in terms of physical and chemical (turbidity, color, total iron content).

After 2 times taking samples and testing (dry and wet seasons) showed that water samples Ninh Co is an analysis of indicators turbidity, color, do not meet the Sanitation Standard of Drinking water and running. It is still in the allowed limit of Vietnam 's water surface standard TCVN 5942- 1995 and Ministry of Construction's Standard TCXD 233 – 1999 , especially industrial waste water Standard A level issued by Ministry of Industry TCVN 5945 – 2005 together with Decision No. 22/2008 dated 18/12/2008 by MoNRE.. So Ninh Co River water quality, according to survey and evaluate good and quite stable in abundance, could exploit the process to use for the purpose of living and eating.

Characteristics of Infrastructure

Infrastructure of the commune has built a relatively complete to meet the needs of economic development - the local society. Many roads have been concreted. Many nurseries, kindergartens,

Transportation

Inter-provincial roads 489 and 56, contact the district via the communal areas within the block of sub-project aid was carpet plastic, the road 10 meters, 5.5 meters in plastic, 2 m wide sidewalks on each side. The inter-village roads and lane lines, neighbors have now been invested to renovate and upgrade the carpet has been almost plastic or concrete whole, to meet travel demand of the people.

Housing

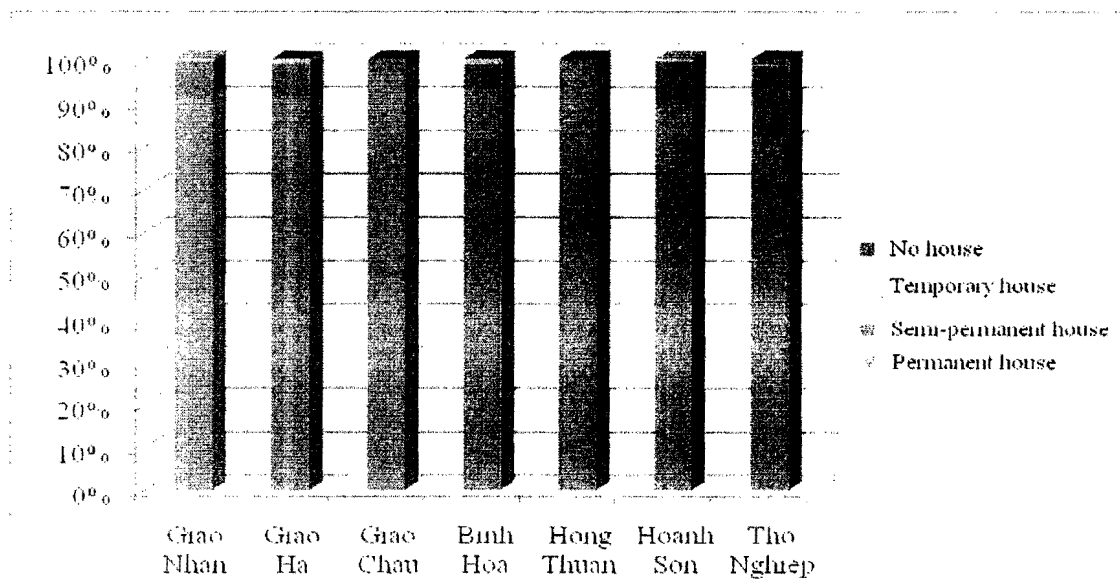
The production, economic, cultural and social work is built in the center of the communes, on main roads such as kindergartens, schools, CPC, clinics, culture home. The houses was built from 1-3 storeys.

Houses built with alternative public works building height is mainly 1-3 storey houses. Along the axis of the provincial road 489, 56 provincial roads and main roads in the communes of the newly formed sequences in conjunction with the service. Housing is a popular residential houses in rural areas, the VAC model.

According to sociological surveys carried out on sub-project areas, households have permanent houses (roof tiles, wall tiles), a high proportion (92.9%), the number of semi-permanent small proportion (6.5%). However, the tabernacle of the households, whether or not there still exists despite the proportion less (0.6%).

This suggests that, in recent years, the lives of people in the province of social research in particular and life of people in other rural areas in Vietnam in general has improved markedly, developed speed after more than five years ago, housing is improved and made more beautiful than the face of our country's rural areas.

Chart 1: Comparison rate housing (%)



Electrical energy

07 communes in the sub-project is already built substations are small. Currently, these power stations provides electricity service to residents across the region as well as the demand for electricity for pumping irrigation and agriculture. 100% of the population in sub-project area have electricity use.
 - Hong Thuan Commune: power supply for commune is medium-voltage transmission line 10 kV from

Hoa Binh to the substation level of the commune. Currently, there are 6 substations with total capacity of 1220KVA.

- Hoanh Son Commune: power supply for commune is medium-voltage transmission line 10 kV from Dong Ngo town and Giao Tien intermediate stations. There are 4 substations with total capacity of 790KVA in which a station with a capacity of 250KVA and three power stations of 180KVA.

- Binh Hoa Commune: the power supply to the commune from Ngo Dong town, the medium voltage line supply to the substation in the commune is 10 kV lines. Currently, there are 3 communal substations with total capacity of 680KVA, in which two stations have a capacity of 180KVA and a capacity station of 320KVA.

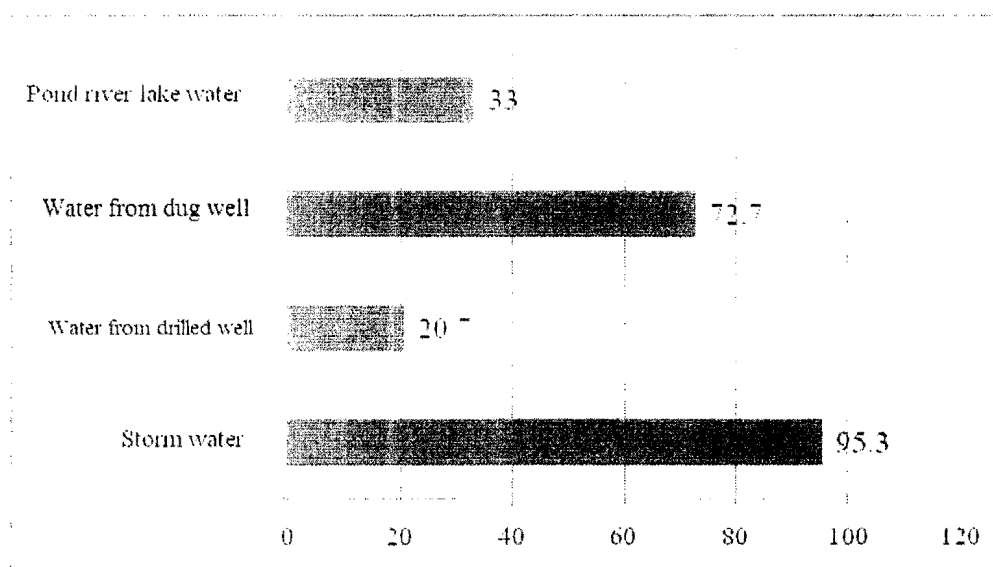
Status subproject area

Status of water supply

The water resources for use and water quality through the prism of the community.

The households in seven communes in the study area used for water main activities include rain water, wells, deep well water, lake / river / pond. This rate is shown in the chart below:

Chart 2: The main source of water used in households

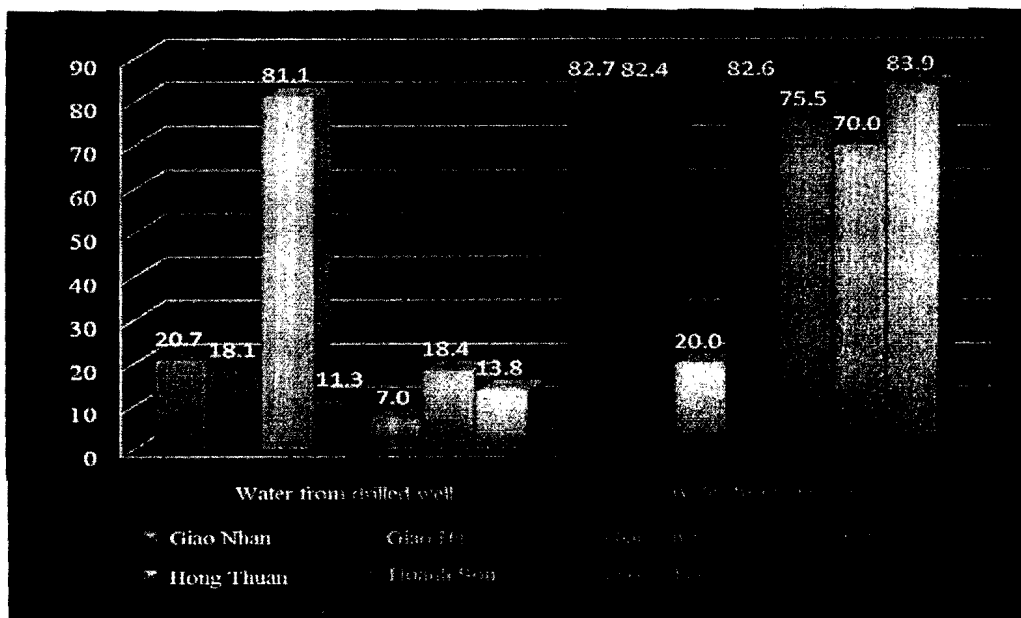


The survey results show that, in total 1776 households surveyed, with 1693 households using rain water (up 95.6%), 1291 household water use deep wells (up 73.3%). Thus, rainwater and dug wells are the two main water sources are used in social surveys. Besides the water wells, water lake / river / pond. According to research results show that 87.5% of households use two sources of water, 23% of households use water from three sources to serve their daily needs.

The rate of households using rain water is not much difference between the communes, most people in the Giao Nhan commune (99.4%), Giao ha commune (99.2%) and the lowest is in Hong Thuan commune (88.6%). This suggests rain water is familiar, widely used in almost all areas surveyed in the province.

Meanwhile, the rate of water use and deep wells drilled between communes differ significantly.

Chart 3: The rate of water use and deep wells (%)



The highest percentage of households use water wells at Giao Chau commune (81.1%). This is the commune rate of households using deep wells water off the lowest (20%). Meanwhile, deep well water is very popular in the communes Giao Nhan, Giao Ha, Binh Hoa, Tho Nghiep. During the actual survey, Giao Chau commune with the most number of wells, with a total of 1105 households, has 700 households used deep wells water.

When asked for comments on water use for food purposes, 95.2% households think is rain water, don't distinguish between households with different living standards. Also other water sources like wells, deep wells small rate, respectively 1.6% and 11.3%. One thing worth noting is still 2.1% of households use water pond / lake / river eating purposes, this rate in most Hong Thuan Commune (8%).

Meanwhile, deep well water is used mainly for bathing and washing with 72% of households use. Because the quality of water is not safe so the majority of people only use well water for bathing and washing purposes, only 11.3% of households that use well water for the purpose of eating.

On water use for purposes of cultivation and animal husbandry, the people of the area commune studies use both water sources are lakes / ponds / rivers (27.3%) and deep well water sources / wells (6.3% .)

Table 3: The main water resources are allocated for use

Water sources	Purpose of use					
	Eat / Drink		Bath / Clothes washing		Crop / Livestock	
	Number of households	%	Number of households	%	Number of households	%
Water	0	0	0	0	0	0

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

Water	0	0	0	0	0	0
Rainwater	1691	95.2	279	15.7	0	0
Water wells	29	1.6	355	20	45	2.5
Deep well water	200	11.3	1279	72	68	3.8
Lake / river / pond	37	2.1	159	9	484	27.3
Other	0	0	0	0	0	0

Water quality

Table 4: Water quality

Water sources are used	Clear and clean water		Clear but smell		Not clear and smell		Total households
	Number of households	%	Number of households	%	Number of households	%	
Rainwater (n=1693)	1289	76.1	193	11.4	211	12.5	1693
Water wells (n=368)	67	18.2	189	51.4	112	30.4	368
Deep well water (n=1291)	86	6.7	876	67.9	329	25.4	1291
Lake / river / pond (n=586)	0	0	0	0	586	100	586

Comments by the public about water quality reflected their own perceptions as well as the actual status of water they are using. Survey results in seven communes of Nam Dinh showed, about rain water, is 76.1% thought that clear and clean.

Notably, the data table is well water quality (both drilled wells and deep wells) of the majority of households are not good, only 18.2% and 6.7% for that water wells / deep wells is clear and clean. Meanwhile, up to 51.4% for wells drilled is clear but for the smell and 30.4% is not clear and has smell. Similarly to the deep wells. Most households assess the water quality of household used is not well because water contaminated by salt water, or contaminated with iron, or fishy smell... Many peoples think that, during the made agricultural, use of pesticides has also caused many impacts on the environment, particularly the water environment polluted. Some households also evaluate the quality of rain water is not good to use because dust contaminated, or polluted environments also affect the quality of rain water.

capita in the commune of 3.7 m³. Average per person consumption in poor households is 3.14 m³/person/month, while on average each person in the household average 3.57 m³/person/month and rich households is highest 4.39 m³/person/ months.

Specifically, the average water consumption per capita by type of household is:

Poor households: 3:14 m³/person/month

The average household: 3:57 m³/person/month

Relatively wealthy households: 4:39 m³/person/month

Water containers in households

Most households surveyed localities have facilities of water, this figure is 97.6%. Mainly used by households are broken brick and securely closed. Cement tank type water is mostly popular and most commonly used by most households, with an average capacity of about 6m³. If calculated according to the economic relationship, the poor households with tanks with an average volume of about 4-5m³, the average household is 5-6 m³ and relatively wealthy households in 7m³.

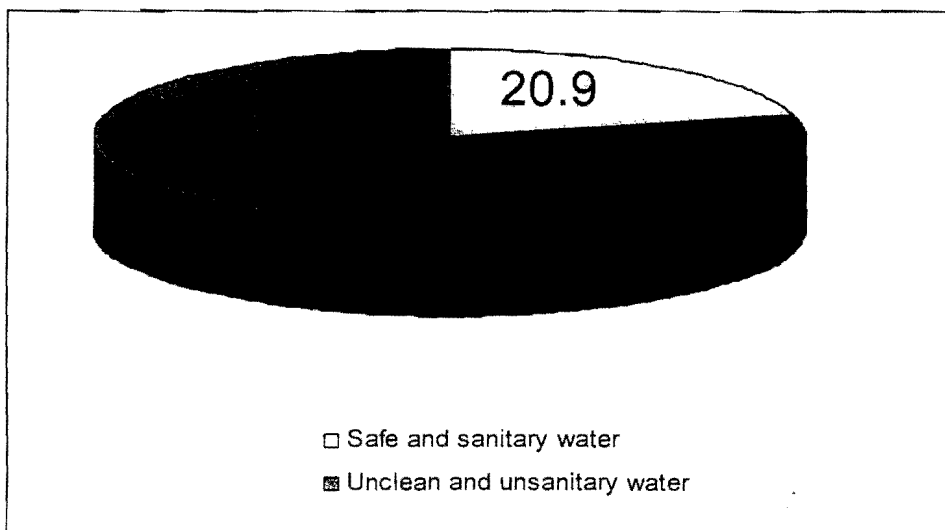
Left of households using primitive means, such as jars, a few connoisseurs, barrels and buckets that can be small.

The rate of households using a water tank with a cap is quite high, accounting for 93.9%. However, there are still a number of households are not aware of the need for a cap for water tank construction of his family should remain around 6.1% of households use the tank without cap. Don't use the cap can cause water pollution by using air and dust in the plant leaves, insects, mice, fried ...

Awareness of the household about the safety of water sources.

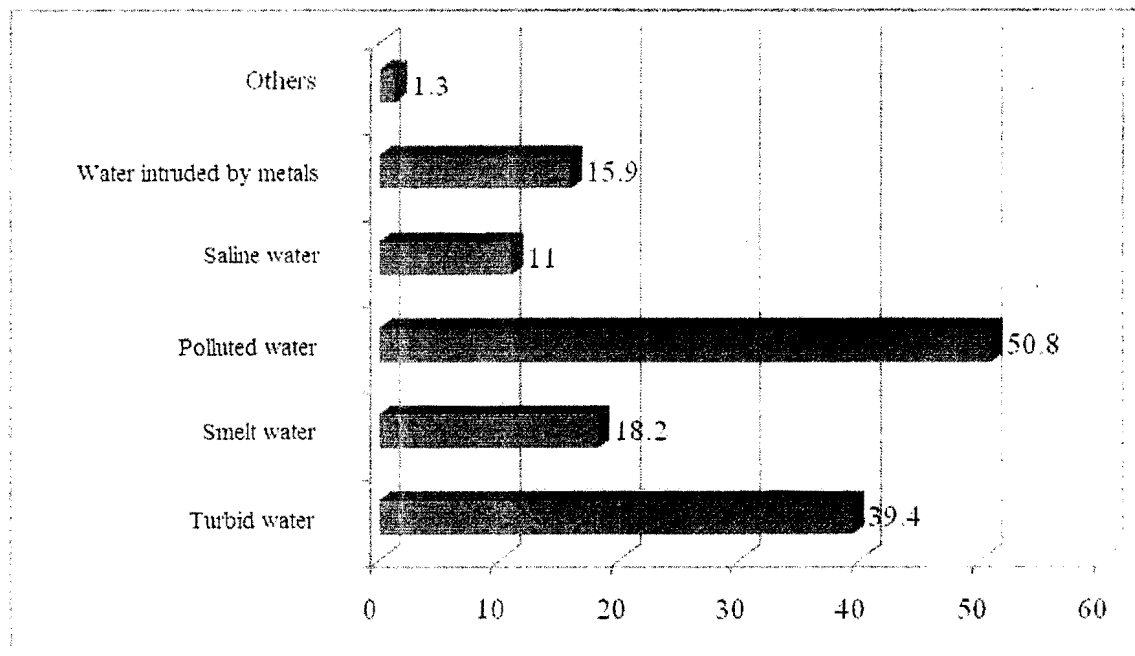
When asked about water quality family is using, most reviews are not clean, not safe.

Chart 4: Assessment of water quality using



Thus, the majority opinion of households that are using their water is not clean water, not safe (79.1%).

Chart 5: Impressions of water quality



Looking at the chart we can see, a large rate of households that they are using water is polluted by waste / drug plants / toilet (50.8%), don't clear , turbid (39.4 %). This also partly reflects the state of the environment has played in the communes studies. "Water wells have limestone deposits, water or sour. Then look is clear, but so long as the red and gold whenever it rains wells were perforated. Rain water flowing on the ground, then soaked into the well. The houses near each other in cages close together, when it rains down the wells affected "(Male, 57, Giao Nhan); Nobody have to go for testing and evaluating water resources here. People only see use in a cool, no smell is as clean water. Instead of well water to seep from the surface, rain water, not treated isn' t called clean water. Generally not enough water now, not clean. People desired to have clean water "(Female, 43, Binh Hoa). Notably, the pond / lake / river of households are using pollution. 100% comment think that water in the pond and smell. But the question here is why there are still some households, though the family knowing that their water use as water sources are polluted, but still not safe for bathing and washing purposes, and even a manual wash, rinse vegetables ... As a word of all households now use pond water, "Water for no money, for the sky, its just more used to wash each limb when from work, washing clothes ... but also for where the fear of eating. That the polluted water so that only you need not only from their ancient ancestors had used still alright ..! "Is the reason no money and use the bathroom washing limbs should be aware that although water pollution but people still use, of course, this figure accounts for very few of the households surveyed.

Present condition of sanitation

Current status of sanitation the household

Most households in area studies are toilets, accounting for 99.2%. Currently only 14/1776 of households without toilets in the family. The reason they give explanations for not building toilets because "no amount is too expensive" (0.5%), "no technical guidelines" (0.3 %)... This is also something to note for local authorities in propagating awareness of people about building latrines, as well as the need to actively support activities to increase the rate use toilets. Reality shows in the communes research there are still families are not aware of the necessity of building toilets for families. Still have the toilet situation indiscriminately, or existing types of toilets are not hygienic, which affect the surrounding environment.

Chart 6: Rate of toilets

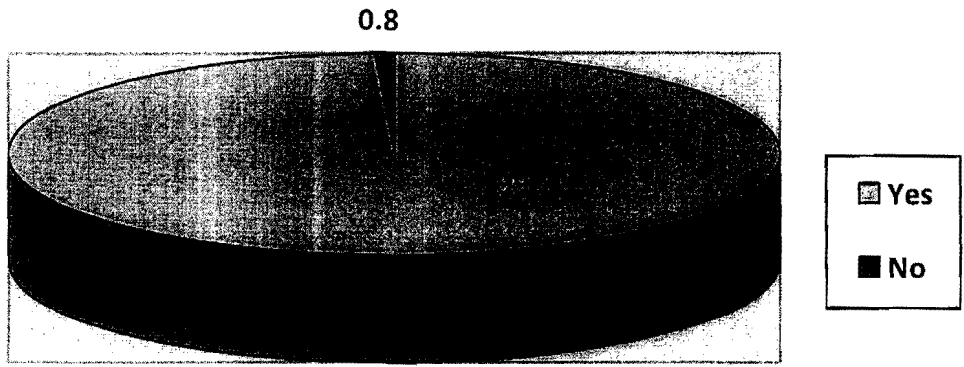
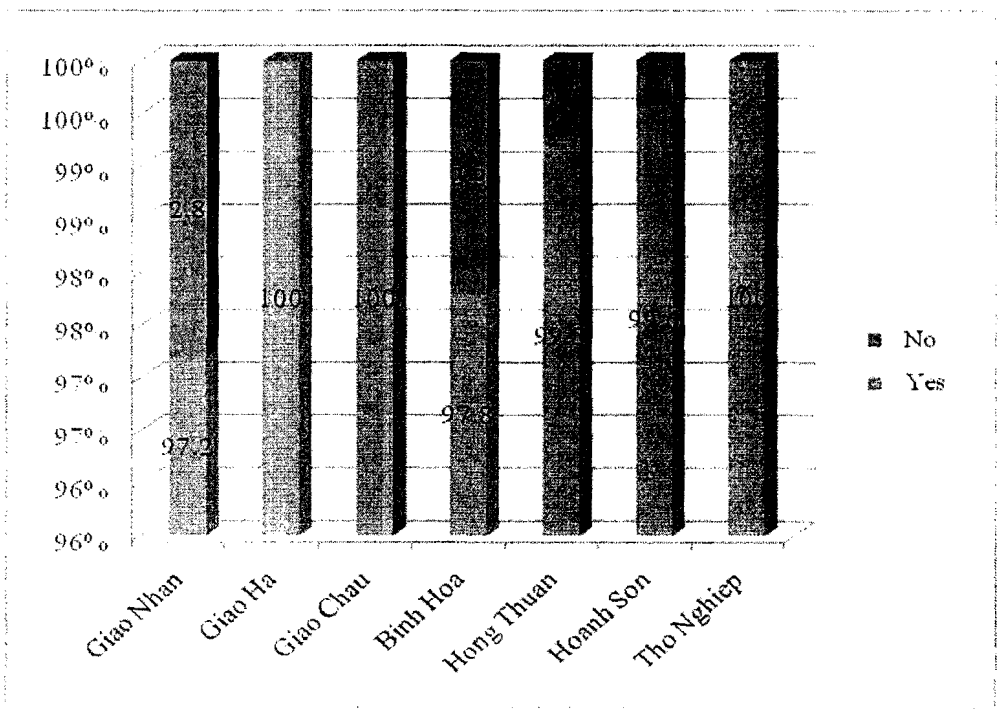


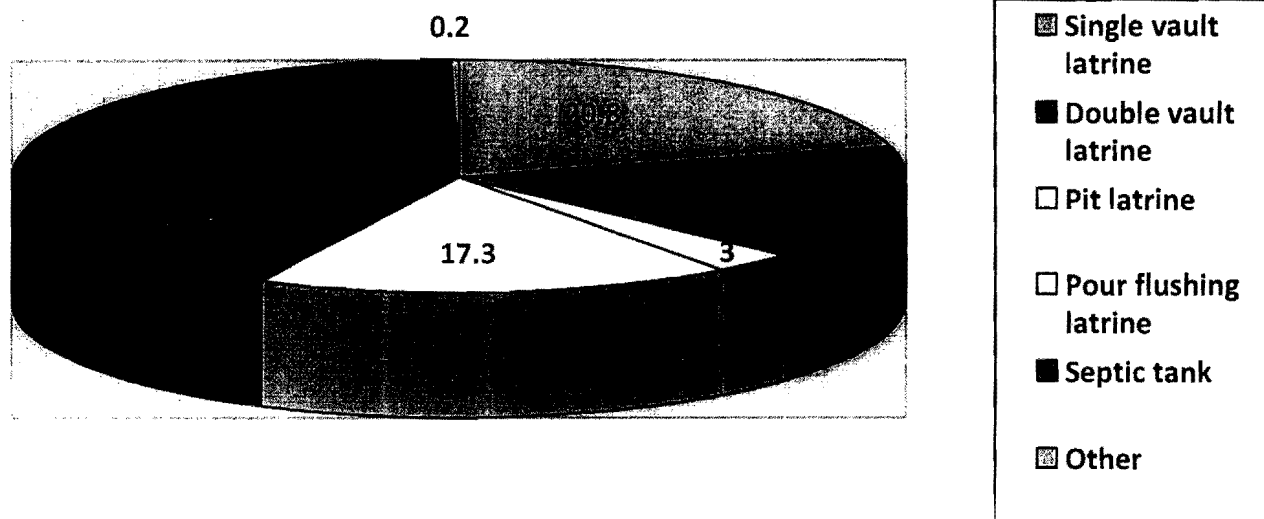
Chart 7: Rate of toilets between communes in area reseach



Looking at the chart we can see, Giao Ha commune, Giao Chau commune and Tho Nghiep is three communes most have toilets, the three communes are 100% households have toilets. Giao Nhan commune and Binh Hoa commune is second commune have toilet rates lowest (97.2% and 97.8%).

Status types of toilets in area studies can be clearly seen through the following chart:

Chart 8: Types of toilets in the family (%)



Diversity in the types of toilets used in the communes in Nam Dinh not only shows the level of sanitation, but also reflect the level of wealth, professional characteristics, situation and general living level of local urbanization. In 1762 household have toilets, households have septic tanks highest proportion (42.6%), followed by single vault latrines (20.8%), absorbent toilet flushing (17.3%), toilet double vault latrines (15.4%). The rate of single vault latrines / double vault latrines remains high due to particular in rural areas, households in farming or planting gardens also want to get fertilizer on the farm and farming seasons. Order from a long background that has become a habit not easily changed. This is a very logical reason as most of the communal areas are agricultural research, the economy based on agriculture is essential. But in the future when the economic conditions of households in the whole society was raised, combined with the attention of leaders at all levels, economic assistance - financial institutions ... the type of toilets will be gradually replaced by type toilets better satisfy the requirements of environmental engineering and more.

Along with cognitive problems, the economic situation is also an important factor in the process of building sanitary latrines by the people. If any family can have their conditions, the ability of investors to build toilets in higher standards than those households without access. In other words, poor households will have less chance to reach the kind of convenient services, ensuring sanitary conditions ... and therefore their ability to illness will also be higher

This project is a matter of interest because one of the objectives of the project is for loans to households for the purpose of construction, improvement of hygienic toilets for the people. With seven local social practice, if so, people in full support and wish to borrow.

Survey results show that, unhygienic environmental impact of toilets in local areas this is still 5.7% of toilet paper thrown indiscriminately, 36.6% had toilets flies , 42.1% had toilets smell, toilet 7.8% distribution rule.

These figures demonstrate the toilets in area studies is one cause of environmental pollution and diseases in the locality. Many toilets still dirty here, not hygiene. Like many rural areas of the Northern Plains, fresh division, also known as distributed in the northern communes of Nam Dinh is also used in agriculture and the rotation frequency should be distributed needs to use the north is inevitable . We can say, is to use distributed north cause environmental pollution, especially if people do not comply with the composting process and time. Short on time composting plus the use of fresh distribution not

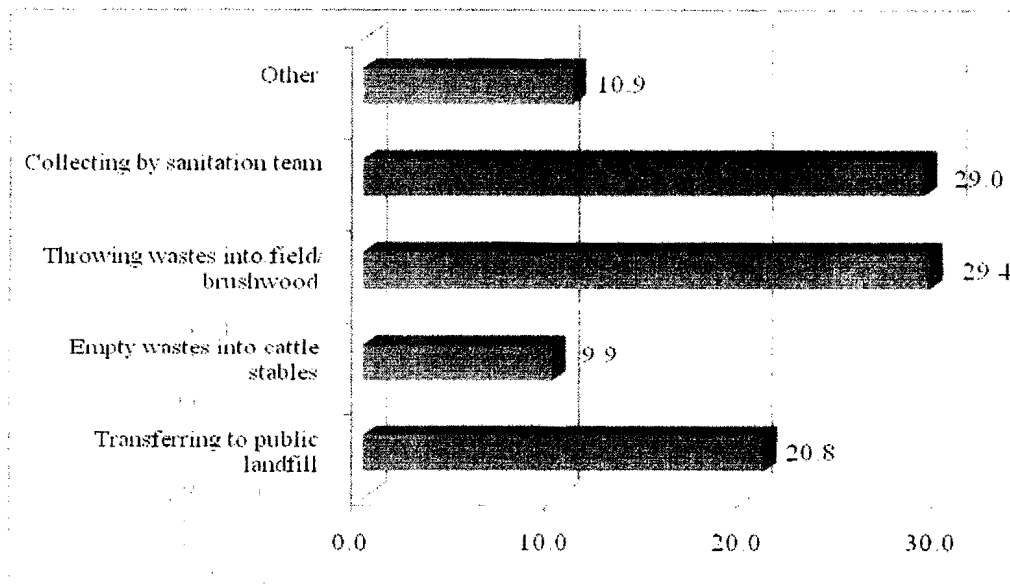
only affects the health and safety for the users but also pollute the surrounding environment. Using distributed north can make cysticercosis rates in the region increased. Stood in terms of hygiene, increasing the risk of pollution when distribution was not brewed properly distributed or used fresh. Another cause also contributed to increased pollution of living environment is the distance to the toilet water and shelter. According to calculations, a minimum distance to ensure safety and health standards between the toilet and the water is 10m. But according to survey results still to 26.7% of households now also use the toilet only water source distance under 10 meters. Through investigation, we found that with a typical farming villages, the land at not less often than they cause depends on the area of land, cause awareness of the household is important. When construction of latrines, households have less attention to science, the hygiene of toilets and water sources, usually they just pay attention to usability, convenience of the family own. This has, is affecting their own living environment.

Status condition of collection, waste treatment and water drainage system

Current status collection, waste treatment

During the investigation, we pay more attention to the treatment of household waste, the way formed such a habit. Characteristics of rural households have large garden area, pond, some family have the farms, pig pens, chicken This led to the littering habits of people waste their families and they were not aware that the waste is at risk, germ causing disease for themselves and family members. The survey result showed that 12.3% of households have rubbish pits in the family. For households without landfill, waste treatment form the simplest unpleasant smell when garbage is to use wind kitchen, or lime. Households with no landfill in the family have many forms of waste treatment of the family.

Chart 9: The selection process of household waste (%)



Among the surveyed households, with 29% of households said their garbage away sanitary group collected daily / weekly. As far as we know, is in some communes area of reseach has a number of villages to establish sanitary waste collection, but there are still some villages / communes without. To refuse collection was created for the purpose of focusing collectors, not to let households rampant littering, to ensure environmental sanitation in the region. 20.8% of households have garbage directly into public landfills to dispose of the commune. However, if the collection focus on that is not treated,

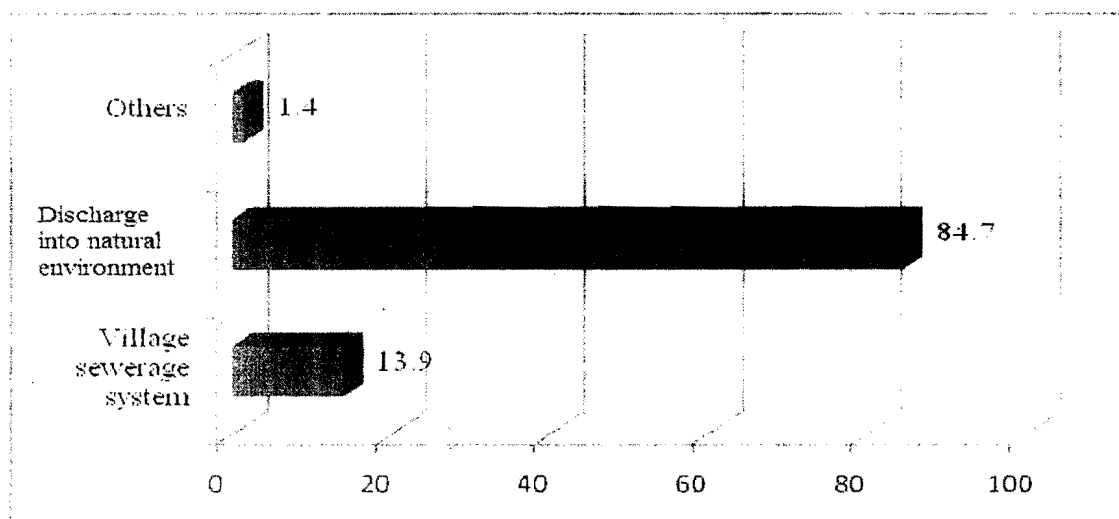
the level of influence it will be great to water, air, soil ... This phenomenon is real concern that local settlement.

Besides, people here also have a habit of littering the field / bush / river / pond /canal (29.4%) or garbage into the cattle pens (9.9%). A small number of households surveyed (accounting 10.9%) had used other forms of waste treatment of his family, particularly the self-burning or burying waste.

Current status of waste water drainage system

According to the opinion of the households in the communes of area research is water waste of the people is still one of the sources of pollution and the most affect the environment.

Chart 10: The drainage system waste from households



Clearly, now is only 13.9% of the waste water is household wastewater into the wastewater drainage system of the village. The remaining 84.7% a huge amount of waste water directly into natural ponds, lakes, rivers, gardens ... The average of wastewater daily is enormous, don't treatment, not concentrated ... will be a direct source of influence on environment and health. Moreover, many households still use pond water, lake ... at risk of contamination from waste water sources to serve daily.

When learning about waste water drainage system of the village, because financial conditions so most of the communes in the project area has no drainage system complete waste. The investment for waste water drainage systems in the communes are not synchronized. As the results showed that 11.9% of people live in areas where sewage trench is dug deep grooves, is built of brick / concrete, 36.1% lived on a trench excavated area (not built). Noting that still up to 26% live in areas without storm drains and 36.4% of self-absorption, flooding the land.

Table 5: The drainage system of rural waste

Wastewater drainage system of village	Rate
	%
Excavated trench (not built)	36.1

problem of pollution from water wells groundwater / drinking water, followed by 50.6% opinions on issues garbage don't collected. Wastewater drainage system of the village does not guarantee causes flooding in the rainy season. This is a serious environmental problem to be solved at the rate of local opinion 53% of the people.

Table 6: Evaluation of the people on the most serious problems to solve environmental

Environmental problems to be solved	Rate %
Air pollution / smog	22.2
Pollution of underground water from wells / water rivers	78.6
Garbage is not collected and thrown indiscriminately	48.5
Waterlogging in rainy season	53.2
Drought in dry season	28.7
Pollution from manufacturing facilities around	7.2

From the data collected and the actual process of penetration in the communal areas of the survey, the research team aware of the problem of clean water, sanitation, contaminated drinking water is to solve problems in these areas. Garbage is not collected, would be thrown indiscriminately cause flooding in the rainy season, which directly influence water resources and water quality for everyday use.

2.3.4 Objectives of the project

Water supply sub-project area and meet people's needs both in terms of reserves and water quality, improve the health of people in sub-project area.

Raising awareness of people in clean water and sanitation environment. Increase the capacity and institutional in managing the operation and maintenance of water supply systems through training. Building water supply systems are improving the infrastructure and people's livelihoods sub-project area, contributing to stabilize the life of the people in rural areas.

Projects area

The communes of Giao Thuy district and Xuan Truong district was selected to implement the phase 4 project. After discussions with the authorities the local government together with the results from community consultation, the service area's water supply system for the immediate future and extend to 2020 were identified. The system will provide water for residents living in the village and all the administrative offices as well as public buildings in the village.

Sub-project water and sanitation in Nam Dinh including commune 7: Giao Chau, Giao Nhan, Giao Ha, Binh Hoa, Hong Thuan, Hoanh Son and Tho Nghiep.

Project content

Subproject six communes of Giao Thuy district and Tho Nghiep commune of Xuan Truong district was built on the basis of reports pre-feasibility study RRD-RWSS project has been approved by the

Government of Vietnam and through the World Bank. The contents of sub-projects for major investment in central water supply, water supply and household sanitation and household hygiene in public places.

Central water supply system

Construction of new water supply system to concentrate on the communes: Giao Nhan, Giao Ha, Giao Chau, Binh Hoa, Hong Thuan, Hoanh Son of Giao Thuy district and Tho Nghiep commune of Xuan Truong district ensure water supply to meet demand to 2020 for 100% of the population in the commune.

Investment contents include the following items:

- Project source: The collection process + raw water pumping station, raw water transmission pipeline DN400-DI with a total length of about 7644m.
- Surface water treatment station capacity of 9500 m3/day: cluster treatment, clean water tank, water pumping station.
- The recovery process and waste water cleaning filters
- Transmission system pipeline, distribution, service and meter of water for household consumption meter for residential traffic.
- Power supply

Water supply and sanitation household

A revolving funds will be provided for the construction and improvement of sanitation and water supply to households. This fund will be led by Women's Union of Nam Dinh province management.

Currently, in the communes there are some households with loan demand improved conditions for household water supply, in addition to a small number of households with loan demand improved sanitation, these are poor households with real needs.

Improved water supply and sanitation in place

Map household water supply or group of households



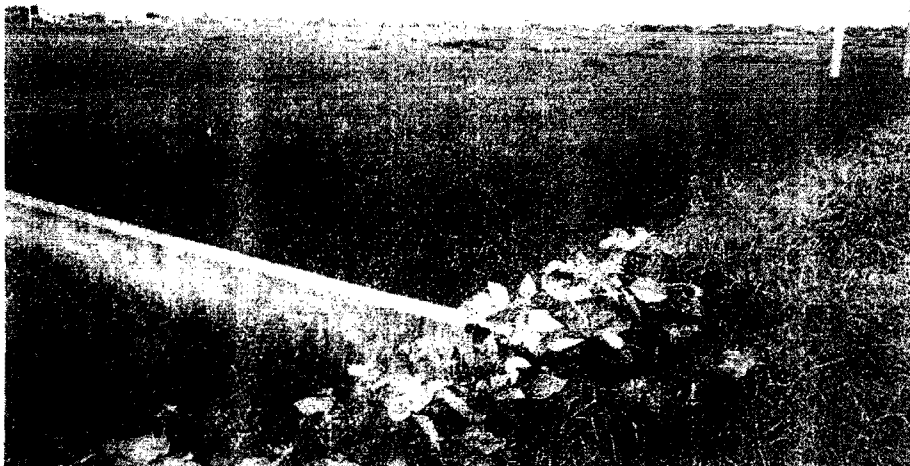
Public toilets

Construction of public toilets in the schools, commune health centers and markets, the Government has made the investment regime of preferential treatment, capital construction will be government subsidy 100%, the benefit unit must ensure funding for operation and maintenance.

Map centralized water supply system..

The determination of water treatment technology based on power, water and selected water quality resources. From the analysis results Ninh Co River water quality, water treatment processes were chosen as follows:

- Water source → Pump station level I → Receiving chamber → Mixing tank horizontal → Horizontal Clarification → Quick Filter → Disinfection (chlorination) → Pump station level II (inverter using) → water supply network → Household consumption.
- Discharging wash water sedimentation tanks, trickling filters lead to siltation of the lake → Drying mud → Landfills.



The location of pumping station Binh Hoa

Table 7 - List the total volume of water treatment works

Alternatives			
Items works	Update build number and size of items	Quantity	Materials
Collected works Raw water pumping station	AxBxH = 7,5x15x3,6m	01	Guano building reinforced concrete, the floats building bricks
Raw Water Pump	Q=188 m ³ /h, H=35m	03	Horizontal axis
Mechanical mixing tank	B x L x H = 1,5x1,5x4 m	02	Reinforced concrete
Mechanical cracking reaction	B x L x H = 3,6 mx8,0mx3,0m	02	Reinforced concrete
Clarification Lamem	B x L x H = 4,5x10,0x7,0 m	02	Reinforced concrete
Fast filtration tank	BxLxH = 5,7x4,3x5,3 m	04	Reinforced concrete
Sludge handling Lake siltation Sludge drying	B x L x H = 15,0x20,0x3,0 m B x L x H = 10,0x20,0x3,0 m	01 02	Building learned Building learned
Sterilization Average Chlorine Pump engineering	Type 500kg Q=5m ³ /h, H = 50m	02 02	Galvanized iron
Preparation of alum, lime Bin consumption Dosing pump	Capacity W= 1m ³ Q=0-900l/h, H = 35m	02 02	Plastic
Water Pump	Q=300 m ³ /h, H= 55m	03	Horizontal axis
Water wash pump filter	Q=280 m ³ /h, H=15m	02	Horizontal axis
Water pump technique	Q=45m ³ /h, H=30m,	02	Horizontal axis
Water pump leak	Q=5m ³ /h, H= 5m	01	

Electrical system:

Building 01 substation 110KVA to power the treatment plant, power from high voltage power grids by building regional processing station about 500 meters, the power of management in Nam Dinh.

This substation was built to ensure adequate supply of power to do the right treatment plant capacity. This is one of the items of subprojects in 7 communes.

Construction voltage cable and power cable, electric lighting systems in sync

Water supply pipe network:

Water supply pipelines were calculated to 2015 were calculated as follows:

Table 8 - Total volume of materials of the water supply network

No	Type pipe	Unit	Weight
1	Iron and plastic pipe DN500 PN10, class9	m	3.285
2	Iron and plastic pipe DN400 PN10, class9	m	4.187
3	Iron and plastic pipe DN300 PN10, class9	m	651
4	Pipe UPVC DN280 PN8, class3	m	3.783
5	Pipe UPVC DN225 PN8, class3	m	7702
6	Pipe UPVC DN180 PN8, class3	m	473
7	Pipe UPVC DN160 PN8, class3	m	19775.0
8	Pipe UPVC DN140 PN8, class3	m	4504.0
9	Pipe UPVC DN110 PN8, class3	m	20367.0

CHAPTER 3. ENVIRONMENTAL IMPACTS

3.1. The positive impact

The project is expected to bring positive benefits for the environment and public health by providing clean water for the Giao Chau commune, Giao Nhan commune, Giao Ha commune, Binh Hoa commune, Hong Thuan commune, Hoanh Son commune and Tho Nghiep commune.

3.2. The negative impact.

3.2.1. The negative impacts on environmental related to phase clearance.

The negative impacts during the preparation mainly issues related to compensation, land acquisition: changing land use, destruction of vegetation (rice fields, crops ...), as affect people in the area of land use, disruption of economic activities, society in the region.

Table 9 - The main items in the project area of interest

The main items in the project area of interest	Need for Compensation	No compensation	Negligible compensation
Giao Tien Commune (put the treatment plant)			
The area of land mainly for the leasing of the CPC rice (15.552 m ²)	x		
Area roads provincial road 489 (209.6 m ²)			x
Binh Hoa ommune (set pumping station)			
The area of land mainly for the leasing of the CPC rice (1715 m ²)		x	

3.2.2. The negative impacts on the environment related to the construction phase.

▪ Waste air

Factors causing pollution in the only stage of construction dust is flying up from long time and occurs in cycles of days of wind and dust comes with the use of machinery, excavation and construction . During the period of construction, loading, unloading, transporting materials will cause dust pollution along the route to go. However, exhaust gas as CO, CO₂, SOx, NOx, VOC and hydrocarbon ... from the engines and trucks increased air pollution, increased greenhouse effect also be considered.

▪ Noise

Noise is created by the noise of automobile engines in the transportation of materials, concrete mixing machinery during constructure ,especially heavy motor vehicles such as cattle, bulldozers, compactors, pumps affect people's lives especially those concentration of population such as schools, hospital, clinic commune, ward ... Besides, the process in operation of plants also emit the noise affect to daily activities of people in the most affected residential areas surrounding the plant and station treatment

▪ Waste water

Increase wastewater treatment and in areas without sewage systems, environmental pollution may occur. When it rains, the construction waste and other waste washed away by rain water and increase

CHAPTER 3. ENVIRONMENTAL IMPACTS

3.1. The positive impact

The project is expected to bring positive benefits for the environment and public health by providing clean water for the Giao Chau commune, Giao Nhan commune, Giao Ha commune, Binh Hoa commune, Hong Thuan commune, Hoanh Son commune and Tho Nghiep commune.

3.2. The negative impact.

3.2.1. The negative impacts on environmental related to phase clearance.

The negative impacts during the preparation mainly issues related to compensation, land acquisition: changing land use, destruction of vegetation (rice fields, crops ...), affected field's ecosystem. Create an amount of organic solid waste that disintegrates easily. When disintegrating, solid waste is an ideal environment for alive pathogenic microorganism, creates odor and a fixed amount of CH₄, H₂S,... affecting air and water. Residence of some organisms disappear which affects area's ecosystem. Beside, archaeological landmines from war ... etc can be found in the construction process can cause danger to construction workers and surrounding communities.

Table 9 - The main items in the project area of interest

The main items in the project area of interest	Need for Compensation	No compensation	Negligible compensation
Giao Tien Commune (put the treatment plant)			
The area of land mainly for the leasing of the CPC rice (15.552 m ²)	x		
Area roads provincial road 489 (209.6 m ²)			x
Binh Hoa ommune (set pumping station)			
The area of land mainly for the leasing of the CPC rice (1715 m ²)		x	

3.2.2. The negative impacts on the environment related to the construction phase.

- **Soil erosion:** after digging the soil lose green floor covering at the top cause erosion, landslides
- **Waste air**

Factors causing pollution in the only stage of construction dust is flying up from long time and occurs in cycles of days of wind and dust comes with the use of machinery, excavation and construction . During the period of construction, loading, unloading, transporting materials will cause dust pollution along the route to go. However, exhaust gas as CO, CO₂, SO_x, NO_x, VOC and hydrocarbon ... from the engines and trucks increased air pollution, increased greenhouse effect also be considered.

The disruption of public services as system of canals, power lines.... For the system of irrigation canals leading to the field, if no refund or new construction of canals for the people will lead to water shortages or flooding fields in the absence of drainage system. This greatly affects crop productivity of the people. In addition, the filling of canals also leading to overflow into the fields alum besides causing difficulties in the production of cultivated relatives.

- **Traffic:**

Traffic disturbance and road damage. The use of inter district roads, village, commune related transportation routes for construction materials can be made of materials scatter more or less down the road will affect the movement of people. Besides, while the road digging construction without spot cleaning will cause traffic congestion, causing difficulties in the movement of people.

- **The impact on agricultural production activities:**

The train line, insert the tube in the construction process will affect directly to the next plot (noise, dust, traffic congestion, water irrigation systems for farms, ...) to reduce crop productivity of the people

- **Health and Safety:**

Safety incidents can happen at any time during construction. There are many causes of such status, such as construction equipment are all motorized heavy equipment, workers live mostly unskilled workers, awareness and limited understanding . When disasters occur mask will directly affect the health and lives of human beings. In particular, the construction site next to the Giao Thuy A high schools, students can go through, curious to see if the construction equipment to the right place is not specified or no warning signs can cause dangerous unfortunate accident.

- **Flora and fauna**

In most communes have taken the field, the land area is cultivated mainly for rice cultivation.

Species dominant in communes are different species of mice and other rodents are less protected. So people do not believe that the project activities have any serious impact to flora and fauna present.

- **The impact of cultural beliefs:**

According to survey results to see, apart from area affected around by water supply, water treatment stations have some work to be interested such as Binh Dong Pagoda, Cemeteries people and martyrs cemetery in Binh Hoa commune. This works but is not directly affected by the project but the project is located near the construction site. Therefore, during the construction process, this work will be affected more or less as: noisy as the quiet temple Binh Dong affect the sacred temples and psychology of people go to church, or dust and smoke emissions from vehicles transporting raw materials, ... if there is no reasonable remedial measures will also impact negatively on daily life and spiritual life of the community

- **Society**

Conflict between local people and construction workers.

Affect public order in the area

Emerged social issues if not managed

Table 10 -The main items in the project area of interest

Communes	The main items in the project area of interest
Giao Tien	Provincial Road 489
	Water drain system for the area irrigated rice
	Route people to the fiel
Binh Hoa	The high power voltage 110 KV
	Route people to the field
	The causeway of Truc river, Dong Binh pagoda
	The causeway of Co Nhat river
	Cemetery
	Martyrs Cemetery
	15 households
	Giao Thuy A high school
	Inter-commune road.

3.2.3. The negative impacts on environment and mitigation measures related to operational phase

▪ **Noise**

Operating the treatment plant noise affects people in surrounding area and worker.

▪ **Dried mud**

During the wash born filter made of waste water and sludge. Dry sludge is produced after sewage treatment is also a notable problem in the line of water quality treatment. This sludge can contain heavy metals or compounds harmful, if not careful burial will cause pollution of land or water. In addition, more and more sludge causing aesthetic areas.

▪ **Solid waste / chemicals:**

Hazardous solid waste as fuel and used oil, containers of chemicals, chemical damage can not be used, sticky oil cloth, broken light bulbs,... if not buried will cause cell Air pollution, water and soil

pollution caused long-term effects to the environment. There is also solid waste activities, solid waste is biodegradable and contains many pathogenic microorganisms to humans.

- **Environmental incidents**

There may be risks in operations such as chemical leaks, fires, accidents ...

In the case of contaminated water can cause wide spread water-related diseases



Giao Thuy High school - the location is next pumping station Binh Hoa

CHAPTER 4. MITIGATION MEASURES NEGATIVE IMPACT

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
Design phase				
1	Choosing supplied water source	Water source used for construction	<ul style="list-style-type: none"> ▪ Make a survey of current situation of surface water sources Top priority to using surface water of big rivers, not using water sources from irrigation streams/canals. In this project, plans are selected and optimized through the Ninh Co River water Place water in Xuan Truong town. ▪ Determine and assess pollution sources for water of Ninh Co river ((household sewage, sewage from factories, companies along the water source, capacity of water sources...)) ▪ Refer to yearly monitoring data of water quality ▪ Check raw water quality and compare to regulation QCVN 02:2009/BYT on National technical regulation on domestic water quality ▪ Determine the place to take water: we have to calculate the water level, not places garbage dump, toilet or water discharge location near economic places in the area Pay attention to impacts being created by waterway transport means ▪ Determination of seasonal water and salt from their experience of the people for water, salinity, acidity, tides ... so make sure water is guaranteed for volume and quality 	Design consultant
2	Choosing places for water treatment construction	Stratigraphy, geological and other public facilities, cultural facilities and residential areas ...	<ul style="list-style-type: none"> ▪ Places for water treatment construction need to be surveyed seriously in geography geology, social issues to ensure long-term safety of construction ▪ Places of pump station need to be far away 200 m residential area (if possible). This ensures that noise doesn't affect inhabitants life. ▪ Avoid siting of construction works in areas where the geological structure is weak unstable flows, such as drainage ditches, close to residential areas ▪ Avoid choosing place WTP in cultivated land with high productivity, especially in the rice field ▪ WTP construction places, water pipe system need to avoid cultural, historical buildings such as funeral, temple, church, pagoda, big tree, historical monument, etc. 	Authority at commune level, PPMU and Design consultant
3	Environmental impact assessment	Environmental minimized	<ul style="list-style-type: none"> ▪ Optimizing the design and planning projects to minimize its negative impacts on the environment 	PPMU and consultancy

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
	(EIA)/environmental protection commitment (EPC)	methods stated in EIA/IPC report	<ul style="list-style-type: none"> ▪ EIA/EPC report completely foresee impact sources, impact scale, impacted subjects and impact level in each issue (limit qualitative). ▪ The mitigation measures must be concretized by the impact was assessed. ▪ Reporting process EIA / IPC, the investor is PPMU and consulting units must consult communities affected by the project and be recorded in writing together with the reports. ▪ EIA / EPC Report must be functional agencies are the Department of Natural Resources and Environment,/ DPC to consider the appraisal and approval confirmation. ▪ After the report has been approved by authorities / validation, reporting to the investors (PPMU) send a copy of the commune People's Committee to oversee the implementation of projects under the first commitment investment. 	agency making report EIA/EPC
4	Bidding documents and consultant/ construction contract.	Issues affecting the environment stated in Bidding Documents	<ul style="list-style-type: none"> ▪ The bidding documents should have mentioned the environmental issues to the contractor free to propose solutions to reduce and this will be one of the criteria for assessing bid ▪ The contract between the investor (PPMU) and contractors must have the terms of the commitments and responsibilities of contractors in the implementation of environmental mitigation measures as stated in the environmental protection commitment and the technique plan proposed by contractors ▪ At the time of work acceptance, water quality treatment meets the standards of the Ministry of Health QCVN 02:2002/BYT on National technical regulation on domestic water quality 	PPMU and Contractors units
Phase of land acquisition, site preparation				
1	Recover land for project	Policies of compensation and resettlement of the project	<ul style="list-style-type: none"> ▪ Setup a management board for ground clearance including representatives of the People's Committee at commune level where the project affected ▪ Minimize Recover land that has been granted to households. Try using the land managed by the commune People's Committee ▪ Inform people who are effected directly from the project ▪ Have reasonable compensation policy for people with land acquisition ▪ Selection of land replacement 	The PPMU to coordinate with clearance board, local authorities, mass organizations
2	Trees were cut down	The period of	<ul style="list-style-type: none"> ▪ Avoid WTP site selection, water place, pipes drain on cultivation land for high yield 	Authority at local,

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
	or damaged. Loss of arable land	land acquisition, site clearance before construction	<p>especially in fields where rice can grow well.</p> <ul style="list-style-type: none"> ▪ Avoid the design of pipeline along the grown trees ▪ Inform so timely to farmers that they can adjust cultivation time if possible 	PPMU and Design consultant
3	Topsoil stripping	Silt layer and the surface soil layer	<ul style="list-style-type: none"> ▪ Avoid building water plant location, the treatment plant, pumping stations where the land is too low. Such compensation will have to fill up investment costs Keep the soil layer before digging, using the layer to restore land. ▪ There should be zoned fence during the construction 	Authority at local, PPMU and Design consultant
4	Bomb and landmines	Bombs and mines left over from the war unexploded	Issues of concern to demining, these activities should be the professional division of infantry made prior to construction	Authority at location, PPMU
Construction phase				
1	Soil erosion	By construction	<ul style="list-style-type: none"> ▪ After completing construction, the greening as early as possible to prevent wind and water erosion and landslides. ▪ The work should apply these measures to control and prevent erosion during construction and increased sedimentation in the river nearby. 	Authority at local, PPMU and Construction units.
2	Dust, smoke and emissions	<p>From the surface</p> <p>Clearance site</p> <ul style="list-style-type: none"> - The process of burning fuel by means of execution - means of transport 	<ul style="list-style-type: none"> ▪ Require contractors to use standard equipment during construction ▪ Organizing special team responsible for collecting material falling around construction site and area nearby. 2collectors/ team and 2 times/day. ▪ Do not use the old mean of transport for sand, soil and rocks. ▪ Do not carry materials left overload. ▪ Encourage the use of tank trucks. Benefits of vehicle tanks are not only sealed to prevent the possibility of dust dispersed into the environment but also limited the state to carry overload ▪ With mean of transportation for buiding material need to be cover to limit spreading dust. ▪ Do not transport building materials in raining days to avoid affecting the transportation system due to the fall of material along the roads ▪ Watering on dry days, a lot of dust on construction in the locality concerned and the 	Construction contractors, engineering supervision

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN

7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
			<ul style="list-style-type: none"> ▪ route to avoid dust. 	
3	Noise	Machines and transportations such as, bulldozer machines, concrete mixers, water pumps, the transportation of raw materials	<ul style="list-style-type: none"> ▪ Staking on construction must be done in accordance with procedures, using advanced equipment to pile. ▪ Using and maintain noise reduction equipments and noise barriers. Turning off some machines to limit noise if they are not necessary. ▪ Some machines cause high noise such as drilling machines, hammers.. will not operate them at night time to avoid the impact of living of workers and nearby residential. ▪ Monitoring of the noise during the construction process ▪ Forbidding the abuse of using horn and turning off the engine when stopping. ▪ Encourage the construction on holiday to limit impact of learning activities of students. 	Construction contractors, engineering supervision
4	Waste water	Stormwater runoff	<ul style="list-style-type: none"> ▪ Mix and materials containing areas are separated during construction. ▪ Do not focus on the materials, next to the water line to prevent leakage in drainage lines. ▪ Build spillway dam around work with iron bars and gas holé to stop water from running to water releasing system in area.) ▪ Check, dredge, enlarge regularly to avoid waste causing jam in water releasing ways ▪ Restrictions on the implementation of construction in raining days ▪ Do not pour solid waste (construction waste, sand, stone...) and oil waste down the flow. 	PPMU, Construction contractors, engineering supervision
5	Solid Waste	Construction and domestic waste	<ul style="list-style-type: none"> ▪ Establishing a team included 2-3 people of collection all solid waste and solid waste construction daily. ▪ Classification of solid waste, solid waste construction and hazardous waste. These types of solid waste can re-use, particularly for solid waste construction can utilize for the purpose of ground leveling. ▪ Arrange for at least 3 types of trash-150 litter in construction site to classify, collect and treat waste in accordance with regulations on environmental sanitation. ▪ Agreement with local authorities / DONRE of temporary garbage yards at a place 	PPMU, Construction contractors, engineering supervision

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
			<p>away from water</p> <ul style="list-style-type: none"> ▪ Collecting toxic wastes such as oil tanks, oil ▪ Have the containers of hazardous solid waste separately ▪ Used oil must be collected in containers ▪ To arrange a mobile toilet in the construction site. ▪ Preparation of internal regulations on sanitation in camp education workers or sense of hygiene and environmental protection. Strictly forbidden littering ▪ <p>Strictly forbidden all acts of discharging pollutants, harmful substances.</p>	
6	The infrastructure such as drainage, power lines, telephone cables, roads and drainage canna will be damaged.	Transportation of vehicles, construction works such as digging, ground leveling	<ul style="list-style-type: none"> ▪ Coordinate with the local authorities to ask for relocation of infrastructure as required. ▪ Inform local people where the services were temporarily cut before at least three days. ▪ Before driving under power lines or unloading of materials, equipment and the cable The driver must check and observe the height cable. ▪ Use equipment in accordance with load, no damage to roads. ▪ Repaire the damage. ▪ Limited transport of materials in the peak hours of the day to avoid traffic congestion Especially avoid the seasonal time of the people, by people's transportation is active Using a vehicle carrying a load of small and consistent with the traffic load of the commune and district levels. 	Contractors and Authority at local
7	Traffic safety Labor safety Fire	Automobile transportation, electrical equipment, construction equipment and construction materials	<ul style="list-style-type: none"> ▪ Major fire incidents related to electrical problems. Therefore, in the process of construction should note this and the supply conductor. The device should be checked regularly and collapse after a day of construction. ▪ The drivers should drive and transport at the same time. When passing to residential areas, need to reduce speed to avoid accidents ▪ Construction area must be fenced and signs noted. Especially where construction near the school, students can play, curious to public schools should be careful ▪ Workers should be equipped with labor protection (helmet, gloves, goggles, masks ...) 	Construction contractors, engineering supervision
8	Effects for the	Excavation and	<ul style="list-style-type: none"> ▪ In case unknown archaeological objects are found during construction phase, ac 	Contractors,

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
	cultural, historical, archaeological works	levelling on PS, WTP and water supply pipeline network	<p>following chance findings procedures described below:</p> <ul style="list-style-type: none"> ▪ If cultural artifacts are uncovered the Contractor must stop work at the site, secure the site and inform the supervision Engineer. ▪ The Contractor should arrange with the Engineer to move his activities to another site. Construction works at the site where objects were found only be resumed at permission of PPMU. ▪ The Engineer will inform PPMU, the one who inform the provincial Department of Cultural, Sports and Tourism (DCPS) ▪ Officer from DCPS will inspect the side, evaluate the importance of the objects found and decide on the next steps. <p>For Dong Binh Pagoda, the impact is mainly noise and dust affecting the purity of the temple place, which should limit the operation noise and regular water spray to reduce dust.</p>	Engineering supervision, Investors Department of Culture, Sport and Tourism Province
9	Social	The conflict, evil .	<ul style="list-style-type: none"> ▪ Human Resource Management Notes remind workers behave in harmony with local people. ▪ Need time management of workers in the activities. Should have its own regulations close to workers. ▪ Prohibited workers involved in activities related to the social evils. Should be severely sanctioned violations 	Construction contractors
Operation phase				
1	Noise	Sound from pump	<ul style="list-style-type: none"> ▪ The workers will be equipped with adequate labor protection when operate pumping machines. ▪ Make the plan of pumping water to avoid noise at the same time. 	Workers and management units
2	Solid Waste/ chemical	Hazardous waste as used fuel and oil, containers of used chemicals, washcloth with	<ul style="list-style-type: none"> ▪ Provide at least two trash -150 litter to collect and classify solid waste and domestic waste of workers (one container of waste to decompose and a container of hard-to-decompose solid waste) ▪ Assignment of timeline to workers in cleaning the area. ▪ Need a septic toilet. Forbidden any action of making a mess. ▪ Unit of management should conduct records of management and monitoring of hazardous and solid waste registration and periodically report to the functional units for environmental management - Department of Natural Resources and 	Workers and management units

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN

7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

No	Impacts / Issues	Source of impacts	Mitigation measure	Implementers
		oil, broken light bulbs,	<p>Environment to monitor the production process of solid waste at treatment station.</p> <ul style="list-style-type: none"> ▪ The management, monitoring of hazardous waste shall comply with Circular No 12/2006/TT-BTNMT on December 26, 2006 by Department of Natural Resource and Environment to "guide and set records, registration, granting to practice management codes of hazardous waste". ▪ hazardous solid wastes will separate from non-hazardous solid wastes ▪ workers work under the time shift should be responsible for collecting all hazardous solid waste and put it at a certain place for functional units collecting and processing. ▪ For the washcloth with oil, the packaging with chemical need to handle after using. ▪ The handling of hazardous solid waste must be leased functional units in accordance with the regulations on collection and treatment of hazardous solid waste. ▪ 	
3	Sludge	Sludge collected from the pits.	<ul style="list-style-type: none"> ▪ Periodically vacuum mud from drying ▪ Each province can use a dedicated car for collecting dried mud at water treatment plant to landfill for treatment. ▪ If the condition does not allow, we can arrange a private waste area and grow some plants to collect the pollutants, especially heavy metals (spinach, water-fern bindweed..). However, these plants must then be handled as hazardous solid waste 	PPMU and operating workers
4	Environmental disasters	Labor safety Fire Chemical leak Workers exposed to chemicals	<ul style="list-style-type: none"> ▪ Provide portable fight fighting equipment and training in the WTP ▪ Restrict access to the water treatment plant and chemical house by design solutions such as fence, lock and signboards ▪ Bảo quản hóa chất trong hộp chứa kín ▪ Maintain first-aid kits in workers' camps and WTP ▪ Maintain labels stating the name and toxicity of chemicals ▪ Do not place flammable or explosive materials near chemical storages and place fobbing sign boards 	PPMU and operating workers

CHAPTER 5. ENVIRONMENTAL MONITORING PROGRAM

5.1. Environmental monitoring program.

5.1.1. Monitoring groundwater quality.

The objective of monitoring groundwater quality are:

- Monitoring the concentrations of contaminants in groundwater in the project area.
- Forecast the penetration of pollutants into the stream aquifer region.

The position of monitoring quality of groundwater in the construction stages: In the wells in the area affected by the construction process.

The monitoring indicators include suspended sediment (SS), Fe, Mg, oil and grease, coliform, NH₄, NO₃

5.1.2. Surface water quality monitoring:

The monitoring of water quality in the construction phase is the point, was observed in environmental impact assessment of projects and waste water discharge points in the process of construction of the project. The monitoring indicators: pH, SS, BOD₅, oil, $\sum N$, $\sum P$, Coliform.

5.1.3. The frequency and method of monitoring water quality:

The frequency of monitoring is once time before construction, once time every 3 months during construction in 1 year and once time every 6 months in 2 years operation of the project. Monitoring method in accordance with the standards of Vietnam (TCVN).

Monitoring and reporting of data management. The monitoring data is valuable in environmental management and pollution control.

5.1.4. Monitoring air quality

Frequency of observation is a time prior to construction, every 3 months during the construction process in the first year and 6 months / time in 2 years of operation.

The monitoring indicators NO₂, CO, TSP, PM₁₀

5.1.5. Observation noise:

Frequency of observation is a time prior to construction, every 3 months during the construction process in the first year and 6 months / time in 2 years of operation.

Monitoring indicators Noise level (dB)

5.1.6. Monitoring of operations.

The main parameters to be monitored include quality of surface and groundwater quality especially where handling systems. Details of the environmental monitoring parameters, implementing agencies and the agencies responsible are presented in the table:

Table 11 - Environmental Observation Plan

Items		Contents
Air	Parametrial	NO ₂ , CO, TSP, PM ₁₀
	Period	Before construction. One year for construction and two years for operation

Items		Contents
	Frequency	Once a quarter - continuous 5 days of measuring for each observation.
	Time	6:00, 10:00, 14:00,18:00 (TSP and NO ₂)
	Location	Populated points in the town center along the pipeline Site within 200 meters near residential areas,
Noise	Parametrial	Equivalent noise level dB
	Period	Before construction, 1 year construction and 2 years operation
	Frequency	Once a quarter - continuous 5 days of measuring for each observation.
	Time	Day and night
	Location	Populated points in the town center along the pipeline Site within 200 meters near residential areas,
Water	Parametrial	Surface water: pH, SS, BOD5. , $\sum N$, $\sum P$, Coliform Groundwater: SS, Fe, Mg, oil and grease, Coliform,
	Period	Before construction, 1 year construction and 2 years operation
	Frequency	Once every 3 month (implementation) ; once every 6 month(operation)
	Time	Daytime
	Location	Rivers, ponds near work Well near works The waste water after washing filters, sludge Raw water

**Table 12 - Estimated fund monitoring and environmental monitoring
 in the first stage construction, stage construction and operation**

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

Stage works	Observation Location	These factors need Observation	Observation time	Frequency of observation	Unit responsible	Implementation funding
I. Before construction						22.000.000 đ
Air	Populated points in the center of commune along the pipeline	CO, SO ₂ , NO ₂ , PM10	Before construction	One time before construction	Project Management Board	
Noise	Populated points in the center of commune along the pipeline	dB	Before construction	One time before construction	Project Management Board	
Surface water	Rivers, ponds near work	pH, SS, BOD ₅ , $\sum N$, $\sum P$, Coliform	Before construction	One time before construction	Project Management Board	
Groundwater	Well near works	SS, Fe, Mg, grease, Coliform	Before construction	One time before construction	Project Management Board	
II. Construction works						87.000.000 đ
Air	Works within 100 meters near residential areas, populated places in the town center along the pipeline	CO, SO ₂ , NO ₂ , PM10	One year	3 months/time	Contractor	
Noise	Within 200 meters of construction area, densely populated places in the center of commune along the pipeline	dB	One year	3 months/time	Contractor	
Surface water	Rivers, ponds near work	pH, SS, BOD ₅ , $\sum N$, $\sum P$, Coliform.	One year	3 months/time	Contractor	

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
 7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

Groundwater	Well near works	SS, Fe, Mg, grease Coliform	One year	3 months/time	Contractor	
III. Operation of the work						264.130.000 VND/year
Noise	Within 200 m of local water treatment plant	dB	Two years	6 months/time	The uni operates water treatment plants	1.575.000 VND/year
Air	Within 200 m of local water treatment plant	CO, CO ₂ , NO ₂ , PM10	Two years	6 months/time	The uni operates water treatment plants	2.000.000VND/yea
Surface water	The waste water after washing filters, sludg Raw water	pH, SS, BOD ₅ , $\sum N$ $\sum P$, Coliform.	Two years	6 months/time 1 month/time	The uni operates water treatment plants	22.555.000 VND/year

5.2. Planning environmental training / institutional strengthening.

5.2.1. Training Objectives

The objectives of the training program is to help the environment for the staff of the Agency project management, contractors units, supervise construction and officials concerned shall implement environmental monitoring plan to enhance their resources and help ensure the successful implementation of mitigation plans and monitoring specified in the environmental assessment during the final project design, implementation and operation of projects. Participants may include staff of contractors and construction supervision, staff management project in Nam Dinh.

To ensure success for the intensive courses and the implementation of environmental monitoring plan, there is a requirement set by officials appointed officials of environmental agencies and the project management agency province and involved units must have the knowledge and basic skills in management and environmental monitoring. CPO will appoint the officers in charge of environment and professional staff of the unit independent consultant by the CPO hired will be responsible training for the staff of the PPMU Nam Dinh and other related

Table 13 - Cost for the training course on environment

Training courses for environmental professionals and other people involved	Number of personnel	Training contents	Time	Daily Cost	Total cost
1. Training class			Day	\$US	\$US
1.1. Lecturer	2	Training class	8	60	960
1.2 The agency project management / 8 personnel related	18		8	10	1,440
1.3 Facilities and management	1		8	200	1,600
1.4 Documents for students	18		1	10	180
Subtotal					5,000
2. Practical training / field					
2.1 Lecturer	2	The field	2	60	240
2.2 The agency project management and personnel related	18		2	10	360
Material base	1		2	200	200
Subtotal					800
Total					5,180

5.3. Assigning responsibility.

5.3.1. Responsibilities of project management, supervision consultants and project owners.

Project Management Board is the agency directly responsible for environmental management projects.

The management of environmental projects including managing and implementing environmental protection measures for the respective periods: Preparing the ground, construction of works and operation of roads. This work is integrated with the management and technical supervision of project implementation to increase working efficiency.

Personnel service management environment is the project management environment by the project management set up. This is the task of monitoring and inspection activities related to environment in the works. Periodic reports submitted to the project management to ask for direction and resolution.

The project shall comply with environmental laws and regulations of the environmental authorities of the State and local levels. The mitigation measures and environmental management plans are made to strictly conduct supervision and implementation of environmental management plans have been proposed. Periodic report 6-month on the implementation of environmental management plan be submitted to the World Bank and the government agencies concerned.

The basic task of environmental management of project management, consultancy and supervision of the project are summarized as follows:

- Review project design and technical standards in the preparation stage to ensure appropriate and stable environment for the proposed project under the direction of management projects.
- To cooperate with the communes, functional protection and environmental management in local environmental issues under the project and the necessary procedures with the authorities.
- The project implementation process to fully comply with the provisions of the Environmental Protection under the law of Vietnam and the World Bank.
- Monitoring the environmental aspects of the project during construction to ensure that the environmental requirements of the contract and the mitigation measures proposed in the Environmental Management Plan report is executed.
- Managing and monitoring contractors units and Consultant unit in the implementation of environmental mitigation measures
- Development of environmental training to contractors and supervisory consultants.
- Arrange officials environmental to monitoring and environmental management during project implementation.
- Report and provide records of environmental for consulting monitoring environmental independently when they arrived at the PPMU and sub-projects

Supervision Consultants:

- Monitor Client's activities to ensure the Client implement minimization measures proposed in environmental management plans and supply all reference documents/ guidance when required.
- Provide reports of Client's implementation of environmental activities for PMU and WB.

Responsibility of the contractor:

- Contractor is responsible for treatment/ minimization measures of impacts related to environment required for Contractors' construction activities. In case of any environmental issues raised (Grievance/ quarry from the third side about some such issues as environmental damages to properties and natural resources (land sinking, underground

water block, surface and underground water pollution...), contractor inform the engineer immediately for the next measures.

- During the execution process, including site preparation and sanitary clearance after completing, donor should be careful to avoid any environmental damages.
- Contractor have to assign at least one staff in charge of environment (who specialized in environment is encouraged)

Table 14 - Roles and responsibilities for environmental management

UNIT	ROLE AND RESPONSIBILITIES
Division of Natural Resources and Environment	<ul style="list-style-type: none"> ▲ Final decision on issues relating to environmental management
Project Owner	<ul style="list-style-type: none"> ▲ Make sure all the terms proposed in the environmental management plan was put into the project contracts. ▲ Evaluation contractor (or subcontractor), Review inspection reports in all phases of the project. ▲ Make regular inspection and irregular activities of the project to ensure that contractors are performing their obligations under the contract in terms of measures to minimize environmental impact. ▲ Coordinate activities with supervision consultants and construction contractors, and report directly to Project Director. ▲ Check extraordinary about environment ▲ Report directly to contractors on environmental issues could hinder the progress of the project. ▲ Make monthly environment reports and the combined with the project progress report ▲ Report and provide records of environmental
Contractor	<ul style="list-style-type: none"> ▲ Make the scene at all the environmental requirements and mitigation measures was reflected in contract terms. ▲ If the contractor has contracts with subcontractors, the subcontractors also perform the obligations under the contract of environmental monitoring.
Consultant	<ul style="list-style-type: none"> ▲ Behalf of the contractor under the terms of the contract, implementation monitoring air quality, noise and water in the pre-construction and construction. ▲ Report monitoring results for the organization and management unit supervisor. ▲ Training for owners and project monitoring unit, on behalf of project owners to implement environmental monitoring in operation phase. ▲ Perform additional monitoring when requested.

Table 15 - Environmental Monitoring Plan

Stage	Organization	Observation items	Monitoring objectives
Feasibility study	Division of Natural Resources and Environment specialists	Revise environmental management plan proposal	<p>Ensure a complete environment assessment, identify the appropriate topic, and emphasize key points.</p> <p>Ensure that the environmental management plan can reflect serious environmental problems caused by the project</p> <p>Ensure a pragmatic and detailed action plan of mitigation measures and the implementation task</p> <p>Prepare environmental management plan in the implementation sites to monitor in detail the environmental impacts and the improvement.</p>
Design and implementation	Division of Natural Resources and Environment	Revise the preliminary design of environment protection work and environment management plan	<p>Seriously execute the environmental management plan</p> <p>Ensure that environmental laws and regulations nationwide on implementation/construction are considered.</p>
	Division of Natural Resources and Environment,	Check the project location selection	<p>Ensure that the project sites are not located in sensitive areas, especially the concentrated fertilizer treatment system near schools, hospitals.</p> <p>Ensure that all the project sites will not be in stagnant water areas or flood centre</p>

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
 7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

Stage	Organization	Observation items	Monitoring objectives
	Division of Health	Supervise dust and noise pollution if they come as a problem.	<p>Execute proposed measures in the environmental management plan on dust and noise pollution.</p> <p>Ensure that the implementation unit will follow seriously the environmental management plan as well as related regulations of the Government and the localities.</p> <p>If noise is considered as a factor affecting the environment, implement the construction following the time proposed in the environmental management plan.</p>
		Check whether the implementation cause land erosion more rapidly.	Ensure that the erosion control measures are in compliance with the environmental management plan, national law and local law.
Operation	Donors/PPMU /environment observation station	<p>Inspect the implementation of the environmental management plan during operation stage</p> <p>Check the implementation monitoring plan</p> <p>Check whether other environment protection measures are needed.</p>	<p>Protect the environment; mitigate the impacts on the environment during implementation stage.</p> <p>If needed, revise and amend the environmental management plan in order to correct unexpected impacts.</p> <p>Ensure that the project's impacts on natural resources are mitigated, especially on land and water resources.</p>

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
 7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

Stage	Organization	Observation items	Monitoring objectives
		<p>Check whether the waste discharges can meet national standard.</p> <p>Check whether the Project is causing unexpected pressure on water in the area</p> <p>Check whether the Project accelerate the land erosion process.</p> <p>Ensure that the soil fertilization exercise has no impact on the absorption of nutritive substances.</p> <p>Ensure that the soil fertilization cause no serious consequences on land surface and cause no pollution to groundwater.</p>	

5.3.2. The implementation organizations and responsibilities.

Consultants will be assigned to implement EMPs, monitor district environmental management unit and Division of Health.

Their tasks are: (1) ensure the project follow Vietnamese standards, regulations and laws on environmental protection, and (2) monitor environmental protection of Provincial Human Health Unit. Project Management Agency will select appropriate Consultants to monitor the work of Division of Health and Division of Natural Resources and Environment.

Consulting Organization implementing EMPs and project supervision has these following tasks: report Provincial Management Agency and Project Management Agency when any natural environmental changes arise, control environmental pollution; and report the progress achieved during environmental protection and improvement process.

Staffs of Division of Health and Division of Natural Resources and Environment do not have responsible for daily inspection and environmental supervision result of the projects. Still, they have responsible in case of the project repeated. Therefore, Project Execution Agency/ Unit should give necessary training courses and human resources to make sure the implementation of project environmental requirements is effectively and smoothly. These following chapters give details of execution organizations and proposed environmental management plans, staffs and institutional requirements.

An environmental observation plan will be set up in Project Management Agency/ Provincial Management Agency to apply EMP and cooperate with at least one environmental staff working part-time for each execution area. Project Management Agency/ Provincial Management Agency staff will be trained environmental regulations, application and management, pollution control, minimization measures, progress and supervision report. One environmental expert from Supervision Consultants will make sure the execution is implemented based on environmental protection awareness.

Table 16 - The Environmental Management Unit

Name	Tasks	Note
The appointed consultant and the local environmental observation station	Design and manage the environment in execution period.	One environmental expert implements supervision and management plans.
Environmental management staff of Project Management Agency	Execute and control environmental protection measures in execution period.	One environmental expert supports Environmental experts of the Project Office.

Monitoring: Environmental aspects will be supervised 4 times a year when execution period. Quarterly progress reports provided by Management Agency will include environmental monitoring reports.

Nam Dinh Provincial People's Committee is the Project Executing Agency. The Project Governing Committee set up by Executing Agency will meet at least twice a year to assess the project implementation situation.

A Provincial Project Management Unit (PPMU) will be set up in Nam Dinh province. PPMU is responsible for controlling consultants' works, manage and coordinate project aspects at all levels of government, central, province and city, including other sponsors, ex. the World Bank. Each Project execution Unit will be authorized one project sub-component. One environmental management unit set up in PPMU will be responsible for applying measures to minimize the

REPORT ON THE ENVIRONMENTAL MANAGEMENT PLAN
7 Communes in Giao Thuy, Xuan Truong District, Nam Dinh Province

impact on environment and supervising. The environmental observation unit includes one technical staff and one administrative staff. Contractors will do the minimization measures during execution period. Execution supervision Consultant will do donor's' environmental work and prepare supervision reports with the cooperation of the environmental observation unit.

The project will cooperate with Division of Natural Resources and Environment under district and Division of Health to check the environmental quality. The environmental supervision result will be recorded to ensure the discovery of signals of negative impacts as soon as possible. The result before and during execution will be reported monthly by an environmental expert assigned in each project implementing unit. The environmental observation unit will prepare a supervision report twice a year and submit PPMU, and then PPMU submit Division of Natural Resources and Environment to approve for Provincial People's Committee and submit WB).

During the implementation and operation process, the execution of the environmental observation plans will be ensured by the project owner (nominated by Nam Dinh people's committee based on the nature of each project's subcomponents) in order to reach the following objectives and outcomes:

- Provide information for assessing the project's impacts on the environment;
- Give out recommendations in case the environmental control measures are not enough to meet the environmental standards.
- Monitor the project implementation and the effectiveness of the mitigation measures in environmental protection.
- Appraise the forecasted impacts on environment described in the initial environment assessment report.
- Evaluate the compliance with GoV's requirements, standards, policies and regulations.
- Propose activities for the purpose of mitigating the consequences in case of serious impact occurrence.
- Provide data for environment auditing.

The environment observation Plan is done by the environment observation unit, PMUs in coordination with the contractors, implementation monitoring consultants and other agencies. The monitoring report and auditing report will be submitted to Division of Natural Resources and Environment and WB.

The environment monitoring program in the implementation and operation process is presented in the following table:

Table 17 - The monitoring of the Division of natural resources and environment and PMU

Name	Responsibilities
The Division of Natural resources and Environment	Monitor the application of laws and regulations on environment and management... Coordination amongst various Division in terms of environment management; Check and approve the environment monitoring report; Make final environmental approval of the construction project

PMU/	Support the monitoring work for district agencies; Check and approve the environment monitoring report;
------	--

Implementation organizations

During the implementation/construction and operation process, the implementation of environment management plan is the responsibility of the respective PMU. If there is any environment observation station in the project area, they should be requested to gather necessary input, monitor the implementation of environment management plan and check whether mitigation measure of each project component is successfully carried out. The respective Division of natural resources and environment requested by the respective PMU to monitor and inspect the project components having potential impacts on environment in accordance with the proposed environment management plan and in compliance with the Vietnamese environment protection law.

The project area comprises of 7 communes. To assure the smooth project implementation and mitigate negative impacts on environment, the following environment management plan should be considered as one part of the project and must be budgeted as with a project component in financial feasibility report and project implementation plan.

PMU should appoint their staff trained by project environmental supervisor to take the responsibility of ensuring the full implementation of all environment management's activities by the district – level projects. This staff should promulgate environmental issues within the project scope to the PMU and the environment observation station (if any), be responsible for gathering information and provide technical assistance for environmentalists. During operation phase, the PPMU will assist the CPMU in environmental monitoring program implementation and other works in management plan. Nevertheless, the highest responsibility is ensuring that the rest of the activities identified in the environmental management plan will be completed by the CPMU.

The PMU must ensure that the requested environmental reports/ data will be sent from the district to the PPMU. The environment managers and organizations in the implementation and operation phase are illustrated by respective figures.

The responsibilities / project management agencies and environmentalist

The / PMU at all levels are responsible for implementing the environmental management plan. These agencies are in charge of assuring the smooth implementation of mitigation measures and monitoring plan as described in the environment assessment report. The main responsibilities are:

- Evaluate and implement mitigation and assessment activities and provide some recommendations for adjustment of activities as requested in order to achieve the minimum acceptable environment activity level in the whole project.;
- Regularly revise the implementation of pollution control measures in subcomponents which can have pollution problems like the model of the fertilizer management technology subcomponent.
- Report on units having inappropriate operations or its waste level exceed the above standard waste level and report the violating cases to the Division of Natural resources and environment via the local environmental specialists;
- Recommend, ask for the approval and implement necessary, special studies in order to achieve minimum acceptable environmental activities;

- Closely coordinate with designing and implementation groups, ensure that the final project plan can reflect mitigation measures in the environment management plan and provide necessary conditions on project monitoring;
- Provide necessary trainings for PMU's staffs and those who implement subcomponents on environmental issues and environmental survey to strengthen institutional capacities for provincial and town-level staffs in implementing environment management plan's activities;
- Supervise the implementation of environment protection measures as requested in the environmental impact mitigation plan;
- Provide guidelines once mistake is noticed in environmental activity and give out solution;
- Apply urgent response plan in case of emergency and timely report on accidents/ risks for the PMU and local Division of Natural resources and environment;
- Carry out the environmental observation plan including signing contracts and supervise the supervision organizations and assure the timely completion of all the activities identified in the supervising plan;
- Grant authority to appropriate environmental staffs to implement the environment management plan including signing contracts and supervise monitoring agencies, ensure the timely completion all the activities identified in the monitoring plan;
- Address complaints related to environmental issues and accept the monitoring work of departments of environment protection;
- Supervise environment issues during the implementation/construction stage and give warnings to construction units to strictly follow the regulations; and be responsible for the other necessary activities in order to fully implement the environment management plan.

Monitoring organization

The Division of natural resources and environment are administrative bodies of the District, responsible for environment protection. Each Division is responsible for environment monitoring and management task in its own district. The Division of Natural resources and environment and environmental monitoring specialists' offices will be in charge of project's environment monitoring work. Project's environmental protection task will be implemented under the supervision of the Division of Natural resources and environment and Division of Health within project's areas. The environment observation plan is summarized in the table.

Facility and training needs to ensure the implementation of the measuring, management and monitoring plan as described above, training on environment protection is very important in order to have understandings on environmental impacts and timely deal with accidents. The training program includes: regulations and laws on environment, environmental standards, and environmental science related to the project, burning issues and control measures, environment management, etc.

The budget prepared for the environment management plan (environment observation plan) includes one subsidy for necessary testing tools. One subsidy for environment checking and monitoring cost is also included in the project's budget.

Budget allocation and implementation plan: budget planning and project implementation planning is one part of the environment management plan. Costs for environmental impact mitigation task include facility cost, environment monitoring work (air quality, water quality, noise, workers' health, safety/sanitation within the project area) will be executed by specialists assigned by the PPMU and be provided technical assistance.

Refer to the mitigation Plan in the project legal agreement because the negative impacts on the environment during implementation process are minor, then there is no special legal terms and conditions provided except for quality standard for the implementation of environment management plan.

Monitoring: A detailed list of environmental factors such as air, water quality, noise level, along with the time and location for implementing the monitoring work, and agencies responsible for their monitoring work were included in the environmental management plan. The PMU/PPMU will be in charge of following up and reporting the monitoring work of mitigation measures of all agencies. The agencies responsible for environmental monitoring work are:

Table 18 - Agencies responsible for environment monitoring task

Name	Responsibilities
PPMU/ /environmental assessment specialists	Environmental monitoring and management design during construction process
Environmentalists	Implement and manage environment protection measures during construction process
Environment Consultants/	Environmental monitoring during project construction and implementation process

CHAPTER 6. IMPLEMENTATION AGREEMENT

The results from environmental assessment of rural water supply and sanitation subproject in 7 communes of Xuan Truong and Giao Thuy district show that:

- The Project brings about positive impacts on the environment. It also brings about fresh water and helps improve the sanitation situation for the area.
- Provide fresh water pipe lines system for the residents; meet the people's need of using fresh water.
- Improve significantly rural water supply, environmental condition in the area, help prevent waterborne diseases
- Improve people's living standard, help stabilize their lives

The Project also created negative but insignificant impacts and they will be mitigated by technical measures as well as management ones and environmental observation activities.

Commitments in the project are as follow: Commitment on conducting waste treatment methods; mitigation of other impacts in the commitment; Commitment on meeting standards and technical specifications on environment; Commitment on implementing other environmental protection methods based on current regulations of Vietnamese Government.

THE ANNEX

Appendix 1.

Table 19: Standards for the criteria specified environmental components

No	Name of indicators of environmental components	Unit	Posted next level prescribed standards ¹
I	Toxic gases		Regulations of Vietnam 05:2009/ MOER
	Oxit cacbon (CO)	mg/Nm ³	5000
	Pêoxit Nitơ (NO ₂)	mg/Nm ³	100
	Sunphuarơ (SO ₂)	mg/Nm ³	125
	Dust (PM ₁₀)	mg/Nm ³	150
II	Noise		TC 3733/2002
	From 6h to 22h	dB	< 85
III	Surface water		Regulations of Vietnam 08: 2008/ MOER
	pH		6-8,5
	Total suspended solids (TSS)	mg/l	20
	Mercury (Hg)	mg/l	0,001
	Phosphat (PO ₄ -)	mg/l	0,1
	COD	mg/l	10
	BOD ₅ (20 ^o C)	mg/l	4
	Coliform	MPN/100m	2500
IV	Ground water		Regulations of Vietnam 09: 2008/ MOER
	Total suspended solids	mg/l	1500
	Fe	mg/l	5
	Mangan(Mn)	mg/l	0,5
	Mercury (Hg)	mg/l	0,001
	Coliform	Con/100ml	3
V	Solid waste, sludge, waste		Waste during construction and production are collected and classified in accordance handled in accordance with the hazardous waste components under decision No. 23/2006/UD- MOER, Circular No. 12/2006 / TT- MOER of minister environmental resources

¹ Posted next level criteria specified by an average 24 hours applies to all kinds of waste air

Appendix 2.

Standard

Water quality standards:

Level A1 of the environmental quality of water - National Technical Regulations for Surface Water Quality (08 Regulations of Vietnam: 2008/MOER)

National Technical Regulations on the quality of groundwater (09 Regulations of Vietnam: 2008/MOER)

Regulation 1369/QD-BYT

Standard Ambient Air Quality

Air quality - National Technical Regulations on ambient air quality (Regulations of Vietnam 05:2009 / MOER) for residential areas;

Noise quality standards

Noise in residential areas and public places - the maximum noise level permitted (TC 3733 / 2002)

Prevention of accidents: Project application and maintenance of fire protection measures, labor safety and reduce pollution as described in the report, while enhancing the training of staff to strengthen resource management, minimize the environmental pollution

The requirements of World Bank

According to the requirements of the World Bank, the environmental assessment report should satisfy the original policy of the Bank the following:

- Operational policy 4:01 on environmental assessment
- Operational policy 4:04 on natural habitat
- Operational policy 4:20 on indigenous people.

Appendix 3.

The parameters for monitoring and analysis unit (Circular No. 83/2002/TT-BTC September 25, 2002 issued by Ministry of Finance regulations on invoices and management of cost expenditure and comments from standardization activities and measurement)

Table 20 - Analysis of surface water

No.	Parameters	Price (VND)	Note
01	pH	30.000	Circular No. 83/2002/TT
02	BOD ₅	80.000	Circular No. 83/2002/TT
03	TSS	50.000	Circular No. 83/2002/TT
04	Mecurry	60.000	Circular No. 83/2002/TT
05	Phosphat(PO4)	60.000	Circular No. 83/2002/TT
06	General bacilli	60.000	Circular No. 83/2002/TT
<i>Total</i>		<i>340.000</i>	

Table 21 - Analysis of ground water

No	Parameters	Price (VND)	Note
02	Total suspended solids	50.000	Circular No. 83/2002/TT
07	Fe	50.000	Circular No. 83/2002/TT
09	Mangan(Mn)	60.000	Circular No. 83/2002/TT
13	Mecurry (Hg)	300.000	Circular No. 83/2002/TT
14	General bacilli	60.000	Circular No. 83/2002/TT
	<i>Total</i>	<i>520.000</i>	

Table 22 - Analysis of Emission and Ambient Air Quality

No	Parameters	Price (VND)	Note
01	PM10	60.000	Circular No. 83/2002/TT
02	SO ₂	300.000	Circular No. 83/2002/TT
03	NO ₂	300.000	Circular No. 83/2002/TT
04	CO	300.000	Circular No. 83/2002/TT
05	Noise	50.000	Circular No. 83/2002/TT
	<i>Total</i>	<i>1.010.000</i>	

Appendix 4. *Chart positions affected*

Appendix 5. *Commitment to environmental protection*

BIÊN BẢN HỌP THAM VẤN MÔI TRƯỜNG VÀ TÁI ĐỊNH CU
Các tiểu dự án cấp nước và vệ sinh nông thôn của 8 xã tỉnh Nam Định(GĐ 4)

Địa điểm họp: Văn phòng UBND xã Bình Hòa, huyện Giao Thủy, tỉnh Nam Định

Thời gian: 13.h.30 ngày 04 tháng 8 năm 2010

Thành phần tham dự:

**Ban Quản lý dự án và Công ty CP nước sạch & VSNT Nam Định*

- Ông: *Vương Duy Nam* - Chức vụ: *Giám đốc*

- Ông: *Ngô Văn Minh* - Chức vụ: *Cáo bộ*

**Đơn vị tư vấn Công ty TNHH Tư vấn Cơ sở Hạ tầng Môi Trường và Xã hội*

- Ông (Bà): *Nguyễn Thị Hòa* - Chức vụ: *Giám đốc*

- Ông (Bà): *Chu Thị Thanh Châu* - Chức vụ: *T. V. viên*

**UBND xã Bình Hòa huyện Giao Thủy, tỉnh Nam Định*

- Ông: *Phạm Quang Tuấn* - Chức vụ: *Chủ tịch UBND*

- Ông: *Phạm Việt Hà* - Chức vụ: *Cáo bộ địa phương*

Các cán bộ của Ban quản lý dự án, đơn vị tư vấn và đại diện các tổ chức đoàn thể trường thôn và các hộ dân khu vực trung dụng đất cho xây dựng dự án.

NỘI DUNG THAM VẤN

1. Giới thiệu dự án:

Tên dự án: Các tiểu dự án cấp nước và vệ sinh nông thôn của 08 tỉnh Nam Định thuộc dự án cấp nước sạch và vệ sinh nông thôn đồng bằng sông Hồng. Vay vốn WB.

**Phân loại môi trường thuộc nhóm B:*

**Địa điểm xây dựng: xã Bình Hòa, huyện Giao Thủy, tỉnh Nam Định*

**Mục tiêu dự án:*

Cải thiện điều kiện cấp nước và công trình vệ sinh cho người dân khu vực dự án. Gồm các hạng mục như sau:

- Xây dựng/ cải tạo hạ tầng cấp nước và vệ sinh nông thôn

- Giáo dục truyền thông nhằm thay đổi hành vi vệ sinh, cải thiện sức khỏe cộng đồng.

- Nâng cao năng lực và khả năng của cộng đồng và các cơ quan địa phương để thực hiện dự án.

- Quản lý và giám sát dự án.

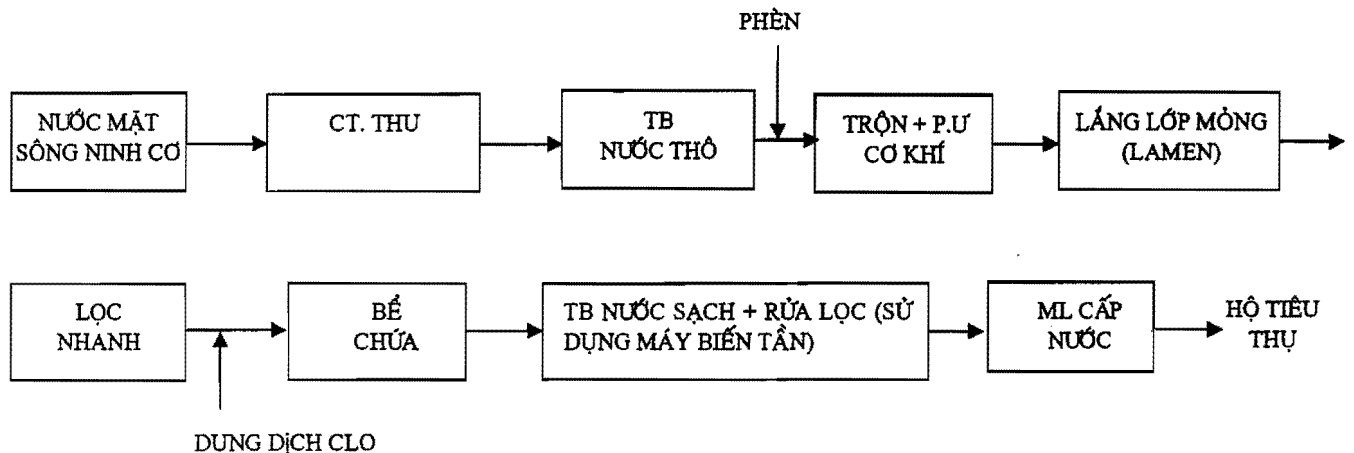
** Tổng mức đầu tư: 225.824.119.880 đồng.*

** Công suất của hệ thống cấp nước: 9500 m³/ ngày.*

** Số dân được cấp nước đến năm 2020: 75074 người.*

** Nguồn nước: Sông Ninh Cơ*

** Công nghệ xử lý:*



2. Tác động môi trường và các biện pháp giảm thiểu:

2.1 Tác động của dự án:

Trạm bơm tăng áp xây dựng tại xã Bình Hòa với diện tích chiếm đất là 1.715 m², tổng diện tích thu hồi đất là 1.715m². Đây hoàn toàn là diện tích đất nông nghiệp thuộc quyền sử dụng của UBND xã Bình Hoà.

Trạm xử lý nước xây dựng tại xã Giao Tiến với diện tích chiếm đất là 15.000m², có 33 hộ bị ảnh hưởng với tổng diện tích thu hồi đất là 15.552m².

2.2 Biện pháp giải quyết:

TT	Tác động môi trường	Biện pháp giảm thiểu
I	Giai đoạn chuẩn bị dự án	
1	Thu bồi đất đai, trưng dụng đất tạm thời hoặc lâu dài	-Khảo sát kỹ lưỡng, lựa chọn phương án kỹ thuật, vị trí thi công tối ưu nhất -Có chính sách đền bù hợp lý.
2	ảnh hưởng đến hệ sinh thái, phá huỷ thảm thực vật(ruộng lúa, hoa màu....)	Tránh thi công vào khu vực có giá trị sinh thái cao
II	Giai đoạn thi công	
1	Nhiễm bẩn nước	-Công tác đào đất phải được tiến hành trong thời gian ngắn nhất. -Nguyên vật liệu xây dựng phải được bảo quản trong kho và tránh mưa gió.
2	ảnh hưởng đến giao thông	-Phối hợp với địa phương để sắp xếp tránh thi công giờ cao điểm, đặc biệt khu đông dân cư.
3	An toàn	-Áp dụng các biện pháp an toàn (Thiết bị, vật dụng, biển báo...).

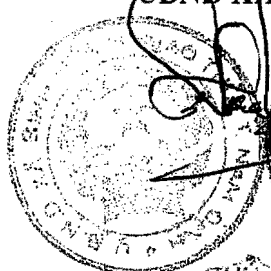
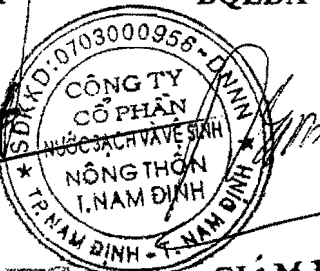
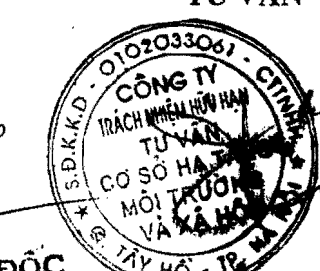
III	Giai đoạn quản lý và vận hành	
1	Tiếng ồn do hoạt động của trạm bơm, trạm xử lý nước	-Kiểm tra độ ồn 6 tháng 1 lần
2	Rủi ro do rò rỉ hoá chất (phen, nhôm, cho hoạt tính) và tai nạn trong vận hành	-Hàng tháng kiểm tra các biện pháp khẩn cấp khi có sự cố rò rỉ hoá chất, nguồn nước. -Hàng tháng kiểm tra chất lượng nước thô và nước sau xử lý (đối với tiêu chuẩn cơ bản nhóm A) và hàng năm (đối với chỉ tiêu cơ bản nhóm B) theo tiêu chuẩn 1329/2002/BYT/QĐ.

2.3 Quan điểm của người bị ảnh hưởng:

Quan điểm chung. Các cuộc điều tra KT-XH và khảo sát tác động của dự án đã được thực hiện qua phỏng vấn trực tiếp những người bị ảnh hưởng. Kết quả ban đầu cho thấy, khi được hỏi về quan điểm và mong muốn của họ về ảnh hưởng của việc thu hồi đất và đền bù. Đa số những hộ bị ảnh hưởng đều sẵn lòng giao đất khi họ nhận được đền bù và hỗ trợ hợp lý.

3.Các hoạt động tiếp theo:

- Hoàn thiện báo cáo môi trường và tái định cư, phổ biến thông tin các hoạt động của dự án, thông tin môi trường tái định cư đến mọi người dân.
- Công khai kế hoạch đền bù sau khi dự án được phê duyệt.

<p>ĐẠI DIỆN UBND XÃ</p>  <p>CHỦ TỊCH PHẠM QUANG TUYẾN</p>	<p>ĐẠI DIỆN BQLDA</p>  <p>GIÁM ĐỐC VƯƠNG DUY NAM</p>	<p>ĐẠI DIỆN TƯ VẤN</p>  <p>GIÁM ĐỐC Nguyễn Kiều Hoàn</p>	<p>ĐẠI DIỆN NGƯỜI BỊ ẢNH HƯỞNG</p> <p>Nguyễn Quang Thuận</p>
---	---	--	--

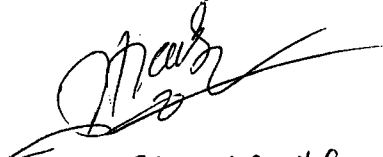
DANH SÁCH THAM DỰ HỘI NGHỊ

Nội dung: ...Thảo luận... Văn... Lòng... Mối... và... tại... ca.....

Thời gian: 13h30.04/08/2010 **Địa điểm:** UBND xã... Bình... Hoa.....

STT	Họ và tên	Chức vụ	Đơn vị công tác	Ghi chú	Ký tên
1	Phạm Văn Triệu	Chủ tịch	UBND xã		<i>[Signature]</i>
2	Nguyễn Văn Tuyên	Chủ tịch	UBND xã		<i>[Signature]</i>
3	Phạm Văn Dũng	Chủ tịch	UBND xã		<i>[Signature]</i>
4	Vương Duy Nam	Chủ tịch	BQL Dự án		<i>[Signature]</i>
5	Ngô Văn Khết	Chủ tịch	BQL DA		<i>[Signature]</i>
6	Nguyễn Tô Hoàng	Chủ tịch	Công ty SPI		<i>[Signature]</i>
7	Nguyễn Thị Thanh Châu	Chủ tịch	Công ty SPI		<i>[Signature]</i>
8	Phạm Văn Tuyên	Chủ tịch	Xã Bình Hoa		
9	Phạm Văn Hòa	Chủ tịch	Xã Bình Hoa		
10	Chu Thị Thanh Châu	Chủ tịch	Cty SPI		<i>[Signature]</i>

NGƯỜI LẬP BIỂU


 Chu Thị Thanh Châu

BIÊN BẢN HỌP THAM VẤN MÔI TRƯỜNG VÀ TÁI ĐỊNH CU
Các tiểu dự án cấp nước và vệ sinh nông thôn của 8 xã tỉnh Nam Định(GĐ 4)

Địa điểm họp: Văn phòng UBND xã Giao Tiến, huyện Giao Thủy, tỉnh Nam Định

Thời gian: 8 giờ ngày 04 tháng 08 năm 2010

Thành phần tham dự:

***Ban Quản lý dự án và Công ty CP nước sạch & VSNT Nam Định**

- Ông: *Vũ Văn Nam*, - Chức vụ: *Quản lý*

- Ông: *Nguyễn Văn Minh*, - Chức vụ: *CB*

***Đơn vị tư vấn Công ty TNHH Tư vấn Cơ sở Hạ tầng Môi Trường và Xã hội**

- Ông (Bà): *Nguyễn Thị Hoa*, - Chức vụ: *Giám đốc*

- Ông (Bà): *Nguyễn Thị Huệ*, - Chức vụ: *T.Đ. viên*

***UBND xã Giao Tiến huyện Giao Thủy tỉnh Nam Định**

- Ông: *Cao Xuân Chiến*, Chức vụ: *Ph. Chủ tịch UBND*

- Ông: *Mai Xuân Hiệp*, Chức vụ: *Chủ tịch địa phương*

Các cán bộ của Ban quản lý dự án, đơn vị tư vấn và đại diện các tổ chức đoàn thể trường thôn và các hộ dân khu vực trung dụng đất cho xây dựng dự án.

NỘI DUNG THAM VẤN

1. Giới thiệu dự án:

Tên dự án: Các tiểu dự án cấp nước và vệ sinh nông thôn của 08 tỉnh Nam Định thuộc dự án cấp nước sạch và vệ sinh nông thôn đồng bằng sông Hồng. Vay vốn WB.

* Phân loại môi trường thuộc nhóm B:

* Địa điểm xây dựng: xã Giao Tiến, huyện Giao Thủy, tỉnh Nam Định.

* Mục tiêu dự án:

Cải thiện điều kiện cấp nước và công trình vệ sinh cho người dân khu vực dự án. Gồm các hạng mục như sau:

- Xây dựng/ cải tạo hạ tầng cấp nước và vệ sinh nông thôn

- Giáo dục truyền thông nhằm thay đổi hành vi vệ sinh, cải thiện sức khỏe cộng đồng.

- Nâng cao năng lực và khả năng của cộng đồng và các cơ quan địa phương để thực hiện dự án.

- Quản lý và giám sát dự án.

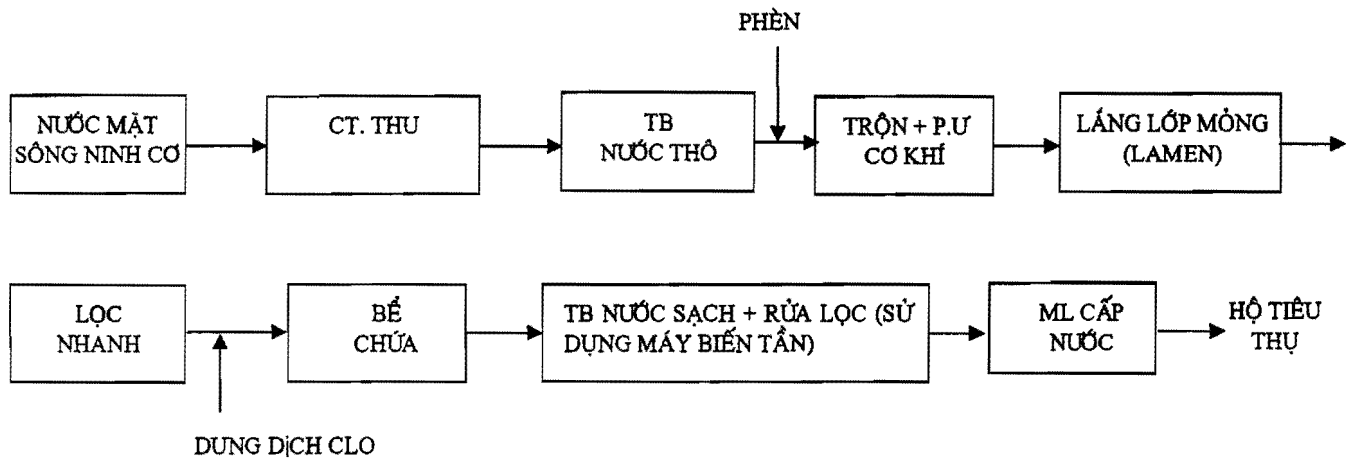
* Tổng mức đầu tư: 225.824.119.880 đồng.

* Công suất của hệ thống cấp nước: 9500 m³/ ngày.

* Số dân được cấp nước đến năm 2020: 75074 người.

* Nguồn nước: Sông Ninh Cơ

* Công nghệ xử lý:



2. Tác động môi trường và các biện pháp giảm thiểu:

2.1 Tác động của dự án:

Trạm bơm tăng áp xây dựng tại xã Bình Hòa với diện tích chiếm đất là 1.715 m² tổng diện tích thu hồi đất là 1.715m². Đây hoàn toàn là diện tích đất nông nghiệp thuộc quyền sử dụng của UBND xã Bình Hoà.

Trạm xử lý nước xây dựng tại xã Giao Tiến với diện tích chiếm đất là 15.000m², có 33 hộ bị ảnh hưởng với tổng diện tích thu hồi đất là 15.552m².

2.2 Biện pháp giải quyết:

TT	Tác động môi trường	Biện pháp giảm thiểu
I	Giai đoạn chuẩn bị dự án	
1	Thu bồi đất đai, trưng dụng đất tạm thời hoặc lâu dài	-Khảo sát kỹ lưỡng, lựa chọn phương án kỹ thuật, vị trí thi công tối ưu nhất -Có chính sách đền bù hợp lý.
2	ảnh hưởng đến hệ sinh thái, phá huỷ thảm thực vật(ruộng lúa, hoa màu....)	Tránh thi công vào khu vực có giá trị sinh thái cao
II	Giai đoạn thi công	
1	Nhiễm bản nước	-Công tác đào đất phải được tiến hành trong thời gian ngắn nhất. -Nguyên vật liệu xây dựng phải được bảo quản trong kho và tránh mưa gió.
2	ảnh hưởng đến giao thông	-Phối hợp với địa phương để sắp xếp tránh thi công giờ cao điểm, đặc biệt khu đông dân cư.
3	An toàn	-Áp dụng các biện pháp an toàn (Thiết bị, vật dụng, biển báo...).

III	Giai đoạn quản lý và vận hành	
1	Tiếng ồn do hoạt động của trạm bơm, trạm xử lý nước	-Kiểm tra độ ồn 6 tháng 1 lần
2	Rủi ro do rò rỉ hoá chất (phen, nhôm, cho hoạt tính) và tai nạn trong vận hành	-Hàng tháng kiểm tra các biện pháp khẩn cấp khi có sự cố rò rỉ hoá chất, nguồn nước. -Hàng tháng kiểm tra chất lượng nước thô và nước sau xử lý (đối với tiêu chuẩn cơ bản nhóm A) và hàng năm (đối với chỉ tiêu cơ bản nhóm B) theo tiêu chuẩn 1329/2002/BYT/QĐ.

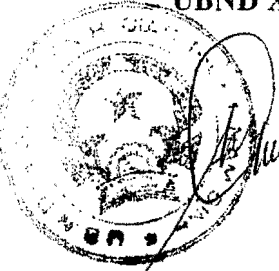
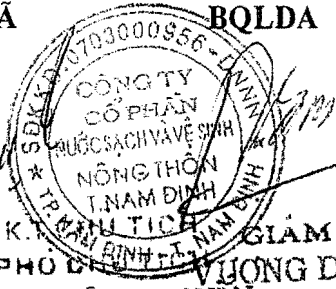
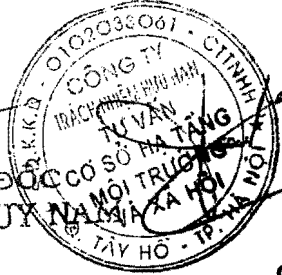
2.3 Quan điểm của người bị ảnh hưởng:

Quan điểm chung. Các cuộc điều tra KT-XH và khảo sát tác động của dự án đã được thực hiện qua phỏng vấn trực tiếp những người bị ảnh hưởng. Kết quả ban đầu cho thấy, khi được hỏi về quan điểm và mong muốn của họ về ảnh hưởng của việc thu hồi đất và đền bù. Đa số những hộ bị ảnh hưởng đều sẵn lòng giao đất khi họ nhận được đền bù và hỗ trợ hợp lý.

3. Các hoạt động tiếp theo:

- Hoàn thiện báo cáo môi trường và tái định cư, phổ biến thông tin các hoạt động của dự án, thông tin môi trường tái định cư đến mọi người dân.
- Công khai kế hoạch đền bù sau khi dự án được phê duyệt.

ĐẠI DIỆN UBND XÃ ĐẠI DIỆN BQLDA ĐẠI DIỆN TƯ VẤN ĐẠI DIỆN NGƯỜI BỊ ẢNH HƯỞNG

   *Đào Ngọc Bích*

Biết

PHÓ CHỦ TỊCH GIÁM ĐỐC CƠ SỞ HÀ TANG *Nguyễn Võ Hoàn*
 VƯƠNG DUY NAM TÂY HỒ - TP. HÀ NỘI

CAO XUÂN CHIẾN

DANH SÁCH THAM DỰ HỘI NGHỊ

Nội dung: ... Họp... Tham... Vấn... M.T. ... Tài... Ảnh... C.A.

Thời gian: ... 07/12/2007 ... Địa điểm: ... UBND xã ... Cao... Tiến ...

STT	Họ và tên	Chức vụ	Đơn vị công tác	Ghi chú	Ký tên
1	Mai Văn Dương	Chủ hộ	Xóm 7		
2	Lê Huy Thảo	Chủ hộ	Xóm 7		
3	Đào Mai Biêt	Chủ hộ	Xóm 7		
4	Phạm Văn Rư	Chủ hộ	Xóm 7		
5	Phạm Thị Thúy	Chủ hộ	Xóm 7		
6	Phạm Thị Hợp	Chủ hộ	Xóm 7		
7	Vũ Văn Chính	Chủ hộ	Xóm 7		
8	Mai Văn Phương	Chủ hộ	Xóm 7		
9	Vũ Thị Hoài (Đô Thị Dệt)	Chủ hộ	Xóm 7		
10	Hoàng Văn Thành	Chủ hộ	Xóm 7		
11	Cao Thị Bích	Chủ hộ	Xóm 7		
12	Hoàng Văn Hiến	Chủ hộ	Xóm 7		
13	Nguyễn Thị Sang	Chủ hộ	Xóm 7		
14	Hoàng Văn Hiến	Chủ hộ	Xóm 7		
15	Hoàng Văn Viêng	Chủ hộ	Xóm 7		
16	Hoàng Văn Kiên	Chủ hộ	Xóm 7		
17	Hoàng Văn Kiên	Chủ hộ	Xóm 7		
18	Nguyễn Văn Luân	Chủ hộ	Xóm 7		
19	Hoàng Văn Chánh	Chủ hộ	Xóm 7		
20	Nguyễn Văn Luân	Chủ hộ	Xóm 7		
21	Hoàng Văn Chánh	Chủ hộ	Xóm 7		
22	Lê Văn Dũng	"	"		
23	Cao Văn Bàn	"	"		
24	Hoàng Văn Hoài	"	"		
25	Hoàng Văn Tôn	"	"		
26	Cao Văn Tâm	"	"		
27	Cao Văn Đạt	"	"		
28	Cao Văn Thiệu	"	"		
29	Cao Văn Trúc	Chủ hộ	Xóm 7		
30	Cao Văn Luân	"	"		
31	Cao Văn Đề	"	"		
32	Cao Văn Kinh	"	"		
33	Cao Văn Trường	"	"		

NGƯỜI LẬP BIỂU

DANH SÁCH THAM DỰ HỘI NGHỊ

Nội dung:

Thời gian: Địa điểm:

STT	Họ và tên	Chức vụ	Đơn vị công tác	Ghi chú	Ký tên
34)	Vương Duy Nam	Chủ tịch Hội	BQL Dự Án		
35)	Ngô Văn Kình	Cán bộ	BQL Dự Án	<i>[Signature]</i>	<i>[Signature]</i>
36)	Cao Xuân Chiến	PC UBND xã	Giáo Tiên		
37)	Mai Xuân Hiệp	CB Hội đồng	xã Giáo Tiên		<i>[Signature]</i>
38)	Nguyễn Tô Hoàn	Chủ tịch	Công ty SFT	<i>[Signature]</i>	<i>[Signature]</i>
39)	Nguyễn Thu Nhung	Trưởng	Công ty SFT		<i>[Signature]</i>
40)	Chu Thị Thanh Liên	Trưởng	Công ty SFT		<i>[Signature]</i>

NGƯỜI LẬP BIỂU

[Signature]
Chu Thị Thanh Liên

Số: 6.59/GXN-UBND

Giao Thủy, ngày 20 tháng 10 năm 2010

**GIẤY XÁC NHẬN ĐĂNG KÝ
BẢN CAM KẾT BẢO VỆ MÔI TRƯỜNG**

**Của Dự án “Cấp nước sạch và vệ sinh nông thôn tại 6 xã huyện Giao Thủy
và xã Thọ Nghiệp huyện Xuân Trường tỉnh Nam Định”**

Căn cứ Luật Bảo vệ môi trường ngày 29 tháng 11 năm 2005;

Căn cứ Nghị định 80/2006/NĐ-CP ngày 09/8/2006 của Chính phủ qui định chi tiết và hướng dẫn thi hành một số điều của luật Bảo vệ môi trường;

Căn cứ Nghị định số 21/2008/NĐ-CP ngày 28/02/2008 của Chính phủ về sửa đổi bổ sung một số điều của Nghị định 80/2006/NĐ-CP ngày 09/8/2006 của Chính phủ qui định chi tiết và hướng dẫn thi hành một số điều của luật Bảo vệ môi trường;

Căn cứ Thông tư số 05/2008/TT-BTNMT ngày 08/12/2009 của Bộ Tài nguyên và Môi trường hướng dẫn về đánh giá môi trường chiến lược, đánh giá tác động môi trường và cam kết bảo vệ môi trường;

Căn cứ Quyết định số 75/2006/QĐ-TTg ngày 12/4/2006 của Thủ tướng Chính phủ ban hành Quy chế làm việc mẫu của UBND huyện, quận, thị xã, thành phố thuộc tỉnh;

Theo đề nghị của Trưởng phòng Tài nguyên và Môi trường,

**ỦY BAN NHÂN DÂN HUYỆN GIAO THỦY
XÁC NHẬN:**

Điều 1. Chủ Dự án là Công ty CP nước sạch và VSNT tỉnh Nam Định đã có Công văn số 190 ngày 07 tháng 10 năm 2010 đăng ký bản cam kết bảo vệ môi trường của Dự án “Cấp nước sạch và vệ sinh nông thôn tại 6 xã huyện Giao Thủy và xã Thọ Nghiệp huyện Xuân Trường tỉnh Nam Định”.

Điều 2. Chủ dự án có trách nhiệm thực hiện đúng và đầy đủ những nội dung về bảo vệ môi trường nêu trong bản cam kết bảo vệ môi trường và những yêu cầu bắt buộc sau đây:

1. Về quản lý và xử lý chất thải:

- Đối với nước thải: Phải có hệ thống xử lý nước thải đạt QCVN 14: 2008/BTNMT Quy chuẩn kỹ thuật quốc gia về nước thải sinh hoạt áp dụng ở cột B với hệ số $k = 1,2$.

- Chất thải rắn: Phải thu gom phân loại ngay tại nguồn và xử lý theo quy định của Nghị định số 59/2007/NĐ-CP ngày 09 tháng 4 năm 2007 của Chính phủ về Quản lý chất thải rắn. Chất thải nguy hại phải thực hiện theo Thông tư số 12/2006/TT-BTNMT ngày 26/12/2006 của Bộ TN&MT.


- Về không khí và tiếng ồn: Khi đi vào hoạt động dự án phải bảo đảm không vượt quá QCVN 05:2009/BTNMT Quy chuẩn kỹ thuật quốc gia về chất lượng không khí xung quanh; QCVN 06:2009/BTNMT Quy chuẩn kỹ thuật quốc gia về một số chất độc hại trong không khí xung quanh; TCVN 5949-1998

- Âm học – Tiếng ồn khu vực công cộng và dân cư – Mức ồn tối đa cho phép

Các tiêu chuẩn, quy chuẩn kỹ thuật được áp dụng trên khi có thay đổi thì vận dụng tiêu chuẩn, quy chuẩn kỹ thuật tương ứng theo văn bản mới nhất. Thực hiện các biện pháp phòng ngừa và ứng phó với các sự cố môi trường. Có phương án, trang thiết bị và lực lượng phòng chống bão, lũ, phòng chống cháy nổ theo đúng quy định của pháp luật

2. Thực hiện chương trình giám sát môi trường theo nội dung cam kết bảo vệ môi trường đã được xác nhận. Định kỳ tối thiểu 06 tháng 1 lần báo cáo kết quả giám sát môi trường về UBND huyện Giao Thủy (qua Phòng Tài nguyên và Môi trường) để kiểm tra, giám sát.

Điều 3. Bản cam kết bảo vệ môi trường của Dự án và Giấy xác nhận này là cơ sở để các cơ quan quản lý nhà nước về bảo vệ môi trường giám sát, kiểm tra, thanh tra việc thực hiện bảo vệ môi trường trong suốt quá trình thi công xây dựng và vận hành Dự án.

Điều 4. Giấy xác nhận này có giá trị kể từ ngày ký./. 

Nơi nhận:

- Chủ dự án;
- Phòng TN-MT;
- Lưu VT.

TM. ỦY BAN NHÂN DÂN

KT. CHỦ TỊCH

PHÓ CHỦ TỊCH



Phùng Văn Nhân

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Giao Châu đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quần dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Giao Châu, huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên

- Lưu VP

Giao Châu, ngày 22 tháng 12 năm 2010



CHỦ TỊCH
TRẦN VĂN THẮNG

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Bình Hòa đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quân dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Bình Hòa, huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên

- Lưu VP

Bình Hòa, ngày 20 tháng 10 năm 2010

T/M UBND XÃ



CHỦ TỊCH
PHẠM QUANG TUYẾN

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Hồng Thuận đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quần dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Hồng Thuận, huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên
- Lưu VP

Hồng Thuận, ngày 20 tháng 10 năm 2010

T/M UBND XÃ



CHỦ TỊCH
NGUYỄN VĂN LẬP

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Giao Hà đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quân dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Giao Hà huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên
- Lưu VP

Giao Hà, ngày 22 tháng 10 năm 2010

T/M UBND XÃ



CHỦ TỊCH
PHÙNG VĂN HUÂN

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Giao Nhân đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quần dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Giao Nhân, huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên
- Lưu VP

Giao Nhân, ngày 20 tháng 10 năm 2010



**CHỦ TỊCH
ĐỖ NGỌC HIÊN**

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Thọ Nghiệp cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quần dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

Các hoạt động công bố thông tin đại chúng tại xã Thọ Nghiệp, huyện Xuân Trường, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên
- Lưu VP

Thọ Nghiệp, ngày 10 tháng 10 năm 2010

TAM UBND XÃ



Phạm Văn Tuyên
**PHÓ CHỦ TỊCH
PHẠM VĂN TUYÊN**

CAM KẾT CÔNG BỐ THÔNG TIN

Kính gửi: - Ngân hàng thế giới – Việt Nam

- Ban QLDA Trung ương

- Ban QLDA Nước sạch & VSNT tỉnh Nam Định

Sau khi nhận được báo cáo đánh giá môi trường và kế hoạch tái định cư của Ban QLDA nước sạch & VSNT tỉnh Nam Định – UBND, xã Giao Tiến đã cam kết thực hiện:

- Việc công bố thông tin về đánh giá môi trường và kế hoạch tái định cư đến tất cả các khu vực dân cư trong toàn xã (bao gồm cả người hưởng lợi và người bị ảnh hưởng)

- Hình thức tổ chức công bố thông tin: Họp BCH Đảng uỷ, thông báo thông tin đến toàn thể đảng viên; Tổ chức hội nghị quần dân chính và tại họp tại cộng đồng xóm đội cơ sở; Trưng bày tại các điểm văn hoá xã; Thông báo rộng rãi trên hệ thống truyền thanh xã

- Những thông tin phản hồi của Cán bộ và nhân dân sẽ được UBND xã giải thích hoặc ghi nhận đầy đủ và gửi về Công ty CP Nước sạch & VSNT tỉnh Nam Định

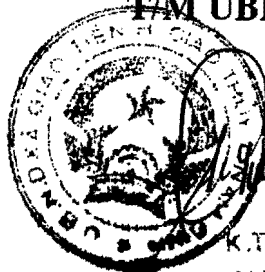
Các hoạt động công bố thông tin đại chúng tại xã Giao Tiến huyện Giao Thủy, tỉnh Nam Định được UBND xã triển khai thực hiện từ ngày ký./.

Nơi nhận

- Như trên
- Lưu VP

Giao Tiến, ngày 22 tháng 10 năm 2010

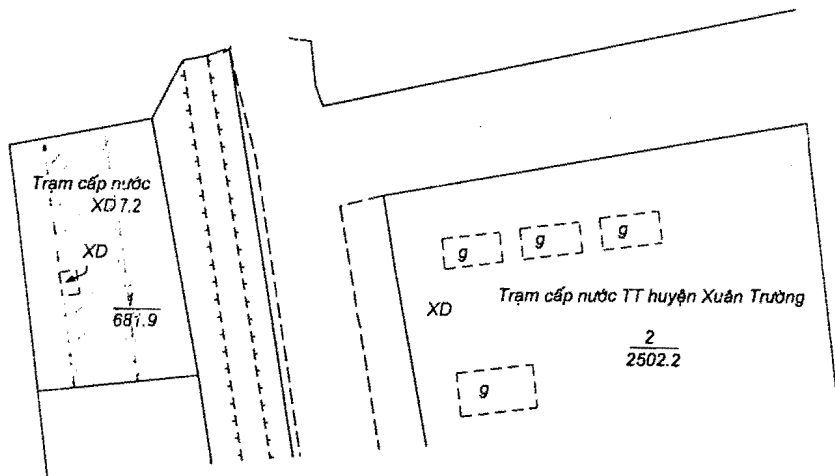
T/M UBND XÃ



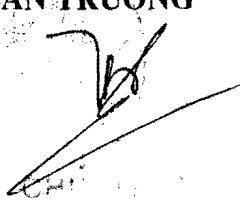


K.T CHỦ TỊCH
PHÓ CHỦ TỊCH
CAO XUÂN CHIẾN

TRÍCH LỤC BẢN ĐỒ ĐỊA CHÍNH KHU ĐẤT
Trạm cấp nước thô dự án cấp nước sạch & VSNT tại 07 xã
huyện Giao Thủy và huyện Xuân Trường tỉnh Nam Định

Vị trí: Tờ bản đồ số: 1 ; thửa số: 01
 Tỷ lệ: 1/1.000



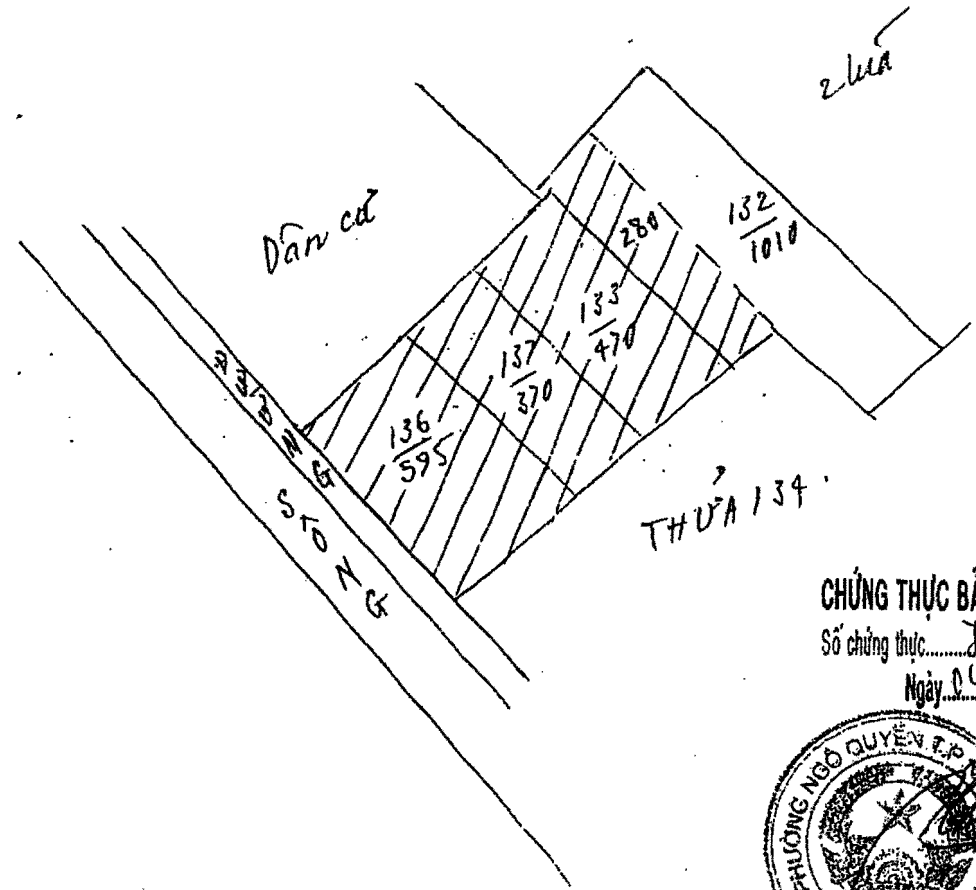
TT.	Tờ BĐ	Số thửa	Loại đất	DT sử dụng	DT thu hồi	Ghi chú	PHÒNG TN & MT
1	1	01		300m ²			Ngày . 31. tháng . 8. năm 2010
2							 TRƯỞNG PHÒNG PHAN VĂN CHIẾN
3							
4							
CÁN BỘ ĐỊA CHÍNH XÃ				TM. UBND THI TRẦN XUÂN TRƯỜNG			
 Nguyễn Phi Yên				 NGUYỄN VĂN CHIẾN			

TRÍCH LỤC BẢN ĐỒ, MẶT BẰNG KHU ĐẤT XÂY DỰNG TRẠM BƠM TĂNG ÁP DỰ ÁN CẤP NƯỚC LIÊN 6 XÃ HUYỆN GIAO THỦY VÀ XÃ THỊ NGHIỆP HUYỆN XUÂN TRƯỜNG

SỐ TỜ: 2 ; SỐ THỬA: 132 + 133 + 136 + 137 ; DIỆN TÍCH: 1715 m² M2; TỶ LỆ: 1/1000




BẢN SAO




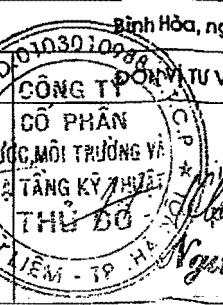
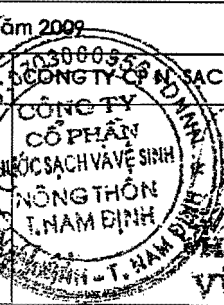
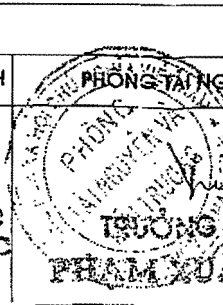
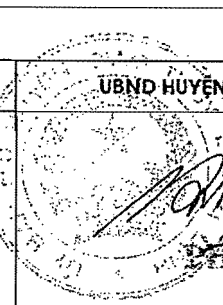
CHỨNG THỰC BẢN SAO ĐÚNG VỚI BẢN CHÍNH
 Số chứng thực: 798 ; Quyền số: 12 SCT/BS
 Ngày: 04 tháng 5 năm 2010



PHÓ CHỦ TỊCH
 HOÀNG THỊ THUY NGÂN

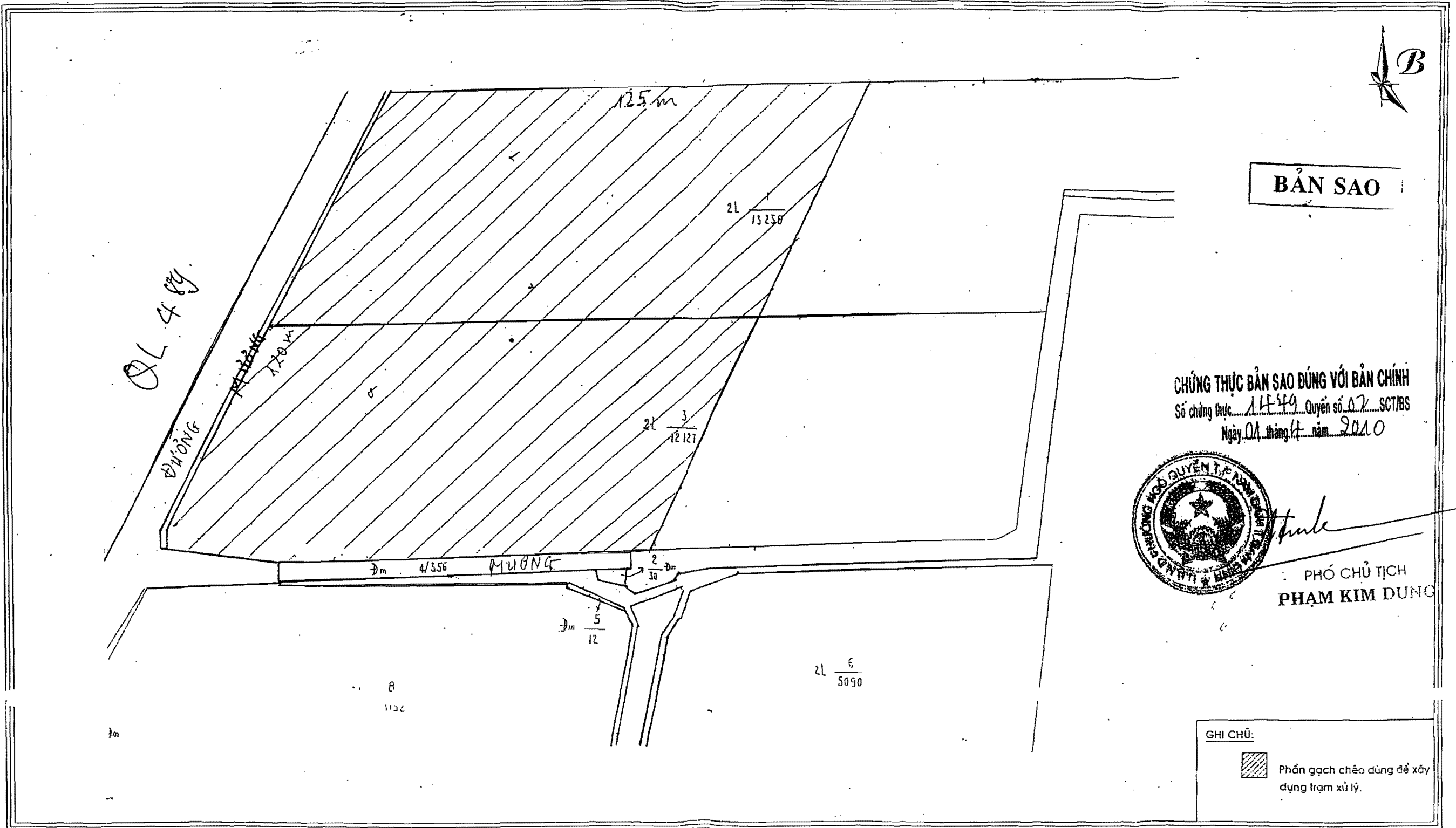
GHI CHÚ:
 Phần gạch chéo dùng để xây dựng trạm xử lý.

Bình Hòa, ngày 16 tháng 12 năm 2009

 UBND XÃ BÌNH HÒA (Signature)	CÁN BỘ ĐỊA CHÍNH XÃ BÌNH HÒA (Signature)	 CÔNG TY CỔ PHẦN HƯỚC MÔI TRƯỜNG VÀ HẠ TẦNG KỸ THUẬT (Signature)	 CÔNG TY CỔ PHẦN DỊCH VỤ SẠCH VÀ VỆ SINH NÔNG THÔN T. NAM ĐỊNH (Signature)	 PHÒNG TÀI NGUYÊN - MT (Signature)	 UBND HUYỆN GIAO THỦY (Signature)
--	---	---	---	---	--

TRÍCH LỤC BẢN ĐỒ, MẶT BẰNG KHU ĐẤT XÂY DỰNG TRẠM CẤP NƯỚC SẠCH 6 XÃ HUYỆN GIAO THỦY VÀ XÃ THO NGHIỆP HUYỆN XUÂN TRƯỜNG

SỐ TỜ: 09 Q. TIẾN ; SỐ THỬA: 1+3 ; DIỆN TÍCH: 15.000 M²; TỶ LỆ: 1/1000



BẢN SAO

CHỨNG THỰC BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Số chứng thực 1449 Quyển số 02 SCT/BS
Ngày 01 tháng 4 năm 2010



PHÓ CHỦ TỊCH
PHẠM KIM DUNG

GHI CHÚ:
Phần gạch chéo dùng để xây dựng trạm xử lý.

Giao tiến, ngày ... tháng ... năm 2009.

UBND XÃ GIAO TIẾN	CÁN BỘ ĐỊA CHÍNH XÃ GIAO TIẾN	ĐƠN VỊ TƯ VẤN	CÔNG TY CP. NƯỚC SẠCH & VSNT NAM ĐỊNH	PHÒNG TÀI NGUYÊN - MT	UBND HUYỆN GIAO THỦY
	 Mười bốn Hiệp				

MẶT BẰNG TỔNG THỂ MẠNG LƯỚI CẤP NƯỚC 7 XÃ
 HUYỆN XUÂN TRƯỜNG, GIAO THỦY TỈNH NAM ĐỊNH



BẢNG THỐNG KÊ KHỐI LƯỢNG ĐƯỜNG ỐNG

Ống DN 100	1.340
Ống DN 150	2.780
Ống DN 200	4.320
Ống DN 250	6.860
Ống DN 300	2.980
Ống DN 350	1.120
Ống DN 400	4.420
Ống DN 450	15.720
Ống DN 500	4.920
Ống DN 600	20.560
Ống DN 700	320
Ống DN 800	20
Ống DN 900	18
Ống DN 1000	270
Ống DN 1200	120

GHI CHÚ:

1. S. 1:100 1:1000 1:5000 KHỐI CHẾ TẠO



CÔNG TY CP
 NƯỚC, MÔI TRƯỜNG
 VÀ HẠ TẦNG KỸ THUẬT
THỦ ĐỘ
THU ĐO WEICO

TÊN CÔNG TRÌNH-PROJECTS:
 XÂY DỰNG HỆ THỐNG CẤP NƯỚC SẠCH
 TIỂU DỰ ÁN LƯÊN 07 XÃ-TỈNH NAM ĐỊNH
 (XÃ THỢ NGHIỆP HUYỆN XUÂN TRƯỜNG
 VÀ 06 XÃ HUYỆN CAO THẮT)
 WATER SUPPLY AND PUBLIC TOILET
 COMMUNE 07-NAM ĐỊNH SUB PROJECT

ĐỊA ĐIỂM-PLACE

TÊN BẢN VẼ -DRAWING NAME:

MẶT BẰNG TỔNG THỂ
 MẠNG LƯỚI CẤP NƯỚC
 7 XÃ TỈNH NAM ĐỊNH

DUYỆT-APPROVED

THS. NGUYỄN HUY KHÔI

CHỦ TRÌ-TEAM LEADER

THS. NGUYỄN VĂN CHÍ

KIỂM-CHECKER

THS. NGUYỄN MẠNH THẮNG

THIẾT KẾ-DESIGNER

KS. HOÀNG HẢI DUYỄN

BẢN VẼ THIẾT KẾ CƠ SỞ
 BASIC DESIGN DRAWING

TỶ LỆ-SCALE: NHƯ BẢN VẼ

NGÀY HOÀN THÀNH-DATE: 08-2010

SỐ HIỆU BẢN VẼ-DRAWING NO:

NH-CN-TT-01



PHIẾU TRẢ KẾT QUẢ XÉT NGHIỆM NƯỚC

Số: 76/XN-CNC-2010

1. Tên mẫu thử: Nước sông Ninh Cơ
2. Cơ sở giao mẫu: Công ty cổ phần Nước, môi trường và hạ tầng kỹ thuật Thủ Đô
3. Địa chỉ: Số 7, đường Thiết Giáp, Cổ Nhuế, Từ Liêm, Hà Nội
4. Số lượng mẫu: 01
5. Ngày nhận mẫu: 08-03-2010

STT	Chỉ tiêu phân tích	Đơn vị	Kết quả phân tích	Giới hạn tối đa cho phép
1.	pH		7,84	6,5 - 8,5
2.	Mùi		Không có mùi vị lạ	Không có mùi vị lạ
3.	Độ đục	NTU	39	2
4.	Độ màu	TCU	49	15
5.	Tổng chất rắn lơ lửng (SS)	mg/l	36	-
6.	Tổng chất rắn hòa tan(TDS)	mg/l	138	1000
7.	Độ cứng toàn phần	mg/lCaCO ₃	113	300
8.	NO ₂ ⁻	mg/l	0,163	3
9.	NO ₃ ⁻	mg/l	3,9	50
10.	Cl ⁻	mg/l	21	250
11.	NH ₄ ⁺	mg/l	0,12	3
12.	Fe tổng	mg/l	0,46	0,3
13.	Mn tổng	mg/l	0,02	0,3
14.	COD	mg/l	2,6	-
15.	Asen	mg/l	<0,005	0,01

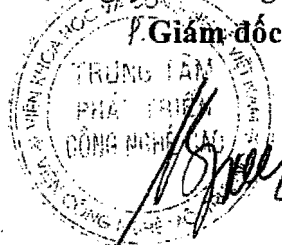
Ghi chú: Giới hạn tối đa cho phép áp dụng theo QCVN 01:2009 - quy chuẩn kỹ thuật quốc gia về chất lượng nước ăn uống do Bộ trưởng bộ y tế ban hành kèm theo Thông tư số 04/2009/TT-BYT ngày 17 tháng 6 năm 2009.

Kết luận: Mẫu nước trên không đạt vệ sinh nước ăn uống về mặt lý hóa (độ đục, độ màu, hàm lượng sắt tổng).

Kiểm nghiệm viên

Phạm Văn Thuận

Hà Nội, ngày 17 tháng 03 năm 2010



Nguyễn Hồng Quân

Ghi chú: Kết quả trên chỉ có giá trị trên mẫu xét nghiệm

MẶT BẰNG ĐỊNH VỊ TRẠM BƠM NƯỚC THÔ-LOCATION OF RAW PUMPING STATION PLAN

TỶ LỆ-SCALE: 1/250



CÔNG TY CP
NƯỚC, MÔI TRƯỜNG
VÀ HẠ TẦNG KỸ THUẬT
THỦ ĐỨC
THU DO WEICO

TÊN CÔNG TRÌNH-PROJECTS:
XÂY DỰNG HỆ THỐNG CẤP NƯỚC SẠCH
HIỆU DŨ AN TIỀN 07 XÃ-TỈNH NAM ĐỊNH
(XÃ THO NGHIỆP HUYỆN XUÂN TRƯỜNG
VÀ 06 XÃ HUYỆN GIÃO THỦY)
WATER SUPPLY AND PUBLIC TOILET
COMMUNE 07-NAM DINH SUB PROJECT

ĐỊA ĐIỂM-PLACE:
XÃ BÌNH HÒA-HUYỆN GIÃO THỦY
TỈNH NAM ĐỊNH
BINH HOA COMMUNE-GIÃO THUY DISTRICT
NAM DINH PROVINCE

TÊN BẢN VẼ-DRAWING NAME:
MẶT BẰNG ĐỊNH VỊ
TRẠM BƠM NƯỚC THÔ
LOCATION OF RAW
PUMPING STATION PLAN

DUYỆT-APPROVED

THS. NGUYỄN HUY KHÔI

CHỦ TRÌ-TEAM LEADER

THS. NGUYỄN VĂN CHÍ

KIỂM-HECKER

THS. NGUYỄN MẠNH THẮNG

THIẾT KẾ-DESIGNER

KS. HOÀNG HẢI DUYỄN

BẢN VẼ THIẾT KẾ CƠ SỞ
BASIC DESIGN DRAWING

TỶ LỆ-SCALE: 1/250

NGÀY HOÀN THÀNH-DATE: 06-2010

SỐ HIỆU BẢN VẼ-DRAWING NO.

ND-CN-NT-01

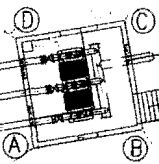


Kê đá

X=2244967.3889
Y=638738.0447

B1
TRẠM BƠM HIỆN TRẠNG
EXISTING PUMPING STATION

B1
X=2244968.3325
Y=638743.4631



X=2244962.9140
Y=638744.4067

X=2244961.9704
Y=638738.9883

SÔNG NINH CỎ

Kê đá

- CỐT SAN NỀN HOÀN THIỆN VỚI HỆ LẠ 1.1.90
ỨNG VỚI HỆ CAO ĐỘ NHÀ NƯỚC
COMPLETE EARTH-EMBANKMENT LEVEL IS 1.1.90

MẶT BẰNG ĐỊNH VỊ TRẠM BƠM TĂNG ÁP BÌNH HÒA

TỶ LỆ: 1/50



CÔNG TY CP
NƯỚC, MÔI TRƯỜNG
VÀ HẠ TẦNG KỸ THUẬT
THỦ ĐÔ
THU ĐO WEICO

TÊN CÔNG TRÌNH-PROJECTS :
XÂY DỰNG HỆ THỐNG CẤP NƯỚC SẠCH
TIỂU DỰ ÁN XÃ NAM HÙNG
HUYỆN NAM TRỰC- TỈNH NAM ĐỊNH
WATER SUPPLY AND PUBLIC TOILET
NAM HUNG SUB PROJECT

ĐỊA ĐIỂM-PLACE:
XÃ NAM HÙNG-HUYỆN NAM TRỰC
TỈNH NAM ĐỊNH
NAM HUNG COMMUNE-NAM TRUC DISTRICT
NAM DINH PROVINCE.

TÊN BẢN VẼ-DRAWING NAME:
MẶT BẰNG ĐỊNH VỊ
TRẠM BƠM TĂNG ÁP BÌNH HÒA

ĐƯỢC-APPROVED

THS. NGUYỄN HUY KHÔI

CHỦ TRÌ-TEAM LEADER

THS. NGUYỄN VĂN CHÍ

KIỂM-CHECKER

THS. NGUYỄN MẠNH THẮNG

THIẾT KẾ-DESIGNER

KS. HOÀNG HẢI DUYỄN

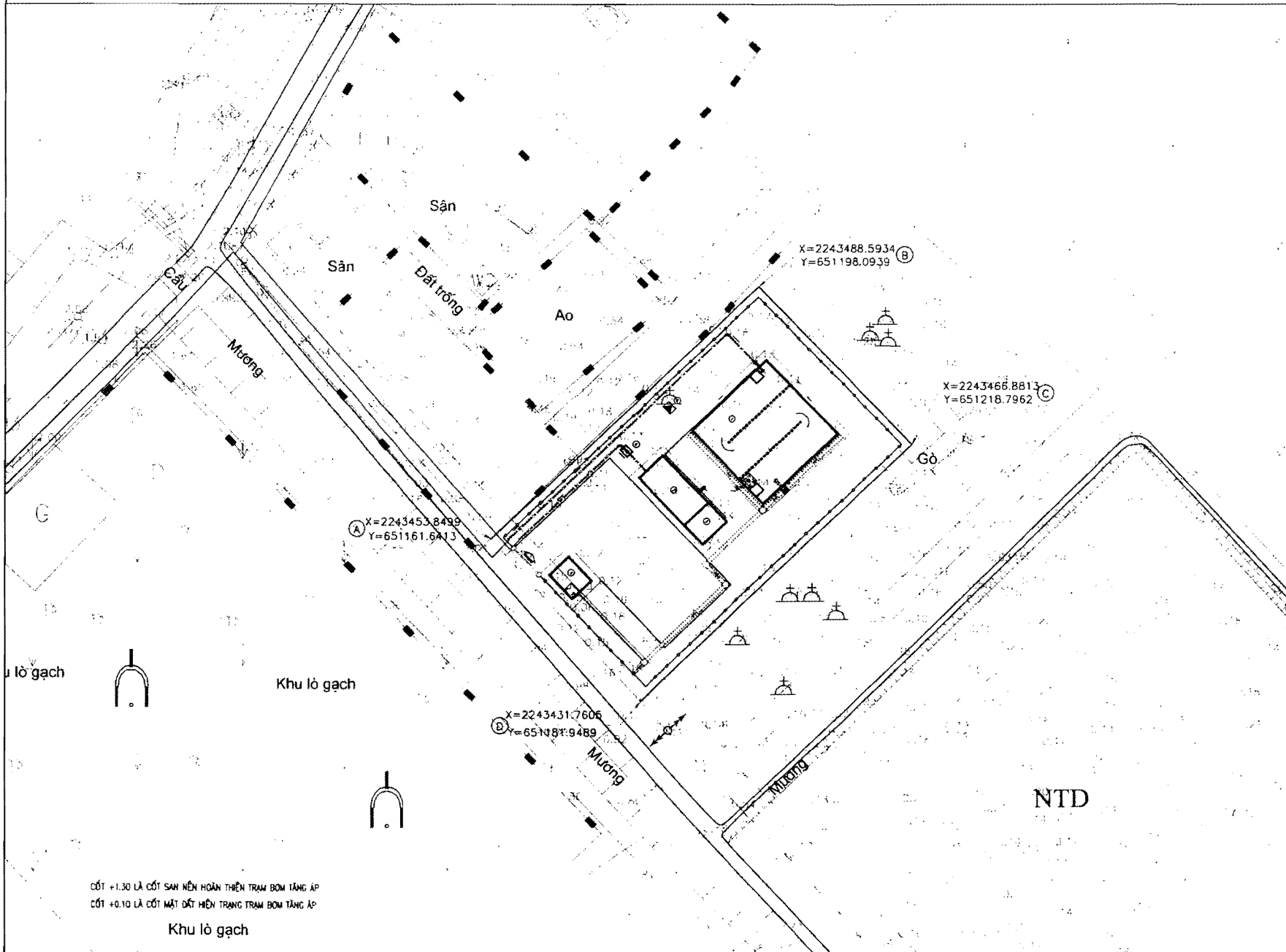
BẢN VẼ THIẾT KẾ CƠ SỞ
BASIC DESIGN DRAWING

TỶ LỆ-SCALE: 1/50

NGÀY HOÀN THÀNH-DATE:

SỐ HIỆU BẢN VẼ-DRAWING NO:

ND-CN-TA-01

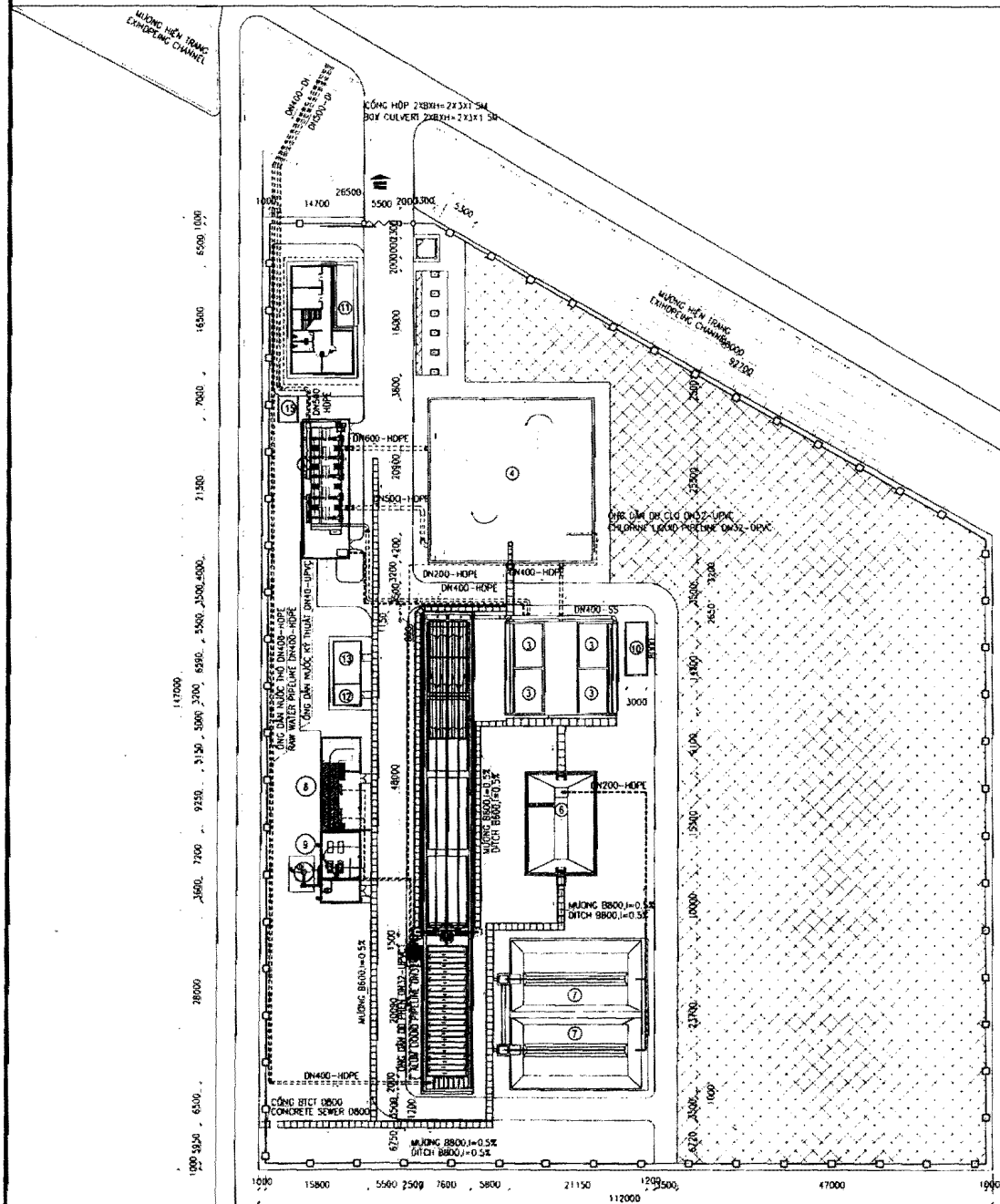


CỘT +1.30 LÀ CỘT SÀN NỀN HOÀN THIỆN TRẠM BƠM TĂNG ÁP
CỘT +0.10 LÀ CỘT MẶT ĐẤT HIỆN TRẠNG TRẠM BƠM TĂNG ÁP

Khu lò gạch

MẶT BẰNG ĐƯỜNG ỐNG KỸ THUẬT TRẠM XỬ LÝ NƯỚC SẠCH - INTERNAL TECHNICAL PIPES OF WATER TREATMENT PLAN

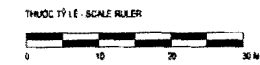
TỶ LỆ SCALE: 1/500



CHỮ THÍCH - LEGEND

- 1 BỂ PHẢN LƯNG VÁCH NGÀM - FLOCCULATION BASIN
- 2 BỂ LẮNG NGÀM - SEDIMENTATION BASIN
- 3 BỂ LỌC RAPID FILTER
- 4 BỂ CHỨA NƯỚC SẠCH - RESERVOIR
- 5 TRẠM BƠM NƯỚC SẠCH - TREATED WATER P.S
- 6 HỒ LẮNG Bùn-SLUDGE LAGOON
- 7 SÀN PHOS BUN - DRYING BED
- 8 NHÀ HÒA CHẤT - CHEMICAL HOUSE
- 9 NHÀ CLO - CHLORINE HOUSE
- 10 SÀN PHOS CAT - DRYING BED FOR SAND
- 11 NHÀ HÀNH CHÍNH - ADMINISTRATION HOUSE
- 12 XƯỞNG SỬA CHỮA - WORKSHOP
- 13 NHÀ HO - HOPEONE HOUSE
- 14 NHÀ BẢO VỆ - GUARD HOUSE
- 15 TRẠM BIẾN ÁP - TRANSFORMER
- 16 NHÀ ĐỂ XE - PARKING HOUSE

- [Symbol] CÁC CÔNG TRÌNH GIAI ĐOẠN 1
WORK INVESTMENT IN HOPEAGE 1
- [Symbol] MÀU ĐẤT DỰ TRÙ
LAND FOR FUTURE



CỐI SAN NÉN HOÀN THIỆN VÀ HẸ LÀ +1.90
 ỨNG VÀ HẸ CAO ĐỘ NHÀ NƯỚC
 COMPLETE EARTH - FINISHMENT LEVEL IS +1.90



CÔNG TY CP
 NƯỚC, MÔI TRƯỜNG
 VÀ HẠ TẦNG KỸ THUẬT
THỦ ĐỨC

TÊN CÔNG TRÌNH
 XÂY DỰNG HỆ THỐNG CẤP NƯỚC SẠCH
 THỦ ĐỨC AN LIÊN ĐỢT XÂY DỰNG MẠM ĐỊNH
 ĐUA THỜI NGHỆP XUYỆN MUẬN TRƯỜNG VÀ
 ĐỀ XÂY MUYỆN CAO THẤT

ĐUA ĐIỀU
 XÂY DỰNG MUYỆN - MUYỆN CAO THẤT
 TỈNH MẠM ĐỊNH

TÊN BẢN VẼ:
**MẶT BẰNG ĐỐT
 TRẠM XỬ LÝ NƯỚC SẠCH
 INTERNAL TECHNICAL PIPES
 OF WATER TREATMENT PLANT**

ĐƯỢC
 T.S. NGUYỄN HUY KHÔN

CHỮ THÌ
 T.S. NGUYỄN VĂN CHÁ

KẸM
 T.S. NGUYỄN VĂN THẮNG

THIẾT KẾ
 K.S. LƯƠNG VĂN MẠNH

BẢN VẼ THIẾT KẾ CƠ SỞ
 TỶ LỆ:
 NGÀY HOÀN THÀNH
 SỐ HIỆU BẢN VẼ.

ND-CN-TXL-26