Initial Environmental Examination (IEE) Report

For

Collection, Transport, Treatment and Disposal of Sewage

Below is the IEE Report Checklist for Collection, Transport, Treatment and Disposal of Sewage. Read the questions carefully before answering in the space provided. Use additional sheets if necessary and indicate this in an appropriate space.

Misleading or erroneous answer are the basis for legal actions and/ or denial of ECC

PROJECT LOCATION: (Complete Address: Street, Barangay, Municipality/City)

Clemente Jose St., Barangay 168, Malibay, Pasay City

NAME OF PROPONENT: **Maynilad Water Services, Inc.**

ADDRESS: (Complete Address: Street, Barangay, Municipality/City)
MWSS Compound, Katipunan Avenue, Barangay Balara, Quezon City

A. GENERAL INFORMATION

1. Project Ownership (attached document as Annex 1)
   Single Proprietorship ____ Partnership _____ Corporation _____
   Others: **Concession**
2. Capitalization & Project Cost
   2.a Capitalization: Authorized _____ paid up _____
   2.b Project Cost: **Php 2,555 Million**
3. Project Components
   - 46 MLD Sewage Treatment Plant
   - 2 - Pumping stations
   - Manhole pumps
   - Force main pipes
   - Interceptors
   - Conveyance manholes

4 Project Site (Attach location and vicinity maps and photographs of front, left, right and rear views for project site as Annex 2 for Treatment and Disposal components only)

4.a Land

4.a.1 Total land area: **1,0676.70 sq.m**.

4.a.2 Land area to be occupied _____

4.a.3 Is the area owned or leased **Covered by Contract to Sell**

4.a.3.1 If leased, period covered **N/A**
(Attach document, TCT as Annex 3)

4.a.4 Access road construction
(Attach right of way document)

4.b Classification (attach locational clearance as Annex 4)
Industrial ✓ Residential _____
Commercial _____ Other, pls. Specify _____

5. Description of Project Phases

5.a. Collection

5.a.1. Manpower Requirement N/A

5.a.2. Equipment to be used

Equipment	Quantity
N/A	N/A
N/A	N/A

Use additional sheet if necessary

5.a.3. Completion time (From site to transport vehicle) _N/A

5.b. Transport

5.b.1. Manpower Requirement N/A

5.b.2. Equipment to be used

Equipment	Quantity
N/A	**N/A**

Use additional sheet if necessary

5.b.3. Completion time (truck to treatment/ disposal site) _N/A

5.c. Treatment (Sewage Treatment Plant)

5.c.1. Pre-Operation Construction Phase

Activity	Timeframe
Feasibility Study	Completed – 2nd quarter 2011
Plans/ Design	STP to be bidded as design and build program Conveyance – 1st quarter 2012
Bid Preparation	STP – 3rd quarter 2013 Conveyance – 3rd quarter 2013
Contract Completion	STP – 4th quarter 2015 Conveyance – 4th quarter 2015
Construction	STP – 4th quarter 2013 Conveyance – 3rd quarter 2013

Use additional sheets if necessary

5.c.2. Manpower requirement: to be determined

5.c.3. Facilities requirement

5.c.3.1. Water Supply

Source	Consumption/day
Local Water District	To be determined
Deepwell	N/A
Surface water	

5.c.3.2. Power Supply

Source of Power Supply	Consumption/day
Local Electric Utility	To be determined
Generator	Standby only
Others (pls. specify)	

5.c.4. Operation Phase

5.c.4.1 Capacity of plant/day _46,000 cu.m./day_

5.c.4.2. Process Flowchart (attach process flowchart)

5.c.4.3. Manpower Requirement: to be determined

5.c.4.4. Other waste generated __Dried Sludge___

Type of waste	Source of waste	Volume of waste	Mode of disposal
Dried Sludge	Activated sludge	6,546 cu.m./day	Integrated sludge management with possible waste to energy scheme

(Use additional Sheet if necessary)

5.c.4.5. Abandonment Phase

Facilities to be abandoned	Waste Generated	Restoration Plan
To be determined	Demolition wastes	N/A
N/A	N/A	N/A

(Use additional Sheet if necessary)

5.d. Disposal (Landfill)

5.d.1. Pre-Operation Construction Phase

Activity	Timeframe
Plans/ Design	N/A
Permits/ Clearances	N/A
Site Preparation and Clearing	N/A
Excavation	N/A
Civil Works	N/A
Finishing	N/A
Installation of equipment	N/A
Commissioning and Start-Up	N/A

Use additional sheets if necessary

5.d.2. Manpower requirement: N/A

5.d.3. Facilities requirement

5.d.3.1.Water Supply

Source	Consumption/day
Local Water District	N/A
Deepwell	N/A
Surface water	N/A

5.d.3.2. Power Supply

Source of Power Supply	Consumption/day
Local Electric Utility	N/A
Generator	N/A
Others (pls. specify)	

5.d.4. Operation Phase

5.d.4.1 Capacity of plant/day _____

5.d.4.2. Process Flowchart (attach process flowchart)

5.d.4.3. Manpower Requirement _____

5.d.4.4. Other waste generated _____

Type of waste	Source of waste	Volume of waste	Mode of disposal

(Use additional Sheet if necessary)

5.d.4.5. Abandonment Phase

Facilities to be abandoned	Waste Generated	Restoration Plan
N/A	N/A	N/A

(Use additional Sheet if necessary)

B. DESCRIPTION OF ENVIRONMENTAL SETTING (For Treatment and Disposal Components Only)

1. Physical Environment

1.a Description of Terrain (% slope)
Flat or level (0-3) _✓_
Level to undulating (3-8) _____
Undulating to rolling (8-18) ____
Rolling to Moderately steep (18-30)____
Moderately steep to steeply mountainous (30-50) _____
Very Steeply mountainous (above 50) _____

1.b Is the area erosion prone? _No_____
If so, what is the status: slight ____ Moderate_____ Severe ____

1.c Are there existing natural hazards in the area, e.g. landslides, gullying, subsidence, etc.? __None____
If yes, please enumerate them _____

1.d Is the site situated along a flood prone/storm surge area _Yes___

1.e Is the project beside or near the shoreline? _No___
if yes, how far? _N/A____

1.f Are there water bodies found inside or near the project site? _Yes
If yes, please enumerate them: Estero de Tripa de Galina, Maricaban creek, and Maricaban Pond

1.g What is the quality of water?
Fresh ___ Brackish ___✓_ Saline/ Salty _____

1.h What is the quality of air?
Poor ____ Fair _✓__ Good _____

2. Biological Environment

2.a Is the project immediately adjacent to a natural ecosystem? _NO___
If yes, please check :
Forest _____ Coastal/ Marine _____ Marshland _____
Grassland _____ Mangrove _____ Wetland _____
Others, please specify _____

2.b Are there any wildlife in the area? _NO__
If yes, please identify and enumerate: _____N/A_____
_____

2.c Are there trees within the project site?YES_____
If yes, please identify and enumerate: Fruit-bearing trees such as Avocado, Coconut, Kamias, Atis, Calamansi, and Mango; and shade trees such as Balite Dalipaweng, Indian tree, ipil-ipil and Balite.

2.d Is there other vegetation within the project site?
If yes, please identify and enumerate: ___ cactus, shrubs, and other garden plants

3. Socio- Economic Environment

3.a Total household to be affected? __NONE_
What will happen to them? _____N/A_____

3.b Will you employ vulnerable groups?N/A Children N/A Handicapped N/A

3.c Are there health facilities within the project site. _Barangay Health Centers___

3.d Are there required benefits under the labor code and other regulations to be enjoyed by the staff? YES
If yes, please enumerate: Distressed Pay / Health Card

3.e Are the local inhabitants to be benefited by the project? YES
Please elaborate Reduce pollution of waterways, improve sanitation and lessen health hazards from wastewater.

3.f Are the cultural norm/ morals and lifestyle of the local inhabitants to be affected by the project? NO
Please elaborate N/A

3.g. Are there oppositions on the project? _NONE___
(Attach document to support the answer as Annex 6)

4. Project Impacts

4.a For Collection, and Transport

Components/ Parameters	Answer Yes	Answer No	Describe Impacts	Describe your Mitigating/ Enhancement Measures
Will it affect ambient air quality in the area		√	N/A	Collected sewage will be transported through water intake and interceptors.
Will the collection/ transport process distract on-going activities in the immediate vicinity?		✓	N/A	N/A
Will the collected sewage immediately proceed to the treatment or disposal area?	✓			
Will the equipment used be immediately cleaned after the respective activities?			N/A	N/A

(Use Additional Sheets If Necessary)

4.b For Treatment and Disposal

Components/ Parameters	**ANSWERS**		**Describe the impacts**	**Describe your Mitigating /Enhancement Measures**
	Yes	**No**		
1. **Pre- Construction / Construction Details**				
Is there land clearing	✓		Clearing of remaining structures will generate demolition wastes.	Clearing activities will be confined in the project site. Seller will be required to conduct clean-up on the site and to properly dispose of any waste materials left at the site prior to turn-over to MWSI.
Is there vegetation clearing	✓		Most of the trees are planted along the periphery but some bushes and shrubs will be cleared.	The existing trees in the periphery may be retained as buffer around the site.

Is there tree cutting	✓		This will be determined once the site development plan is finalized.	Avoid cutting trees to extent possible. Any affected tree can be earthballed and replanted. Tree Earthballing/Cutting Permit will be secured from the DENR.
Is there topsoil removal/replacement?	✓		Topsoil will be removed during the excavation for foundation of structures.	Excess excavated materials must be properly disposed offsite in an LGU and DENR-approved disposal area.
Is there excavation works and cut & fill activities?	✓		Open excavation may cause accidents.	Barricades and warning signages shall be installed in excavations. Steel plate covers and barricades will be provided in open excavation during non-working hours. MWSI's Safety Code shall be imposed in the TOR of the contractor.
Is there stockpiling of sand gravel material in the site?	✓		Stock piling of gravel and sand can cause runoff of materials during heavy rainfall.	Construction materials will be stock piled in designated areas within the construction. Silt traps shall be provided to prevent runoff of materials into the drainage canal. Good housekeeping will be maintained within the construction site.
Is there dust emission into the environment?	✓		Generation of dust and particulates during windy conditions. Impact of dust emission to nearby residential areas is minimal since the area is already fenced.	Dust suppression measures will be employed as necessary during construction. Watering of dust sources to minimize discomfort to nearby residents.
Is there drilling,	✓		Noise will be generated from	Careful programming

boring, & hammering activities?			the drilling, hammering activities, delivery trucks and engine of equipment.	of works by avoiding heavy noise-generating activities at nighttime. Provision of mufflers or noise shield for vehicles / equipment.
Is there any slope modification or ground leveling?		✓		
Is there increased traffic movement in the area?	✓		Traffic congestion may be experienced along the two-lane roads during movement of construction vehicles.	Schedule delivery and movement of construction materials during non-peak hours. Coordinate with the Barangay. Assign security guards at the gate of the project site to assist in traffic movement of construction vehicles entering and exiting the property.
Does the public/community have access to/though the area affected?		✓	The proposed STP site is a private property and is currently fenced.	
Is there an increase economic activity in the area?	✓		Presence of workers at the construction site may contribute to the creation of secondary businesses like food eateries/restaurants.	
Is there increase in the availability of employment?	✓		Local job opportunities will be generated during construction	Contractor will be required to give preference to qualified locals in hiring workers of the project.
Is there displacement of people in the area?		✓		
Will the displacement involve relocation of affected parties?		✓		
2. **Operation and Maintenance Phase**				
Will the project generate wastewater?	✓		Generation of wastewater from personnel cleaning/washing and also domestic sewage.	The STP site will be provided with toilets with septic tanks for workers Wastewater can be directed to STP for treatment.
	✓		Wastewater collected from	Effluent from the

			the sub-basin will be treated at the STP and is expected to result to positive impact to the environment.	STP shall be monitored regularly to ensure compliance with the Effluent Standards of the DENR
Is there an effect on the quality of the receiving body of water?	✓		There is no expected increase in volume of wastewater discharged into the creeks since the same volume will be treated at the STP. Expected effects will be on the improvement of water quality of the wastewater being discharged into the creeks through treatment at the STP.	Regular maintenance of the treatment facility. Water quality monitoring of the influent and effluent water including the quality of the upstream and downstream of the receiving body of water will be planned and monitored.
Is there an increase in surface run- off to other areas?		✓		
Is there increase in water demand?		✓		
Is there air pollution sources equipment to be installed?	✓		Increase SO2 and NOx emission from diesel generator.	Regular maintenance of equipment to ensure that these are working effectively. Maintenance of vegetation buffer around the project site.
Will it affect the ambient air quality of the area?	✓		Emission of odor/smell.	Odor treatment system will be designed for the project. Sludge drying beds will be enclosed with 3-meter concrete wall to confine odor emission. Gas detector equipment/ facility will be installed thus odor problem will be monitored and immediately acted upon. Maintenance of vegetation buffer

				around the project site.
Are there solid wastes to be generated?	✓		Solid wastes such as empty bottles, cans, paper, food wastes, etc. will be generated	Solid waste segregation shall be implemented within the facility. Organic biodegradable wastes shall be segregated from the non-biodegradable wastes through provision of waste segregation bins around the facility. An Ecological Solid Waste Management Plan (ESWMP) shall be implemented.
Are hazardous / toxic waste to be generated?	✓		Hazardous wastes such as empty chemical containers used in the treatment system and from laboratory analysis. Also busted lamps and used oil from maintenance of generator set will be generated.	Hazardous wastes will be segregated from the regular solid wastes. Hazardous Waste Registration shall be applied with the DENR-EMB. Hazardous waste treatment, storage, and disposal (TSD) facility accredited and recognized by the DENR shall be commissioned to collect and properly dispose the generated hazardous wastes.
Are there sludge to be generated?	✓		Sludge will be generated from the STP.	Sludge treatment will be designed that will consider an Integrated Sludge Management system with possible waste to energy scheme.
Will there be of workers to hazards?	✓		Workers may be exposed to health hazards due to exposure to chemicals and wastes.	Implement an Occupation, safety and health program within the facility. Post the MSDS of chemicals used within the facility for

				information and guidance of workers. Orient workers on safety procedures to avoid accidents.
Is there any pollution complaint from the near by residents?		✓		
Is there an increased in crime / security concern in the area?		✓		
Will there be improvement of health and sanitation in the area?	✓		There is expected improvement in health and sanitation in the area due to reduced exposure to untreated sewage.	Effluent quality will be regularly monitored.
Is there an increase in land value?	✓		Improvement of sanitation services and provision of central sewerage system increases land value	Maintenance of the treatment and conveyance facilities.
3.Abandonment & Rehabilitation Phase				
Will any of the facilities be abandoned or demolished after the project life?	✓		Generation of demolition wastes, remaining sanitary wastes.	All waste materials generated during abandonment shall be properly disposed. An abandonment plan shall be prepared.
Will any of the facilities need to be rehabilitated after a certain period of time?	✓		To be determined.	
Is there a generation of solid waste?	✓		Generation of office/domestic solid wastes.	Strict observance of good and responsible housekeeping practices.
Is there an increase traffic movement in the area?	✓		Increased traffic movement will be expected due to frequent movement of vehicles from the site during hauling of materials	Hauling of materials should be done during non-peak hours. Coordination with the local government.

Panoramic view of project site and its immediate vicinity

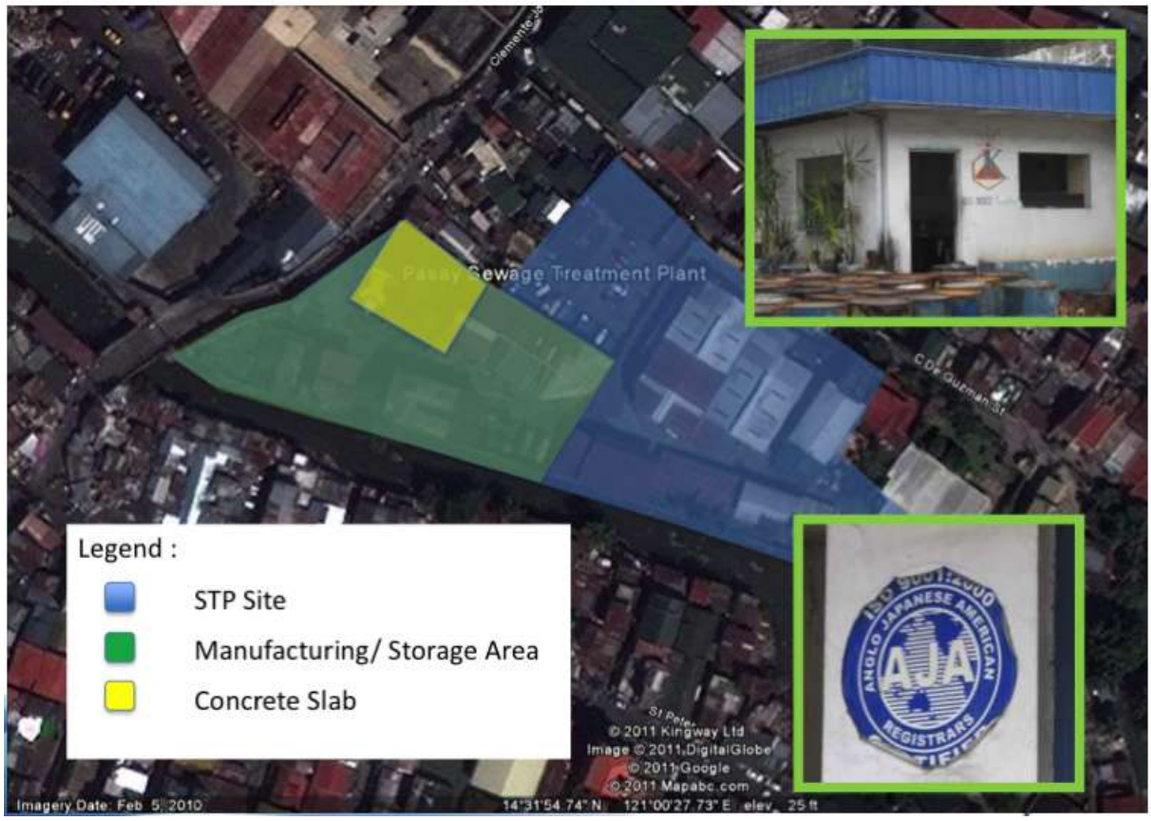

Photo 1. The location of the proposed STP site.

Photo 2. Remaining structures of Kemwerke, former occupant of the site.

Photo 3. Ongoing clean-up activities of Kemwerke at the site prior to turn-over of the property to MWSI.

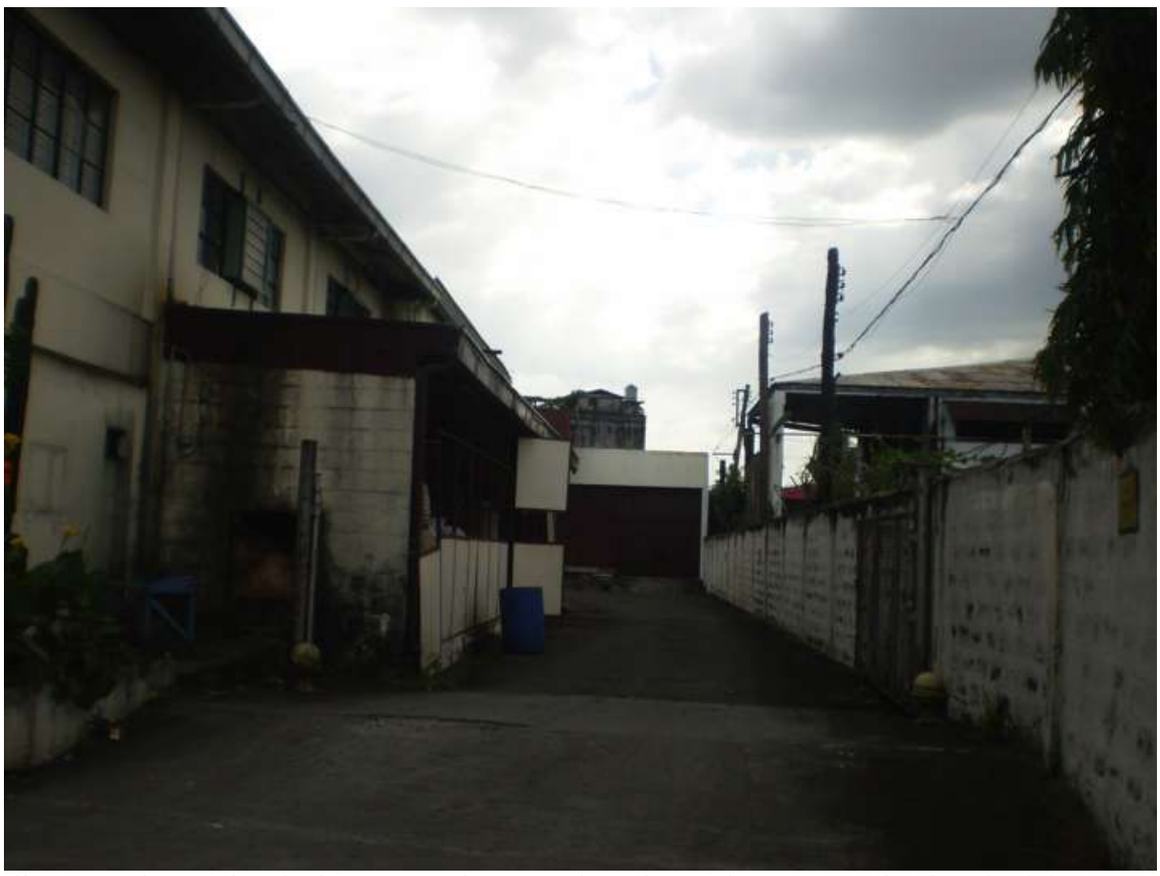

Photo 4. View of the vinyl factory at the central section of the property that is schedule to vacate the property in December 2011.

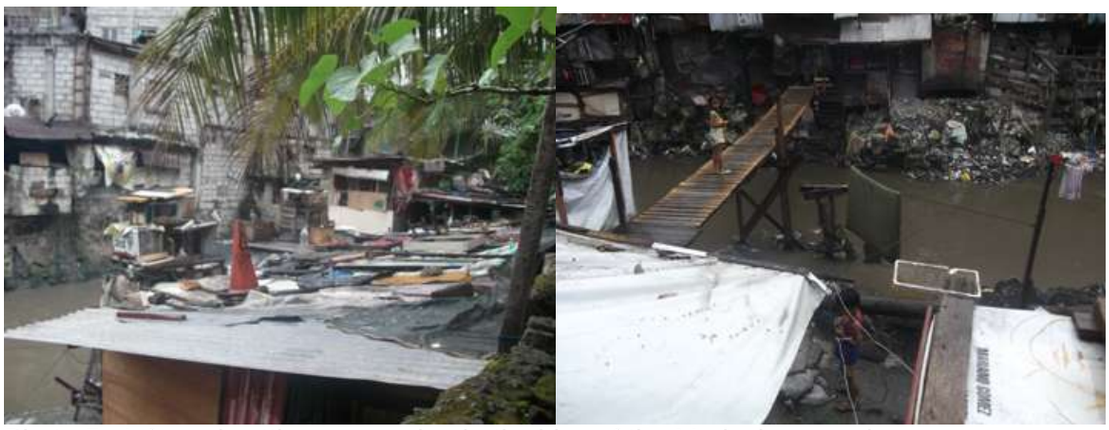

Photo 5. Informal settlers occupying both sides of the Maricaban creek.

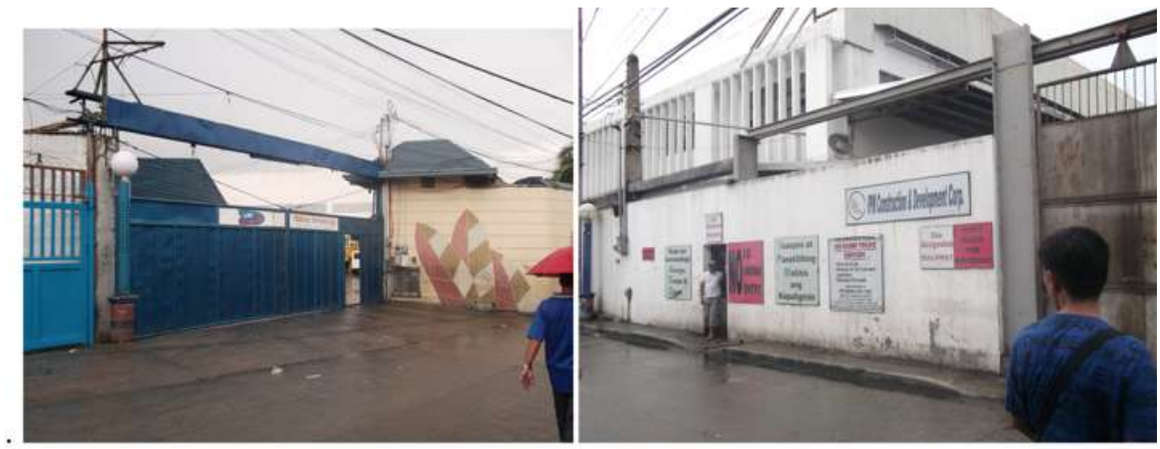

Photo 6. Establishments across Clemente Jose St. from the project site. These are the Hauling Service Corporation (left) and the IPM Construction and Development Corporation (right). Both are engaged in garbage hauling.

Plan/lay-out of project site

Attach drawing /plan of waste water treatment facilities (with dimensions and descriptions)

SEE ATTACHED PLANS AND DRAWINGS

ATTACHMENTS

1. Government Permits and Clearance (attach photocopies of documents)

PERMITS/CLEARANCES	ATTACHED?
Location Clearance/ Certificate ofLocational Viability	
DTI?SEC Registration	
Safety (Fire) Permit	
Municipal/Business Permit	
Other(s)	

DESCRIPTION	ATTACHED?
Transfer Certificate of the Title	
Map/delineation of primary& secondary impact areas	
Colored photo of the site (different perspectives)	
Construction schedule in chart form	
Endorsement from the LGU (Barangay Certificate)	
Environmental Management Plan/ Program	

ACCOUNTABILITY STATEMENT

This is to certify that all the information and commitments in the Initial Environmental Examination (IEE) Report are true, accurate and complete. Should I/we learn if any information, which would make the IEE inaccurate, I/we shall bring, said information to attention of the Environmental Management Bureau of DENR Regional Office.

I/We hereby bind myself/ourselves jointly and solidarity for any penalties that may be imposed arising from and misrepresentations or failure to state material information in the IEE.

FRANCISCO A. ARELLANO
Maynilad Water Services, Inc.
Project Proponent

Senior Vice President
Title/Designation

November 22, 2011
Date

ACKNOWLEDGMENT

BEFORE ME this (day) _____of _____2011 at (place)_____, personality appeared name_____with Community Tax Certificate No. _____issued on _____date_____At (place)_____, in his/her capacity as _____(designation_____at _____ and acknowledged to me that this IEE is his voluntary act and deed, and voluntary act and deed of the entity he/she represents. This document which consists of (no)_____pages, including the page of which this acknowledgment, is an Initial environmental Examination Report Checklist.

Witness my hand and seal on the place and date above written.

_____
Notary Public

Doc. No._____
Page No._____
Book No._____
Series of 2011.