



# Environmental Monitoring Report

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Semestral Report

January to June 2016

## SRI : Dry Zone Urban Water and Sanitation Project (DZUW&SP) – Mannar and Vavuniya Districts

Prepared by DZUW&SP Project Management Unit of National Water Supply & Drainage Board(NWS&DB), for the Ministry of City Development and Water Supply, Sri Lanka and the Asian Development Bank.

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**Asian Development Bank**

ADB ASSISTED DRY ZONE URBAN WATER AND SANITATION PROJECT

# Environmental Management and Monitoring Report

## Projects in Mannar & Vavuniya Districts

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For the period from January to June 2016

Prepared by  
SMEC International in association with Ocyana Consultants and Ceywater Consultants (Pvt) Ltd

On behalf of  
Project Co-ordination Cell of the  
National Water Supply And Drainage Board  
Ministry of City Planning and Water Supply



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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
DPR	Daily Progress Report
DZUWSP	Dry Zone Urban Water & Sanitation Project
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMR	Semi-annual progress report on environmental management and monitoring
EMS	Environmental Method Statement
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
ES	Environmental Specialist
GRC	Grievance Redress Committee
IEE	Initial Environmental Examination
IEER	Initial Environmental Examination Report
ISO	International Organization for Standardization
MSW	Municipal Solid Waste
NBRO	National Building Research Organization
NEA	National Environmental Act
PPE	Personal Protection Equipment
PPTA	Project Preparatory Technical Assistance
SC	Supervision Consultant

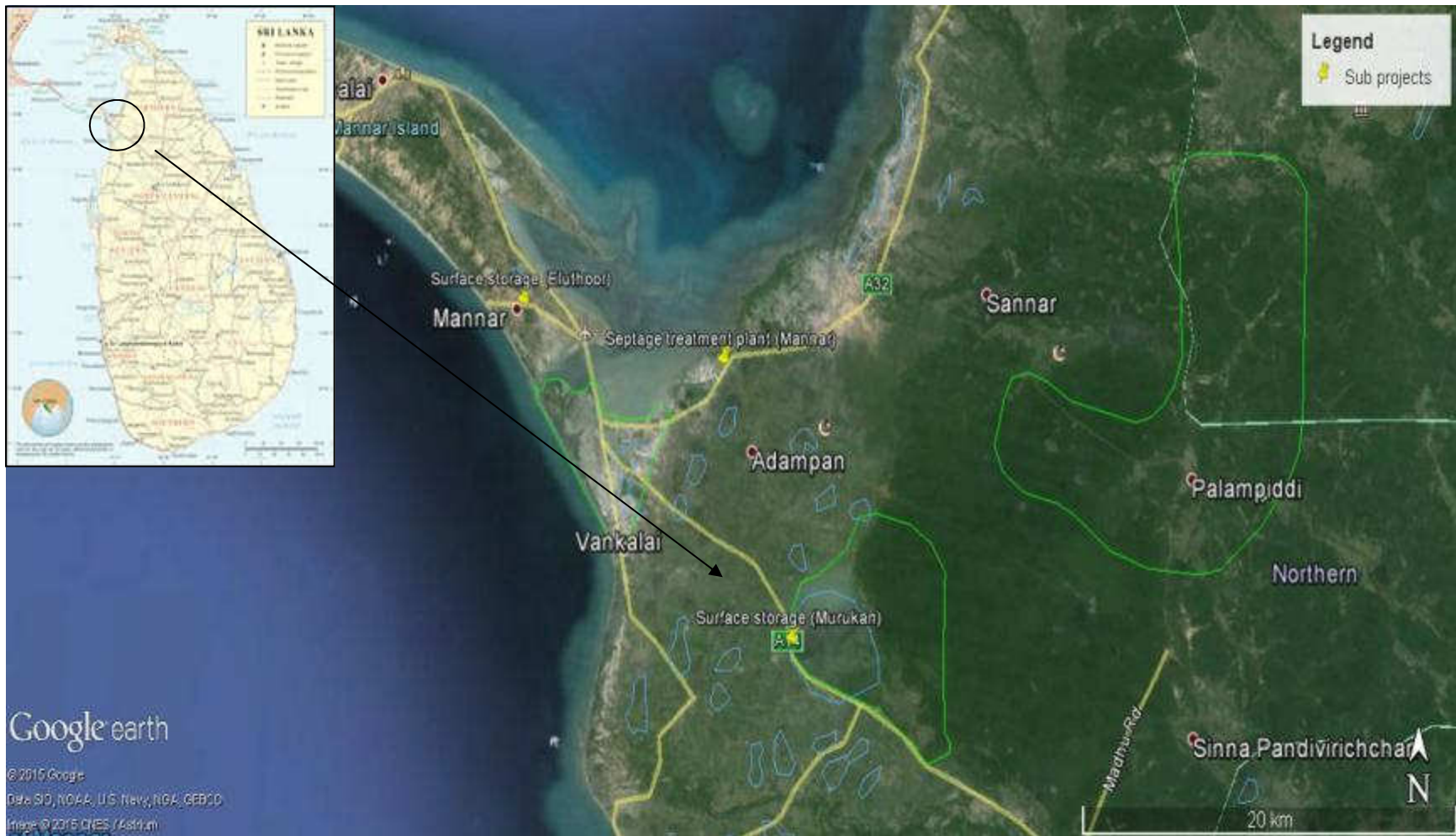


Figure 1.1. Location of each subproject in Mannar

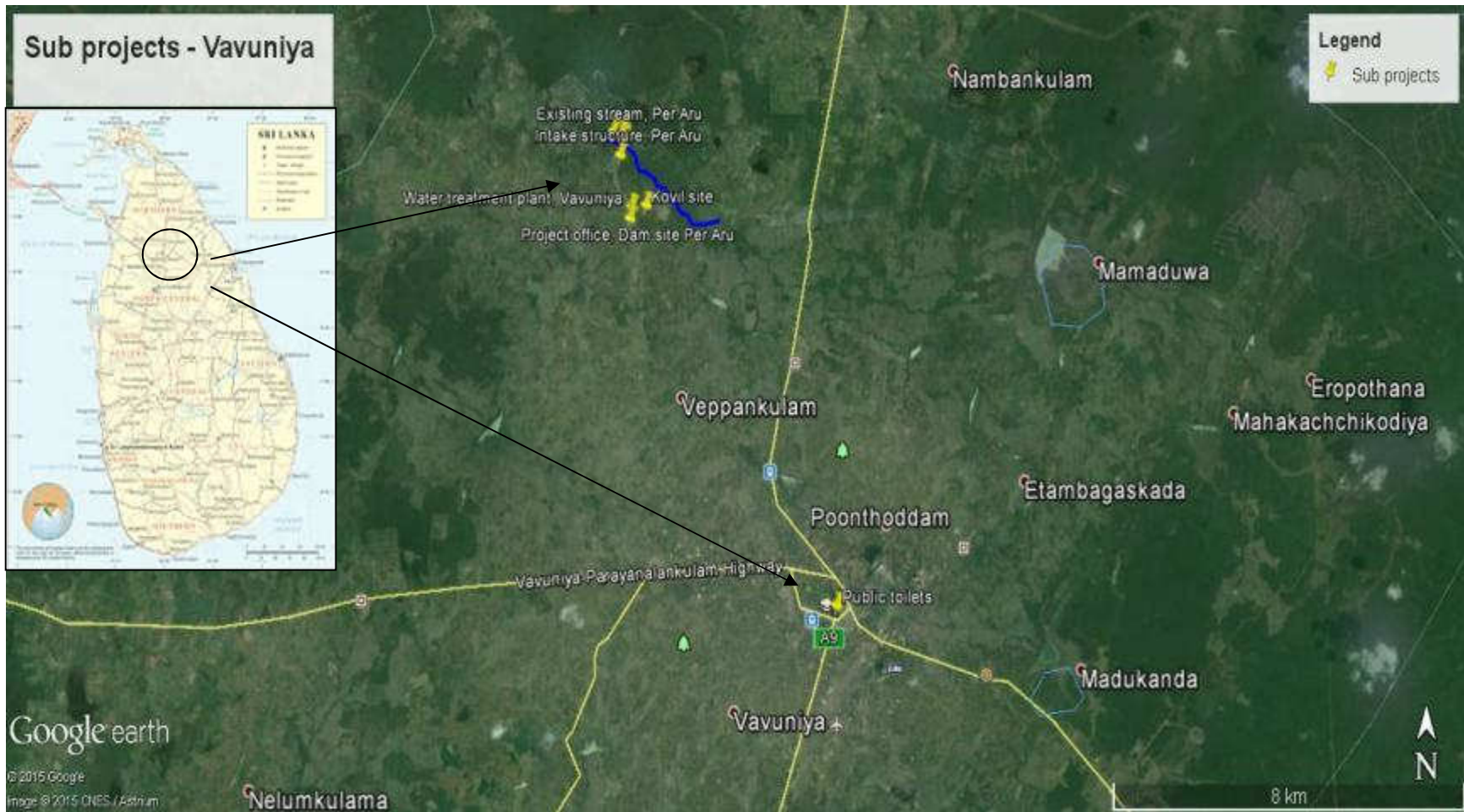


Figure 1.2. Location of each subproject in Vavuniya (except Per Aru subproject)

# Environmental Management and Monitoring Report – Projects in Mannar and Vavuniya Districts

## January to June 2016

### 1. Introduction

Inadequate and poor water supply and sanitation facilities that existed in major urban and peri-urban towns of Chilaw, Puttalam, Mannar and Vavuniya has badly affected the day to day lives of public who live in these areas. Government of Sri Lanka (GoSL) has identified the need to improve water supply and sanitation facilities in towns of north and north western region. Under project loan No. 2477 and 2977 from the Asian Development Bank (ADB), this project is expected to rehabilitate, expand, develop water and sanitation infrastructure (including septage treatment). The project is officially termed as Dry Zone Urban Water and Sanitation Project (DZUWSP).

The project is estimated to cost about US \$ 163 million and is under implementation from June 2009. Ministry of City Planning and Water Supply is the executing agency for the project, while National Water Supply and Drainage Board (NWS & DB) is the project implementing agency.

This report is the semi-annual progress report on Environmental Management and Monitoring (EMR) of subprojects in Mannar and Vavuniya districts under DZUWSP. The report is prepared based on the key construction and environmental related activities carried out for the time period from January to June 2016. However the surface water project in Per Aru (Vavuniya) is not included in this report. Environmental management and monitoring of Per Aru surface water project is presented as a separate report. Other subprojects in Mannar and Vavuniya districts are listed below with their contract number and date of commencement. Location map of subprojects in Mannar and Vavuniya are presented in figures 1.1 and 1.2 above.

Table 1.1. Subprojects under DZUWSP in Mannar and Vavuniya with contract No. and date of commencement of construction

Subproject area	Subproject	Contract No.	Date of Commencement
Mannar	Distribution pipe lines	PIPES/M/11	April, 2013
	Surface storage tank	STRU/M/12	December, 2013
	Septage treatment plant	SEP/M/07	August, 2013
	Public toilets	PT/M/17	May, 2013
Vavuniya	Surface water intake (Per Aru reservoir)	SW/V/02	July, 2013
	Water treatment plant	WTP/V/05	April, 2014
	Distribution pipe lines	PIPES/V/10	August, 2013
		PIPES/V&M/19	November, 2013



Subproject area	Subproject	Contract No.	Date of Commencement
	Public toilets (at Cycle park and near Horowpatana road)	PT/V/16	May, 2013

Environmental Assessments (EAs) in the form of Initial Environmental Examinations (IEE) have been carried out for subprojects in Mannar and Vavuniya. A separate Environmental Impact Assessment has been conducted for the Per Aru reservoir and surface water intake.

The impacts identified and mitigation measures suggested under the sections “Screening of Potential Impacts” and “Mitigation Measures” of each EA report (IEER) were summarized in to an Environmental Management Plan (EMP). An Environmental Monitoring Plan (EMoP) was also prepared for each subproject that includes information on environmental parameters to be monitored, Location, time and frequency, cost for sampling and stage of subproject on which the monitoring should be conducted. The EMoP is considered to be a useful tool to monitor the implementation of mitigation measures and EMP.

### 1.1. Contractors’, Supervision Consultants’ and Clients’ role in environmental safeguards compliance

As indicated above NSW & DB is the project implementing agency and the Project Co-ordination Cell (PCC) headed by the Project Director has the overall responsibility in monitoring the implementation of EMP and EMoP by each contractor. The Supervision Consultant/ Engineer {(SC), SMEC International in association with Ocyana Consultants and Ceywater Consultants (Pvt) Ltd} working under the PCC will directly supervise/ monitor the contractor in implementing the EMP.

The EMPs and EMoPs have incorporated into respective bid documents, and each contractor has submitted an Environmental Method Statement (EMS) which has been reviewed and approved by the Engineer.

Contractor and his nominated subcontractor/s are directly responsible in implementing the mitigation measures required to minimize the adverse impacts during construction period. The SC shall direct the contractor to rectify any non-compliance situation arising in construction sites. Table 1.2 below lists the contractors and nominated sub-contractors of each subproject.

Table 1.2. Appointed contractors of subprojects in Mannar and Vavuniya

Subproject area	Subproject	Contractor
Mannar	Distribution pipe lines	M/S Beijing Municipal Construction Group Co. Ltd. & M/s KDA Weerasinghe Co. (Pvt) Ltd. (Joint Venture)
	Surface storage tank	Sierra construction (Pvt) Ltd.

<b>Subproject area</b>	<b>Subproject</b>	<b>Contractor</b>
	Septage treatment plant	Finite Lanka (Pvt) Ltd.
	Public toilets	M/S. Vijeya Builders
Vavuniya	Surface water intake (Per Aru reservoir)	M/S BMG-KDAW Joint venture
	Water treatment plant	Sierra construction (Pvt) Ltd.
	Distribution pipe lines	Engineering Project India Ltd.
	Public toilets (at Cycle park and near Horowpatana road)	A.J. Construction & Engineers.

Critical construction activities are monitored on a daily basis by SC and any non-compliance situations and rectification measures/ instructions to contractor are recorded in Daily Progress Reports (DPRs), Engineers' log books and monitoring checklists.

Monitoring of air quality, water quality, noise and vibration levels are done on a quarterly basis by the contractor, while compliance indicators such as availability of Vehicle Emission Test (VET) certificates are monitored by the SC at a lesser frequency. A public complaint register is also maintained by the contractor/s under the supervision of SC. Any complaint received from public is attended by the contractor with instructions from SC.

An Environmental Specialist (ES) has been appointed by the SC on an intermittent basis, to look into the environmental safeguards aspects of the overall project. A mechanism has been developed to communicate between Team Leader, Deputy Team leaders and Resident Engineers of SC to assist them in resolving any environmental issue arising in each subproject. However the ES conducts site visits at least once a month to record the level of compliance by the contractor and instructions are given to improve on any non-compliance situation/s.

As stated above this report presents the status of environmental safeguards compliance with respect to each sub project in Mannar and Vavuniya (except Per Aru project), for the period from January to June 2016. The report is based on actual field observations, DPRs, Engineers' log books, monitoring checklists and other available records/ approvals at site.

## 2. Monitoring of environmental parameters

Monitoring of environmental parameters is done only at water treatment plant at Vavuniya and Per Aru reservoir. Details on the measurements at Per Aru site is discussed separately in the EMR of Per Aru subproject. Contractors have also kept daily weather records. Below table summarize the monthly total rainfall and the number of rainy days for each month from January to June 2016. The monitoring locations are Mannar and Per Aru reservoir (intake) at Vavuniya.

Table 2.1. Monthly total rainfall and No. of rainy days

Month	Eluthoor site- Mannar		Per Aru reservoir - Vavuniya	
	No. of rainy days	Total rainfall (mm)	No. of rainy days	Total rainfall (mm)
January	03	20.4	06	42.0
February	01	1.2	02	9.1
March	03	16.7	01	2.0
April	01	10.8	07	79.7
May	08	399.3	13	294.5
June	01	0.5	0	0.0

Source: Daily rainfall records

Hot and dry weather with high sunshine having high UV index prevailed during the months of March and April causing a great difficulty to worker to work during day time. The project area then received substantial rains during the month of May.

### Results of environmental parameter monitoring at water treatment plant – Vavuniya

Measurements of noise and dust fallout levels have been taken at selected locations with respect to water treatment plant. Measurements have been taken on carried out on 7 and 8 June, 2016 by the Environmental Studies and Service Division of National Building Research Organization (NBRO).

#### Noise level measurements

The sound level measurements have been carried out in accordance with the methods laid down in International Organization for Standardization (ISO) 1996 (part 1,2,3) and BS 4142: 1990 as stipulated in National Environmental Noise Control Regulations. Table 2.2. below presents the day/ night noise levels recorded with respect to the identified locations.

Table 2.2. Noise levels recorded at each monitoring location

Location	Monitoring date	Time	Run time (min)	Measured noise level Leq (dB)	Residual noise level Leq (dB)	Corrected noise level
At the water intake to the plant (N1)	07/06/2016	Day	15	41	41	*
		Night	5	40	40	*

Location	Monitoring date	Time	Run time (min)	Measured noise level Leq (dB)	Residual noise level Leq (dB)	Corrected noise level
At the end of the access bridge (N2)	07/06/2016	Day	15	50	41	49
		Night	5	40	40	*
A location close to the main entrance at the eastern boundary of plant (N3)	07/06/2016	Day	15	47	41	46
		Night	5	45	40	43
At the south-east boundary corner of the plant (N4)	07/06/2016	Day	15	41	41	*
		Night	5	41	40	*
At the south-west boundary corner of the plant (N5)	07/06/2016	Day	15	41	41	*
		Night	5	48	40	47
At the middle of the western boundary (N6)	07/06/2016	Day	15	47	41	46
		Night	5	46	40	45
North west boundary corner of the treatment plant (N7)	07/06/2016	Day	15	46	41	44
		Night	5	47	40	46
At the north east boundary corner of the treatment plant (N8)	07/06/2016	Day	Not measured			
		Night				

Note: \* - Corrected noise levels cannot be estimated in accordance to BS: 4142: 1990 since the measured noise level is closer to residual noise level measured (<2).

The maximum permissible noise levels stipulated under Gazette Extraordinary No. 924/12 of 23 May, 1996 under the National Environmental Act (NEA) at boundaries of construction sites are as follows;

- 75 dB(A) during day time
- 50 dB(A) during night time

As per the above measurements no location has recorded noise levels above the stipulated noise levels of NEA, both during day time or night time.

#### Dust fallout level measurements

Air samples have been collected by NBRO as requested by the contractor to measure the dust fallout levels in the water treatment plant area. Sampling has been carried out on 7 and 8 June, 2016, for duration of 24 hours. Table 2.3 below presents the dust fallout at the two sampling locations.

Table 2.3. Concentration of dust fallout at sampling locations of water treatment plant

Location	Date of sampling	Time average	Units	Concentration of dust fallout
A location at the centre of the treatment plant (L1)	7, 8 June, 2016	24 hours	g/m <sup>2</sup> per day	1.05
At the water intake of the treatment plant (L2)	7, 8 June, 2016	24 hours	g/m <sup>2</sup> per day	0.50

Although there is no Gazetted standard for dust fallout in Sri Lanka, section 6B.7 of contract document (Environment protection) has recommended a dust fallout rate less than 0.25 g/m<sup>2</sup> per day.

As per the results of table 2.3 it is observed that the dust fallout rate at both locations (L1 and L2) has exceeded the recommended level. Existing dry weather and earth backfilling operations at site during the measurement period could be considered as attributes to high rates of dust fallouts. Hence the contractor was instructed to increase the frequency of water spraying and haul/move earth after conditioned with water. However the dust fallout rates will be permanently reduced as the contractor has now commenced turfing and improving the ground cover within the WTP site.

### 3. Construction activities during the period

Critical construction activities that were carried out in each subproject during the reporting period are listed below.

#### Subprojects in Mannar

##### Distribution pipe lines (PIPES/M/11)

Pipe laying works continued (under the variation) during the reporting period. Trenches cut for pipe laying have been back filled in a progressive manner once the pipe lines are placed inside the trenches. A total length of about 134.25 km of distribution pipes has been laid up to end June 2016.

Pressure testing, flushing and disinfection of PE pipes of transmission main, fixing of air valves and cleaning of all chambers were done for the completed sections, before handing over to the Client.

##### Surface storage tank (STRU/M/12)

With completion of all major structural works the contractor engaged in finishing of remaining civil works. All Fixing of mechanical and electrical components of both (Murunkan and Eluthoor) have also been completed. Testing of mechanical and electrical components was carried out as the main task during the reporting period.

Site landscaping was also done during the reporting period. Below figures taken at Murunkan and Eluthoor sites, presents the progress of landscaping in each subproject site.



Figure 3.1. Site cleaning and landscaping works in progress at Murunkan site



Figure 3.2. Site cleaning, turfing and site fencing works at Eluthoor site

#### **Septage treatment plant (SEP/M/07)**

The plant has been completed and handed over to Urban Council –Mannar on in March 2015.

#### **Public toilets (PT/M/17)**

All the sites had been handed over to relevant Local authorities on 06-01-2014 and now functioning.

### **Subproject activities in Vavuniya**

#### **Water treatment plant (WTP/V/05)**

Major structural works of water treatment plant had been completed and finishing works commenced during the reporting period. Site cleaning (removal of debris and other temporary structures) and landscaping works commenced towards the end of this reporting period. Mechanical and electrical works also commenced during the reporting period.

#### **Distribution pipe lines (PIPES/V/10 & PIPES/V&M/19)**

A total length about 234.00 km of pipes has been layed up to end of June 2016. Pipe laying and backfilling of cut trenches continue as progressive works. There by disturbance to public by interruption to access has been kept at a minimum.

#### **Public toilets (PT/V/16)**

All construction activities have been completed by January, 2014 and the sites have been handed over to the Client in July, 2014.

#### 4. Environmental impacts, mitigation measures taken at site and monitoring

Key activities discussed under section 3 have been carried out in each subproject during the reporting period. These activities in general have impacts on physical, ecological and social environments for which mitigation measures have been taken by the contractor under the supervision of SC. The effectiveness of mitigation measures have been monitored and recorded by the SC. In cases where further actions were needed the SC has advised the contractor. Table 4.1 below summarize the activities carried out in each subproject, their impacts to the environment, mitigation measures taken to avoid/ minimize the adverse impacts, effectiveness of the mitigation measure adopted and any further action needed.

Table4.1. Activities carried out in each subproject, their impacts to environment, mitigation measures, effectiveness and any further action needed

Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
<b>Subprojects in Mannar</b>					
<b>Distribution pipe line (PIPES/M/11)</b>					
Excavation of trenches.	Temporary loss of access to public.	Provide temporary cover slabs over trenches. Back fill the trenches as soon as the pipe laying is completed (as progressive works).	No. of public complaints related to loss of access.	Once a month	Contractor has provided temporary access without disturbing the public/ vehicle movement. No public complaint was received during the reporting period. No accident was recorded during the reporting period due to open trenches.
	Risk of accidents to public, workers and animals.	Placing of barricade tape and signboards along the trenches. Back filling of cut	No. of accidents recorded due to open trenches.	Once a month	



Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
		trenches soon after laying of pipes.			
<b><i>A total of 90.00 km of pipe laying was completed and handed over to Client by June, 2016 and the contract is now on a variation with an extended length of pipe laying</i></b>					
<b><i>Surface storage tank (STRU/M/12)</i></b>					
Structure finishing works, site clearing and landscaping.	Nuisance of dust.	<p>Spraying of water around the construction site.</p> <p>Reuse of excavated material stored close to the site.</p> <p>Enforcing speed limits to all construction vehicles moving on the public access road (10 kmph).</p> <p>Site cleaning and landscaping works including turfing.</p> <p>All construction debris to be collected and disposed only at designated location assigned by local</p>	<p>No. of public complaints regarding dust.</p> <p>No. of excavated soil heaped at site.</p>	<p>Weekly</p> <p>Once in 3 months</p>	<p>No public complaints were received during the reporting period.</p> <p>Excavated material stocks piled close to site have been used for backfilling and leveling operations.</p> <p>No major activity involving movement of heavy machinery required during the reporting period.</p> <p>Site cleaning and landscaping work including turfing and planting of shade trees have commenced, which has contributed to minimize the dust at site.</p> <p>With major construction work over the contractor has worked on site cleaning (housekeeping) and landscaping operations through which the sites (Murunkan and</p>

Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
	Construction debris (e.g. used form boards, wooden planks and spilled concrete) disposed haphazardly within the site causing visual segregation and injuries to workers.	authority.	No. of construction waste dumps at site.	Monthly	Eluthoor) has greatly improved.
Maintenance of site office, yard and labour camp. And mobilization of workers.	Accumulation and disposal of solid and kitchen waste.  Risk of accidents and health hazards to workers.	Collection of waste in bins and disposal at sites approved by local authority.  Workers are provided with proper accommodation with sanitary facilities, Personal Protection Equipment (PPE) and adequate resting places.  <i>All workers were instructed to use suits avoiding exposure to direct sun light.</i>	Open waste dumps at site.  No. of workers per billet.  Availability of potable water at site.  <i>No. of workers falling sick during working hours.</i>	Weekly  Monthly  Weekly  Daily	With continuous awareness the workers now use waste bins supplied by contractor to dispose kitchen and food waste.  Collected solid and kitchen waste disposed only at approved locations.  No billet was observed with overcrowded workers. All workers have been supplied with mosquito nets and potable water is available.  <i>Advance precautionary measures taken at site was taken to avoid any worker getting exposed to the extreme sunny and hot weather</i>

Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
		<p>Workers were instructed to take shade during times of extreme sun shine.</p> <p>Workers were instructed to use more water and report any conditions of ill health especially during working hours.</p> <p>Display of safety and warning sign boards at site.</p>	<p>No. of trainings given to workers on health and safety.</p> <p>No. of accidents at site.</p>	Monthly	<p>conditions which prevailed during months of March and April.</p> <p>Monthly awareness trainings are conducted by the contractor's staff.</p> <p>Safety and warning signboards have been displayed at site. No fatal accidents were recorded during the reporting period.</p>
<b>Septage treatment plant (SEP/M/07)</b>					
<i>The site has been completed and handed over to the client on 30 March, 2015. The plant is now operational.</i>					
<b>Public toilets (PT/M/17)</b>					
<i>Completed and handed over to the local authorities on January, 2014</i>					
<b>Subprojects in Vavuniya</b>					
<b>Water treatment plant (WTP/V/05)</b>					
Structural works, site	Generation of dust and noise nuisance.	Clearing of land limited to area	Extent of land area cleared beyond the	Monthly	Clearing of land and demarcating the project boundary has already

Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
cleaning and landscaping works		<p>required for the water treatment plant, site office, yard and worker camps.</p> <p>Excavated soil piled within the site has been used for back filling.</p> <p>Water is being sprinkled over all exposed soil surfaces at site.</p> <p>Avoiding heavy construction works during days of religious importance.</p>	<p>project site boundary.</p> <p>No. of excavated soil piles left outside the project site.</p> <p>Daily running chart of the water bowser. No. of public complaints on dust.</p> <p>Public complaints on noise and vibration incidents.</p>	<p>Weekly</p> <p>Weekly</p> <p>Weekly</p> <p>Weekly</p>	<p>been completed. Project boundary wall has been constructed.</p> <p>A temporary stock pile of construction debris is maintained near the entrance to the site. This material is taken by public for their use.</p> <p>Although there has not been any complaint on dust. Measurement of dust fallout was significant compared to the suggested level. Therefore the contractor was instructed initially to increase the frequency of water spraying. However, with landscaping operations including turfing being active the incident of dust will be reducing.</p> <p>All heavy construction work has been completed.</p> <p>No complaints received on noise. Noise levels recorded at site were within the limits stipulated under NEA.</p>

<b>Construction activity</b>	<b>Environmental Impact</b>	<b>Mitigation Measure/s Adopted</b>	<b>Monitoring indicator</b>	<b>Monitoring frequency</b>	<b>Effectiveness &amp; further actions needed</b>
Maintenance of site office, yard and labour camps.	Accumulation and disposal of Solid and kitchen waste.	Collection of waste in bins and disposal at sites approved by local authority.	Open waste dumps at site.	Weekly	Contractor was instructed to improve on housekeeping and place additional waste bins at every billet and kitchen area.
		Workers are provided with proper accommodation with sanitary facilities and Personal Protection Equipment (PPE).	No. of workers per billet.	Monthly	Workers have been given adequate accommodation. No billet was found to be overcrowded.
		Display of safety and warning sign boards at site.	Availability of potable water at site.	Weekly	Workers have been provided with potable water at site and worker camps.
			No. of trainings given to workers on health and safety.	Monthly	Monthly awareness trainings are conducted by the contractor's staff. Safety and warning signboards have been displayed at site.
			No. of accidents at site.	Monthly	No fatal accidents were recorded during the reporting period.
	<i>Health hazards to workers exposed to extreme weather (March to April).</i>	<i>Workers have been advised to wear clothes avoiding direct exposure to sun light.</i>	<i>No. of workers falling sick during working hours.</i>	<i>Daily</i>	No worker was reported sick due to exposure to sun light and hot weather during the reporting period.
Storage of fuel oil,	Accidental spills or contamination with	Placing of all fuel, oil and other chemicals	Visual inspection of any signs of chemical spills	Weekly	No incidents of chemicals spills recorded.

Construction activity	Environmental Impact	Mitigation Measure/s Adopted	Monitoring indicator	Monitoring frequency	Effectiveness & further actions needed
grease and other chemicals for construction activities	storm water causing surface and ground water pollution.  Risk of fire hazard and accidents.	in a store with impervious floor, roofing and proper ventilation.	in the stores.	Monthly	Contractor has placed all chemicals within an enclosed stores having adequate ventilation.
		Placing of warning signboards near all flammable chemicals. Conducting regular safety training programmes for the workers.	Availability of proper warning signboards and instructions near material stores.		Proper signboards were available at site. Regular training programmes on safety have been carried out by the contractor.
		Placing of proper firefighting equipment and material near stores.	Availability of proper firefighting equipment near material stores.		Firefighting equipment is available at site. However the contractor was advised to carry out timely refilling of all fire extinguishers before they expire.
		Providing first aid facilities at site.	Availability of a first aid room with equipment.	Once in 3 months	Except for few minor incidents, no fatal incidents were recorded.
<b><i>Distribution pipe line (V/PIPES/10, PIPES/V&amp;M/19)</i></b>					
Excavation and back filling of trenches.	Temporary loss of access to public.  Risk of accidents to public, workers and	Provide temporary cover slabs over tranches. Back fill the trenches as soon as the pipe laying is completed.	No. of public complaints related to loss of access.	Once a month	Contractor has provided temporary cover planks as means of providing access. No public complaint was received during the reporting period.
		Placing of barricade tape and signboards	No. of accidents recorded due to open	Once a	No accident was recorded during the reporting period due to open

<b>Construction activity</b>	<b>Environmental Impact</b>	<b>Mitigation Measure/s Adopted</b>	<b>Monitoring indicator</b>	<b>Monitoring frequency</b>	<b>Effectiveness &amp; further actions needed</b>
	animals.	along the trenches.	trenches.	month	trenches.
	Transporting of backfilling material	Reuse of excavated soil for backfilling. If excessive amounts of soil are required, such material is brought only from approved sites using covered trucks.	No. of trucks moving with material uncovered.	Monthly	All material transport trucks have complied with using covers when transporting filling material.
<b>Public toilets (PT/V/16)</b>					
<i>Completed and handed over to the local authorities on July, 2014</i>					

## 5. Examples of good practices, noncompliance notices and corrective plans

Sites at Murunkan and Eluthoor are nearing completion and are in the process of site cleaning and landscaping as the major activities. All major construction works at the Water Treatment Plant in Vavuniya has also ended. Hence no major non-compliance issues were recorded during the reporting period. Below figures illustrate few good practices at Vavuniya water treatment plant.



Figure 5.1. Watering the turfed area – WTP at Vavuniya



Figure 5.2. Construction debris collected to be removed – WTP at Vavuniya



## **6. Public complaints**

As required in the contract documents and ADB, SPS 2009, Grievance Redress Committees (GRCs) have been established to look into any public grievances that would occur during construction works. However as the storage plants are constructed in less populated area there were no public complaints. Even the pipe laying work has not affected the public during the reporting period. However, all contractors are maintaining a public complaint register.

## **7. Conclusion and further actions**

Most of the subprojects in Mannar and Vavuniya have been completed (e.g. septage treatment plant and public toilets) and handed over to the Client. All major works related to the storage tanks in Mannar have also been completed. Cleaning of the construction sites and landscaping works have commenced in storage tanks in Mannar and at the WTP in Vavuniya. It is expected that these sites will also be completed and handed over to Client during the before end of year 2016.

As recommended the contractor will plant some shade trees at Eluthoor and Murunkan sites before they are handed over to Client. The same will be done at the intake and WTP at Vavuniya.

With site cleaning and landscaping activities all sites in Mannar and Vavuniya will also create a unique scenic environment in the dry zone towns in Mannar and Vavuniya.