Male' Water and Sewerage Company Pvt Ltd

Environmental Impact Assessment

Relocation of Fuel tanks at MWSC compound at Male' City

Report Prepared by LaMer Group Pvt Ltd:
Hussein Zahir
Shahama A. Sattar
Mohamed Aslam
Aishath Abdulla

Proponents Name:
Male' Water and Sewerage Company (MWSC) Pvt Ltd

Signature:

February 2016

Land and Marine Environmental Resource Group Pvt Ltd, Maldives

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Consultants Declaration

I certify that to best of my knowledge the statements made in this Environmental Impact Assessment report for relocation of fuel storage tanks at MWSC compound (Male' City), are true, complete and correct.

Name: Hussein Zahir

Consultant Registration Number: 04-07

Signature: 

Company Name: Land and Marine Environment Resource Group Pvt Ltd

Date: 28 February 2016

Proponents Declaration

Re: Environmental Impact Assessment report for relocation of fuel storage tanks at MWSC compound (Male' City)

As the proponent of the proposed project WE guarantee that WE have read the report and to the best of our knowledge all non-technical information provided here are accurate and complete. Also we hereby confirm our commitment to finance and implement all mitigation measures and the monitoring program as specified in the report.

Signature:

Name:

Designation:

Male' Water and Sewerage Company Pvt Ltd

Date: 28 February 2016

1 Non-technical Summary

Background

The non-technical summary outlines the findings of the Environmental Impact Assessment of the proposed relocation of existing fuel tanks of the Male' Water and Sewerage Company Pvt Ltd. The proponent of the proposed project is Male' Water and Sewerage Company Pvt Ltd. The total estimated cost of this project is MVR 1,000,000.00

The proposed project involves relocation of the existing fuel tanks of the Male' Water and Sewerage Company Pvt Ltd which is as per recommendation by the MNDF, following the fire incident which occurred at the facility in 2015.

Key impacts, mitigation measures and alternatives

Impacts on the environment from various activities of the construction work and during the operation of the facility have been identified through interviews with the project management team, field data collection and surveys and are also based on past experience of consultant in similar development projects. Mitigation measures have also been identified for impacts which are irreversible in nature.

Impact analysis was done using the Leopold matrix. Impact analysis showed that impact due to the project was due to possible accidental spillage and leakage during the construction phase and operational phase. However, this impact was envisaged to be minor to moderate during both phases and reasons for this are discussed in Section 9.

Mitigation measures are discussed in the report for potential impacts, including mitigation in the event of accidental spillage/leakage and consequent groundwater contamination. Measures include careful handling and daily inspection of fuel lines/bund wall for detection of leakage.

Given the scope of the project and the need, the "do-nothing" option or no project scenario is the only alternative available for the project. If this is chosen the fuel tanks would remain at the existing location, which has been identified as one which is not feasible or ideal technically or safety-wise. Furthermore, the existing location does not confirm to regulation regarding fuel handling and storage. Hence the no-project scenario is considered not feasible and thus the project will be continued. Furthermore, with due consideration to the project need, which is urgent and environmental impacts, which have been found to be minor, the Consultant feels that the project is feasible and that appropriate mitigation measures have been considered to further minimize impact on the environment.

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2 Introduction

The proposed project involves relocation of the existing fuel tanks of the Male' Water and Sewerage Company Pvt Ltd. These tanks are located within the MWSC compound in Male' and are currently at the Northeastern side of the compound (facing Ameenee Magu). Following the fire incident which occurred at the facility in 2015, the facility was inspected by the Maldives National Defense Force (MNDF). The outcomes of the inspection revealed that the existing location of the fuel tanks are not appropriate (does not meet regulatory requirement), both technically or safety-wise (easy access to fuel storage area from Ameenee Magu making the facility an easy target for vandalism or terrorism acts). It was therefore a recommendation of the inspection that these tanks be relocated to a more appropriate location. It is proposed to relocate the tanks to the Southwestern side of the plot by closing part of Nikagas Magu and Falhumathee Magu temporarily. The Ministry of Housing and Infrastructure allocated parts of these two roads to MWSC for 3 years.

The proponent of the proposed project is Male' Water and Sewerage Company Pvt Ltd. The total estimated cost of this project is MVR 1,000,000.00

2.1 Purpose of the report and need for the EIA

This document presents the findings of an Environmental Impact Assessment (EIA) for the relocation of four fuel tanks located within the compound of Male' Water and Sewerage Company Pvt Ltd. Developers of such development projects are required to carry out EIA studies under the Environmental Act of Maldives. The developer is required to obtain approval of the Environmental Protection Agency (EPA), prior to the implementations of any development activities on the island.

Land and Marine Environmental Resources Group Pvt Ltd won the bid for the project to prepare the EIA and to provide assistance in other environmental related activities. This EIA is prepared in accordance with Environmental Impact Assessment Regulations 2012 and the environmental policy and guidelines of the Government of Maldives.

3 Terms of Reference (ToR)

All development projects that have a socioeconomic environmental relevance and are listed in Appendix Raa of the EIA Regulations 2012 are required to submit an Environmental Impact Assessment report which forms the basis for project approval. As such, projects are required to follow a screening process identifying the environmental impacts associated with the project. Projects which are not listed in the above mentioned Schedule has to follow a screening process, based on which EPA decides whether the project requires the submission of an Initial Environment Evaluation report or and Environmental Monitoring report. Based on the findings of this report, EPA as the regulator makes a decision on whether the specified project further requires the submission of an EIA based on the impacts associated with the project.

In accordance with the regulations of Ministry of Environment and Energy, an EIA application form and project brief was sent stating the nature of the project and likely impacts associated with the environment. The scoping meeting was held at the Environmental Protection Agency (EPA) on the 25^{h} January 2016 with the project proponent, consultant and EPA officials. Based on the discussions at the meeting, a ToR was finalized and approved by EPA on the 25th January 2016 (See Appendix 2 for approved TOR).

4 Project Setting

The project conforms to the requirements of the Environmental Protection and Preservation Act of the Maldives, Law no. 4/93. The EIA has been undertaken in accordance with the EIA Regulation 2012 of the Maldives by a registered consultant. Furthermore, it adheres to the principles underlined in the regulations, action plans, programs and policies of the following Ministries of the Government of Maldives.

- Ministry of Environment and Energy (MEE)
- Ministry of Defence and National Security

Table 1. Legislation pertaining to the project and how the project conforms to these legislation

Legislation	How does current project conform to legislation
Environmental Protection and Preservation Act (Law 4/93)	EIA undertaken as stipulated in the Act, which states that any developmental project which has a potential impact on the environment should have an EIA done prior to commencement of the project. List of such projects are given in the EIA Regulations 2012
Third National Environment Action Plan (2009 – 2013) (NEAP III)	The plan sets out the agenda for environmental planning and management for the period of 2009 – 2013. One of the targeted goals of the plan is to strengthen the EIA process. By undertaking the EIA prior to the project, the project ensures that environmental impacts due to the project are minimized.
National Biodiversity Strategy and Action Plan (NBSAP)	The objective of NBSAP was to *"achieve biodiversity conservation and sustainable utilization of biological resources in the Maldives"* by integration of biodiversity conservation into all areas of national planning, policy development and administration (MHAHE, 2002). To achieve this objective, one of the first actions listed is "formulation and adoption of suitable development planning procedures, land use plans and strengthening of the EIA process". The current project conforms to this policy, by carrying out the EIA prior to commencement of the project, so as to minimize impact on the environment and to incorporate ways of environmental monitoring and management during the project works.
Regulation on fuel storage and use (2015/ R-160)	The objective of this regulation is to: • Decrease the number of accidents due to fuel usage and storage and protect the people and their belongings from such incidences • Raise awareness regarding protective measures which should be in place when using/storing fuel • Establish means which would enable all places which sell fuel (currently established and in the

	future) to do so under proper protective measures The implementing agency for this regulation is the Ministry of Defense and National Security and enforcement of the regulation began on the day the regulation was published in the government gazette (12th August 2015). All current establishments which use and store fuel have to abide by the regulation and existing establishments were given grace periods of 6 months and 1 year to modify their setups so as to meet the criteria outlined in the Regulation. Future establishments should be set up as per the regulation, inclusive of firefighting and safety measures. Operation of new facilities can only commence once its been checked and approved by the implementing agency (MNDF). Existing facilities (at time of implementation of regulation) which had not prior obtained permission from MNDF should also continue their operations after getting the required approval. Appendix 6 of the Regulation states distance which should be left between the bund wall adjacent residential areas (inclusive of road). These distances are based on the capacity of the facility and MWSC fuel tanks have a capacity of 200 tonnes (approximately 6350 gallons) which as per the regulation means that there should be a distance of 15ft between the bund wall of the tank and other residential areas adjacent to the plot. There should also be a distance of 5ft between the bund wall and other properties within own plot. The implementing agency has the authority to make inspections at the facilities once every 6 months and this will be done in the presence of the owner of the facility. During such inspections, the implementing authority will advise if any changes have to be brought to the facility. In such instances the facility will be checked again after been given a time period to make this change.
Waste Management Regulation (R-58/2013)	This Regulation was gazetted on the 5th of August 2013 and came into effect 6 months from the date, on 5th of February 2014. The main objective of this regulation is to implement the national policy on waste management. Article 8 of the regulation addresses management of hazardous waste, where Section Raa of specifies that transport of hazardous waste from one location to

	another should be in a manner where the waste is packed in tightly sealed containers so as to prevent leakage. The Article further specifies that hazardous waste should not be dumped or burnt under any circumstance. Hazardous waste has to be separated and stored separately in a manner which ensures no leakage of waste. As per the regulation, hazardous waste generated during the project will be collected and stored separately and as per the regulation. Transportation will also be as per the Regulation

5 Project Description

5.1 Project Proponent

The proponent of the proposed project is Male' Water and Sewerage Company Pvt Ltd. The total estimated cost of this project is MVR 1,000,000.00

5.2 The Project

The proposed project involves relocation of the existing fuel tanks of the Male' Water and Sewerage Company Pvt Ltd. These tanks are located within the MWSC compound in Male' and are currently at the Northeastern side of the compound. It is proposed to relocate the tanks to the Southwestern side of the plot with the closure of parts of Nikagas Magu and Falhumathee Magu.

The project involves construction of 150mm concrete screed and bund wall (23.8m x 8.53m) at the south western side of the compound (incorporation of part of Nikagas Magu and Falhumathee Magu). Once the bund wall and screed is completed, the fuel tanks ($50m^3$ steel tanks) will be relocated to new location.

5.3 Need for the Project

Following the fire incident which occurred at the facility in 2015, the facility was inspected by the Maldives National Defense Force (MNDF). The outcomes of the inspection revealed that the existing location of the fuel tanks are not appropriate, both technically or safety-wise (easy access which allows vandalism). It was therefore a recommendation of the inspection that these tanks be relocated to a more appropriate location. Furthermore, the existing location does not confirm to present regulations of Ministry of Defence regarding fuel storage. Therefore MWSC decided to relocate tanks to an appropriate area, but since the compound is already quite congested, MWSC requested MHI to allocate part of Nikagas Magu and Falhumathee Magu for relocation of tanks temporarily till permanent solution is worked out. At the time of this report preparation, permanent location of fuel tanks is yet to be decided.

5.4 Location and Extent of Site Boundaries

The MWSC plot is located at the southern side of Male', as shown in Figure 1 and Appendix 3. The fuel tanks are currently located on the northeastern side of the plot and it is proposed to relocate the tanks to the southwestern side after closing Nikagas Magu and Falhumathee Magu.

Figure 1. Satellite image showing existing fuel tank location, Nikagas Magu, Falhumathee Magu and temporary location for the fuel tank (image source: Google Earth)

5.5 Project management

5.5.1 Construction phase and schedule for implementation

The project duration for the proposed fuel tank relocation project is estimated to be a total of 2 month. Listed below are the construction phases.

1- Clearance of the road pavement blocks
2- Construction of 150mm thick concrete screed
3- Emptying the tanks to day tanks in power house
4- Relocation of the tanks to new site
5- Removal of tank foundation and disposal to Thilafushi

Table 2 Construction schedule for the MWSC fuel tank relocation project

Item	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Clearance of the road pavement blocks								
Construction of 150mm thick concrete screed and curing								
Emptying the tanks to day tanks in power house								
Relocation of tanks to new site								
Removal of tank foundation and disposal to Thilafushi								

5.5.2 **Methodology**

The project does not involve construction of tanks as the existing tanks will be used. 150mm concrete screed will be casted in-situ along with the bund wall as per Ministry of Defence regulation on Fuel Storage and Use. Afterwards the tanks will first be emptied into day use tanks inside the existing generator room. Afterwards the tanks will be relocated to temporary location using a crane.

5.5.2.1 **Machinery and equipment to be used**

Machinery and equipment which will be used for the project are 1 crane for tank relocation, day use fuel tanks and concrete machines.

5.5.2.2 **Emergency plan in the incidence of spills**

First aid kits will be available at the site during the project period. In the event of minor injuries, where possible, first aid kit will be used, afterwards will be send to Hospital at Male'.

All workers will be provided with sufficient work safety equipment, while contractor is responsible to ensure that all safety equipment are provided and are in good condition.

The existing location also has a bund wall hence it is unlikely that spill will occur during emptying the tanks to day tank, the fuel will be pumped to day tanks. During transport of tanks to temporary location, spills are not anticipated since tanks will be empty.

Table 3 Inputs and outputs

INPUTS	
CONCRETE SCREED	
Clearance of pavement (removal of pavement blocks) (m^2)	201
Workers	10
Cement (bags)	264
Sand (bags)	1320
Aggregate (bags)	3960
Concrete machine	2
OUTPUTS	
Concrete Screed (m^2)	201
Bund wall (23.8m x 8.53m x 1.2m) (volume m^3)	243
Construction debris (removal of existing screed) (m^3)	26

5.5.3 **Decommissioning of temporary fuel storage**

The temporary site is assigned to MWSC for a 3 year period and afterwards as per MHI the road has to be opened after restoring the road surface. Therefore the concrete screed will be removed and disposed at Thilafushi. Estimated volume of construction debris is 26m^3. The decommissioning work will be dependent on the redesign of the MWSC compound hence in the event the projected timeline is not met, MWSC will request extension of road closure.

6 Methodology

The approach to data collection and compilation of this report includes;

- Consultation and discussion with the proponent with regard to design and work methodology that would be used to implement the proposed activities of the project,
- Examination of the existing environment to identify significant environmental components that are likely to be affected,
- Consultation with major stakeholders to exchange information on the project and to follow the EIA procedures required for the report, and
- Evaluation of available and relevant literature on environmental impacts associated with similar projects.

Information on existing environment was collected during the field visit to the project site in February 2016. Since the project does not involve land clearance and removal of vegetation as per TOR only groundwater sampling was carried out. As per the TOR, water samples were collected from existing fuel tank location and at proposed temporary location. The water samples were test in-situ using Hanna Multiprobe water test meter HI9828 and for hydrocarbon level test, samples were sent to MWSC water quality assurance lab.

Figure 2 Location and GPS coordinate of groundwater sampling sites

7 Existing environment

7.1 Location of existing fuel tanks and proposed temporary tank location

The existing fuel tanks are located at the north eastern corner of MWSC compound just east of FEN building. The proposed temporary location is Nikagas Magu and Falhumathee Magu junction. The two roads will be closed off and used for MWSC requirements.

Figure 3 Existing fuel tank location at the north eastern side of the MWSC compound

Figure 4 Proposed temporary location of fuel tanks at Nikagas Magu and Falhumathee Magu junction

7.1.1 Groundwater quality

Groundwater is the primary source of potable water available in the islands of Maldives due to lack of surface running water which is a result of the geomorphologic characteristics of the islands being atoll based. Groundwater or freshwater lens develops from rain infiltrating the soil of the coral islands and forms as a result of density differences between fresh and saline groundwater. All soil on coral islands are calcareous residual corals derived from weathered corals that form the bedrock coral limestone foundation of the islands. These soil types have a very high vertical permeability and hydraulic conductivity in the order of several meters per day.

The average recharge of groundwater in the islands of Maldives has been estimated from 40% of rainfall. Based on the average rainfall of approximately 1,700mm/year, this amounts to 680mm/year which is equivalent to 6,800m^3 per hectare per year. Studies in Maldives by Falkland (2001a, 2001b, 2002) have defined a generalized recharge potential as 30% of the rainfall with 10% variation depending on the vegetation cover (GWP Consultants, 2006).

In order to estimate the groundwater quality of the project area, in-situ test was done by collecting water samples dug out ground pits at the existing fuel storage and proposed location. Physical parameters were tested using Hanna Multiprobe test meter while Total Petroleum Hydrocarbon test was done at MWSC Water Quality Assurance Lab (See Appendix 4 for test report). Tables 4 and 5 below shows the results of in-situ water test and results from lab test. The results show low levels of hydrocarbon at the existing and temporary location (0.10 - 0.15mg/l).

Table 4 In-situ water testing result for site Existing fuel tank location, Total Petroleum Hydrocarbon is tested at MWSC water quality assurance laboratory

Reading	Temperature (^oC)	pH	Dissolved Oxygen (mg/l)	Conductivity (µS/cm)	Total Dissolved Solids (g/l)	Salinity (ppt)	Total Petroleum Hydrocarbon (mg/l)
1	30.02	7.70	2.34	1389	0.693	0.69	0.10
2	30.02	7.70	2.34	1389	0.693	0.69	
3	30.02	7.70	2.34	1389	0.693	0.69	
4	30.01	7.70	2.35	1390	0.693	0.70	
5	30.01	7.71	2.35	1390	0.693	0.70	
Average	**30.02**	**7.70**	**2.34**	**1389.40**	**0.69**	**0.69**	

Table 5 In-situ water testing result for site proposed temporary fuel tank location, Total Petroleum Hydrocarbon is tested at MWSC water quality assurance laboratory

Reading	Temperature (^oC)	pH	Dissolved Oxygen (mg/l)	Conductivity (µS/cm)	Total Dissolved Solids (g/l)	Salinity (ppt)	Total Petroleum Hydrocarbon (mg/l)
1	29.67	7.90	2.79	1033	0.517	0.50	0.15
2	29.67	7.90	2.79	1033	0.517	0.50	
3	29.67	7.90	2.79	1033	0.517	0.50	
4	29.67	7.91	2.80	1033	0.517	0.50	
5	29.68	7.91	2.80	1034	0.519	0.51	
Average	**29.67**	**7.90**	**2.79**	**1033.20**	**0.52**	**0.50**	

8 Stakeholder Consultations

Stakeholder consultation was carried with Ministry of Housing and Infrastructure (MHI), State Electric Company Plc (STELCO), Maldives National Defence Force, Fire department and Transport Authority regarding the project. List of people consulted is provided in Appendix 5.

8.1 Transport Authority

Consultation with Transport Authority was done via telephone conversation on 23rd February 2016. The personnel from Transport Authority informed that closing of roads or allocation of roads different purposes are not the authorities mandate and these aspects are regulated and management by MHI. According to the personnel from the authority a committee of members from MHI, Transport Authority, Maldives Police Service and MNDF makes decision regarding issues of roads in Male' and Hulhumale.

8.2 Ministry of Housing and Infrastructure (MHI)

Consultation with MHI was done via telephone conversation on 20th February 2016. The State Minister of the ministry was consulted regarding the closure of the roads for the MWSC project. The State Minister informed that after the fire incident at MWSC compound, a review was done by MNDF regarding the safety and fire prevention measure at the facility. Based on the recommendation MWSC requested part of Nikagas Magu and Falhumathee Magu to be assigned for them so that they can do the modifications as per the MNDF fire department recommendations. A letter has been sent to MSWSC regarding temporary assignment of parts of Nikagas Magu and Falhumathee Magu for a 3 year period (see Appendix 6). After the 3 year period, MWSC has to reopen the roads and restore the road surface to existing condition.

8.3 STELCO

Consultation with STELCO was done via telephone with Engineering department. Personnel from STELCO informed that MWSC has consulted STELCO regarding the relocation of fuel tanks at of Nikagas Magu and Falhumathee Magu junction area. STELCO informed MWSC that prior to any excavation below 600mm, STELCO has to be informed and excavation work can only be undertaken at the presence of STELCO personnel. This is due to location of high voltage power cable at the roads. The personnel from STELCO also informed that design drawings should be shared with them to confirm that point load pressure is avoided.

8.4 Maldives National Defence Force (MNDF)

Fire Department of MNDF was consulted regarding the fire safety requirements and the inspection done after the fire incident. The consultation was done via telephone conversation on 20th February 2016. The personnel from Fire Department informed that inspection report has been sent to MWSC after evaluation of site conditions (see Appendix 7). The personnel informed that existing location of fuel tanks does not confirm to fuel handling and storage regulations of Ministry of Defence. Therefore the existing tanks were recommended to be relocated to more suitable location.

The new location site plan, fuel line drawings and fire safety features/equipment has to be submitted to MNDF for approval.

8.5 Outcome of the consultation meetings

Parts of the roads, Nikagas Magu and Falhumathee Magu was assigned to MWSC for a 3 year period to assist in the company to relocate the fuel tanks and also make other changes to infrastructure at the compound. These changes are required due to recommendations made by MNDF Fire Department after the fire incident that the MWSC generator room crippling the facilities water production that lead to subsequent water crisis in Male'.

The drawing set of new fuel tank, bund walls, fuel lines and fire safety measures/equipment needs to be submitted to MNDF for inspection and approval.

MWSC will provide the design drawings to STELCO to ensure high voltage cables are not compromised. MWSC will also inform STELCO prior to excavation works and excavation works will be done in the presence of personnel from STELCO to ensure power cables are not damaged during construction work.

9 Environmental Impacts

9.1 Impact Identification

Various methods are available to categorize impacts and identify the magnitude and significance of the impact, such as checklists, matrices, expert opinion, modeling etc. Impacts on the environment from various activities of the project construction work (constructional impacts) and post construction (operational impacts) have been identified through interviews with the project management team, field data collection surveys and based on past experience in similar development projects. Data collected during field surveys can be used to predict outcomes of various operational and construction activities on the various related environmental components. This data can also be used as a baseline for future monitoring of the environment.

Possible impacts arising from the construction and operation works are categorized into reversible and permanent (irreversible) impacts. The impacts identified are also described according to their location, extent (magnitude) and characteristics. Reversible and irreversible impacts are further categorized by intensity of impacts (negligible, minor, moderate and major) for identifying best possible remedial (mitigation measures) action to be taken. Below are the impact categories.

Table 6 Impact prediction categorized

Impact category	Description	Reversible/ irreversible	Cumulative impacts
Negligible	The impact has no significant risk to environment either short term or long term	Reversible	No
Minor	The impact is short term and cause very limited risk to the environment	Reversible	No
Moderate	Impacts give rise to some concern, may cause long term environmental problems but are likely short term and acceptable	Reversible	May or may not
Major	Impact is long term, large scale environmental risk	Reversible and Irreversible	Yes, mitigation measures have to be addressed

The concept of the Leopold Matrix (Leopold et. al., 1971) has been used to classify the magnitude and importance of possible impacts which may arise during the constructional and post constructional stage of the proposed project. This is one of the best known matrix methodology used for identifying the impact of a project on the environment. It is a two dimensional matrix which cross references between the activities which are foreseen to have potential impacts on the environment and the existing conditions (environmental and social) which could be affected.

The matrix has the actions which may cause an impact on the horizontal axis and the environmental conditions which may be impacted on the vertical axis. While the original Leopold matrix lists 100 such actions and 88 environmental conditions, not all are applicable to all projects. Hence the matrix used in the current assessment is a modified matrix customized to this project.

Each action which is evaluated, is done so in terms of magnitude of effects on the environmental condition and importance of this impact. Value in upper left hand corner of the block indicates magnitude of interaction and that in the bottom right hand corner of the block indicates importance. All significant actions, their magnitude of impact and importance of impact (which specifies whether the impact is short term or long term) are further described in the text.

The proposed project involves relocation of existing fuel tanks of MWSC from the NE side of the plot to the SW side temporary location (Nikagas Magu and Falhumathee Magu junction). Potential impacts during the work are due to pollution of terrestrial environment and groundwater contamination.

The severity of impacts is predicted by reviewing the design plans and construction methodologies. Mitigation measures are formulated in light of the information revealed by the project engineers.

9.2 Limitation or uncertainty of impact prediction

Since the project scope is small impacts can be predicted accurately. Impacts identified are pollution of terrestrial environment (due to littering and solid waste during construction stage) and potential groundwater contamination (due to accidental spill during operational phase). Existing baseline data includes hydrocarbon levels at temporary location hence changes to groundwater condition can be compared after completion of the project (end of 3rd year).

9.3 Constructional Impacts

In any development project major direct impacts to the environment (either short term or long term) occur mainly during the construction phase. Potential direct or indirect impacts on the environment from the proposed works include:

- Impact on ground water
- Pollution of natural environment
- Risk of accidents and pollution on workers

9.3.1 Impact on ground water

The groundwater quality of Male' is already in a deteriorated condition due to past high extraction rates for personal use as well as the numerous construction activities which have been ongoing on the island over the past many years. However, the project has the potential to further impact the groundwater quality, due to accidental spills during the work, and such an incident could have a major impact on the resource as well as users of the resource. Since the project construction works does not involve dewatering, impacts due to dewatering is avoided.

The tanks are proposed to be relocated after emptying the tanks hence potential for accidental spill is avoided.

9.3.2 Pollution of natural environment

The project has the potential to pollute the natural environment should there be spills during the transfer of fuel from the fuel tanks to day use tanks. Should such a spill occur this has the potential to have a major impact on the environment. However, given that the staff are experienced in the work and measures to implemented to minimize spills, this impact is envisaged to be minor.

9.3.3 Risk of accidents and pollution on workers

The work has the potential to have a negative impact on workers in the instance of a spill. However, due to the scope of project and as workers will be given appropriate protective clothing, this impact is envisaged to be minor. Furthermore workforce involved in the project are those who are experienced in the area.

9.4 Operational Impacts

9.4.1 Impact on ground water

Accidental spill or fuel line leakages could potentially contaminate groundwater at the location. The tanks are provided with bund walls to contain the fuel in case of damage to tank or leakage of tanks, hence this impact is thought to be minor if bund walls are properly constructed. The fuel lines are designed to be run above ground therefore proper inspection will allow detection of leakage therefore this impact is also view as minor.

9.5 Impact Analysis

An analysis of the impacts due to the project was done using the Leopold matrix (Table 7). Magnitude and importance of an impact is given a numerical value from 1-10, 1 being the lowest

and 10 highest. Importance of impact is judged based on existing environment data, methods used and past experience with similar project.

The matrix showed that impacts on terrestrial environment (due to solid waste) and accidental spill is minor to moderate.

Table 7 Leopold matrix for fuel tank relocation at MWSC plot (Male')

				Constructional Activities		**Operational Activities**	
				Fuel / hazardous material spillage	Solid waste generation	Accidental spill or leakage at fuel lines	Total
Environmental /Social Condition	**Physical**	Water	Ground water	5		5	10
				7		7	14
	Biological	Ecosystems	Quality		3		3
					4		4
	Social	Social	Employment				
			Hazards/ safety/wellbeing	7		7	14
				8		8	16
	Total			12	3		
				15	4		

10 Alternatives

Given the scope of the project and project site, no alternatives are available for the project except for the no-project scenario which is discussed below.

10.1.1 The no-project scenario

The “do-nothing” option or no project scenario is the only alternative available for the project. If this is chosen the fuel tanks would remain at the existing location, which has been identified as one which is not feasible or ideal technically or safety-wise. Hence leaving them at the existing location is not a viable option, especially as it was a recommendation of the MNDF Fire department to relocate the tanks to another location within the plot which is more ideal in above mentioned aspects. Furthermore, the existing location does not confirm to regulation regarding fuel handling and storage. Hence the no-project scenario is considered not feasible and thus the project will be continued.

11 Mitigation Plan

There are a number of actions that can be taken to minimize or avoid impacts altogether. Those that are explored below emerged out of the discussions and consultations during this EIA and from the past experience of the consultant. Mitigation measures are selected to reduce or eliminate the severity of any predicted adverse environmental effects and improve the overall environmental performance and acceptability of the project.

Mitigation measures are discussed for the construction phase of the project. Since impacts due to the project are foreseen to be very few although moderate to major, mitigation measures have been discussed for all potential impacts which may arise (Table 8).

Table 8 Possible environmental impacts and mitigation measures for fuel tank relocation project at MWSC plot (Male')

Phase	Possible Impacts	Mitigation measures	Location	Time frame	Impact intensity	Institutional responsibility	Estimated cost (USD)
CONSTRUCTION PHASE (Temporary impacts)	Littering on terrestrial environment	Littering, accidental disposal and spillage of any construction wastes should be avoided by pre-planning ways of their transportation and unloading. Careful planning of the work activities can also reduce the amount of waste generated.	Land	Construction phase	Minor / short term impact	Contractor, Project manager	N/A (no additional cost)
	Ground water contamination, fuel handling, accidental oil or chemical spillage	Oil /chemical handling and management procedures will be made known to all relevant staff, mismanagement will be fined.	Land	Construction phase	Moderate to major	Project manager	N/A should be included in the initial cost
OPERATIONAL PHASE	Ground water contamination, fuel handling, accidental oil spillage	Daily inspection of fuel lines and bund wall to ensure detection of fuel leakages and remedial action taken to correct leakages	Land	Operational phase	Moderate impact	Operational management of MWSC	N/A should be included in the operational cost

12 Monitoring Program

Monitoring works during the construction and operational phase will be carried out according to the monitoring programmes in Tables 9 and 10. Cost for the monitoring (data collection) activities will be covered by the proponent (commitment to carrying out and financing the mitigation and monitoring work is given in the Proponents Declaration on Page vii).

Table 9 Monitoring programme for construction phase of the project

Environmental parameter	Methodology	Sampling frequency	Estimated cost for monitoring
Groundwater	Water samples sent to Food and drug authority for analysis of following parameters; • Temperature • Electrical conductivity • pH • Dissolved oxygen • Total Dissolved Solids • Total Hydrocarbon	Once after completion	Rate per test set MRF 1,400.00

Table 10 Monitoring program for operational phase of the project

Environmental parameter	Methodology	Sampling frequency	Estimated cost for monitoring
Groundwater	Water samples sent to Food and drug authority for analysis of following parameters; • Temperature • Electrical conductivity • pH • Dissolved oxygen • Total Dissolved Solids • Total Hydrocarbon	Once year for three years (period of use), report to be prepared on the third year after decommissioning	Rate per test set MRF 1,400.00

The monitoring report format should be as follows;

<u>Report after construction;</u>

- Name of project, date of report and name of consultant
- Introduction
- Methodology
- Results
- Impacts identified
- Remedial action

Report at the end of project (after 3 years)

- Name of project, date of report and name of consultant
- Summary
- Introduction (providing background information of the project)
- Methodology
- Survey results (comparison of data to baseline survey and discussion of changes)
- Impacts identified (cumulative impacts observed, significant negative impacts observed)
- Mitigation measures taken for impacts that are identified during monitoring phase
- Remedial action for impacts identified
- Conclusion

The EIA monitoring report structure provided in the EIA report bylaw 2012 (2012/R-27) shall be used for the monitoring report preparation. Monitoring reports will be submitted at the intervals as specified in Tables 9 and 10 for monitoring work during construction and operational phase of the project.

13 Conclusion

The environmental impacts associated with proposed project are considered minor. This conclusion is based on the evaluation of various components of the proposed project and results of the environmental surveys. The proposed temporary fuel tank location is existing roads hence vegetation clearance or demolition works are not required. The only foreseeable significant impact is potential impact on groundwater due to leakages or accidents. The design will include bund wall around the tanks to ensure accidental spill or leakage is contained while daily routine monitoring of the fuel lines and facility will detect leakages or spills thereby reducing potential impact magnitude. The fire safety features shall be submitted to MNDF Fire Department for their approval and will conform to the Fuel Use and Storage regulations.

Given that high voltage cables are located at the roads used for temporary location of fuel tanks, STELCO will be informed prior to excavation works and personnel from STELCO will be on site during excavation works. The design does not include deep excavation for foundation purposes since a 150mm screed will suffice as foundation pad for tanks and bund wall. The design drawings will be shared with STELCO engineering department to ensure that point load stress is avoided on areas where the power cables are located.

Groundwater test shows low levels of hydrocarbon from the two water sampling sites (0.10-1.15mg/l). The monitoring program includes checking levels of total hydrocarbon with standard physical parameters to monitor changes to groundwater quality. With proper sealed bund walls and routine leakage checks deteriorate or impact on groundwater can be reduced or totally avoided.

Given that the project is part of restructuring of MWSC facility in Male', the project is essential in facilitating the process since the space at the compound is limited. MWSC also needs to shut down the existing fuel storage facility due to regulatory and safety aspects (MNDF recommendations). Therefore, with due consideration to the environmental components identified above and the extent of the project activities and their likely and predicted impacts identified, the consultant concludes that the project components and designs are feasible and appropriate mitigation measures have been considered to correct and minimize unfavorable environmental changes.

Acknowledgements

The consultant acknowledges the contribution provided by the team members in this report for the valuable contribution to the report and at the field. The consultant also acknowledges the assistance provided by MWSC, STELCO, MNDF and MHI.

CVs of team members are given below.

بسم الله الرحمن الرحيم

CURRICULUM VITAE

1. POSITION: Environmental Specialist/EIA Consultant

2. NAME OF FIRM: LaMer Group

3. NAME: Hussain Zahir

4. DATE OF BIRTH: 10th February 1966

5. NATIONALITY: Maldives

6. EDUCATION:

Masters of Philosophy (MPhil) in Coral Reef Ecology
University of Newcastle upon Tyne. Newcastle Upon Tyne, United Kingdom
2006

Marine Biology B.Sc. (Hon)
University of Newcastle Upon Tyne.
Newcastle Upon Tyne,
United Kingdom
1993-1996

7. MEMBERSHIP OF PROFESSIONAL SOCIETIES:

8. OTHER TRAINING:

1988. Marine Science Institute, University of Philippines
Certificate of completion of training course on Scleractinian Coral Taxonomy

1989. Chulalongkorn University. Bangkok. Thailand
Certificate of Completion of training Course on Coral Taxonomy, Ecology and Management

1998 Okinawa International Centre, Okinawa, Japan
Certificate of participation on training course on Conservation and Sustainable Management of Coral Reefs

1999 Korean Research and Development Institute, Seoul, South Korea
Certificate of Completion of the Training Course on marine coastal zone conservation and management

1990. Department of Marine Sciences. Chulalongkorn University. Bangkok. Thailand
Workshop on Taxonomy of Soft Bottom Invertebrates (ASEAN-Australian Coastal Living Resources Project)

1991. Mc Master University, Hamilton, Ontario. Canada.
Training on Boring Sponges of Coral reefs in Maldives

1996 Turtle Specialist Group, Convention on the Conservation

of Migratory Species of Wild Animal (CMS) and government of India. Bhubaneshwar, India

Workshop and Strategic Planning Session for the Conservation of Sea Turtles of the Northern Indian Ocean

1999. United Nations Environment Program. Environment for South Asia and Pacific, organized by SACEP and Ministry of Home Affairs, Housing and Environment.

National Training for State of the Environment and Data Collection and Reporting

9. COUNTRIES OF WORK EXPERIENCE:

10. LANGUAGE AND DEGREE OF PROFICIENCY:

Dhivehi -Mother Tongue
English -Proficient

11. EMPLOYMENT RECORD:

Nov 2007- Present	Senior Reef Ecologist Marine Research centre, Ministry of Fisheries Agriculture and Marine Resources Male', Maldives.
Feb 2006- October 2007	Reef biologist Marine Research centre, Ministry of Fisheries Agriculture and Marine Resources Male', Maldives.
July 2001- January 2006	Senior Research Officer Marine Research centre, Ministry of Fisheries Agriculture and Marine Resources Male', Maldives.
June 2000 to Present	Marine Biologist/ Director (Part Time) Land and Marine Environmental Resource Group of Pte Ltd
July 1996 to July 2001	Research Officer Marine Research Centre , Ministry of Fisheries Agriculture and Marine Resources
1988 to 1992	Biological Aid Marine Research Centre , Ministry of Fisheries Agriculture and Marine Resources
1986 to 1988	Marine Research Centre , Ministry of Fisheries Agriculture and Marine Resources Trainee

12. DETAILED TASKS ASSIGNED:	WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE TASKS:
Marine Research Centre, Ministry of Agriculture and Marine Resources	**National coordinator of Global Coral Reef Monitoring Network** *Responsibilities:* Including Implementation and management of the programme activities in the country through the GCRMN Regional Node for south Asian Region in Srilanka. Current programme of activities include, establishing and monitoring of coral reefs to assess the recovery processes after the 1998 Bleaching and to monitor the temporal changes to the reef system. Responsibilities also include coordination and implementation of socioeconomic monitoring at designated pilot sites to asses the livelihood and their dependence on coral reef resources. Coordinating the establishment national reef database to share information at national, regional, and global level is also part of the program of activities. **Coral Reef Degradation in the Indian Ocean (CORDIO) Programme** *Responsibilities:* include implementation and management of the identified projects/ Studies funded by CORDIO. Currently involved biophysical studies designed to understand the reef recovery processes after a severe disturbance in coral reefs **Catalogue of Common Coral Reef of Maldives, 1996** *Year: 1996* *Location:* Maldives.
Task Undertaken Independent Consultant	**Initial Environmental Evaluation, Tsunami Emergency Assistance Project, Maldives** *Year: 2006* *Location:* Ha. Filladhoo, HDH. Nolhivaranfaru, Sh. Maroshi, N. Maafaru, DH. Meedhoo, M. Kolhufushi and Th. Madifushi, Maldives *Client: ADB* *Project features:* Rehabilitation of damaged infrastructures (electricity)due to the tsunami of December 2004 in the Maldives financed by ADB under Tsunami Emergency Assistance project *Positions held:* Domestic Environmental Specialist *Responsibilities:* Initial Environmental Evaluation for the Repair and Reconstruction of Diesel powered generator housed in the above 7 island communities. Environmental issues specific of diesel power generation in the local and national context were addressed following ADB environmental guidelines. I **Initial Environmental Evaluation, Tsunami Emergency Assistance Project, Maldives** *Year: 2005* *Location:* Ugoofaaru, Manadhoo , Dhidhdhoo, Maldives *Client: ADB* *Project features:* Rehabilitation of damaged infrastructures (harbours)due to the tsunami of December 2004 in the Maldives financed by ADB under Tsunami Emergency Assistance project *Positions held:* Domestic Environmental Specialist *Responsibilities:* Initial Environmental Evaluation of the project sites; Ugoofaaru, Manadhoo and Dhidhdhoo for the tsunami

emergency assistance project: TA-0001 (MLD). Specific Task include rapid environmental assessment of the project sites, prepare environmental evaluations based on filed data and community Consultants, predict environmental impacts and propose an environmental monitoring plan for the project activities.

Marine Biodiversity assessment, Faafu atoll, Maldives,
Year: 2003
Location: Faafu atoll, Maldives
Client: ADB
Project features: Identification of potential biodiversity hotspots (sites/species) as part of identifying priority areas for an MCPA planning project funded by ADB. Project involves assessment of socioeconomic and biophysical assessment of the short listed sites identified for the project.
Positions held: Biodiversity Environmental Specialist
Responsibilities: Marine Biodiversity assessment Faafu atoll Maldives. ADB regional technical assistance for coastal and Marine resource management and poverty reduction in south Asia. (ADB RETA 5974). A project implemented by Ministry of Fisheries, Agriculture and Marine Resources. Assignment involves detail preparation of marine biodiversity and Coastal management issues with special reference to grouper fishery and resource management.

Environmental Impact Assessment Report for the Development of Fish Processing Plant at Ha. Huvahandhoo, Maldives,
Year: 2002
Location: Maldives
Client: Jausa Fishery Links
Project features: Construction of a tuna processing plant
Positions held: Marine Biologist
Responsibilities: The EIA report involves collection and assessment of baseline and secondary environmental data both at the marine and terrestrial environment of the project site. It also involved a risk assessment and evaluation report. An environmental management plan was also developed as part of the EIA.

Task Undertaken as an employee o f Land and Marine Environmental Resource Group Pte Ltd

Replacement of wastewater collection, septic tanks and disposal systems in Ga.Villingili, Ga.Dhaandhoo, Gdh.Gahdhoo
Year: 2007-Ongoing
Location: Ga.Villingili, Ga.Dhaandhoo, Gdh.Gahdhoo
Client: American Red Cross
Project features: Design and construction of wastewater disposal systems in the specific islands
Positions held: EIA Specialist
Responsibilities: Environmental Impact Assessment research and analysis.
Preparation and submission of the Environmental Impact Assessment Report.

Environmental Impact Assessment for Reethi Rah Resort Redevelopment
Year: 2005
Location: Reethi Rah Resort
Client: Kersner International, Hotel Group
Resort development at Reethi Rah Resort
Positions held: Marine Biologist
Responsibilities: The EIA involves collection and assessment of baseline and secondary environmental data and marine and terrestrial environment of the project site. This is one of the largest reclamation project for resort development and assessment of impact of dredging and reclamation on the coastal marine habitats was a major component of this study

Environmental Impact Assessment Report for Villa Hakatha at Thilafushi, Male Atoll
Year: 2001
Location: Male Atoll
Client: Villa Hakatha,Maldives
Positions held: Project Biologist
Responsibilities: The EIA report involves collection and assessment of baseline and secondary environmental data both at the marine and terrestrial environment of the project site. It also involved a risk assessment evaluation report. An environmental management plan was also developed as part of this EIA.

Development at Baa. Landaagiraavaru, Maldives
Year: 2000
Location: Baa. Landaagiraavaru, Maldives
Client: Club mediterranee *Project features:*
Positions held: Project Biologist
Responsibilities: The EIA involved collection of Oceanographic data, Study of the beach environment, Vegetation, reef quality and reef water quality. The study examined the impacts of the island and mitigation measures where appropriate. The study also forms the baseline data for future monitoring of the environmental changes due to the resort development

Environmental state for the proposed channel dredging & associated Barrier Island at Sun Island Resort.
Year: 2000
Location: Sun Island Resort, Maldives
Client: Tekton Design Associates Pvt. Ltd
Positions held: Project Biologist
Responsibilities: The Study involved assessment of the potential environmental impact on the coastal shoreline of the island and on to the reef environment within close proximity of the proposed project site.

Tasks undertaken as an employee of Riyan Design and Management Pte Ltd

Environmental Statement for the Proposed Redevelopment of Reethi Rah Resort
Year: 2000
Location: Reethi Rah Resort
Client: Reethi Rah Resort
Positions held: Project Biologist
Responsibilities: This Study Involved assessment of the existing

status of the islands environment and identification of potential environmental impact areas related to the proposed redevelopment plans. Formulation of an environmental monitoring plan that would enable the client to record the environmental changes that may be related to anthropogenic activities or natural.

Environmental Statement for the Proposed Redevelopment of Reethi Rah Resort
Year: 2000
Location: Reethi Rah Resort
Client: Reethi Rah Resort
Positions held: Project Biologist
Responsibilities: This Study Involved assessment of the existing status of the islands environment and identification of potential environmental impact areas related to the proposed redevelopment plans. Formulation of an environmental monitoring plan that would enable the client to record the environmental changes that may be related to anthropogenic activities or natural.

Proposed Beach Nourishment at M. Medhufushi. An assessment of Environmental Design Parameters
Year: 2000
Location: M.Medhufushi
Client: Vaaly Brothers Pte.Ltd
Positions held: Project Biologist
Responsibilities: The study involved examination of the beach characteristic
Including the sediment properties, beach profiles. Identification of a borrow site by Comparing the borrow sediment characteristics of the borrow site and the native beach sand.

Environmental Evaluation of Small-bore Sewer System (SBS) in Lh. Hinnavaru and K. Gulhi
Year:1999
Location: Lh. Hinnavaru and K. Gulhi
Client: Maldives Water and Sanitation Authority
Project features: The Study Involved ground water/ Seawater analysis of sewage pollution; reef surveys hydro graphic /oceanographic surveys and survey of the slopes of the sewage lines.
Positions held: Project Environmental Analyst

Assessment of Oil Contamination in Male' Groundwater from Vehicle Garages and Petrol Stations.
Year:1999
Location: Male', Maldives
Client: Maldives Water and Sanitation Authority
Positions held: Project Environmental Analyst
Responsibilities: The study involved Ground water analysis of oil contamination and assessment of general working conditions and practices in the vehicle garages and petrol stations in male'.

Environmental Impact Statement for the Proposed Beach Protection Works at Nika Island Resort
Year:1999

Location: Male', Maldives
Client: Nika Island Resort
Positions held: Project Biologist
Responsibilities: The project involves assessment of physical environmental condition such as the wave, current sediment characteristics, bathymetry at the project site (Nika Island Resort). Assessment of the status of the reef at the project site and an evaluation of the possible impacts on the reef and the physical environment as a result of the proposed beach protection work.

Environmental Monitoring of F. Filitheyo Resort Development
Year:1999
Location: F.Filitheyo
Client: AAA Trading Company Pvt.Ltd
Positions held: Project Biologist

Environmental Monitoring of M. Medhufushi Resort Development
Year:1999
Location: M. Medhufushi, Maldives
Client: Vaally Brothers Pte Ltd
Position Held: Project biologist

Environmental Monitoring of Lh. Kanuhuraa, Maldives
Year:1999
Location: Lh. Kanuhuraa
Client: SIMDI Hotel Management Pte Ltd
Positions held: Project Biologist

Environmental Monitoring of R. Meedhupparu Resort Development
Year:1999
Location: R. Meedhupparu
Client: Cowrie Investment Pvt Ltd, Maldives
Positions held: Project Biologist
Responsibilities: The Monitoring programmes involved periodic measurements of the beach profiles around the islands, reef quality surveys, ground water/ seawater analysis and environmental auditing

Tasks Under Taken as a Freelance Consultant

Environmental impact Assessment for the F. Filitheyo Resort Development
Year:1998
Location: F.Filitheyo
Client: AAA & Trading Company, Maldives
Positions held: Project Biologist

Environmental Impact Assessment for Lh. Madhiriguraidhoo Resort Development
Year:1997
Location: Lh. Madhiriguraidhoo
Client: Guardian Agency Pte Ltd
Positions held: Marine Biologist

Environmental Impact Assessment for B. Fonimagoodhoo Resort Development
Year:1997
Location: B. Fonimagoodhoo, Maldives
Client: Thasmeen Ali, M. Sheeraazeege, Maldives
Positions held: Marine Biologist

Environmental Impact Assessment for M. Hakuraahuraa Resort Development
Year:1997
Location: M. Hakuraahuraa
Client: Fantasea Pte Ltd, Maldives
Project features:
Positions held: Marine Biologist
Responsibilities: The EIA studies Involved collection of oceanographic data studies of the beach environment, vegetation, reef quality and ground water / Seawater quality. These studies examined the impacts of the development on the island and mitigation measures where appropriate. The studies also form the baseline data for the future monitoring of the environmental changes due to the resort development

13. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Date: 7 May 2008
[*Signature of staff member or authorized representative of the staff]* *Day/Month/Year*

Full name of staff member Hussain Zahir
Full name of authorized representative:

CURRICULUM VITAE

1. POSITION: Geological Specialist

2. NAME OF FIRM: Riyan Pvt Ltd

3. NAME: Mohamed Aslam

4. DATE OF BIRTH: 6 October 1969

5. NATIONALITY: Maldivian

6. EDUCATION:

University of Auckland, NewZealand,
Master of Science (Msc) in Geography ,2004

University of Wales, United Kingdom
Bachelor of Science (Hons) (Bsc) ,in Geological Oceanography, 1997

7. MEMBERSHIP OF PROFESSIONAL GROUPS:

A presiding member of International EC-safety cooperation organisation (IESCO)

Member, Climate Change Technical Team, Integrated Climate Change Strategy - Maldives, Ministry of Environment, Water and Energy (Presently).

Member, Technical Committee on Harbour Construction and Land Reclamation, Ministry of Planning and National Development (April 2001 – July 2003).

Member, Project Co-ordinating Committee, Fuahmulaku Harbour Project, Ministry of Construction and Public Works (April 2001 – July 2003).

Member, Technical Focal Group, Maldives Protected Area Systems Project, Ministry of Home Affairs Housing Environment (2000 – 2003)

8. OTHER TRAINING:

9. COUNTRIES OF WORK EXPERIENCE:

10. LANGUAGE AND DEGREE OF PROFICIENCY:

English – Excellent
Dhivehi - Excellent

11. EMPLOYMENT RECORD:

Director
Land & Marine Environmental Resource Group-Maldives
March 2012 to present

Minister of Housing & Environment
Ministry of Housing & Environment
July 2010 – February 2012

Minister of Housing, Transport & Environment
Ministry of Housing, Transport & Environment
November 2008 – July 2010

Land & Marine Environmental Resource Group-Maldives, (2006 to 2008)
Director
Founding Partner and Director of Lamer Group

Director
Male',Maldives (12/05-03/06)
Ministry of Construction and Public Infrastructure,
Coastal and Civil Engineering Section

Deputy Director
Male',Maldives (07/05-12/05)
Ministry of Construction and Public Infrastructure

Deputy Director
Male',Maldives (01/05-07/05)
Ministry of Construction and Public Works

Oceanographer
Male',Maldives (09/97-08/03)
Ministry of Construction and Public Works

Secretary
Male',Maldives (07/90-09/92)
Ministry of Public Works and Labour

Private
Male',Maldives (10/89-07/90)
National Security Services

12. DETAILED TASKS ASSIGNED:

WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE TASKS:

- Lead the climate change negotiation and mitigation level in COP 15, COP16 & COP 17 an head of delegation of Maldives

- Deputy chair of the climate change council, the national body who advised the president on policy matter relating to climate negotiation and Environmental conservation, protection in the Maldives

- Founding Member of Regional task force on renewable energy, an ADB body that was forced in 2010

Topographic and Hydrographic Surveys for JBIC, Japan
Location: Maldives,
Year: 2008,
Time Spent: 5months,
Position: Project Director

The Topographic and Hydrographic Surveys were carried out to prepare topographic maps and bathymetric maps for the Tsunami Reconstruction project in the Maldives, and to analyze the characteristics of the Tide of the project areas through the field observation and analysis of the records.
The Service consists of the following surveys.
Topographic and Bathymetric Surveys at Sh. Funadhoo Harbor

Tide Observation and Establishment of MSL at the harbor project sites
Topographic Survey of the sewerage project islands
Inventory Survey of Septic Tanks in the sewerage project islands

The Surveys were carried out at the following islands:

- *Ga Dhaandhoo (Tide)*
- *L Isdhu (Tide)*
- *L Fonadhoo (Tide)*
- *Th. Dhiyamigili (Tide)*
- *M Muli (Topography)*
- *K Mafushi (Tide)*
- *B Eydhafushi (Topography)*
- *Sh Funadhoo (Topography, Hydrographic, Tide)*

Topographic Surveys of Tsunami rehabilitation project, sewer system designing for American Red Cross
Location: Maldives,
Year: 2007,
Time Spent: 2months,
Position: Project Director

The Topographic Surveys were carried out to prepare topographic and as-built maps for the Tsunami Reconstruction project in the Maldives
The topographic Surveys were carried out at the following islands:

- *GDh Gadhoo*
- *Ga Villigili*
- *Ga Dhaandhoo*

Topographic Surveys of Tsunami rehabilitation project, sewer system designing for UNOPS
Location: Maldives,
Year: 2007,
Time Spent: 2months,
Position: Project Director

The Topographic Surveys were carried out to prepare topographic and as-built maps for the Tsunami Reconstruction project in the Maldives
The topographic Surveys were carried out at the following islands:

- *Dh Meedhoo*
- *F Nilandhoo,*
- *R Ungoofaaru*

Lh Madivary Airport Development Topographic and Bathymetric Surveys for IAS, Maldives
Location: Maldives,
Year: 2007,
Time Spent: 2months,
Position: Project Director/Surveyor

The Topographic and Bathyetric Surveys were carried out to prepare topographic maps and bathymetric maps for the Island for the design of the runway and harbour facilities of the airport

Fuahmulaku Harbour Project
Location: Maldives,
Year: 1999 - 2003,
Time Spent: 4 years,
Position(s): Environmental Analyst (1999 – 2001)
then Project Manager (2001 – 2003)

Responsibilities:
The project involved dredging of a 2000sqm harbour basin with a sheet piled quay wall of length 650m and a rubble mound breakwater of 540m. The environmental analyst assisted the design consultant (Niras/Portconsult, Denmark) for the project to understand the specific environmental conditions of the project site and also carried out the bathymetric surveys required for the physical modelling of the harbour design.

As the project manager, duties included managerial review of all project components and making timely decisions on all matters to be dealt by the client for the effective implementation of the project.

Hulhumale Land Reclamation and Coastal Structures Development Project
Location: Maldives, *Year:* 2001 - 2002, *Time Spent:* 1 year,
Position: Project Engineer

Responsibilities:
The project involved reclamation of a land area of approximately 2sqkm that required approximately 3million cum of dredged material. This fill material was dredged from the deeper lagoon of Hulhule Lagoon. The coastal protection works included construction of a revetment and a sheet pile quay wall. As the project engineer, duties included overall supervision of the quality of works carried out by the contractor (Dredging International, Belgium) and making assessment of technical issues in the implementation of the project.

Environmental/Technical Study for Dredging and Reclamation Works Under the Hulhumale Project
Location: Maldives, *Year:* April 2002- June 2002, *Time Spent:* 3 months,
Position: Counterpart Environmental Specialist
Responsibilities:

This was study conducted to assess the technical feasibility of the reclamation works under the Hulhumale' project and to assess the environmental impacts associated with the dredging and reclamation works. The counterpart environmental specialist was responsible for carrying out the environmental data collection program. Some of the specific environmental data collected by the counterpart environmental specialist included current measurements at the site and a detailed bathymetric survey of the site. Preliminary assessment of the current data and processing and plotting of bathymetric data were also performed by the counterpart environmental specialist.

List of Some Technical Studies and Papers

EIA Ha Berimadhoo Resort Development
Location: Maldives, *Year:* February – March 2008, *Time Spent:* 2

month,

Position: Consultant

EIA Ga Kondeymathilabadhoo Resort Development
Location: Maldives, *Year:* January –February 2008, *Time Spent:* 2 month,

Position: Consultant

EIA Ga Munandhua Resort Development
Location: Maldives, *Year:* January 2008, *Time Spent:* 1 month,

Position: Consultant

EIA for Coastal Protection Works at Gdh. Lonudhuhutta

Location: Maldives, *Year:* 2006-2008, *Time Spent:* 2 years,

Position: Leading Consultant for Coastal Monitoring for 2 years and for the design of the coastal protection works

EIA GDh Vattavareha Resort Development
Location: Maldives, *Year:* July 2006, *Time Spent:* 1 month,

Position: Consultant

Beach Replenishment Technical Study. WhiteSands Resort and Spa, South Ari Atoll, Maldives
Location: Maldives, *Year:* March 2006, *Time Spent:* 1 month,

Position: Leading Consultant

Geological effects of tsunami on mid-ocean atoll islands: The Maldives before and after the Sumatran tsunami.
Paul S. Kench, Roger F. McLean, Robert W. Brander, Scott L. Nichol, Scott G. Smithers, Murray R. Ford, Kevin E. Parnell and **Mohamed Aslam** (2006). Geology: Vol. 34, No. 3, pp. 177–180.

Shore Protection Technical Study for Dhonveli Beach & Spa Resort, Maldives
Location: Maldives, *Year:* February 2006, *Time Spent:* 1 month,
Position: Leading Consultant

Environmental Impact Assessment Report for the Proposed Remodelling of the Coastal Environment of FunIsland Resort.
Location: Maldives, *Year:* September 2005, *Time Spent:* 2 month,
Position: Consultant (Coastal Environmental Specialist)

Environmental Impact Assessments (EIA) Report, Domestic Maritime Transport Study (ADB TA 4394-MLD)
Location: Maldives, *Year:* March 2005, *Time Spent:* 5 ½ month,
Position: Consultant (Environmental Specialist)

Environmental Impact Assessment Report Redevelopment of Reethi Rah as a Premium Nature Resort
Location: Maldives, *Year:* May 2005, *Time Spent:* 1 ½ months,
Position: Consultant (Coastal Environmental Specialist)

Regional Technical Assistance for Coastal and Marine Resources Management and Poverty Reduction in South Asia (ADB RETA 5974)
Location: Maldives, *Year:* April 2003, *Time Spent:* 3 months,
Position: Consultant (Coastal Environmental Specialist to assess the coastal zone issues in Faaf atoll, Maldives and formulation of an Integrated Coastal Zone Management Strategy and An Action Plan.

Proposed Shore Protection works at Hakuraahuraa – An Assessment of Environmental Design Parameters
Location: Maldives, *Year:* Sep 2001, *Time Spent:* 4 months,

Position: Leading Consultant
The study involved examination of the beach characteristics, nearshore current and wave patterns and how they affect the beach of the island. Based on these examinations a shore protection structure suitable for the island was proposed.

Environmental Study on the Proposed Beach Fill Project at K. Hudhuveli – An Assessment of Beach Fill Design Parameters
Location: K. Hudhuveli, *Time Spent:* September 2000 (1 ½ months),
Position: Leading Consultant

The study involved examination of the beach characteristics including the sediment properties, beach profiles. Identification of a borrow site by comparing the borrow sediment characteristics of the borrow site and the native beach sand.

Environmental Impact Assessment Study for the Resort Development at Baa. Landaagiraavaru
Location: Maldives, *Year:* June 2000, *Time Spent:* 2 months,
Position: Consultant (Coastal Environmental Specialist)

The EIA study involved collection of oceanographic data, study of the beach environment, vegetation, reef quality and groundwater/seawater quality. The study examined the impacts of the development on the island and mitigation measures where appropriate. The EIA study also recorded the baseline data for future monitoring of the environmental changes due to the resort development.

Proposed Beach Nourishment at M. Medhufushi. An assessment of Environmental Design Parameters
Location: M. Medhufushi, *Time Spent*: April 2000,
Position: Leading Consultant

The study involved examination of the beach characteristics including the sediment properties, beach profiles. Identification of a borrow site by comparing the borrow sediment characteristics of the borrow site and the native beach sand.

Environmental Evaluation of Small Bore Sewer System (SBS) in Lh. Hinnavaru and K. Gulhi (A study carried out for Maldives Water and Sanitation Authority, Maldives).
Location: Maldives, *Year:* 1999, *Time Spent:* 3 months,
Position: Consultant

The study involved groundwater / seawater analysis for sewage pollution, reef surveys hydrographic / oceanographic surveys and survey of the slopes of the sewage lines.

Assessment of Oil Contamination in Male groundwater from vehicle garages and petrol stations. . (A study carried out for Maldives Water and Sanitation Authority, Maldives).
Location: Maldives, *Year:* 1999, *Time Spent:* 3 months,
Position: Consultant

The study involved groundwater analysis for oil contamination and assessment of general working conditions and practices in the Vehicle Garages and Petrol Stations in Male.

Environmental Impact Assessment for R. Meedhupparu Resort Development
Location: Maldives, *Year:* 1998, *Time Spent:* 2 ½ months,
Position: Consultant

Environmental Impact Assessment for F. Filitheyo Resort Development
Location: Maldives, *Year:* 1998, *Time Spent:* 2 ½ months,
Position: Consultant

Environmental Impact Assessment for Alif Maamigili Airstrip Development
Location: Maldives, *Year:* 1997, *Time Spent:* 3 ½ months,
Position: Consultant

Environmental Impact Assessment for Lh Madhiriguraidhoo Resort Development
Location: Maldives, *Year:* 1997, *Time Spent:* 2 ½ months,
Position: Consultant

11.Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

[*Signature of staff member or authorized representative of the staff]*
Mohamed Aslam

Shahaama Abdul Sattar

Personal Information

Date of birth:	30 September 1980
Address:	G. Helengeli Aage, Apt 2 B Rahdhebai Magu Male' Republic of Maldives
Contact No:	+ 960 7904985 (m)
Email:	shahaama@lamer.com.mv (LaMer Pvt Ltd) shahaama.sattar@gmail.com
Work Address:	Currently working independently

Education

Graduate and Postgraduate

Aug 2004 - Jun 2006	Master of Science in Fisheries Biology and Fisheries Management University of Bergen Department of Biology Postbox 7800 N-5020 Bergen, Norway
Feb 1999 - Dec 2001	Bachelor of Science The Flinders University of South Australia GPO Box 2100 Adelaide 5001, South Australia

Secondary

Apr 1997 – Jul 1998	G.C.E A'Level (London) Kolej Damansara Utama Damansara Jaya Selangor, Malaysia
Jan 1994 – Dec 1996	G.C.E O'Level (London) Aminiya School Male', Republic of Maldives

Work experience

Feb 2002	Volunteer work at Seal Bay, Kangaroo Island, South Australia. Work involved helping researchers with catching seals and removing tracking devices from the seals.

Dec 2001 – Feb 2002 Work experience at the South Australian Aquatic Sciences Centre
Work involved dealing with sea urchins, mainly cleaning their tanks, doing dissections on sea urchins and helping researchers with different aspects of the research.

May 2008 Participated in the Biodiversity Valuation survey of Baa Atoll Maldives carried out by AEC project and IUCN

Employment Record

May 2011 - Present Consultant, Darwin Reef Fish Project
Marine Research Centre, Maldives / Marine Conservation Society, UK

- Consultant to the Darwin Reef Fish Project (4 year joint collaboration between MRC and MCS, UK), which assesses the various reef fisheries (grouper, aquarium and food fisheries) of the Maldives and aims to establish management plans for these fisheries. Provision of technical support and assistance to the project staff and MRC in implementing the project and formulation of the management plans.

June 2011 – Present LaMer Pvt Ltd

- Work part time in report writing for the various Environmental Impact Assessment projects conducted by the group.

July 2011 – Present BOBLME Sharks Working Group Coordinator, Bay of Bengal Large Marine Ecosystem Project

- Coordinator for the Sharks WG of BOBLME project, and work with the focal points in the member countries, to assist in the formulation and implementation of their National Plans of Action for Sharks.

June 2002 – May 2011 Fisheries Biologist (At time of resignation)
Marine Research Centre
Ministry of Fisheries and Agriculture
Male', Republic of Maldives

Line of work at MRC included:

- Conduct field surveys to monitor the reef fishery and fish species behaviour
- Compilation and analyses of the reef fisheries data, in particular the grouper and food fishery data
- Write reports and regular reviews on the status of fisheries including recommendations for management.
- Focal point for the IUCN funded project on identification of reef fish spawning aggregations in the Maldives through fishermen interviews (2007)
- Secretariat – Indian Ocean Cetacean Symposium 2009
- Project Partner for Maldives for the Darwin Initiative Coral Reef Fish Project, Maldives
- MRC Focal point for the Atoll Ecosystem Conservation Programme, Ministry of Housing and Environment (2009 – 2011)

Workshops/Seminars Participated

15-21 March 2003 - Training Workshop on the Implementation of Multilateral Agreements in the Conservation of Biodiversity with special focus on Marine Biodiversity. Kushiro, Japan

14-16 November 2006 – Sixth William R. and Lenore Mote International Symposium – Life history in Fisheries Ecology and Management. Sarasota, Florida

03-05 March 2008 – Olhugiri and Dhigalihaa Protected Areas Management Planning Workshop. Eydhafushi, Maldives

11 March 2008 – Applying the Ecosystem Approach to managing Atoll Ecosystems in the Maldives. Hulhule Island Hotel, Maldives

24-26 March 2008 – Regional Consultation on Preparation of Management Plans for Shark Fisheries. Beruwela, Sri Lanka

17-19 June 2008 – Workshop on Assessment and Management of the Offshore Resources of South and Southeast Asia. Bangkok, Thailand

22-23 March 2009 – BOBP-IGO National Workshop on Monitoring, Control and Surveillance in Marine Fisheries. Male', Maldives

18 – 20 July 2009 – Indian Ocean Cetacean Symposium 2009. Paradise Island Resort and Spa, Maldives.

09-11 August 2009 – Second Regional Consultation on Preparation of Management Plans for Shark Fisheries. Kulhudhuffushi, Maldives

24-25 February 2010 – BOBLME Project – National Inception Workshop, Male', Maldives

2-3 June 2010 – BOBP-IGO Technical Advisory Committee – 5th Meeting, Male', Maldives

13-14 September 2010 – BOBLME Fisheries Assessment Working Group – 1st Meeting, Bangkok, Thailand

14-16 December 2010 – EWS-WWF 2nd Marine Conservation Forum for the Gulf Region In partnership with the Pew Environment Group – Local Actions for Global Challenges, Abu Dhabi, United Arab Emirates

18-19 January 2011 – Bay of Bengal Large Marine Ecosystem Project – Workshop on the Status of Marine Managed Areas in the Bay of Bengal, Penang, Malaysia

5-7 July 2011 –Bay of Bengal Large Marine Ecosystem Project – First meeting of the BOBLME Sharks Working Group, Male', Maldives

7-8 September 2011 – Workshop to formulate the Grouper Fisheries Management Plan, DRFP/MRC, Male', Maldives

15-17 September 2011 – SEAFDEC Special Meeting on Sharks Information Collection in Southeast Asia, Bangkok, Thailand

Publications

Sattar, S. A., Amir, H. and Adam, M. S. (2011) Reef fish tagging programme – Baa Atoll Pilot project (in press)

Sattar, S. A., Andréfouët, S., Ahsan, M., Adam, M. S., Anderson, R. C. and Scott, L (2011) Status of the Coral Reef Fishery in an Atoll under tourism development: the case of Central Maldives (in press)

Saleem, M., Sattar, S. A. (2009) Study on post-tsunami restoration and conservation projects in Maldives, *Prepared for the International Union for Conservation of Nature*.

Tamelander, J., Sattar, S., Campbell, S., Hoon, V., Arthur, R., Patterson E. J.K., Satapoomin, U., Chandi, M., Rajasuriya, A. and Samoilys, M. (2009) Reef fish spawning aggregation in the Bay of Bengal: Awareness and Occurrence, *Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008,* Session 22

Sattar, S. A., Jørgensen, C., Fiksen, Ø. (2008) Fisheries Induced Evolution of Energy and Sex Allocation. *Bulletin of Marine Science*, 83(1): 235-250

Sattar, S. A. (2008) Review of the Reef fishery of the Maldives, Marine Research Centre, Male', Maldives. 62 pp

Sattar, S. A. and M. S. Adam (2005) Review of the Grouper fishery of the Maldives with additional notes on the Faafu Atoll fishery. Marine Research Centre, Male', Maldives. 54 pp

Referees

Dr. Mohamed Shiham Adam, PhD
Marine Research Centre
Ministry of Fisheries, Agriculture and Marine Resources
Male', Republic of Maldives
Tel. No: +960 331 3681
Email: msadam@mrc.gov.mv

Associate Professor Øyvind Fiksen, PhD
Department of Biology,
University of Bergen
Postbox 7800
N-5020 Bergen, Norway
Tel. No: +47 5558 4624
Email: Oyvind.Fiksen@bio.uib.no

Christian Jørgensen, PhD
Department of Biology,
University of Bergen
Postbox 7800
N-5020 Bergen, Norway
Tel. No: +47 5558 4618
Email: Christian.Jorgensen@bio.uib.no

Dr. Charles Anderson
anderson@dhivehinet.net.mv
charles.anderson11@btinternet.com

CURRICULUM VITAE

1. PROPOSED POSITION: Environmental Planner

2. FIRM: LaMer Pvt. Ltd

3. NAME: Aishath Abdulla

4. DATE OF BIRTH: 10th September 1986

5. NATIONALITY: Maldivian

6. PERSONAL ADDRESS: H.Regalge,
MajeedheeMagu
Male' Rep. of Maldives

7. EDUCATION: 2012 M. Environment, Australia
2010 BA (Hons) in Urban and Regional Planning, Malaysia

8. OTHER TRAINING:

9. LANGUAGE AND DEGREE OF PROFICIENCY:
English – Fluent
Dhivehi – Mother tongue

10. MEMBERSHIP OF PROFESSIONAL SOCIETIES:

11. COUNTRIES OF WORK EXPERIENCE:
Maldives, Malaysia

12. EMPLOYMENT RECORD:

February 2013- Present	Senior Planner LAMER Group Pte Ltd Male' Maldives
November 2010 – January 2011	Planner/ Acting business development Manager Riyan Pte.Ltd Male' Maldives
May 2009 - July 2009	Trainee ANZ PLANNERS SDN. BHD Selangor Malaysia
August 2005 - October 2005	Surveyor Ministry of Fisheries and Agriculture Male' Maldives

	December 2003	Surveyor Ministry of Planning and National Development Male' Maldives
	May 2003-August 2003	Volunteer UNICEF Male' Maldives

13	**DETAILED TASKS ASSIGNED:**	**WORK UNDERTAKEN THAT BEST ILLUSTRATES CAPABILITY TO HANDLE THE TASKS ASSIGNED:**
		Review and Update the Detailed Island Risk Assessment in the Maldives prepared for HDh. Kulhudhufushi and GDh. Thinadhoo Year: 2013 Client: Ministry of Environment and Energy Position Held: Social Planner/Project Coordinator Duties Rendered: Review all relevant documents related to DIRAM study, study the social aspects impacting the risks of the islands and overall management of the project.
		Preparation of Heritage Action Plan and Preliminary Inventory Year: 2011 Client: Department of National Heritage Position Held: Team Leader Duties Rendered: Proposed action plan for the protection and safeguarding of national heritage. Prepared a preliminary inventory of the existing tangible and intangible heritage of Maldives
		Preparation of Atoll and Island Development Plans for AA. Atoll Year: 2011 Client: Secretariat of AA Atoll council Position Held: Planner/ Project Manager Duties: Manage and prepare the development plans
		Reviewing the Third Tourism Master Plan 2005-2011 Year : 2011 Client: Ministry of Tourism Arts and Culture Position Held: Planner/Project Coordinator Duties Rendered: Provide input in planning perspective and also over all coordination of the project inclusive of conducting a workshop to present the findings
		Integration of Climate Change Risk Resilience into Land Use Planning Location: Maldives Year: 2011

Client: Ministry of Housing and Environment
Position Held: Planner/Project Coordinator
Duties Rendered: Provide input in planning perspective and also over all coordination of the project inclusive of conducting a workshop to present the findings

Preparation of a detailed Layout Plan for Tourism Zone (Asseyri Project)
Year :2011
Client: Ministry of Tourism Arts and Culture
Position Held: Planner/Project Coordinator
Duties Rendered: Provide input in planning perspective through preparing the layout plan and also over all coordination of the project inclusive of conducting a workshop to present the findings

Appraisal of Hithadhoo Regional Hospital Development
Location: S. Hithadhoo, Maldives
Year :2010
Client:OPEC Fund for International Development (OFID)
Position Held: Socio Assessment Specialist/Project Coordinator
Duties Rendered: Overall Coordination of the project and carry out social Impact assessment study.

Mapping study of infrastructure and resources for Youth
Location:
Year :2010
Client:UNDP
Position Held: Assistant project coordinator
Duties Rendered: Assisting in overall coordination of the project

***Draf RancanganTempatan* DAERAH KUALA LANGAT (*Draft Local Plan* for Kuala Langat District)**
Location: Kuala Langat, Selangor, Malaysia
Year :2009
Client:JPBD (Town and country planning department, Selangor)
Position Held: Support consultant
Duties Rendered: Assisting in the planning process including the report writing, consultations, preparing layout plans and 3D sketch-up models

Reviewing the Master Plan
Location: Badra and Sweirra, Iraq
Year :2009
Client: City council, Badra and Sweirra
Position Held: Support consultant
Duties Rendered:providing consultancy on the master plan. Reviewing the EIA and preparing SIA for the master plan of Badra and Sweirra

HELIPAD Development; PRINCE COURT Hospital
Location: Ampang, Kuala Lumpur, Malaysia
Year :2009
Client:
Position Held: Support Consultant
Duties Rendered: Reviewing the guidelines for HELIPAD development, preparing proposal presentations for the development.

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Aishath Abdulla Date: 10 December 2013

Address: LaMER Group Pvt Ltd
3rd Floor, Azum, Ameenee Magu
Contact Number: + (960) 778 2143
Email: aishath.abdulla@lamer.com.mv

References

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MHAHE, 2002.National Biodiversity Strategy and Action Plan of the Maldives. pp 110

MHTE, 2009. Third National Environment Action Plan. pp. 25

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Schott, F. A. and McCreary, J. P. Jr., 2001. The monsoon circulation of the Indian Ocean. *Progress in Oceanography*, 51 (1): pp. 1 – 123Segal, B. and Castro, C.B., 2001. A Proposed Method for Coral Cover Assessment: A case study in Abrolhos, Brazil. *Bulletin of Marine Science* 69 (2), pp 487-496.

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Appendix 1 List of abbreviations

CBD – Convention on Biological Diversity
EIA – Environmental Impact Assessment
EPA – Environmental Protection Agency
MEE – Ministry of Environment and Energy
MNDF – Maldives National Defense Force
MWSC – Male' Water and Sewerage Company
NBSAP - National Biodiversity Strategy and Action Plan
NEAP III – Third National Environment Action Plan
ToR – Terms of Reference

Appendix 2 Terms of Reference (ToR)

203-EIARES/MWSC/2016/11

Terms of Reference for Environmental Impact Assessment for relocation of fuel tanks at MWSC compound, Male' City

The following is the Terms of Reference (ToR) following the scoping meeting dated **25th January 2016** and submitted to EPA for undertaking the EIA for the proposed relocation of fuel tanks at MWSC compound at Male' City. While every attempt has been made to ensure that this ToR addresses all of the major issues associated with development proposal, they are not necessarily exhaustive. Additional matters that are significant but not incorporated in this TOR should not be interpreted as exempt from considering any additional environmental impacts identified during the course of preparation of the EIA report.

1. **Introduction and rationale** – Describe the purpose of the project and, if applicable, the background information of the project/activity and the tasks already completed. Objectives of the development activities should be specific and if possible quantified. Define the arrangements required for the environmental assessment including how work carried out under this project is link other activities that are carried out or that is being carried out within the project boundary. Identify the project financing and institutional arrangements relevant to the project.

2. **Study area** – Submit a minimumA3 size scaled plan with location of existing and proposed new locations for the fuel tanks. Specify the agreed boundaries of the study area for the environmental impact assessment highlighting the proposed development location and size.

3. **Scope of work**– Identify and number tasks of the project including preparation, construction and decommissioning phases.

   Task 1. Description of the proposed project – Provide a full description and justification of relocation of fuel tanks:

   - Existing location of fuel tanks and proposed new locations on an A3 scaled map,
   - Dimension of tanks, screed and bund walls
   - Justification for the relocation works

   Task 2. Description of the environment – Assemble, evaluate and present the environmental baseline study/data regarding the study area and timing of the study(e.g. monsoon season). Identify baseline data

gaps and identify studies and detail of various assessments o be carried out. All baseline data must be presented in such a way that they are referenced to future monitoring. The report should outline detailed methodology of data collection utilized.

The baseline data will be collected before construction and from at least two benchmarks. All sampling/survey locations shall be geo referenced. Information shall be provided regarding the following:

- General description of fuel tank relocation area.
- Ground water quality measuring these parameters pH, electrical conductivity, TDS, dissolved oxygen and total hydrocarbon from existing location and proposed location.

Task 3. Legislative and regulatory considerations – Identify the pertinent legislation, regulations and standards, and environmental policies that are relevant and applicable to the proposed project, and identify the appropriate authority jurisdictions that will specifically apply to the project.

Task 4. Potential impacts (environmental and socio-cultural) of proposed project– The EIA report should identify all the impacts, direct and indirect, during and after construction, and evaluate the magnitude and significance of each. Particular attention shall be given to impacts associated with the following:

<u>Impacts on the natural environment</u>

- Impact on ground water

<u>Construction related hazards and risks</u>

- Pollution of the natural environment (e.g. spills, pollution from construction related waste);
- Risk of accidents and pollution on workers and local community,

The methods used to identify the significance of the impacts shall be outlined. One or more of the following methods must be utilized in determining impacts; checklists, matrices, overlays, networks, expert systems and professional judgment. Justification must be provided to the selected methodologies. The report should outline the uncertainties in impact prediction and also outline all positive and negative/short and long-term impacts. Identify impacts that are cumulative and unavoidable.

Task 5. Alternatives to proposed project – Describe alternatives including the *"no action option"* should be presented. Determine the best practical environmental options. Alternatives examined for the proposed project that would achieve the same objective including the "no action alternative".

This should include alternative location. The report should highlight how the location was determined. All alternatives must be compared with locally accepted standards of similar nature. The comparison should yield the preferred alternative for implementation. Mitigation options should be specified for each component of the proposed project.

Task 6. Mitigation and management of negative impacts – Identify possible measures to prevent or reduce significant negative impacts to acceptable levels. Measures for both construction and operation phase shall be identified including cost the mitigation measures, equipment and resources required to implement those measures. The confirmation of commitment of the Developer to implement the proposed mitigation measures shall also be included.

Task 7. Development of monitoring plan– Identify issues requiring monitoring to ensure compliance to mitigation measures and present impact management and monitoring plan for all relevant components of the project. Detail of the monitoring program including the physical and biological parameters for monitoring, cost commitment from the developer to carryout monitoring in the form of a commitment letter, detailed reporting scheduling, costs and methods of undertaking the monitoring program must be provided.

Task 8- Stakeholder Consultation – A summary of the stakeholder consultations in the context of the project shall be provided. This shall include consultation with all the major stakeholders of the project to include:

- Ministry of Defense and National Security
- Ministry of Housing and Infrastructure
- Maldives Transport Authority
- STELCO

Details of the consultative meetings including summary outcomes, participants, date, time and location should be described. The EIA report should include a list of people/groups consulted, their contact details and summary of the major outcomes. The EIA report should be submitted to the atoll council and evidence of which included in the EIA report.

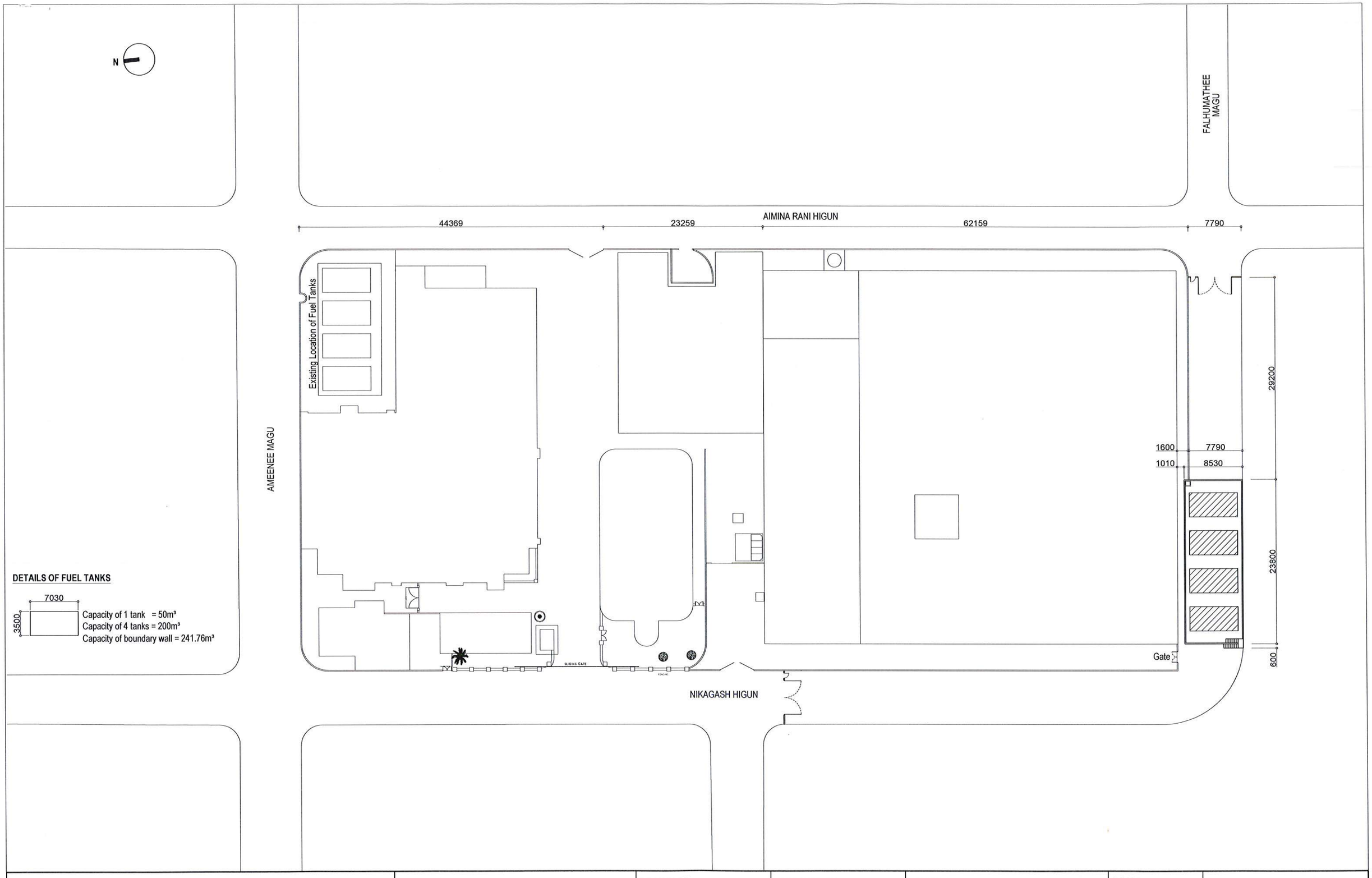
Presentation- The Environmental Impact Assessment report shall be concise and focus on significant environmental issues. It will contain the findings, conclusions and recommended actions supported by summaries of the data collected and citations f or any references used in interpreting those data. The environmental assessment report will be organized according to, but not necessarily limited by the outline given in the Environmental Impact Assessment Regulations 2012 and the relevant amendments.

Timeframe for submitting the EIA report – The developer must submit the completed EIA report within 6 months from the date of this Term of Reference.

.....

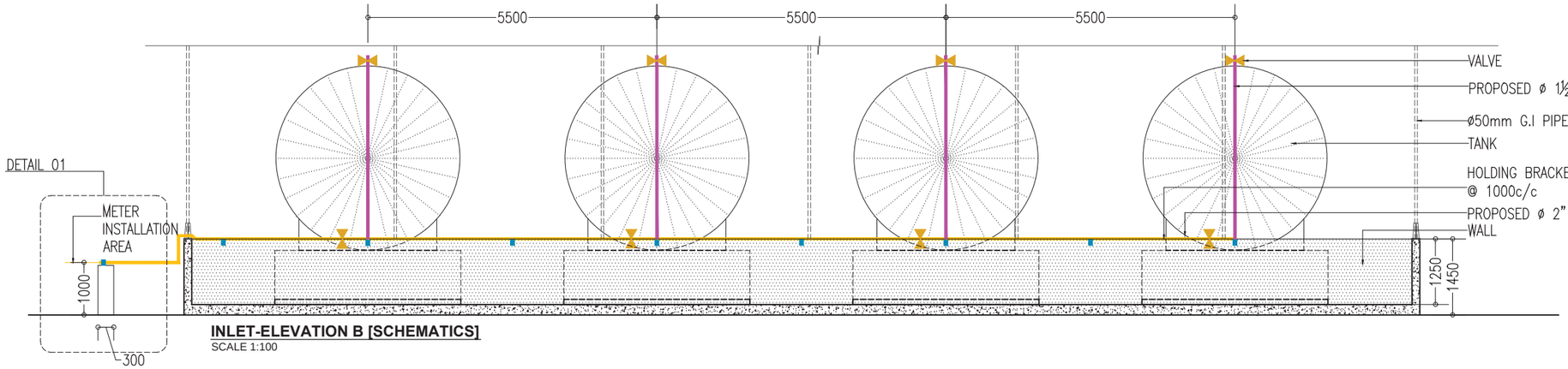
25th January2016

Appendix 3 Site Plan

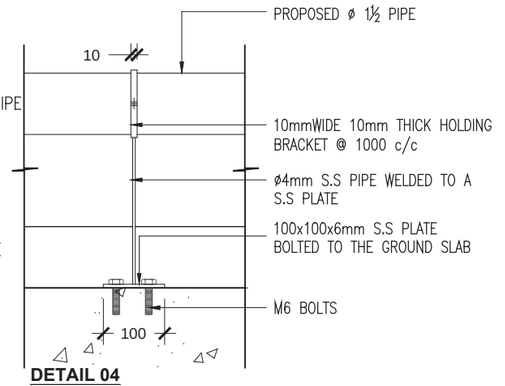


AMENDMENTS	PROJECT	DRAWN BY:	CHECKED BY	CLIENT	SCALE
	RELOCATION OF FUEL TANK, MALE'	AMINATH MOHAMED (451)	MOHAMED ALI (PE)	PROPERTY MANAGEMENT	1:500
	TITLE	CHECKED BY OPERATIONS:	CHECKED BY	DESIGN CONTRACTOR	DWG NO. RFT-01
	SITE PLAN	RUSTHUM	MOHAMED IMRAN ADNAN (EM)	MWSC	DATE 05 JAN 2016

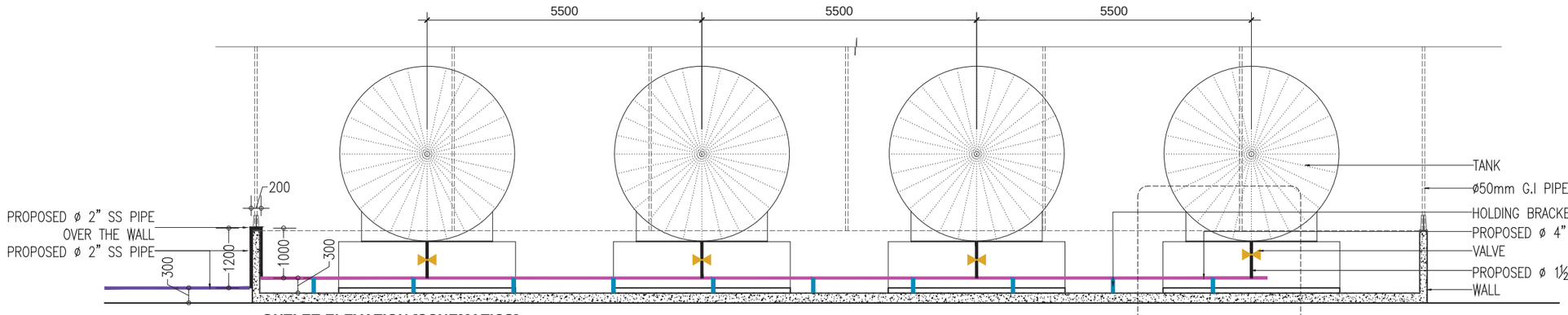
MWSC
MALE' WATER & SEWERAGE COMPANY PVT LTD.
AMEENEE MAGU, MACHCHANGOLHI MALE' 20-01 REPUBLIC OF MALDIVES
Tel: (+960) 3323200, Fax: (+960) 3332430, E-mail: mwsc@dhivehinet.net.mv



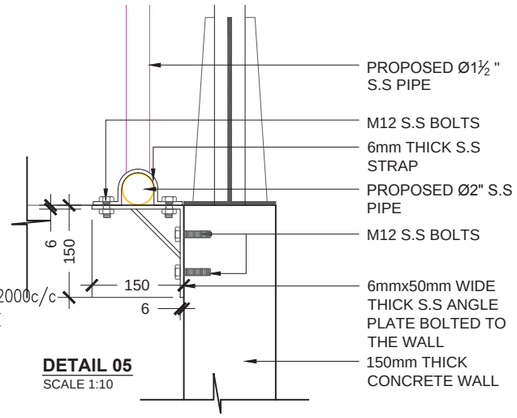
INLET-ELEVATION B [SCHEMATICS]
SCALE 1:100



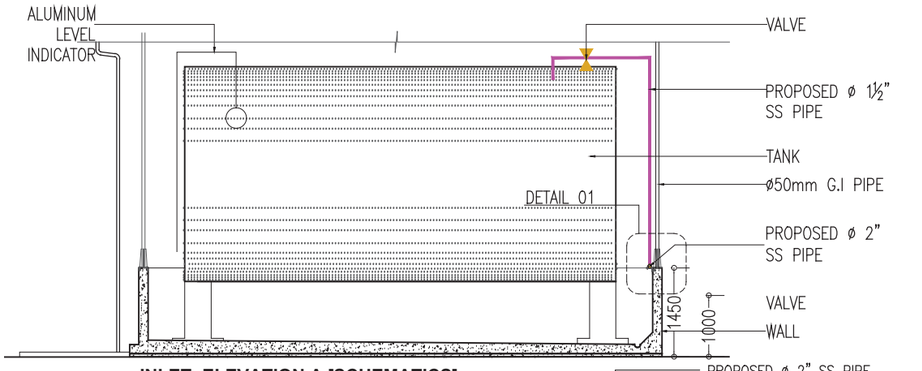
DETAIL 04
SCALE 1:10



OUTLET-ELEVATION [SCHEMATICS]
SCALE 1:100



DETAIL 05
SCALE 1:10



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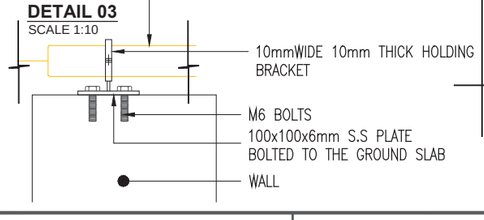
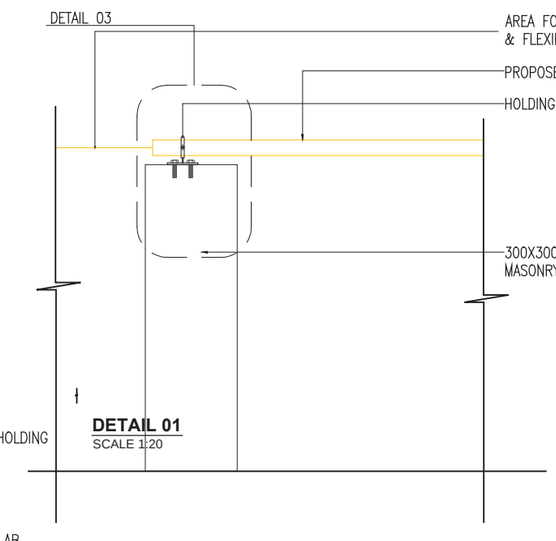
SCALE 1:100

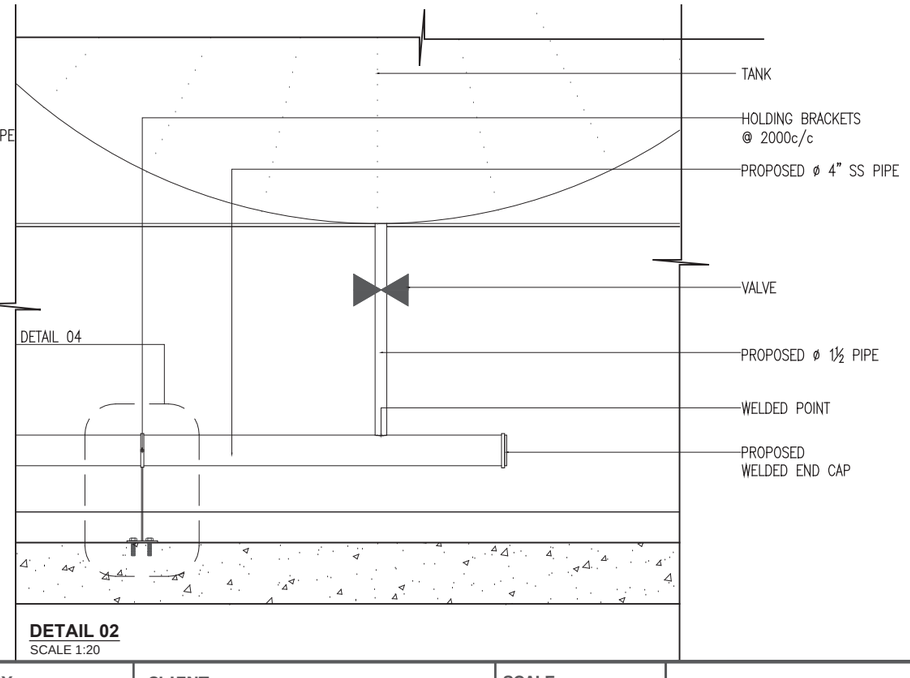


DETAIL 03
SCALE 1:10



DETAIL 01
SCALE 1:20

DETAIL 02



DETAIL 02
SCALE 1:20

AMENDMENTS	PROJECT	DRAWN BY:	CHECKED BY	CLIENT	SCALE
	RELOCATION OF FUEL TANK, MALE'	SHAUFA M SAEED [1161]	MOHAMED ALI (PE)	PROPERTY MANAGEMENT	AS GIVEN
	TITLE	**CHECKED BY OPERATIONS:**	**CHECKED BY**	**DESIGN CONTRACTOR**	**DWG NO.** RFT-A_DTLS02-14
	SITE PLAN	RUSTHUM	MOHAMED IMRAN ADNAN (EM)	MWSC	**DATE** FEB 2016

MWSC
MALE' WATER & SEWERAGE COMPANY PVT LTD.
AMEENEE MAGU, MACHCHANGOLHI MALE' 20-01 REPUBLIC OF MALDIVES
Tel: (+960) 3323209, Fax: (+960) 3332 4306, E-mail: mwsc@dhivehinet.net.mv

Appendix 4 Water Test Results Reports

Male' Water & Sewerage Company Pvt Ltd
Water Quality Assurance Laboratory
FEN Building 5th Floor, Machangoalhi, Ameeneemagu, Male', Maldives
Tel: +9603323209, Fax: +9603324306, Email: wqa@mwsc.com.mv

بسم الله الرحمن الرحيم

MWSC

WATER QUALITY TEST REPORT

Test Report No: 300706/2016/02

Customer Informations : ***Land & Marine Environmental Resources Group Pvt. Ltd***
H. Azum 3rd Floor,
Ameenee Magu,
Male'
Rep. of Maldives

Date: 17/02/2016

Sample Description / Location~	Existing Tank Location	Proposed New Location	TEST METHOD	UNIT
Sample Type~	Ground water			
Sampled Date~	14/2/2016			
Sample Received Date	15/2/2016			
Test Requisition Form No.	900162914			
Sample No.	821769	821770		
Date of Analysis	17/2/2016			
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Cloudy with particles	Muddy with particles	Visual	-
Total Petroleum Hydrocarbon (TPH)	0.10	0.15	UV Fluorescence	mg/L

Keys:

UNITS: mg/L: Milligrams per litre

Checked by:	Approved by:
Afnan Farooq Laboratory Executive	Mohamed Eyman Senior Technical Officer

Notes:

Sampling Authority: Sampling was not done by MWSC Laboratory

This test report is ONLY FOR THE SAMPLES TESTED.

~ Information Supplied by the customer

**********END OF THE REPORT**********

Appendix 5 List of people consulted

Office/company	Name	Designation	Contact no/email
Transport Authority	Shazna Moosa	Licensing Officer	3343420
STELCO, Transmission and Distribution Department	Ibrahim Nashid	Senior Engineer	332 0982
MHI	Ahmed Habeeb	State Minister	3004300
MNDF Fire Department	Ahmed Faiz	Captain	3322607

Appendix 6 Letter from MHI assigning parts of Nikagas magu and Falhumathee magu for temporary use by MWSC

8/10/15

MWSC

INCOMING MAIL

15 Oct 2015

	To	CC		To	CC
CM			PROC		
MD			WQA		
ED		✓	MIT		
OD		✓	CS		
AD	✓		LO		
FD			89		

1444

بسم الله الرحمن الرحيم

"ހިލޮކާ ތިލޮކުން ގަނެދޭ - ފިނިވަންތަކަމުގެ ދަށަކީ"

Ministry of Housing and Infrastructure

Male', Republic of Maldives.

ފެންވަރާއި ތަރައްގީ ހިންގާ ވަޒާރާ

ދިވެހިރާއްޖެ، ފިލާދަންފުށި.

138-PS2/MWSC/2015/78 :ނަންބަރު

ފެންވަރާއި ތަރައްގީ ހިންގާ ވަޒާރާ ދިވެހިރާއްޖެ ގައި ހުންނަ ކުންފުނިތަކުގެ ބޯޑުތަކަށް ކުންފުނީގެ ބޯޑު ގަވާއިދާ ގުޅިގެން ދެވޭ ތަމްރީނާ ގުޅިގެން ދެވޭ ލިޔުން

ފޮނުވާ ނަންބަރު MWSC-34/2015/3396 (2015 ސެޕްޓެމްބަރ 26) ގެ ލިޔުމާ ގުޅިގެންވެ،

ފެންވަރާއި ތަރައްގީ ހިންގާ ވަޒާރާ ދިވެހިރާއްޖެ ގައި ހުންނަ ކުންފުނިތަކުގެ ބޯޑު ގަވާއިދުގެ 375، 376 ނަންބަރު ދަށުން ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 375 ވަނަ ދަށުގެ (ހ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ހ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ށ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ނ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ރ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ބ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ޅ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ކ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ވ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ފ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ދ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ތ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ލ) ގެ ދަށުން ކުންފުނީގެ ބޯޑު ތަމްރީނާ ގުޅިގެން ކުންފުނީގެ ބޯޑު ގަވާއިދުގެ 376 ވަނަ ދަށުގެ (ސ

Appendix 7 Inspection report by MNDF Fire Department

VIP
AS weed for
20/8/15

(10097)

بسم الله الرحمن الرحيم

މިނިސްޓްރީ އޮފް ޑިފެންސް އެންޑް ނޭޝަނަލް ސެކިއުރިޓީ
މާލެ، ދިވެހިރާއްޖެ

ދިވެހިން ދިވެހިންގެ ގޮތުގައި - މިނިވަންކަމުގެ އަހަރު

ނަންބަރު: 28-LA-1/[illegible]/2015/24

މާލޭ ވޯޓަރ އެންޑް ސުވަރޭޖް ކޮމްޕެނީ ޕްރައިވެޓް ލިމިޓެޑްގެ މެނޭޖިންގ ޑިރެކްޓަރ އަލްފާޟިލް އިބްރާހިމް ފަޒީލް ރަޝީދަށް،

ވެދުން ސަލާމަށްފަހު ދަންނަވަމެވެ.

މިމިނިސްޓްރީގެ ނަންބަރު : 28-LA-1/MWSC/2014/29 (21 ޑިސެމްބަރު 2014) ސިޓީއާއި ހަވާލާދީދަންނަވަމެވެ.

ތިޔަ ކުންފުނީގެ ހަތަރު ބިލްޑިންގ އެންޑް ވޯކްޝޮޕް (ޕްރޮޖެކްޓްސަން ބިލްޑިންގ)ގައި ގާއިމްކޮށްފައިވާ އަލިފާނުން ރައްކާތެރިވުމުގެ އާލާތްތަކުގެ ހާލަތު ދެނެގަތުމަށްޓަކައި 2015 އޮގަސްޓް 12 ދުވަހު މޯލްޑިވްސް ނޭޝަނަލް ޑިފެންސް ފޯސްގެ ފަޔަރ އެންޑް ރެސްކިއު ސަރވިސް އިން އިންސްޕެކްޓް ކުރައްވާ ތަފްޞީލުކޮށްފައިވާ ރިޕޯޓް މިސިޓީއާއެކު ފޮނުވީމެވެ.

ވީމާ، މިރިޕޯޓުގައި ފާހަގަކުރެވިފައިވާ ކަންތައްތައް އަވަސް މުއްދަތެއްގެ ތެރޭގައި ރަނގަޅުކުރެއްވުމަކީ މުހިންމު ކަމެއްކަމުގައި ދަންނަވަމެވެ.

އިޙްތިރާމް ގަބޫލުކުރެއްވުން އެދެމެވެ.

04 ޛުލްޤައިދާ 1436
19 އޮގަސްޓް 2015

ޚާދިމުކުމް

MSKdsh

މުޙައްމަދު ޝަރީފް
މިނިސްޓަރ އޮފް ސްޓޭޓް

MWSC
INCOMING MAIL
20/8/15

	To	CC		To	CC
CM			PROC		
MD			WQA		
ED			MKT		
OD			CS		
AD	✓		LO		
FD					

މާލޭ ވޯޓަރ އެންޑް ސުވަރޭޖް ކޮމްޕެނީ ޕްރައިވެޓް ލިމިޓެޑް
މާލެ، ދިވެހިރާއްޖެ.

بسم الله الرحمن الرحيم

މިނިސްޓްރީ އޮފް ޑިފެންސް އެންޑް ނޭޝަނަލް ސެކިއުރިޓީ
މާލެ، ދިވެހިރާއްޖެ.

އެމް.ޑަބްލިޔު.އެސް.ސީގެ ޕަވަރ ބިލްޑިންގ އެންޑް ވޯކްޝޮޕް

1. ތަޢާރަފު

މިއިންސްޓްރަކްޝަނަކީ އެމް.ޑަބްލިޔު.އެސް.ސީގެ ޕަވަރ ބިލްޑިންގް އެންޑް ވޯކްޝޮޕް (ޕްރޮޑަކްޝަން ބިލްޑިންގ) ގައި ޤާއިމުކޮށްފައިވާ އަލިފާނުން ރައްކާތެރިކަމުގެ އާލާތްތަކާއި ނިޒާމުތަކުގެ ހާލަތު ދެނެގަތުމަށް ފަޔަރ އެންޑް ރެސްކިއު ސަރވިސްއިން ޗެކްކޮށް ފޮނުވައިދިން 2015 އޮގަސްޓް 12 ވަނަ ދުވަހުގެ ރިޕޯޓުގައިވާ އިންސްޓްރަކްޝަނެކެވެ.

2. އެމް.ޑަބްލިޔު.އެސް.ސީ ޕަވަރ ބިލްޑިންގ އެންޑް ވޯކްޝޮޕް (ޕްރޮޑަކްޝަން ބިލްޑިންގ)ގައި ޤާއިމުކޮށްފައިވާ އަލިފާން ނިވާ ނިޒާމުތަކުގެ ހާލަތު

2.1 އަލިފާންނިވި

މި އިމާރާތުގެ ގިނަތަންތަނުގައި އެމް.އެން.ޑީ.އެފް ފަޔަރ އެންޑް ރެސްކިއު ސަރވިސް އިން ބަލަމުންދާ މިންގަނޑަށް އަލިފާންނިވި ބަހައްޓާފައި ހުއްޓެވެ. ނަމަވެސް ބައެއް އަލިފާންނިވިތައް މި އިމާރާތުގެ ޕްލޭން ރޫމްގައި ހިނގި އަލިފާނުގެ ހާދިސާގައި އަލިފާންނިއްވުމަށް ބޭނުންކުރެ، ސަރވިސްކުރުމަށް ނުވަތަ ފުރާ އިތުރު މަސައްކަތްކަމީ ކުރިއަށްދާން ހުރިހާކަމެއް ފާހަގަކުރެވުނެވެ.

#	އަލިފާންނިވި ބަހައްޓާފައިވާ ތަންތަން	އަލިފާންނިވީގެ ވައްތަރު	އަލިފާންނިވީގެ ހާލަތު
01	ވޯކްޝޮޕް [illegible]	4.5 ކިލޯގެ 01 ޑީ.ސީ.ޕީ	ބޭނުންކުރެވޭ ހާލަތުގައި
		09 ލީޓަރުގެ 01 ފޯމް	ބޭނުންކުރެވޭ ހާލަތުގައި
		02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
02	އޯލްޑް ސްޓޯރ ގިއަރ ރޫމް (އަލިފާނުގެ ހާދިސާ ހިނގި ޕަމްޕް ރޫމް)	02 ކިލޯގެ 06 ސީ.އޯ.ޓޫ	ސަރވިސްކުރުމަށްޓަކައި ނަގާފައި
03	އޯލްޑް ކޭޕް ޖެނެރޭޓަރ ރޫމް	09 ލީޓަރުގެ 01 ފޯމް	ރީފިލް ކުރާތީ ނަގާފައި
		09 ކިލޯގެ 01 ޑީ.ސީ.ޕީ	ރީފިލް ކުރާތީ ނަގާފައި
04	ޓްރަކް	50 ލީޓަރުގެ 01 ފޯމް ޓްރޮލީ	ބޭނުންކުރެވޭ ހާލަތުގައި
		50 ކިލޯގެ 01 ޑީ.ސީ.ޕީ ޓްރޮލީ	ބޭނުންކުރެވޭ ހާލަތުގައި
05	ނިއު ކޭޕް ޖެނެރޭޓަރ ރޫމް	9 ކިލޯގެ 01 ޑީ.ސީ.ޕީ	ބޭނުންކުރެވޭ ހާލަތުގައި
		02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
06	އާރ.އޯ ޕްލާންޓް ރޫމް އިރުމަތީ	02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި

		02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ސާރވިސްކުރުމަށްޓަކައި ނަގާފައި
07	އާރު.އޯ ޕްލާންޓް ރޫމް ހުޅަނގު	02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
		02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
08	ނިއު ޕެނަލް ރޫމް	02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
		09 ލީޓަރުގެ 01 ވޯޓަރ	ބޭނުންކުރެވޭ ހާލަތުގައި
09	ޕްލާންޓް ކޮންޓްރޯލް	02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި
10	ޕްލާންޓް ކޮންޓްރޯލް އެތެރެބައި	02 ކިލޯގެ 01 ސީ.އޯ.ޓޫ	ބޭނުންކުރެވޭ ހާލަތުގައި

2.2 ފަޔަރ އެލާމް ސިސްޓަމް

މި އިމާރާތުގައި އެނަލޮގް އެޑްރެސަބަލް ފަޔަރ އެލާމް ސިސްޓަމެއް ޤާއިމުކޮށްފައި ހުރެއެވެ. އެހެން ނަމަވެސް ބައެއް ފަހަރު ފަޔަރ އެލާމް ޕެނަލުއިން އެރަރ ފޯލްޓް އަދި ބައެއް ޑިޓެކްޓަރތަކުގެ ފޯލްޓް އުޅޭކަމަށް ދައްކައެވެ. އަދި މިސިސްޓަމް މެއިންޓެނަންސް ޕްރޮގްރާމްކޮށްފައިވާ ފަޔަރ އެލާމް އަޑީ ކޮންޓްރޯލްރޫމަށް އެލާމް ޕެނަލުއިން ނުދައްކާތީ، ޑިޓެކްޓަރތަކުގެ ލިސްޓެއް ބަލައިގެން އެލާމް އަޑުއަހަން ހުރިން ޖެހޭކަން ފާހަގަކުރަމެވެ.

2.3 މެއިން ފިއުލް ޓޭންކް

އެމް.ޑަބްލިއު.އެސް.ސީގެ ޖަނަރޭޓަރުތަކަށް ބޭނުންކުރާ ތެޔޮ ރައްކާކުރުމަށް 50،000 ލީޓަރުގެ 04 ޓޭންކު ބަހައްޓާފައި ހުރި އިރު މި ޓޭންކުތަކުގައި އަލިފާނުން ރައްކާތެރިކުރުމުގެ އެއްވެސް ނިޒާމެއް ޤާއިމުކޮށްފައެއް ނުވެއެވެ. އަދި އިންސްޕެކްޝަން ޗެކުން މިން އަޅައިގެން ބެލިއިރު ތެލު ވިސްނުން ޑިޕްސްޓިކް ސްޓޭންޑައި ބަންޑުވެފައި ދުރުމިނުގައި ހުރީ 07 ފޫޓެވެ. ފެން ބޮޑުވެގެން ބޮޑުވެފައި ދުރުމިނުގައި ހުރީ 08 ފޫޓެވެ. އަދި އައިމިނާރާ ހިސާބުމަތި ބޮޑުވެފައިވާ ދުރުމިނު 06 ފޫޓު 03 އިންޗި ހުރި އިރު އަޑިހަމަގައި ބޮޑުވެފައި ދުރުމިނުގައި ހުރީ 08 ފޫޓު 03 އިންޗެއެވެ. ދަންނަވަމެވެ. މިހާރު އަމަލުކުރަމުންދާ "[illegible] ބިލްޑިންގ ކޯޑް [illegible] އަދި ގުޅިގެން ބޭނުން ގަވާއިދު" ގައިވާ ގޮތުން 200,000 (ދެ ލައްކަ) ލީޓަރުގެ ޖުމްލަ އޮތެންގައި ރައްކާކުރާނަމަ ޓޭންކުތަކުގެ ބޮޑުވެފައިން ފާރުގެން ވަކި ނުވަތަ އެހެން ފަރާތްތަކުގެ މިލްކިއްޔާތާއި ދުރުމިން 30 ފޫޓު ހުންނަން ޖެހެއެވެ. އަދި ޓޭންކުތަކުގެ ބޮޑުވެފައިން ފާރުގެ އާ މިލްކިއްޔާތުގެ ތެރެއިން ހުންނަ އެހެން ޢިމާރާތްތަކާއި ދުރުމިން 10 ފޫޓު ހުންނަންޖެހެއެވެ. ނަމަވެސް ޓޭންކުތަކުގައި އޮޓޮމެޓިކް ފޯމް ސްޕްރިންކްލަރ ސިސްޓަމެއް ޤާއިމުކޮށްފައިވާނަމަ ކުރިން ބުނެވިދިޔަ 30 ފޫޓު އަދި 10 ފޫޓު ދުރުބައި ކުޑަ އެއްބައިން ކުޑަކުރެވިދާނެއެވެ. އެހެންކަމުން މިތަނުގައި މިހާރު ޓޭންކު ބަހައްޓާފައިވާގޮތް މިހާރު އަމަލުކުރަމުންދާ "[illegible] ބިލްޑިންގ ކޯޑް [illegible] އަދި ގުޅިގެން ބޭނުން ގަވާއިދު" އާ ނުގުޅޭކަން ފާހަގަކުރަމެވެ.