

Environmental Monitoring Report

PUBLIC

Project No. 51077-002
Semi-Annual Report (May - October 2023)
December 2023

Maldives: Greater Male Environmental Improvement and Waste Management Project

Prepared by Project management unit for Greater Male' Environmental Improvement and Waste Management Project for the Asian Development Bank (ADB).

CURRENCY EQUIVALENTS

(As of October 2023)

Currency unit	–	Currency Equivalent
MVR 1	=	\$ 0.065
\$1.00	=	MVR. 15.42

ABBREVIATIONS

ADB	–	Asian Development Bank
3R	–	Reduce, Reuse, Recycle
C&D	–	Construction and demolition
CSCECL	–	China State Construction Engineering Corporation Limited
DMF	–	design and monitoring framework
DRM	–	disaster risk management
ELV	–	end of life vehicle
EMP	–	environmental management plan
EPA	–	Environmental Protection Agency
FMA	–	financial management assessment
GAP	–	gender action plan
IEC	–	Information, Education and Communication
IEE	–	initial environmental examination
JFPR	–	Japan Fund for Poverty Reduction
MOFT	–	Ministry of Finance and Treasury
MOU	–	Memorandum of understanding
O&M	–	operation and maintenance
PACCB	–	Public Awareness and Community Capacity Building
PAM	–	project administration manual
PMDSC	–	Project management, design and construction supervision consultant
PMU	–	Project management unit
PPMS	–	project performance management system
SES	–	Social and Environmental safeguards
SOE	–	statement of expenditure
SPS	–	Safeguard Policy Statement 2009
SWM	–	solid waste management
TA	–	technical assistance
TOR	–	terms of reference
URA	–	Utility Regulatory Authority
WAMCO	–	Waste Management Corporation Limited

WEIGHTS AND MEASURES

°C	degree centigrade
dB	Decibels
dia	diameter
kg	kilo gram
Kl	kiloliter
km	kilometer
kmph	kilometre per hour
ha	hectares
HP	Horse Power
LPCD	liters per capita per day
lps	liters per second
m	meter
m ³	Cubic meter
mg	milligram
mm	millimeter
mcm	million cubic meters
sq.km	Square Kilometer
tpd	tons per day
µg/L	Microgram per Litre

NOTE

In this report, "\$" refers to United States dollars.

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A- CSCE

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I. INTRODUCTION

A. Project Name and objectives

1. Greater Male' Environmental Improvement and Waste Management Project.

2. The Project will establish a sustainable solid waste management (SWM) system in the Greater Malé capital region and its inhabited outer islands by (i) establishing a modern waste collection, transfer, and disposal system, (ii) improving community-based outer island waste management systems, (iii) building institutional capacity for sustainable services delivery, and (iv) raising public awareness in reduce, reuse, recycle (3R) behaviors.¹ Physical and non-physical investments are designed to curb climate change and disaster impacts while creating a cleaner environment in one of the world's lowest-lying nations.

3. The Greater Malé capital region and its outer islands (classified as Zone 3 in the National Solid Waste Management Policy and the most populated in the country), suffer from severe environmental pollution and deteriorating liveability due to inadequate collection and improper disposal of solid waste. Open dumping and burning of garbage at the 30-year old 10-hectare dumpsite on Thilafushi Island (6 kilometers from Malé) creates a significant environmental and public health hazard. Plumes of smoke visible from the capital city Malé, the international airport, and surrounding resorts compromise air quality and pose a daily nuisance to residents and tourists, while toxic leachate contaminates soil and groundwater. Greater Malé and its inhabited outer islands lack an organized and sustainable waste management system for the 774 tons of mixed solid waste generated per day (tpd).

4. With rapid urbanization and tourism development in the region, waste generation is expected to grow to 924 tpd by 2022 according to the Feasibility Study for an Integrated Solid Waste Management System for Zone III (2017). The increasing pressure on an already-stressed waste management system poses a significant threat to tourism and fisheries, both of which rely heavily on the country's pristine environment and are cornerstones to the Maldives economy. Poor communities in outer islands suffer from accumulated garbage with limited awareness and capacity to effectively manage solid waste.

5. **Existing waste collection, transfer, and disposal system.** High population density and narrow streets present unique challenges for waste collection in Malé. Waste collection is operated by the Waste Management Corporation Limited (WAMCO), a state-owned operator created in 2015 to collect and transport waste, and manage the regional waste management facilities throughout the country. WAMCO has limited professional experience in modern and efficient waste collection systems, and this lack of technical and managerial skills is a key issue affecting the sector's performance. While WAMCO is trying various initiatives to improve collection, the company received nearly 150 complaints per day (as of September 2017) on its hotline mostly related to non-collection. Collection equipment includes a fleet of aging vehicles unable to access narrow streets and there are no uniform refuse bins or formal transfer stations. Waste is transported to Thilafushi Island in open non-containerized vessels resulting in significant spillage into the ocean. Since 2008 fires have been deliberately set at the dumpsite to reduce growing mounds. On-site equipment and site logistics are severely inadequate to efficiently manage incoming waste and maximize use of limited space (ADB, 2017). Household surveys within the project area show a high demand for 3R awareness and education programs.

6. **Climate change and disaster risks.** At 1.5 meters above mean sea level, Maldives is vulnerable to sea level rise. Natural hazards such as extreme rainfall and severe storms are projected to increase because of climate change, posing a risk to infrastructure and operations. The Indian Ocean tsunami in December 2004 deposited approximately 290,000 cubic meters of waste from open dumpsites, including municipal and hazardous wastes such as asbestos, medical, used oil etc. Therefore, the project design includes measures to protect systems from natural hazards and climate change.

7. **Policy, regulatory, and institutional framework for waste management.** The President's 2013 Manifesto called for improvement in waste management in the Greater Malé area. The National Solid Waste Management Policy outlines the principles to improve environmental quality. The Waste Management and Pollution Control Department in the Ministry of Environment and Energy (MEE) is mandated to ensure safe

waste disposal on all inhabited islands in line with the Government's manifesto. The MEE works closely with development partners to develop its regional waste management systems, and selected the Asian Development Bank (ADB) to cover zone 3 because of the bank's industry experience and the project's link to ADB's technical assistance (TA) for formulating a development strategy for Greater Malé (ADB, 2017).

8. **Greater Malé development strategy.** As part of its national strategy to achieve efficient public spending on economic and social services, the government aims for 70% of its total population to live in Greater Malé in the future. The plan seeks to create spatial agglomeration and economic opportunities for faster growth and poverty reduction. Tourism accounts for 30% of gross domestic product and is expected to expand in the project area. The total population in the area is forecasted to grow on average by 5.4% annually to reach about 400,000 in 2030. Most of the population increase is expected to be absorbed in the newly developed island of Hulhumalé. Waste management systems are not currently equipped to handle future growth.

9. **Value added by ADB assistance.** Based on ADB's industry and country experience, the following lessons and value additions were incorporated in the project design: (i) use a phased approach and provide adequate support for project preparation; (ii) include technical capacity building for operation and maintenance (O&M); (iii) develop high project readiness; (iv) provide capacity building support to the project management unit (PMU) staff in procurement, contract management, and safeguards; (v) ensure strong community consultation and capacity building targeting women; and (vi) incorporate disaster risk reduction and climate change-resilient measures in project design.

10. **Project Impact and Outcome.** The project is aligned with the following impact: a healthy living environment created in the Greater Malé capital region and its outer islands. The project will have the following outcome: climate- and disaster- resilient SWM services improved (Section IX).

11. **Outputs.** The Project will have three outputs.

12. **Output 1:** Waste collection, transfer, and disposal systems improved and made climate and disaster resilient. This will include (i) an efficient waste collection strategy designed and applied in Malé and Hulhumalé in consultation with local communities targeting women; (ii) waste collection and transport equipment such as trucks, bins, and containers provided for Malé, Hulhumalé and Villimalé; (iii) transfer stations in Malé and Villimalé constructed and transfer station in Hulhumalé designed; (iv) construction and demolition (C&D) waste processing plant and end of life vehicle (ELV) dismantling workshop constructed; (v) waste vessel harbor at Thilafushi rehabilitated; (vi) three vessels for waste transport from outer islands to Thilafushi provided; (vii) heavy equipment such as bulldozers, excavators, and roll trucks provided for controlled dumpsite management at Thilafushi; and (viii) construction of two administrative buildings for WAMCO at the Malé transfer station and Thilafushi waste vessel harbor. All facilities will include climate-change and disaster-resilient design features.

13. **Output 2:** Community-based outer island waste management systems targeting poor and women enhanced. This output will provide comprehensive support to strengthen sustainable SWM in poor outer island communities. It will include (i) at least 22 island waste management centers (IWMCs) developed or upgraded with processing equipment (balers, glass crushers, metal presses) in consultation with the community, targeting women and incorporating climate and disaster-risk measures; (ii) collection equipment for outer islands (bins, refuse collection vehicles, dump trucks) provided; (iii) capacity building of eligible island councils targeting women in waste collection, segregation, composting, recycling, and operation and maintenance (O&M) undertaken; and (iv) community awareness and behavior change campaigns in 3R targeting women in outer islands delivered. Output 2 will follow a sector approach where each island is required to meet minimum eligibility and selection criteria, including safeguards, to receive IWMC support under the project. The criteria are intended to ensure sustainability. Output 2 will be partially funded by a Japan Fund for Poverty Reduction (JFPR) grant, which will support islands in the following areas: (i) the construction of IWMCs on at least of 11 eligible islands, (ii) the provision of skills and capacity building to women on eligible islands, and (iii) the delivery of 3R awareness campaigns on all outer islands.

14. **Japan Fund for Poverty Reduction.** The JFPR focusing on Output 2 will support: (i) new or improved IWMCs (works and equipment) designed and implemented with strong community participation targeting women in a minimum of 11 selected outer islands; (ii) skills and capacity building of outer island communities targeting women in sustainable and inclusive SWM; and (iii) public awareness of outer islands communities on sustainable SWM and 3R. The JFPR component which will be financed on a grant basis is estimated to cost \$2,000,000. The JFPR will prioritize outer islands having: (i) high or moderate climate risk vulnerability, and (ii) good governance in the island council (e.g., high representation of women).

15. **Output 3:** Institutional capacity and public awareness in sustainable waste management strengthened. This will include (i) capacity building support in waste collection and disaster risk management provided to eligible WAMCO staff (at least 50% eligible women staff); (ii) public awareness and behavior change campaigns in 3R delivered targeting the poor and women in Greater Malé;²⁹ and (iii) project management, design, and supervision consultant support provided.

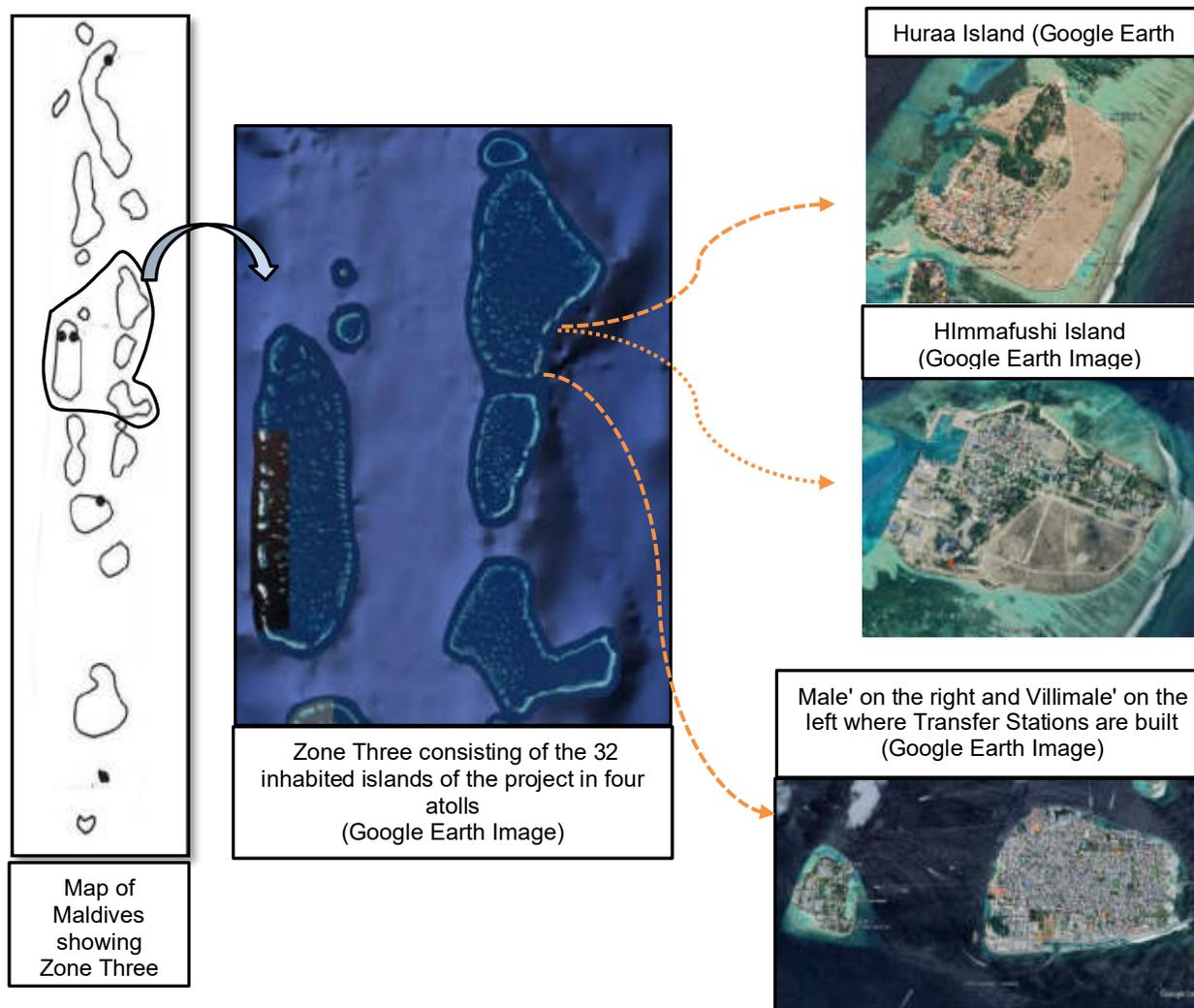
B. Environmental Category

16. The project is classified as Category B according to ADB Safeguard Policy Statement (SPS), 2009 (project components judged to have some adverse environmental impacts, but of lesser degree and/or significance than those for Category A). All subprojects in phase-I are classified as Category B, and the impacts of all subprojects are assessed through Initial Environmental Examination (IEE) as per ADB SPS, 2009.

C. About this Report

17. This is the Semi-annual Environmental Monitoring Report (SEMR) prepared by PMU for the monitoring period of May 2023 to October 2023. This SEMR provides the status of project, presents preparation and implementation of environmental management, mitigation and monitoring actions, and reports status of compliance with Environmental Management Plans (EMPs) and loan covenants.

Figure 1: Location of Project islands



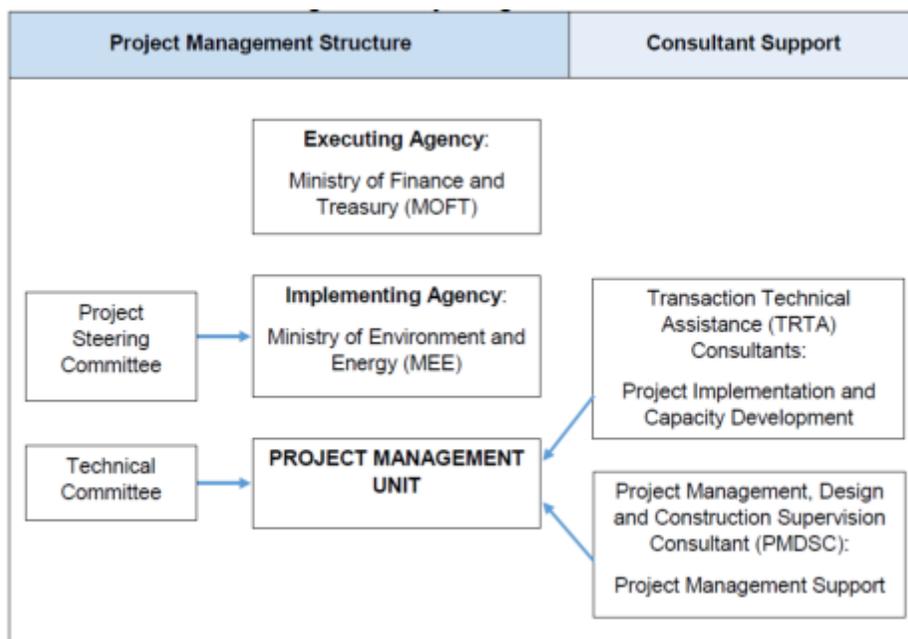
II. PROJECT IMPLEMENTATION ARRANGEMENTS

18. The project is classified as category B for environmental safeguards per ADB SPS. Three initial environmental examination (IEE) reports with environmental management plans (EMPs) were prepared based on preliminary designs covering (i) construction of transfer stations in Malé and Villimalé, (ii) harbor improvement and construction of and wastes processing plant and ELV dismantling workshop; and (iii) construction of IWMC.

19. An environmental assessment and review framework (EARF) were prepared and agreed with ADB to (i) guide selection, screening and categorization, environmental assessment, and preparation and implementation of at least 22 outer island IWMCs to be prepared after ADB Board approval and (ii) facilitate compliance with the requirements specified in ADB SPS, 2009. The EARF ensures that all IWMCs under the project will not deteriorate or interfere with the environmental sensitivity of the area, but rather improve environmental conditions.

20. A Safeguards Officer will be engaged in PMU to ensure the implementation of environmental safeguards. He/she will be provided with the necessary consultant support, and capacity development and training. In order to ensure compliance with ADB SPS, 2009, executing and implementing agencies will ensure the safeguards requirements and procedures agreed are followed for the project. The most important compliance requirements are compliance with the exclusion and subproject selection criteria, meeting public consultation and disclosure requirements, ADB approval of IEE prior to invitation of bids; and obtaining all necessary regulatory clearances and approvals prior to award of contract.

Figure 2: Project Implementation Arrangements

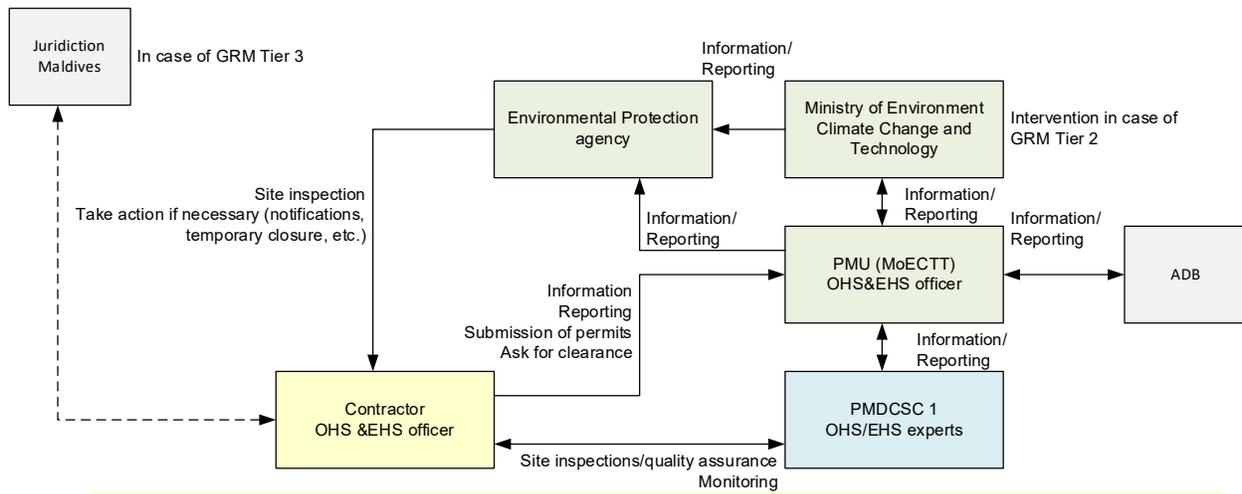


1. Safeguards Implementation Arrangements

21. Monitoring and reporting of the implementation of safeguards requirements and procedures will be prepared by the PMU. The PMU will undertake internal monitoring of safeguard covenants' compliance to be included in the quarterly project progress report and semi-annual safeguards monitoring reports. The PMU with assistance of PMDSC will prepare quarterly progress and semi-annual environmental monitoring reports and submit semi-annual monitoring reports to ADB. PMDSC environment safeguards expert will supervise design and construction works and facilitate preparation of all safeguard documents.

22. Figure 3 shows the project safeguard implementation arrangements.

Figure 3: Project Environmental Safeguards Organogram



Contractor

- obtain all statutory clearances prior to commencement of civil works;
- complies with all applicable legislation
- prepare CEMP/EMP
- carry out all of the monitoring and mitigation measures;
- ensures any sub-contractors/ suppliers, comply with the requirements of the CEMP/EMP
- implement any corrective or preventative actions set out in safeguards monitoring reports
- Provides environmental awareness training to staff;
- bears the costs of any damages/ compensation resulting from non-adherence to the EMP;
- conducts all activities in a manner that minimizes disturbance to directly affected residents and foreseeable impacts on the environment;
- receives complaints/grievances from the public (TIER 1), immediately implements the remedial measures and reports to the PMU and PMDSC.

Table 1: Project Environmental Safeguards Team

S. No	Position	Office	Name	Contact number	Email / Remarks
	PMU				
1	Social and Environment Safeguards Specialist	PMU/GMEIWMP/MoECCT	Ibrahim Mohamed	+9603019233	ibrahim.mohamed@environment.gov.mv
	PMDSC				
1	Environmental Safeguard Expert	PMDSC team, Water Solutions	Abdul Aleem	+9603301643	amooo@water-solutions.biz
	Contractors				
1	Environmental Officer	China State Construction and Engineering Corporation	Qin Haiyang	+9609796339	wts.cscec@gmail.com
2	Environmental Health and Safety Supervisor	Central Line Private Limited	Ibrahim Saleem (Hlmmafushi Island Site) Akif Saeed (Huraa Island site)	+9609992946	azim@centralline.mv The contact is for company Managing Director who is responsible for managing the projects.

III. PROJECT IMPLEMENTATION STATUS

23. Details of all subprojects / packages, type of bid/contract and current status of implementation of packages is presented in the **Table 2**, and detailed implementation progress of each of the awarded packages are given in **Table 3**.

Table 2: Status of All Subprojects / Packages

Package/ Subproject	Subproject / Package components	PIU	Current Status	Bid / contract type
CW/01	(i) Harbor rehabilitation (ii) Waste processing, admin building, (iii) workshop, and civil works (platform) for Construction and Demolition (C&D) plant, recycling yard, and End of Life (ELV)dismantling workshop.		All works completed and site handed over (snag list submitted to contractor, supply of one machine and small containers pending) Defect Notification period ends on 15.08.23	Civil works contract
DBI/01	(i) Two Transfer stations (TS) in Male', and Villimale',		Construction completed for both Transfer Stations	(Design Build)
CW/03	(i) Outer Island Waste Management Centers (8 lots)		One lot with three islands contracted and construction ongoing for HImmafushi Island and Huraa Island. Thulusdhoo Island construction is halted as site was changed and design and EIA process are ongoing. Other 7 lots remaining and bidding process on going.	Civil Works
DBI/02	(i) C&D waste processing plant (includes equipment)		Contract awarded to china state construction engineering corp. ltd.	DBI

Table 3: Implementation Status of Awarded Subprojects / Package

Package	Package status 1. Date of Award 2. Date of mobilization 3. Scheduled completion 4. Duration 5. Contractor	Design progress to date	Construction progress to date	Components completed to date	Works conducted during the reporting period
CW/01	completed	The project is completed and partial handover in January 2022.	Completed	All components. A full testing of the Site and facility was conducted on 9 th August 2022 and Contractor MTCC has rectified all defects in September 2022 (DNP ends in August, contractor rectified most of the defects but failed to provide metal scrap for ELV.	
DBI/01	1. 24-Jun-2021 (contract signed date) 2. 09 March 2022 (commencement date) 3. 6 July 2023 (Completed on 6 th September 2023) 4. 485 days 5. China State Construction Engineering Corporation	Architectural Structural and Services Drawing for Male' and Villimale completed and approved by relevant authorities Male' TS Fire layout completed and approved by MNDF Vilimale TS Fire layout completed, approval pending by MNDF	Completed	All construction completed and final inspections ongoing for handover	Concrete work and Interior completion and painting
CW/03	Contract awarded to Central Lline Private limited on 17 th June 2023	Detail design for 15 islands completed	Construction ongoing for two IWMCs	Site clearance, fencing and foundation	Site clearing, fencing, concrete work
DBI/02	1. Contract awarded to china state construction engineering corp. ltd on 30 th August 2023	Design completed	Construction to start with advance payment and is pending	No progress	No progress

IV. COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS

A. Status of Clearances

24. Briefly describe the statutory clearance / approval requirements of the subprojects (refer IEEs / SEMP.s.) Detailed status of each clearance/permission is provided in **Table 4**. Copies of clearances/permissions attached in **Appendix 1**.

Table 4: Status of Statutory Clearances

Package / Subproject	List of Clearances / permission required	Status	Validity period	Remarks
CW/01	IEE DS	Project is completed	NA	Project is completed
DBI/01	IEE required according to EPA regulation Schedule D of projects as the project is considered a waste management project Decision Statement (DS) for both sub-projects received.	DS for Male' TS was expired and new IEE prepared and approved.	Villimale till 22 nd February 2022 and For Male' was extended till 9 th April 2023	Complied; Pre-construction site preparations have started before the DSs expired and notification to EPA has been provided.
DBI/02	The DS of Thilafushi Rehabilitation EIA is still applicable for the project as it was part of the original design permitted by this EIA	Added as a variation to transfer station contract and is now contracted	31 st October 2024	This package is contracted but no construction has started yet. The Contractor is waiting for advance payment.
CW /03 A and B	IEE DS required	All 15 islands DS obtained	April 2024	All islands except Thulusdhoo and Mahibadhoo, site clearance and waste legacy clean-ups carried out and informed to the EPA. AS pre-construction works have been commenced before IEE expiration date EPA has no objection for commencing construction after contracts are awarded. For Thulusdhoo and Mahibadhoo new IEE/EMP is required as no site works completed and will be completed before commencement of work. EIA for the islands is under preparation.

B. Compliance with Clearance Conditions

25. Following **Table 5** provides a summary of clearance / consent conditions specified by statutory agencies that are required to be complied with and/or monitored during implementation and/or operation, and the status of compliance.

Table 5: Conditions of Clearances

Package	Clearance / Permission	Conditions of Clearance / Permission	Status of Compliance
<ul style="list-style-type: none"> • DBI/01 • DBI/02 • CW/03 	Environmental Decision statement	<ul style="list-style-type: none"> • Approved IEE/EIA 	Complied
		<ul style="list-style-type: none"> • In the event the project activity has not commenced within one (1) year from the date of issue, or if the duration of the Environmental Decision Statement has not been extended, the Environmental Decision Statement shall be considered null and void. In order to extend the duration of the Environmental Decision Statement, the Proponent shall write to the Minister for an extension according to clause 14 of the 2nd Amendment to the EIA Regulations 2012. 	Complied
		<ul style="list-style-type: none"> • In the event the project activities have been delayed for more than one (1) year due to unforeseen circumstances, the Ministry shall have the discretion to extend the duration of the Environmental Decision Statement, or to terminate it. In such circumstances the proponent shall write to the Minister for an extension clearly stating out the reason for the delay. 	Complied
		<ul style="list-style-type: none"> • The Minister, or his designate, may issue a cessation order requiring persons working on a Development Proposal to cease working until the order is withdrawn, if: (a) The Environmental Decision Statement has been withdrawn; or (b) There has been a breach of conditions of the Environmental Decision Statement. 	Complied
		<ul style="list-style-type: none"> • It is the Developer's responsibility to undertake all project activities in accordance with the relevant laws and regulations of the Maldives. 	Complied
		<ul style="list-style-type: none"> • The Developer shall submit environmental monitoring report as outlined in Paragraph viii of the Environmental Decision Statement. Failure to submit the requisite 	Complied

Package	Clearance / Permission	Conditions of Clearance / Permission	Status of Compliance
		monitoring report may result in the suspension or revocation of the permit under the Decision Statement.	
		<ul style="list-style-type: none"> The Developer is aware that under the National Environment Protection Act (Law No. 4/93) and the EIA Regulations the Ministry reserves the right to terminate any activity without compensation if found that such an activity has caused significant, irreversible impacts on the environment. 	Complied
		<ul style="list-style-type: none"> All mitigation measures proposed in the EIA report for all the phases of the project shall be fully implemented. 	Complied
		<ul style="list-style-type: none"> The environmental monitoring program outlined in the EIA report shall be undertaken and implemented and summary environmental monitoring reports shall be submitted to the Ministry. 	Complied
		<ul style="list-style-type: none"> The date of expiry stated in the Environmental Decision Statement is the duration given to commence the project activities approved under the Environmental Decision Statement. 	Complied
		<ul style="list-style-type: none"> Once the project activities have started, the Proponent must inform the EPA the date of commencement of project activities. 	Complied

C. Compliance with Loan Covenants

26. Status of compliance with environmental safeguard related loan covenants is given in the below **Table 6**. Project is being implemented in compliance with all the covenants.

Table 6: Status of Compliance with Loan Covenants

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
Schedule 4 - 2 Environment	The Recipient, through MOFT and MEE, shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Recipient relating to environment, health and safety; (b) the Environmental Safeguards; (c) the EARF, and (d) all measures and requirements set forth in the IEEs, the EMPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Being complied. PMU (Project Management Unit) is continuously ensuring that all subprojects follow all laws and regulations and the Safeguards specialist of the PMU ensures that all measures and requirements set forth in the IEEs and EMP are complied.	
Schedule 4 – 4 Human and Financial Resources to Implement Safeguards Requirements	The Recipient shall make available or cause MOFT to make available necessary budgetary and human resources to fully implement the EMPs	Being complied. The MOFT has approved the post of Safeguards Specialist for the PMU so that all necessary safeguards issues are complied.	
Schedule 4 – 5 Safeguards-Related Provisions in Bidding Documents and Works Contracts	<p>A- comply with the measures relevant to the contractor set forth in the IEE and the EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report;</p> <p>B- make available a budget for all such environmental measures; and</p> <p>C- provide the Recipient with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation, or operation of the Project that were not considered in the IEE and the EMP.</p>	All bidding documents related to the project will have the IEE included and compliance will be ensured by the safeguard's specialist.	

Schedule 4 – 6 Safeguards Monitoring and Reporting	A- submit semiannual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;	Monitoring Reports are semiannually submitted to ADB for approval and disclosure. There is a delayed reporting as PMDSC contract expired and some of the inspections delayed until contract was renewed.	PMDSC contract is renewed for an additional year.
	B- If any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEEs and the EMPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and	Will be complied as and when arises. In such cases ADBs safeguards team and team leader will be informed immediately.	
	C- Report any actual or potential breach of compliance with the measures and requirements set forth in the EMPs promptly after becoming aware of the breach.	Will be complied. Any breach or potential breach will be reported.	
Schedule 4 – 7 Prohibited List of Investments	The Recipient, through MOFT and MEE, shall ensure that no proceeds of the Grant are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	Being complied. ADB SPS will be thoroughly followed throughout the project duration.	
Schedule 4 – 8 Labor Standards, Health and Safety	F- Disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	It is included in the Bidding Documents and contract. Contractor carries out induction including awareness sessions as required.	
Schedule 4 – 9	The Recipient, through MOFT and MEE, shall strictly monitor compliance with the requirements set forth in paragraph 8 of the loan agreement and provide ADB with regular reports.	Being complied.	

D. Preparation and Approval of Environmental Assessment Reports

27. **Subproject Category.** Briefly describe overall project category, and subprojects in category B, and category C (if any).

28. Package-wise status of preparation, submission, and approval and disclosure of IEE Reports of Category B subprojects, are presented in **Table 7 and Table 8.**

Table 7: Status of IEEs

Package Number	Bid type	Package Status	Draft IEE submitted to ADB	Draft IEE cleared by ADB	Updated IEE submitted to ADB	Updated IEE cleared by ADB	Remarks
CW01	Civil Works	completed	yes	yes			No major changes made to the concept design. Therefore, the currently published version is considered as the final document.
DBI/01	Design Build and install	Construction completed	yes	yes	yes	yes	-
CW/03 A and B	Civil Works	Construction ongoing for two IWMCs	yes	yes	yes	yes	IEE for Thulusdhoo and Mahibadhoo under preparation by PMDSC consultants. Construction work of These two islands pending until EIA is approved.
DBI/02	Design build and installation	Awarded	yes	yes	no	no	The design will not change and hence can continue as part of the ongoing project permitted by EIA for the project.

E. Status of Disclosure of Safeguard Documents

29. Status of disclosure of safeguard documents presented in the following Table 9. All the documents have been disclosed on ADB and Project/PMU websites

Table 8: Status of Disclosure of IEEs / DDRs

Package Number	Draft Disclosed on ADB website	Disclosed on Project website	Disclosed on ADB website
CW/01	yes	Yes http://www.environment.gov.mv/v2/en/download/7162	Yes https://www.adb.org/projects/documents/mld-51077-002- iee-0
DBI/01	yes	Yes http://www.environment.gov.mv/v2/en/download/7162 (draft) http://www.environment.gov.mv/v2/en/download/16011 (updated)	Yes https://www.adb.org/projects/documents/mld-51077-002- iee (draft) https://www.adb.org/projects/documents/mld-51077-002- iee-16 (updated)
CW/03	yes	Yes http://www.environment.gov.mv/v2/en/download/15962 (Maafushi IWMC) http://www.environment.gov.mv/v2/en/download/15099 (Guraidhoo IWMC) http://www.environment.gov.mv/v2/en/download/15096 (Thulusdhoo IWMC) http://www.environment.gov.mv/v2/en/download/15093 (Thoddoo IWMC) http://www.environment.gov.mv/v2/en/download/15090 (Thinadhoo IWMC) http://www.environment.gov.mv/v2/en/download/15087 (Rakeedhoo IWMC) http://www.environment.gov.mv/v2/en/download/15084 (Mahibadhoo IWMC)	Yes https://www.adb.org/projects/documents/mld-51077-002- iee-15 (Maafushi IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-14 (Guraidhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-10 (Thulusdhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-7 (Thoddoo IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-5 (Thinadhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-3 (Rakeedhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002- iee-11 (Mahibadhoo IWMC)

Package Number	Draft Disclosed on ADB website	Disclosed on Project website	Disclosed on ADB website
		http://www.environment.gov.mv/v2/en/download/15081 (Keyodhoo IWMC) http://www.environment.gov.mv/v2/en/download/15078 (Huraa IWMC) http://www.environment.gov.mv/v2/en/download/15075 (Himandhoo IWMC) http://www.environment.gov.mv/v2/en/download/15072 (Hangnaameedhoo IWMC) http://www.environment.gov.mv/v2/en/download/15069 (Feridhoo IWMC) http://www.environment.gov.mv/v2/en/download/19172 (Himmafushi IWMC) http://www.environment.gov.mv/v2/en/download/15065 (Felidhoo IWMC) http://www.environment.gov.mv/v2/en/download/19175 (Kaashidhoo IWMC)	https://www.adb.org/projects/documents/mld-51077-002-iee-9 (Keyodhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-8 (Huraa IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-6 (Himandhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-4 (Hangnaameedhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-2 (Feridhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-12 (Himmafushi IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-1 (Felidhoo IWMC) https://www.adb.org/projects/documents/mld-51077-002-iee-13 (Kaashidhoo IWMC)
DBI/02	yes	Yes http://www.environment.gov.mv/v2/en/download/7162	Yes https://www.adb.org/projects/documents/mld-51077-002-iee-0

F. Safeguards in Bid Documents and Contracts

30. Safeguard provisions are duly included in the bid documents / contracts, and these are followed uniformly across all the bids and contracts. Following Table shows package-wise details.

Table 9: Inclusion of safeguards in bid documents and contracts

Package Number	Type of Bid / Contract	Bid / Contract Clauses related to environment, health and safety; labor standards	IEE / EMP included in Bid / contract
CW/01	Civil Works	Yes	Yes
DBI/01	DBI	Yes	Yes
CW/03	Civil Works	Yes	Yes
DBI/02	DBI	Yes	Yes

V. STATUS OF EMP IMPLEMENTATION

A. Preparation of Site Environmental Management Plan

31. Preparation and submission of Site-specific Environmental Management Plan (SEMP) and Health and Safety Plan (HSP) including Health & Safety COVID-19 Plan by contractor and approval of PMU is a requirement prior to commencement of works. Details of awarded packages are presented in the following Table.

Table 10: Status of SEMP

Package Number	Contractor	Current Status	Status of SEMP	Status of HSP	Remarks
CW/01	MTCC	completed	approved	approved	Project completed
DBI/01	CSCEC	completed	approved	approved	Complied
CW/03	Central Line Private Limited	Construction ongoing for lot 3 two islands, Himmafushi and Huraa	approved	approved	Complied

B. EMP Implementation Supervision and Monitoring

32. Of the 4 packages, package CW/01 and DB/01 have been completed. Package CW/03 is being implemented with two IWMCs at construction stage. Package DB/02 has been awarded and is at pre-construction stage. Status of monitoring of packages with ongoing civil works activities is presented in the below **Table 11**, and summary of site visits conducted by safeguard staff is given in **Appendix 2**.

Table 11: Status of EHS Staff, SEMP Preparation and Monitoring

Package Number	Current Status	Contractor EHS Supervisor Appointed & Mobilized on Site	Monthly EMP implementation reports submitted by contractor	Site Monitoring/ Verification Conducted by PMDSC	Remarks
DBI/01	completed (for handover)	Yes	No	Yes, partially complied. See remarks.	PMDSC provided monthly reports, but reports lack specific information. The contractor has not submitted monthly reports on the status of EMP implementation. Only the report on the results of environmental quality monitoring for four months were submitted.
CW/03	Ongoing for two islands, Huraa and Himmafushi	Yes	Yes	PMDSC was not conducting and hence PMU conducted	PMDSC was not able to conduct field work. Hence, PMU did site inspections through PMU engineer and safeguard specialist

C. Contractors Compliance with Statutory and Contractual Requirements

33. The following table shows the compliance with statutory requirements in terms of obtaining licenses, permissions, clearances, and insurance coverage etc., required to conduct construction work. As DBI/01 is now completed there are no workers on site except two engineers from the project assisting in moving of WAMCO and Ministry staff to the office building. Please see Attached

Table 12: Status of Labor Licenses, Insurances, etc.

Requirement	Package DBI/01	
	CSCEC	
	Status	Validity
Work permit for expatriate workers	In place	31 st December 2023
Workmen compensation policy	In place	31 st December 2023
Contractor all risk insurance	In place	31 st December 2023
Pollution control certificate for Construction vehicles & equipment****	In place	31 st December 2023
	Central Line PVT Limited- Package CW/03	
	Status	Validity
Work permit for expatriate workers	In place	31 st January 2024
Contractor all risk insurance	In place	Sent for Approval by PMDSC
Pollution control certificate for Construction vehicles & equipment****	In place	31 st January 2024

D. Implementation of EMP Measures and Compliance Status

34. Implementation of measures as per the approved IEE & EMP / SEMP are reviewed for each package and status is presented in the following Tables. **Table 14** presents the implementation and compliance status of construction stage mitigation measures. This compliance is based on joint monitoring by PMU and PMDSC.

Table 13: Construction Stage Mitigation Measures: Compliance Status (Package DB/01)

Impact / field	Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures	
			Package DBI/01	
			Rating	Remarks
Impeding access to property or facilities, or traffic disruption	<p>Notices to the public, scheduling work that blocks roadways to periods of low traffic.</p> <p>Co-ordination with any other major construction projects taking place in the vicinity of the transfer station on Malé to agree measures such as scheduling of construction traffic to avoid peak vehicle movements occurring at the same time.</p>	DB Contractor (CSCEC)	S	Arrangements were made with WAMCO (the only nearby occupants) for new traffic access.
Noise pollution and vibration	<p>Providing information to the affected persons through direct liaison and via the local media about the timing and duration of the works.</p> <p>Construction activities will be limited to normal daylight working hours. A work schedule will be followed.</p> <p>All construction equipment and vehicles will be in good working order with working mufflers and noise suppression.</p>	DB Contractor (CSCEC)	S	WAMCO being the only occupant adjacent to the site, is informed of working hours and all machinery and vehicles are inspected daily to ensure they are in good condition
Waste generation from construction activities	<p>All solid waste must be disposed of at a landfill or approved disposal site.</p> <p>Importation of any materials rated as hazardous under the Globally Harmonized System of Classification and Labelling of Chemicals to be subject to approval by PMDSC, which will be conditional on stating adequate arrangements for disposal.</p>	DB Contractor (CSCEC)	S	All waste generated is disposed in the designated areas assigned by WAMCO
Handling of day to day waste during construction	Inclusion in CEMP of measures to ensure regular transfer of waste from households, markets and construction sites	DB Contractor (CSCEC)	S	Waste is collected and disposed off daily through WAMCO on the assigned areas
Release of silt	<p>Excavated areas to be rapidly refilled on completion of works.</p> <p>Use of silt fences around temporary piles of excavated material.</p> <p>Avoid excavation in wet weather to the extent practicable.</p>	DB Contractor (CSCEC)	S	All excavated areas are re-filled on completion of work and excavation is stopped during rain.

Impact / field	Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures	
			Package DBI/01	
			Rating	Remarks
Water pollution	<p>Vehicles and plant are to be maintained in sound operable condition, free of leaks. The condition of vehicles and equipment will be periodically checked.</p> <p>Contractor to prepare and submit a plan for spill management, including provision of spill kits, training/briefing of workers on procedures on handling spills and allocation of responsibility within the DB Contractor's team for ensuring that spill kits are available and that workers know how to use them.</p>	DB Contractor (CSCEC)	S	All vehicles and equipment on site are kept in good operable condition without leakage, and the condition of the vehicles and equipment is checked regularly. The contractor also conducts training for workers on environmental protection and mitigation if a leak is detected
Air and dust pollution	Require vehicles and equipment to be well maintained and tuned and fitted with exhaust baffles. Apply water to suppress dust where needed and sweep to remove and clear spoil on surfaces.	DB Contractor (CSCEC)	S	All vehicles and equipment on site are well maintained, and exhaust baffles have been installed. During daily construction, if dust is generated, water is sprayed. Any soil or sand pile is covered properly and all refuse soil is removed from site.
Community health and safety hazards	<p>Restriction of access to the transfer stations. For work at the periphery of the sites, provide notices to the public identifying hazards and erect safety barriers / covers for areas of open excavation.</p> <p>Contractors to adopt the WB EHS Guidelines on Community Health and Safety, particularly those that relate to construction works.</p>	DB Contractor (CSCEC)	S	During the construction contractor maintains security on the site to restrict the entry of any unauthorised persons informs the non-construction staff regarding safety. Any open excavation area is protected by guard rails or until the construction work is completed.
Occupational health and safety hazards	<p>Contractors to appoint health and safety officers for each site and to ensure regular briefing of construction workforce on health and safety issues. Adequate personal protective equipment to be provided to the workforce.</p> <p>Contractors to adopt the WB EHS Guidelines on OHS, particularly those that relate to construction works.</p>	DB Contractor (CSCEC)	S	All workers are provided with personal protection and regular trainings and inspection is conducted by health and safety engineer of the contractor

Construction Stage Mitigation Measures: Compliance Status (Package CW/03 for Himmafushi and Huraa) from June to October 2023

Impacts	Location	Mitigation Measures	Responsibility for Implementation	Compliance rating for implementation of EMP Measures	
				Ratings	Remarks
Noise pollution and vibration	Nearest residential area	Identifying potentially affected households, providing information on operations, limiting construction activities to daylight hours, adhering to schedule, maintenance of construction equipment and vehicles in good operable order.	Central Line PVT Limited	S	Both sites are away from residential area. The council issued a public notice on the start of the construction of project.
Construction waste	IWMC area	All solid waste must be disposed of at the RWEMF/Thilafushi. Importation of any materials rated as hazardous under the Globally Harmonized System of Classification and Labelling of Chemicals to be subject to approval by PMDSC, which will be conditional on stating adequate arrangements for disposal. Prohibit burning of construction and/or domestic waste. Conduct site clearance and restoration to original condition after the completion of construction works.	Central Line PVT Limited	PS	Waste is disposed of at the designated site on the island and PMDSC needs to approve deviation No Materials are imported for project and no waste is burned on the site
Release of silt	IWMC construction site	Excavated areas to be rapidly refilled on completion of works. Use of silt fences around temporary piles of excavated material. Avoid excavation in wet weather to the extent practicable.	Central Line PVT Limited	S	Excavated material is used to re-fill and no piles are kept.

Water pollution	IWMC construction site	Vehicles and plant are to be maintained in sound operable condition, free of leaks. The condition of vehicles and equipment will be periodically checked.	Central Line PVT Limited	S	No leakages and all vehicles used are registered and properly maintained.
Vegetation	Proposed IWMC area	As the proposed site is on reclaimed land, as of yet there is no vegetation in the area and thus no mitigation measures need to be taken. However, it is recommended to start vegetating the area.	Island council of Huraa and Himmafushi	S	Vegetating the areas will be done after completion of construction
Community health and safety hazards	IWMC construction site and immediate surrounds	Restriction of access to work site, warning notices to the public on hazards, barriers when warranted.	Central Line PVT Limited	PS	Site is fenced and access is restricted but no sign boards.
Occupational health and safety hazards	IWMC construction site	Contractor to focal point for health and safety at site and to ensure regular briefing of construction workforce on health and safety issues. Adequate personal protective equipment to be provided to the workforce.	Central Line PVT Limited	PS	Health and safety managers are assigned but workers are not properly trained.

E. Implementation of Health & Safety COVID-19 Plan

35. **H&S COVID-19 Plan Preparation.** Status of preparation and approval of Health and Safety COVID-19 Plan is provided in the following table.

Table 14: Status of H&S COVID-19 Plan

H&S COVID-19 Plan	Preparation	Approval	Update	Remarks
Project level Plan	yes	December 2021	NA	NA
Package/contractor plan				
- Package DBI/01	yes	December 2021	NA	NA
- Package CW/03	Prepared	NA	NA	As COVID emergency is lifted it is not considered a pandemic now and treated as any other communicable disease. However, the contractor maintains a general safety plan in case of any worker getting sick.

36. **H&S COVID-19 Plan Implementation.** Since March 2022, COVID emergency is lifted in the Maldives and measures are to be taken only in case of an outbreak in the site. There have been no reports of any COVID outbreak at the site during this period.

F. Best practices / environment improvement activities

37. The contractor abides by all requirements specified in the EMPs and IEE.

VI. ENVIRONMENTAL MONITORING

A. Environmental Monitoring

38. IEE reports prepared for the respective packages require monitoring activities during construction phase and operation phase. The table below shows the monitoring plan developed for the package with required environmental quality monitoring for the reporting period, which includes the means and frequency of monitoring, and the responsible party for monitoring. Activities include monitoring of general construction impacts, compliance with EMP, solid waste management, and ambient air quality and water quality, in and around project sites to assess the quality and changes with respect to baseline conditions. The PMU has made two site visits to each Island where IWMC construction is ongoing and met the Council of each island.

Table 15: Construction Phase Monitoring Plan (Package DBI/01)

Impact to be Monitored	Means of Monitoring	Construction Phase	
		Frequency	Responsible Agency
General Construction Impacts	Community Feedback	At least once during the reporting period	PMU / PMDSC
Compliance with EMP	Inspections	At least once during the reporting period	PMU / PMDSC
Occurrence of floating waste	Community Feedback	At least once during the reporting period	PMU / PMDSC
Air and water quality	On site measurements and lab analysis	Prior to construction then monthly	Contractor

B. Status of Environmental Quality Monitoring

39. During this reporting period, package CW/01 is already completed but no operation phase activities related to this package has commenced yet. Construction activities are completed under package DBI/01. Construction activities are undergoing for CW/03 package. Status of environmental monitoring is shown in the following table.

Table 16: Status Environmental Monitoring of Awarded Packages

Package No	Baseline Monitoring ^a		Periodic Monitoring in Reporting Period	
	Date/period of monitoring	Environmental parameters	Dates/period of monitoring	Environmental parameters
DBI/01	<ul style="list-style-type: none"> • April to October 2022 • November 2022 to April 2023 • May 2023 to October 2023 	All parameters required in the IEE monitored.	May 2023 to October 2023	Air quality, Water Quality and Noise
CW/03		Ground Water quality once before construction and after construction started	May 2023 to October 2023	No report submitted by contractor

^a Results of first sampling activities by respective contractors during mobilization/pre-construction phase considered as baselines.

40. **Monitoring Locations.** Number of locations/sampling points considered as specified in the approved IEE and SEMP. Location of monitoring/sampling points are selected based on parameters such as representative locations, meteorological conditions (wind direction), land use, terrain, natural drainage etc.,

Figure 4: Sampling Locations at the Male Transfer Station Site



Figure 5: Ambient Air Quality Sampling Location at Villimale Transfer Station Site



41. Monitoring (Sampling & Analysis) Methodology. Sampling and analysis have been carried out by the contractors via the recognized / approved / accredited laboratories, which adopted acceptable and standard methods for sampling, analysis, and results. Sampling and adopted are presented in Table 19.

Table 17: Sampling and Analysis Methods

Parameter	Sampling and testing method
Ambient air	Air quality was measured in real time using an automatic sampler placed on site. Parameters to be measured PM10, PM2.5, Sox, NOx and CO
Ambient noise	Noise level was measured in real time using an automatic sampler placed on site
Ground water	Samples collected from a monitoring well on location and samples send to a local laboratory on a monthly frequency. The parameters Temperature, pH, Salinity/Conductivity, fecal coliform, total coliform, Total Hydrocarbon (THC), ammonium, nitrate, nitrite, phosphate, sulphate

C. Monitoring Results

42. **Ambient air quality.** Ambient air quality monitoring results are presented in the following table. Laboratory reports are attached in **Appendix 3**.

Table 18: Air Monitoring Results

Package / Monitoring Site	Monthly monitoring	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SO ₂ ^a	NO ₂ ^a	CO ^a
AAQ Standard (24 hours)						
IFC/WHO Guideline 2021		24-hour average 45 µg/m ³	24-hour average 15µg/m ³	24-hour average 40 µg/m ³	24-hour average 25 µg/m ³	24-hour average 4 mg/m ³
Package 1 DBI/01						
Male' City Transfer Facility site	Baseline ^c	13	3			
	May. 2023	14.97	5.02	Not reported	Not reported	Not reported
	June. 2023	15.34	4.87	Not reported	Not reported	Not reported
	July. 2023	15.62	5.60	Not reported	Not reported	Not reported
	August. 2023	6.20	2.46	2	17	0.5
	Sept. 2023	6.33	2.41	2	15	0.6
	Oct.2023	7.18	2.77	1	10	0.6
Villimale Transfer Facility Site	Baseline ^c	13	3	Not reported	Not reported	Not reported
	May. 2023	15.37	5.70	Not reported	Not reported	Not reported
	June 2023	15.83	4.95	Not reported	Not reported	Not reported
	July 2023	15.43	5.15	Not reported	Not reported	Not reported
	August 2023	15.41	4.88	1	10	0.5
	Sept. 2023	15.4	4.63	2	7	0.5
	Oct.2023	14.27	5.20	1	5	0.6

^a Not analyzed because contractor lacks the equipment capable of analyzing these parameters.

^b Taken from first set of sampling activities during the April – October 2022 SEMR. This is regarded as baseline for site at Male City Transfer Station. (April 2023 for Villimale Baseline)

^c Sampling for this reporting period is the first sampling for the site, and will be considered as the baseline for upcoming reporting periods.

43. **Ambient noise quality.** Ambient noise quality monitoring results are presented in the following table. Laboratory reports are presented in **Appendix 3**.

Table 19: Noise Monitoring Results

Package / Town / Monitoring Location	Package DBI/01 Month	Noise Level Laeq (dB(A)) Day time/ Monthly Average	Land use	
National Ambient Noise Standard follows WHO	Monitoring Date		Industrial/ Commercial	WHO standard (dB(A))
Male' City Transfer Station				
	May. 2023	42.8	Industrial/ Commercial	70
	June. 2023	43.2	Industrial/ Commercial	70
	July. 2023	44.6	Industrial/ Commercial	70
	August 2023	42.74	Industrial/ Commercial	70
	September 2023	42.56	Industrial/ Commercial	70
	October 2023	44.04	Industrial/ Commercial	70
Villimale' Transfer station				
	May. 2023	44.25	Industrial/ Commercial	70
	June. 2023	43.12	Industrial/ Commercial	70
	July. 2023	44.6	Industrial/ Commercial	70
	August 2023	43.3	Industrial/ Commercial	70
	September 2023	43.6	Industrial/ Commercial	70
	October 2023	44.2	Industrial/ Commercial	70

D. Interpretation of monitoring results

45. The results indicate air quality and noise levels are within permissible ranges for the parameters analyzed. However, water quality parameters show ground water is not suitable for any potable purpose. As a national standard for ground water is not available, ground water quality is determined based on the use. As ground water in Male and Villingili is not used for potable purposes it is not applicable to drinking water standards. However, the high levels of faecal coliform indicate a direct contamination of sewage and could be possible due to leaching from waste transfer stations nearby.

During this reporting period, air quality, noise and water quality tests from IWMC sites were not provided by the contractor and will be included in the next reporting period.

VII. TRAINING AND CAPACITY BUILDING ACTIVITIES

46. Trainings related to environmental safeguards, implementation of EMPs, health and safety etc., were conducted at the contractor level only through a toolbox talk setup. For the period, a total of 4 training through toolbox talks were conducted by the contractor to its workers and employees. Summary is presented in the table below. All photo documentation and list of participants are included in **Appendix 4**.

47. Training and Capacity-building activities for the community under the project will begin from next reporting period.

48. Safeguards orientation for IWMC contractors conducted by the PMU during the site handover meeting with contractor.

Table 21: Training / Capacity Building Activities Conducted

Package No.	Date	Training activity	Venue & duration	Trainer	Target Group	Number of participants
DBI/01	7 th June 2023	Environmental Pollution and control, water and air pollution and solid waste management	On Site	HSE Manager of CSCEC	Senior Supervisors	7
DBI/01	16 th June 2023	Safety Training	On site	HSE Manager of CSCEC	Senior Supervisors	7
	15 th July 2023	Occupational health and safety	On site	HSE Manager of CSCEC	workers	6
	24 th August 2023	Emergency escape and fire fighting	On site	HSE Manager of CSCEC	WAMCO and Contractor Staff	18
CW/03		Safeguards Orientation		PMU	IWMC Contractor	2

VIII. PUBLIC CONSULTATION

49. Public consultation activities will begin from the next reporting period. The following consultants are now hired.

- 1- Community Mobilization, Outreach and Gender Expert
- 2- 3R Motivator
- 3- Web, Graphics, Short Video production and social media specialist
- 4- SWM trainer

On the 12th of June 2023 PMU visited the Islands of Huraa and Himmafushi where IWMC construction was contracted to Central Line. PMU met with Island Council and other stakeholders and informed of GRM and initiated GRM committee and site handover was carried out. On 11th July 2023, PMU conducted a scoping and inspection trip to K. Huraa, Himmafushi, this event involved meetings with island councils and site inspections of the progress at the Island Waste Management Centres (IWMC). On 10th October, 2023 PMU conducted a site inspection trip to Huraa island and Himmafushi for inspections and verifications of reports by contractor.

PICTURES: 10TH OCTOBER



Huraa island fenced site



HURAA ISLND CONSTRUCTION PROGRESS



HURAA, SITE ENTRANCE BOARD SHOWING CONTACT INFORMATION FOR GRM

PICTURES: 10TH OCTOBER



HIMMAFUSHI island Signboard



HIMMAFUSHI, FENCE



HIMMAFUSHI, EXCAVATION FOR LAYING CONCRETE

IX. GRIEVANCE REDRESS

A. Grievance Redress Mechanism

50. A Project-specific grievance redress mechanism (GRM) is established in to provide a time bound and transparent mechanism to voice and resolve social and environmental concerns linked with the project. GRM is notified by EA/IA/PMU by an Officer Order / Notification issued on 12th January 2021. Description of the GRM is provided through the following link to the Ministry website. This publication or announcement over the Ministry website also serves as notification of the GRM.

<https://www.environment.gov.mv/v2/en/download/10842>

51. Project GRM is presented in the following Figure. Accordingly, responsibilities are allocated to project agencies, consultants and contractors, and grievance redress committee(s) established at subproject/town level or project level. Status of establishment of GRCs are presented in **Table 23**.

52. A GRC has been formed with a member of Male' City Council, Member from Women's Development Committee, an NGO representative a government representative outside the Ministry of Environment, Project Director, Project Manager and PMU safeguards Specialist. This Committee will respond to any grievances or concerns raised by the public and in the PMU, Project Director, Project Manager and PMU safeguards Specialist will address any unresolved matters from First Tier. The aggrieved party will be then allowed to involve the judicature in the next level.

Figure 6: Project GRM

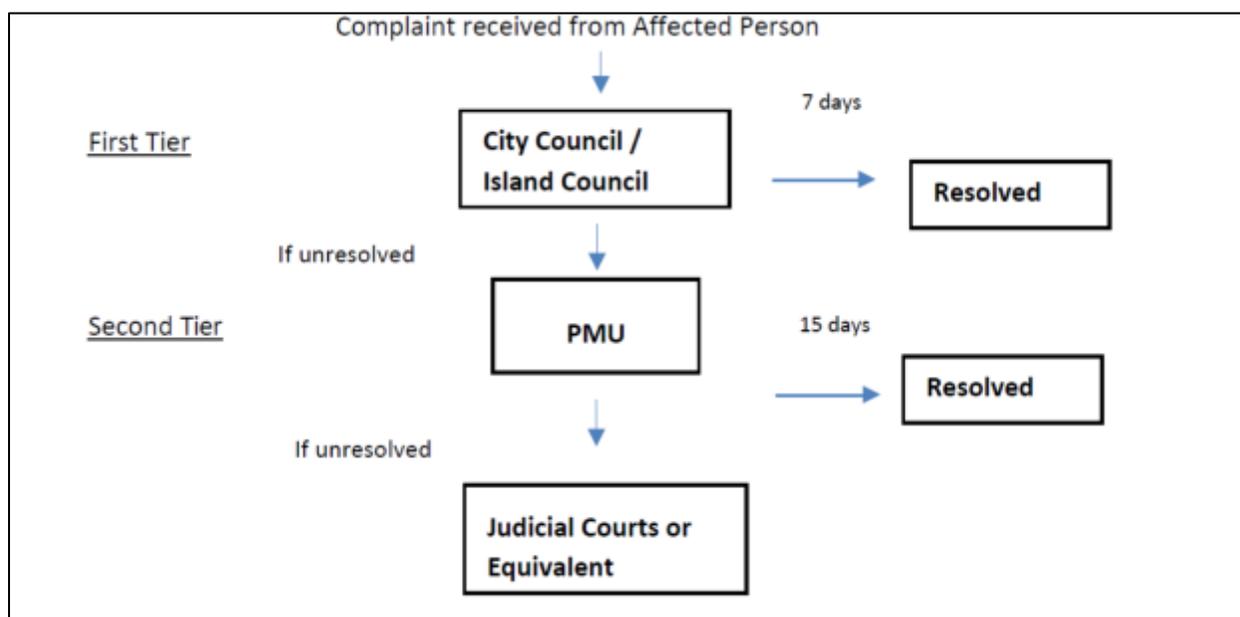


Table 22: GRM Operationalization

Package No.	Subproject level GRM Notified	GRM responsibilities assigned	GRM Operational to receive, register & redress complaints	Date of GRC Formation	Public informed of GRM	Members of GRC outside PMU
DBI/01	Yes	Yes	Yes	December 2021	Yes	Deputy Mayor of Male' City Council: Ahmed Nareesh Email: ahmed.nareesh@malecity.gov.mv
						Deputy of Women's Development Committee of Male' City Council Ms. Viraashaa Mohamed Email: viraamohamed86@gmail.com
						Senior Curriculum Development Analyst of Ministry of Education Ms. Gulfishan Shafeeu. Email: gulfishan@nie.edu.mv
						Executive Secretary of Maldivian Red Crescent Aminath Shahuba Shaheed Email: aminath.shahuba@redcrescent.org.mv
CW/03	Yes	Yes	Yes	No GRC at island level, the island Council is the first tier to respond.		For Himmafushi himmafushicouncil@gmail.com For Huraa hrcouncilhuraa@gmail.com

B. Complaints Received during Reporting Period

53. No complaints received and reported during this period.

C. GRC Meetings

54. GRC meetings conducted as necessary to resolve the complaints, and details are presented in the following Table. No meetings were conducted in this reporting period.

Table 23: GRC Meetings

S. No	Package No.	No, of meeting in Reporting Period	Cumulative meetings till date
DBI/01	DBI/01	0	1

X. FINDINGS, KEY ISSUES & REMEDIAL MEASURES

A. Findings

55. This Semi-annual Environmental Monitoring Report (SEMR) for the period of May to October 2023 is prepared as per the ADB SPS requirements. This SEMR describes progress with the implementation of the subproject-wise EMPs, and compliance status. Project includes four subprojects/contract packages, which consist of two civil works and two design-build-install (DBI) packages. One package (CW/01) package is now completed. One package (DBI/01) has been awarded, and construction is completed but formal hand over is not yet completed. In addition, CW/03 is now contracted and construction is ongoing in two IWMC sites. However, DBI/02 is now contracted to CSCE as a variation to their contract. Findings of this SEMR are presented in the following table along with key issues and remedial measures.

Table 24: Findings and Key Issues

Monitoring aspect	Findings & Key issues	Remedial measures/Further actions
Availability of safeguards personnel (PMU, PIU, Consultants and Contractors)	<p>Complied</p> <p>The PMU is functioning. However, no full consultant support from PMDSC has been received during the period.</p> <p>Contractors have designated EHS focal persons.</p>	<p>PMU conducted monitoring of the EMP implementation of contractors through safeguard person and other PMU staff.</p> <p>PMDSC contract has been extended for another year.</p>
Compliance with statutory requirements (clearance / permissions etc.,)	Complied. All permits and other statutory/contractual requirements are valid.	
Compliance with ADB loan covenants	Complied.	
Compliance with preparation, approval, disclosure of draft IEEs	Complied.	Updated IEE covering the final detailed design for Package DB/02 (DBI modality) to be prepared and submitted to ADB for review, clearance, and disclosure prior to start of construction.
Compliance with preparation, approval, disclosure of updated/final IEEs	Complied.	
Contractor compliance with preconstruction requirements	Complied.	SEMP and other preconstruction requirements to be complied with before start of construction for DB/02, and other IWMC sites under Package CW/03.
EMP implementation, monitoring, reporting	<p>Complied partially.</p> <p>Monitoring of the EMP implementation has been conducted and results reported in this SEMR. However, environmental quality monitoring was completed for only DB1/01.</p>	Inform EMP/CEMP implementation monitoring and reporting requirements to Contractor/s.

	<p>CW/03 Contractor did not provide the air quality, noise and water quality monitoring reports and was requested to provide in the next reporting period.</p> <p>Some deviation noted on solid waste management at CW/03 site. PPE needs to include a hard hat, visibility vests and safety shoes.</p>	<p>Instruct contractors to prepare and submit complete EMP/CEMP implementation reports.</p> <p>Contractor to prepare and submit complete periodic EMP/CEMP implementation reports to PMU.</p> <p>Rectify observed deviation on solid waste management in CW/03 site. Complete PPE to be ensured for all workers in all work sites.</p>
Implementation of COVID19 health and safety measures	Complied.	As COVID emergency is now lifted no special arrangements were required
Training and capacity building activities	Partially Complied	Safeguards orientation for IWMC contractors conducted by the PMU during the site hand over meeting with contractor. However, PMDSC has not conducted any training or monitoring in this monitoring period. PMDSC should provide monitoring reports and details of training conducted for CW/03 contractors and also improve in their reporting to PMU
Public consultation	Partially Complied	Consultations were conducted but more needs to be conducted at island level
GRM establishment, operationalization, and complaint resolution	Complied	No complaints received by PMU or any other concerned parties.

B. Corrective Action Plan

56. The following action plan is developed to address the issues of concerns raised in this report.

Table 25: Corrective Action Plan

Proposed Remedial Measure	Responsibility of implementation	Target date	Remarks
PMDSC to conduct inspections for CW/03 package and provide inspection reports	PMU/PMDSC	Monitoring and reporting period for October 2023 to March 2024.	PMDSC to provide reports to PMU in time for reporting and improve the reporting.
Conduct training to IWMC contractors	PMU/PMDSC	Monitoring and reporting period for October 2023 to March 2024.	PMDSC to train IWMC contractors on HSE
Contractors to improve EMP implementation reports and submit monthly to PMU/PMDSC (include EMP implementation and environmental monitoring results)	Contractor	Every month (during construction phase)	PMDSC to train IWMC contractors on EMP implementation monitoring and reporting.
Public consultations to be conducted at the island level	PMU/PMDSC	At least once before start of construction of IWMCs, and continuing during construction phase	

C. Status of Corrective Actions from Previous Monitoring Report

- Issues with the Contract of the PMDSC is resolved but PMDSC has not conducted any monitoring for CW/03 package in this reporting period.
- Contractors were informed of their contractual obligations and DB1/01 contractor have submitted results of ambient air quality and ground water quality parameters.
- Contractor has conducted Ambient air quality parameters which were not measured in previous reporting period
- Contractors were informed to improve CEMP reporting and CW/03 contractor is given orientation on safeguards by PMU.
- PMDSC prepared monthly reports but needs improvement in their reporting of HSE monitoring.
- PMU conducted orientation but PMDSC has not provided any reports regarding the training conducted for contractor.
- The hiring of PACCB consultants is completed, except the position of Solid Waste Management Trainer.



x. Once the project activities have started, the Proponent must inform the Environmental Protection Agency, the date of commencement of project activities.

x. دسٽاڻو ۾ ڏسڻ ۾ ايندڙ ڪم ۽ ڪارروائي شروع ٿيڻ کان پوءِ، پيشانيءَ کي خبرداري ڏيڻ جي ضرورت آهي ته ڪم ۽ ڪارروائي شروع ٿيڻ جي تاريخ کي ماحولياتي تحفظ آئيندڙ کي خبرداري ڏيڻ جي ضرورت آهي.

Date of Issue: 05 th March 2020	تاريخ ۾ ڏنو: 08 مارچ 2020
Date of expiry: 05 th March 2021	تاريخ ۾ ختم: 08 مارچ 2021
Name: Mr. Ibrahim Naeem	نالو: ماستر ابراهيم نعيم
Designation: Director General	دفتري عهدو: جنرل ڊائريڪٽر
Signature:	





x. Once the project activities have started, the Proponent must inform the Environmental Protection Agency, the date of commencement of project activities.

خ. سہ ماہی پرورش کے سرکاری منصوبوں کے آغاز کے وقت، فراہم کنندہ کو ایجنسی کو مطلع کرنا ہوگا کہ منصوبہ کب شروع ہو رہا ہے۔

Date of Issue: 22 nd February 2021	تقریباً 22 فروری 2021
Date of expiry: 22 nd February 2022	تقریباً 22 فروری 2022
Name: Ibrahim Naeem	نام: ابراہیم نعیم
Designation: Director General	مقام: ڈائریکٹر جنرل
Signature: 	مقام: 





مقررتهما في شأن الموافقة على دراسة تقييم الأثر البيئي APPROVAL OF ENVIRONMENTAL IMPACT ASSESSMENT

رقم القرار: 203-ECA/438/2020/58

مقررتهما في شأن الموافقة على دراسة تقييم الأثر البيئي لمشروع تحويل النفايات إلى طاقة في جزيرة كافتو، مملكة البحرين، الذي تم تقديمه للدراسة في 06 أغسطس 2020، وبتاريخ 18 أغسطس 2020، 21 سبتمبر 2020، وبتاريخ 23 سبتمبر 2020، من قبل وزارة البيئة، مملكة البحرين. المستشار البيئي لهذا المشروع هو السيد أحمد الجميل (EIA/P07/2007).

This Environmental Decision Statement is issued for the purpose of communicating the decision regarding the Environmental Impact Assessment for the Dumpsite Rehabilitation – Greater Male' Waste to Energy Project at Thilafushi, Kaafu Atoll, which was submitted for evaluation on 06th August 2020 and submitted additional information on 18th August 2020, 21st September 2020 and 23rd September 2020 by Ministry of Environment. The EIA consultant of this project is Mr. Ahmed Jameel (EIA/P07/2007).

1. This Environmental Decision Statement has been issued on behalf of the Environmental Protection Agency (hereinafter referred to as the Ministry) pursuant to the Environmental Impact Assessment Regulations 2012 (2012/R-27) to advise that the Ministry has decided that the proposed Development Proposal can proceed according to the Environmental Impact Assessment Report.

1. مقررتهما في شأن الموافقة على دراسة تقييم الأثر البيئي لمشروع تحويل النفايات إلى طاقة في جزيرة كافتو، مملكة البحرين، الذي تم تقديمه للدراسة في 06 أغسطس 2020، وبتاريخ 18 أغسطس 2020، 21 سبتمبر 2020، وبتاريخ 23 سبتمبر 2020، من قبل وزارة البيئة، مملكة البحرين. المستشار البيئي لهذا المشروع هو السيد أحمد الجميل (EIA/P07/2007).

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مقررتهما في شأن الموافقة على دراسة تقييم الأثر البيئي لمشروع تحويل النفايات إلى طاقة في جزيرة كافتو، مملكة البحرين



vi. The Developer shall submit environmental monitoring report as outlined in Paragraph viii of this Environmental Decision Statement. Failure to submit the requisite monitoring report may result in the suspension or revocation of the permit under this Decision Statement.

vi. في هذا القرار يجب على المطور تقديم تقرير مراقبة بيئية كما هو مبين في الفقرة الثامنة من هذا القرار. قد يؤدي عدم تقديم التقرير المطلوب إلى تعليق أو إلغاء الترخيص بموجب هذا القرار.

vii. The Developer is aware that under the National Environment Protection Act (Law no. 4/93) and the Environmental Impact Assessment Regulations the Ministry reserves the right to terminate any activity without compensation if found that such an activity has caused significant, irreversible impacts on the environment.

vii. المطور على علم بأنه بموجب قانون حماية البيئة الوطنية (قانون رقم 4/93) واللائحة التنفيذية لتقييم الأثر البيئي، تحتفظ الوزارة بالحق في إنهاء أي نشاط دون تعويض إذا تبين أن هذا النشاط قد تسبب في آثار بيئية كبيرة، لا رجعة فيها، على البيئة.

viii. All mitigation measures proposed in the EIA report for all the phases of the project shall be fully implemented.

viii. يجب تنفيذ جميع تدابير التخفيف المقترحة في تقرير تقييم الأثر البيئي لجميع مراحل المشروع بشكل كامل.

ix. The environmental monitoring program outlined in the

ix. البرنامج البيئي الموضح في

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١٤. يجب تنفيذ جميع تدابير التخفيف المقترحة في تقرير تقييم الأثر البيئي لجميع مراحل المشروع بشكل كامل.



Environmental Impact Assessment Report shall be undertaken and implemented and summary environmental monitoring reports shall be submitted to the Ministry.

شرعی لہجہ میں ماحولیاتی اثرات کا جائزہ لیا جائے گا اور اس کا رپورٹ پیش کی جائے گی اور اس کے ساتھ ہی خلاصہ ماحولیاتی نگرانی رپورٹیں بھی پیش کی جائیں گی۔

x. The date of expiry stated in this Environmental Decision Statement is the duration given to commence the project activities approved under this Environmental Decision Statement.

x. ماحولیاتی فیصلہ نامہ میں بیان کی گئی تاریخ اس کے لئے ہے کہ اس کے تحت منظور شدہ سرگرمیاں شروع کی جائیں۔

xi. Once the project activities have started, the Proponent must inform the Environmental Protection Agency, the date of commencement of project activities.

xi. جب کہ سرگرمیاں شروع ہو جائیں تو ماحولیاتی تحفظ ایجنسی کو مطلع کیا جائے گا کہ سرگرمیاں شروع کی گئی ہیں۔

محکمہ ماحولیاتی تحفظ، حکومت پنجاب، اسلام آباد۔ ڈیڑھ گھنٹہ کی گفتگو کے نتیجے میں دستخط



Date of Issue: 27 th September 2020	قرارداد نمبر: 27 ستمبر 2020
Date of Expiry: 27 th September 2021	قرارداد ختم ہونے کی تاریخ: 27 ستمبر 2021
Name: Ibrahim Naeem	نام: ابراہیم نعیم
Designation: Director General	مقام: ڈائریکٹر جنرل
Signature: 	

Appendix 2: Details of Site Visits conducted by PMDCSC, & PMU Safeguard Staff in the Reporting Period

Package	Visit date	Expert visited*	Sites visited	
DBI/01	14.05.2023-17.05.2023	Chakir Kasdarli (TL PMDCSC) Ibrahim Faiz (Safeguard expert PMDCSC) Ibrahim Mohamed (PMU safeguards Specialist)	Male' TS (14-15.05) Vilimale' TS (16.05)	Work was in progress Technical missing has been discussed, Site HSE aspect were OK. All personnel were wearing safety shoes and clothes As the work was progressing the demobilisation of the contractor was already started. No heavy vehicles were used, finishing work started
	14.09-18.09.2023	Chakir Kasdarli (TL PMDCSC) Martin Duffner (Structural engineer PMDCSC) Abdullah Fayaz (local site engineer PMDCSC) Ibrahim Faiz (Safeguard expert PMDCSC)	Male' TS (14-.15.09/17.09) Vilimale' TS (16.09)	Substantial completion of the site/pre-commissioning report (see substantial completion notice)
	03.11.2023-11.11.2023	Chakir Kasdarli (TL PMDCSC) Abdullah Fayaz (local site engineer PMDCSC) Robert Ueberholz (SWM PMDCSC) Mohamed Latheef (PMU Engineer)	Male' TS (04-06.11) Vilimale' TS (07.11)	Conditional commissioning of the site (see draft commissioning report)

*Indicate position and organization (PMU, PMDCSC etc.,)

Appendix 3: Environmental Monitoring Reports from Contractors



CEMP MONITORING REPORT

Aug to Oct 2023

Transfer stations in Malé and Vilimalé (incl. 6 story admin Malé) with
equipment for transfer and transport of waste

Prepared by:
China State Construction Engineering Corporation Limited

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1. Project Information

1.1. Project Location Map



1.2. Project Background

The Transfer stations in Malé and Vilimalé (incl. 6 story admin Malé) with equipment for transfer and transport of waste (the Project) will establish a sustainable regional solid waste management (SWM) system in Greater Malé by (i) improving collection, transfer, disposal, treatment, recycling, and dumpsite rehabilitation; (ii) strengthening institutional capacities for solid waste services delivery and environmental monitoring; and (iii) improving public awareness and behaviors in reduce-reuse-recycle (3R).¹ The Project will be designed to reduce disaster risk and improve climate change resilience while creating a cleaner environment and reducing greenhouse gas emissions.

1.3. Purpose of CEMP

The purpose of this monitoring report is to ensure that the environmental thresholds, as specified, in the regulations are not surpassed during the project. This will ascertain that the mitigation measures recommended in the EMP are effective and whether necessary actions need to be taken to further improve the mitigation measures.

2. Methods

2.1. Noise level

Noise levels were measured at the Malé and Vilimalé sites according to the actual construction progress. Measurements were taken during the daytime at 8 am, 2 pm, and 5 pm.

2.2. Ground Water Quality

Groundwater samples were taken in 2500ml glass bottles and specimen collection bag from Malé and Vilimalé sites to be tested monthly at the MWSC laboratory and National Health Laboratory.

2.3. Air Quality

Air quality parameters were measured in situ by the Contractor's monitoring equipment, the tested parameters included PM10 and PM2.5,SOX,NOX,CO.

3. Monitoring Locations



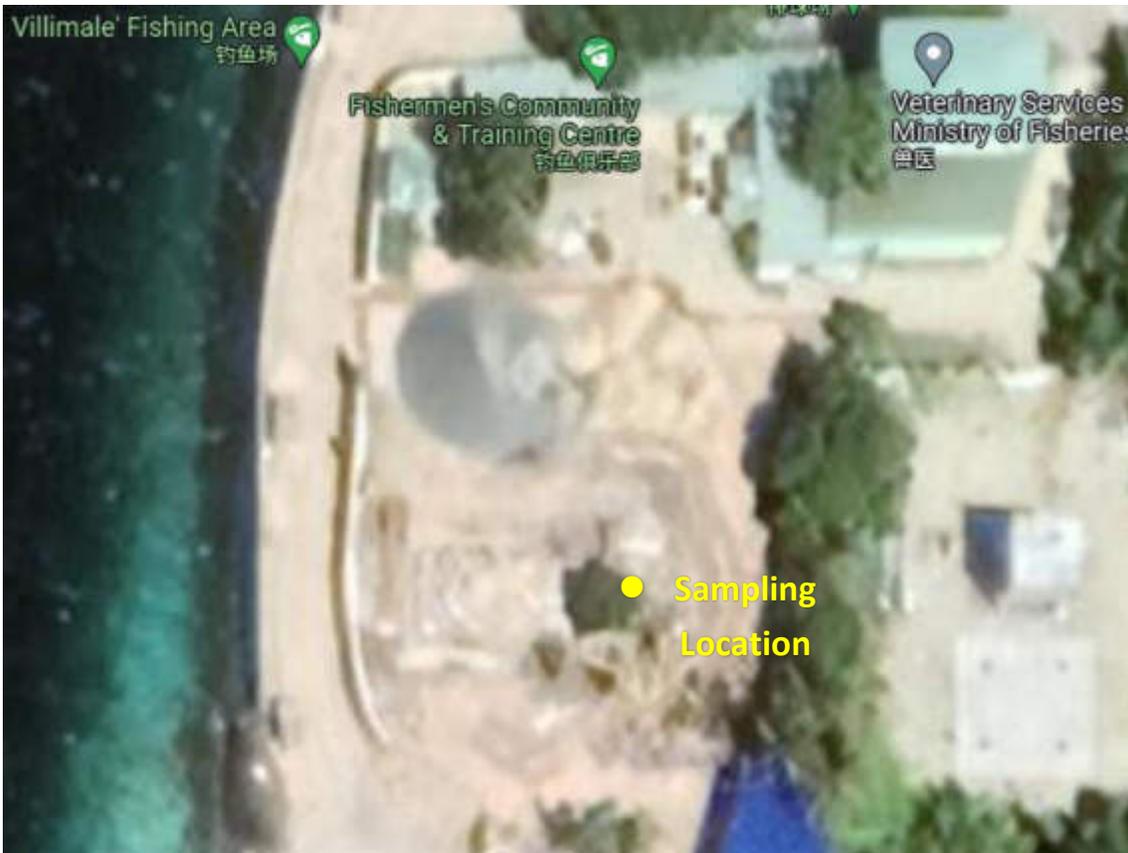
Malé Noise Sampling Location



Malé Ground Water Sampling Location



Malé Air Sampling Location



Vilimalé Sampling Location

4. Analysis and Results

Noise Levels & Air Quality

Noise levels and air quality were measured in the Malé and Vilimalé sites according to the actual construction progress and recorded in Environmental Monitoring Log every day. Measurements were taken during the daytime at 8:00 am, 11:00 am, and 6:00 pm. The Environmental Monitoring Log below shows the measured noise levels and air quality.

WHO Air Quality Guidelines 2022 Recommended: $PM_{2.5} \leq 5 \mu g/m^3$, $PM_{10} \leq 15 \mu g/m^3$; $CO \leq 4 \text{ mg}/m^3$, $NO_2 \leq 25 \mu g/m^3$, $SO_2 \leq 40 \mu g/m^3$

WHO Noise Quality Guidelines 2022 Recommended: $\leq 70 \text{ db}$.



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
2-Aug-2023	Cloudy	18:00	27°C	63.9	5	6	52.3	
3-Aug-2023	Cloudy	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.7	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
4-Aug-2023	Rain	8:00	29°C	63.3	2	10	41.9	
		14:00	30°C	64.8	5	5	30.3	
		18:00	27°C	73.9	2	6	45.6	
5-Aug-2023	Rain	8:00	28°C	64.9	5	6	43.2	
		14:00	30°C	63.7	3	4	40.9	
		18:00	28°C	65.2	3	3	52.4	
6-Aug-2023	Rain	8:00	28°C	63.3	3	6	30.3	
		14:00	30°C	64.8	2	6	44.8	
		18:00	28°C	63.8	1	4	46.7	
7-Aug-2023	Cloudy	8:00	29°C	64.5	3	4	41.9	
		14:00	30°C	63.7	2	11	30.3	
		18:00	28°C	75.2	6	5	47.9	
8-Aug-2023	Cloudy	8:00	29°C	63.3	2	6	46.7	
		14:00	30°C	64.8	5	6	43.6	
		18:00	27°C	63.9	3	4	52.3	
9-Aug-2023	Cloudy	8:00	29°C	64.7	3	3	30.3	
		14:00	30°C	63.7	3	4	44.8	
		18:00	28°C	65.6	3	12	46.7	
10-Aug-2023	Cloudy	8:00	29°C	71.7	1	5	44.9	
		14:00	31°C	68.5	2	6	36.3	
		18:00	28°C	76.7	3	4	44.1	
11-Aug-2023	Rain	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
12-Aug-2023	Cloudy	8:00	29°C	73.3	5	6	30.3	
		14:00	30°C	64.8	3	4	44.8	
		18:00	28°C	63.4	3	3	46.7	
13-Aug-2023	Cloudy	8:00	29°C	64.5	4	4	42.9	
		14:00	30°C	63.7	2	13	30.3	
		18:00	28°C	65.2	1	5	44.8	
14-Aug-2023	Rain	8:00	29°C	63.3	0	7	46.7	
		14:00	31°C	64.3	0	10	40.9	
		18:00	28°C	73.9	5	6	52.3	
15-Aug-2023	Sunny	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.2	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
16-Aug-2023	Sunny	8:00	29°C	63.3	2	13	44.8	
		14:00	30°C	64.8	1	5	46.7	
		18:00	28°C	73.1	2	6	46.8	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Aug-2023	Sunny	8:00	28°C	63.7	2	13	30.3	
		14:00	29°C	65.2	1	5	44.8	
		18:00	27°C	72.8	2	6	46.7	
18-Aug-2023	Sunny	8:00	28°C	69.5	0	10	41.7	
		14:00	30°C	70.3	0	7	44.8	
		18:00	27°C	73.7	0	8	46.7	
19-Aug-2023	Cloudy	8:00	28°C	69.7	0	7	42.9	
		14:00	30°C	68.9	0	10	30.3	
		18:00	27°C	70.2	5	6	44.8	
20-Aug-2023	Sunny	8:00	29°C	64.7	3	3	30.3	
		14:00	30°C	63.7	3	4	44.8	
		18:00	28°C	65.6	3	12	46.7	
21-Aug-2023	Cloudy	8:00	29°C	71.7	1	5	44.9	
		14:00	31°C	68.5	2	6	36.3	
		18:00	28°C	76.7	3	4	44.1	
22-Aug-2023	Cloudy	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
23-Aug-2023	Sunny	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.7	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
24-Aug-2023	Rain	8:00	29°C	63.3	2	10	41.9	
		14:00	30°C	64.8	5	5	30.3	
		18:00	27°C	73.9	2	6	45.6	
25-Aug-2023	Sunny	8:00	29°C	63.3	0	7	46.7	
		14:00	31°C	64.3	0	10	40.9	
		18:00	28°C	73.9	5	6	52.3	
26-Aug-2023	Sunny	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.2	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
27-Aug-2023	Sunny	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
28-Aug-2023	Rain	8:00	27°C	80.27	3	8	30.3	
		14:00	28°C	78.65	2	7	44.8	
		18:00	26°C	84.98	1	10	46.7	
29-Aug-2023	Rain	8:00	27°C	77.25	2	6	44.9	
		14:00	28°C	80.55	3	3	36.3	
		18:00	26°C	75.54	4	4	44.1	
30-Aug-2023	Rain	8:00	27°C	70.86	5	12	46.3	
		14:00	28°C	83.55	1	5	44.8	
		18:00	27°C	84.12	2	6	46.7	
31-Aug-2023	Rain	8:00	26°C	75.36	3	4	44.8	
		14:00	28°C	70.66	3	3	46.7	
		18:00	26°C	79.42	3	4	46.7	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Sep-2023	Cloudy	8:00	28°C	71.7	0	10	30.3	
		14:00	30°C	68.5	5	6	44.8	
		18:00	27°C	76.7	3	4	46.7	
2-Sep-2023	Cloudy	8:00	29°C	64.5	3	3	41.9	
		14:00	30°C	63.5	3	4	30.3	
		18:00	28°C	65.2	2	13	47.9	
3-Sep-2023	Rain	8:00	29°C	64.5	1	5	46.7	
		14:00	31°C	63.7	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
4-Sep-2023	Rain	8:00	29°C	63.3	2	10	41.9	
		14:00	30°C	64.8	5	5	30.3	
		18:00	27°C	73.9	2	6	45.6	
5-Sep-2023	Rain	8:00	28°C	63.3	5	6	43.2	
		14:00	30°C	64.3	3	4	40.9	
		18:00	28°C	73.9	3	3	52.4	
6-Sep-2023	Cloudy	8:00	28°C	64.5	3	6	30.3	
		14:00	30°C	63.2	2	6	44.8	
		18:00	28°C	65.2	1	4	46.7	
7-Sep-2023	Rain	8:00	29°C	64.5	3	4	41.9	
		14:00	30°C	63.5	2	11	30.3	
		18:00	28°C	65.2	6	5	47.9	
8-Sep-2023	Cloudy	8:00	29°C	80.27	2	6	46.7	
		14:00	30°C	78.65	5	6	43.6	
		18:00	27°C	84.98	3	4	52.3	
9-Sep-2023	Rain	8:00	29°C	77.25	3	3	30.3	
		14:00	30°C	63.7	3	4	44.8	
		18:00	28°C	65.6	3	12	46.7	
10-Sep-2023	Cloudy	8:00	29°C	71.7	1	5	44.9	
		14:00	31°C	68.5	2	6	36.3	
		18:00	28°C	76.7	3	4	44.1	
11-Sep-2023	Cloudy	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
12-Sep-2023	Rain	8:00	29°C	73.3	5	6	30.3	
		14:00	30°C	64.8	3	4	44.8	
		18:00	28°C	63.4	3	3	46.7	
13-Sep-2023	Cloudy	8:00	29°C	64.5	4	4	42.9	
		14:00	30°C	63.7	2	13	30.3	
		18:00	28°C	65.2	1	5	44.8	
14-Sep-2023	Cloudy	8:00	29°C	63.3	0	7	46.7	
		14:00	31°C	64.3	0	10	40.9	
		18:00	28°C	73.9	5	6	52.3	
15-Sep-2023	Cloudy	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.2	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
16-Sep-2023	Cloudy	8:00	29°C	63.3	2	13	44.8	
		14:00	30°C	64.8	1	5	46.7	
		18:00	28°C	73.1	2	6	46.8	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Sep-2023	Cloudy	8:00	28°C	63.7	2	13	30.3	
		14:00	29°C	65.2	1	5	44.8	
		18:00	27°C	72.8	2	6	46.7	
18-Sep-2023	Cloudy	8:00	28°C	69.5	0	10	41.7	
		14:00	30°C	70.3	0	7	44.8	
		18:00	27°C	73.7	0	8	46.7	
19-Sep-2023	Cloudy	8:00	28°C	69.7	0	7	42.9	
		14:00	30°C	68.9	0	10	30.3	
		18:00	27°C	70.2	5	6	44.8	
20-Sep-2023	Sunny	8:00	29°C	64.7	3	3	30.3	
		14:00	30°C	63.7	3	4	44.8	
		18:00	28°C	65.6	3	12	46.7	
21-Sep-2023	Sunny	8:00	29°C	71.7	1	5	44.9	
		14:00	31°C	68.5	2	6	36.3	
		18:00	28°C	76.7	3	4	44.1	
22-Sep-2023	Cloudy	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
23-Sep-2023	Sunny	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.7	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
24-Sep-2023	Cloudy	8:00	29°C	63.3	2	10	41.9	
		14:00	30°C	64.8	5	5	30.3	
		18:00	27°C	73.9	2	6	45.6	
25-Sep-2023	Cloudy	8:00	29°C	63.3	0	7	46.7	
		14:00	31°C	64.3	0	10	40.9	
		18:00	28°C	73.9	5	6	52.3	
26-Sep-2023	Sunny	8:00	29°C	64.5	3	4	30.3	
		14:00	30°C	63.2	3	3	44.8	
		18:00	28°C	65.2	3	4	46.7	
27-Sep-2023	Sunny	8:00	27°C	64.5	2	13	46.3	
		14:00	29°C	63.5	1	5	40.6	
		18:00	26°C	65.2	2	6	52.3	
28-Sep-2023	Rain	8:00	28°C	80.27	3	8	30.3	
		14:00	30°C	78.65	2	7	44.8	
		18:00	27°C	84.98	1	10	46.7	
29-Sep-2023	Rain	8:00	29°C	77.25	2	6	44.9	
		14:00	30°C	80.55	3	3	36.3	
		18:00	28°C	75.54	4	4	44.1	
30-Sep-2023	Rain	8:00	29°C	70.86	5	12	46.3	
		14:00	31°C	83.55	1	5	40.6	
		18:00	28°C	84.12	2	6	52.3	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Oct-2023	Cloudy	8:00	28°C	75.7	0	10	30.3	
		14:00	30°C	88.6	5	6	44.8	
		18:00	27°C	76.7	3	4	46.7	
2-Oct-2023	Cloudy	8:00	29°C	77.25	3	3	41.9	
		14:00	30°C	80.55	3	4	30.3	
		18:00	28°C	75.54	2	13	47.9	
3-Oct-2023	Cloudy	8:00	29°C	70.86	1	5	46.7	
		14:00	31°C	83.55	3	3	44.8	
		18:00	28°C	84.12	3	4	46.7	
4-Oct-2023	Rain	8:00	29°C	80.27	2	10	41.9	
		14:00	30°C	78.65	5	5	30.3	
		18:00	27°C	84.98	2	6	45.6	
5-Oct-2023	Rain	8:00	28°C	74.3	5	6	43.2	
		14:00	30°C	88.6	3	4	40.9	
		18:00	28°C	76.7	3	3	52.4	
6-Oct-2023	Cloudy	8:00	28°C	80.27	3	6	30.3	
		14:00	30°C	78.65	2	6	44.8	
		18:00	28°C	84.98	1	4	46.7	
7-Oct-2023	Cloudy	8:00	29°C	77.25	3	4	41.9	
		14:00	30°C	80.55	2	11	30.3	
		18:00	28°C	75.54	6	5	47.9	
8-Oct-2023	Cloudy	8:00	29°C	70.86	2	6	46.7	
		14:00	30°C	83.55	5	6	43.6	
		18:00	27°C	84.12	3	4	52.3	
9-Oct-2023	Cloudy	8:00	29°C	77.25	3	3	30.3	
		14:00	30°C	80.55	3	4	44.8	
		18:00	28°C	75.54	3	12	46.7	
10-Oct-2023	Cloudy	8:00	29°C	70.86	1	5	44.9	
		14:00	31°C	83.55	2	6	36.3	
		18:00	28°C	84.12	3	4	44.1	
11-Oct-2023	Cloudy	8:00	27°C	80.27	2	13	46.3	
		14:00	29°C	78.65	1	5	40.6	
		18:00	26°C	84.98	2	6	52.3	
12-Oct-2023	Rain	8:00	29°C	77.25	5	6	30.3	
		14:00	30°C	80.55	3	4	44.8	
		18:00	28°C	75.54	3	3	46.7	
13-Oct-2023	Rain	8:00	29°C	80.27	4	4	42.9	
		14:00	30°C	78.65	2	13	30.3	
		18:00	28°C	84.98	1	5	44.8	
14-Oct-2023	Rain	8:00	29°C	77.25	0	7	46.7	
		14:00	31°C	80.55	0	10	40.9	
		18:00	28°C	75.54	5	6	52.3	
15-Oct-2023	Rain	8:00	29°C	77.25	3	4	30.3	
		14:00	30°C	80.55	3	3	44.8	
		18:00	28°C	75.54	3	4	46.7	
16-Oct-2023	Rain	8:00	29°C	70.86	2	13	44.8	
		14:00	30°C	83.55	1	5	46.7	
		18:00	28°C	84.12	2	6	46.8	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Oct-2023	Rain	8:00	28°C	77.25	2	13	30.3	
		14:00	29°C	80.55	1	5	44.8	
		18:00	27°C	75.54	2	6	46.7	
18-Oct-2023	Cloudy	8:00	28°C	70.86	0	10	41.7	
		14:00	30°C	83.55	0	7	44.8	
		18:00	27°C	84.12	0	8	46.7	
19-Oct-2023	Cloudy	8:00	28°C	77.25	0	7	42.9	
		14:00	30°C	80.55	0	10	30.3	
		18:00	27°C	75.54	5	6	44.8	
20-Oct-2023	Sunny	8:00	29°C	70.86	2	5	30.3	
		14:00	30°C	83.55	3	4	44.8	
		18:00	28°C	84.12	3	12	46.7	
21-Oct-2023	Sunny	8:00	29°C	70.86	1	5	44.9	
		14:00	31°C	83.55	2	6	36.3	
		18:00	28°C	84.12	3	4	44.1	
22-Oct-2023	Cloudy	8:00	27°C	77.25	2	13	46.3	
		14:00	29°C	80.55	1	5	40.6	
		18:00	26°C	75.54	2	6	52.3	
23-Oct-2023	Rain	8:00	24°C	83.24	1	4	59.7	
		14:00	28°C	70.44	1	5	41.6	
		18:00	25°C	81.31	5	10	60.5	
24-Oct-2023	Rain	8:00	26°C	72.14	1	5	43.2	
		14:00	27°C	75.54	1	2	64.3	
		18:00	28°C	70.14	2	7	43.3	
25-Oct-2023	Cloudy	8:00	28°C	72.8	50	74	41.3	
		14:00	30°C	80.12	4	10	47.3	
		18:00	28°C	82.15	1	5	48.7	
26-Oct-2023	Rain	8:00	29°C	76.32	1	7	44.6	
		14:00	31°C	82.17	1	10	38.2	
		18:00	28°C	77.12	2	7	47.4	
27-Oct-2023	Sunny	8:00	27°C	74.00	0	10	64.4	
		14:00	33°C	59.70	0	10	49.2	
		18:00	29°C	63.70	0	9	45.3	
28-Oct-2023	Cloudy	8:00	28°C	80.27	3	8	30.3	
		14:00	30°C	78.65	2	7	44.8	
		18:00	27°C	84.98	1	10	46.7	
29-Oct-2023	Cloudy	8:00	29°C	77.25	2	6	44.9	
		14:00	30°C	80.55	3	3	36.3	
		18:00	28°C	75.54	4	4	44.1	
30-Oct-2023	Rain	8:00	29°C	70.86	5	12	46.3	
		14:00	31°C	83.55	1	5	40.6	
		18:00	28°C	84.12	2	6	52.3	
31-Oct-2023	Rain	8:00	29°C	92.77	3	4	52.4	
		14:00	31°C	99.4	3	3	55.4	
		18:00	28°C	106.03	3	4	58.4	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Nov-2023	Cloudy	8:00	28°C	81	0	5	48.6	
		14:00	29°C	84	1	10	43.6	
		18:00	27°C	79	5	10	45.9	
2-Nov-2023	Sunny	8:00	28°C	80	10	15	47.6	
		14:00	29°C	79	1	6	48.7	
		18:00	28°C	76	2	10	50.3	
3-Nov-2023	Rainy	8:00	30°C	82	0	5	41.6	
		14:00	29°C	70	1	6	39.1	
		18:00	28°C	79	0	5	44.5	
4-Nov-2023	Cloudy	8:00	29°C	79	10	20	47.2	
		14:00	32°C	67	2	5	38.5	
		18:00	28°C	84	1	10	42.3	
5-Nov-2023	Rainy	8:00	27°C	89	3	10	41.6	
		14:00	29°C	79	0	5	47.4	
		18:00	28°C	84	4	13	46.4	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Aug-2023	Rainy	8:00	29°C	79	6	13	39	
		14:00	30°C	75	7	18	40	
		18:00	29°C	79	8	16	41	
2-Aug-2023	Cloudy	8:00	29°C	84	0	13	44	
		14:00	32°C	71	2	15	46	
		18:00	29°C	79	10	18	52	
3-Aug-2023	Cloudy	8:00	29°C	74	10	19	49	
		14:00	31°C	70	3	13	39	
		18:00	29°C	74	7	15	46	
4-Aug-2023	Cloudy	8:00	29°C	74	9	15	43	
		14:00	32°C	67	5	11	48	
		18:00	29°C	84	2	13	42	
5-Aug-2023	Rainy	8:00	29°C	79	3	14	45	
		14:00	31°C	70	2	20	42	
		18:00	26°C	94	9	15	47	
6-Aug-2023	Rainy	8:00	27°C	89	7	19	45	
		14:00	28°C	84	1	16	39	
		18:00	29°C	79	4	14	41	
7-Aug-2023	Cloudy	8:00	30°C	75	5	13	45	
		14:00	31°C	75	1	16	36	
		18:00	30°C	75	6	12	37	
8-Aug-2023	Cloudy	8:00	30°C	75	0	14	47	
		14:00	32°C	71	4	17	43	
		18:00	30°C	79	10	11	44	
9-Aug-2023	Cloudy	8:00	29°C	79	1	17	46	
		14:00	32°C	71	0	13	51	
		18:00	29°C	84	3	11	49	
10-Aug-2023	Cloudy	8:00	29°C	79	1	18	37	
		14:00	31°C	70	10	20	45	
		18:00	29°C	79	5	14	50	
11-Aug-2023	Sunny	8:00	29°C	79	4	15	35	
		14:00	32°C	67	6	15	37	
		18:00	29°C	84	3	11	48	
12-Aug-2023	Cloudy	8:00	30°C	75	2	19	45	
		14:00	32°C	75	8	11	36	
		18:00	29°C	79	7	14	37	
13-Aug-2023	Rainy	8:00	29°C	84	2	13	43	
		14:00	32°C	71	9	14	50	
		18:00	30°C	79	8	17	39	
14-Aug-2023	Sunny	8:00	30°C	79	5	17	36	
		14:00	32°C	71	7	14	44	
		18:00	29°C	84	2	14	48	
15-Aug-2023	Rainy	8:00	29°C	84	10	16	49	
		14:00	31°C	75	10	19	38	
		18:00	28°C	89	2	13	36	
16-Aug-2023	Rainy	8:00	28°C	89	5	18	38	
		14:00	25°C	94	7	12	37	
		18:00	26°C	89	8	19	49	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Aug-2023	Cloudy	8:00	29°C	79	6	12	47	
		14:00	31°C	75	1	15	43	
		18:00	30°C	79	7	14	50	
18-Aug-2023	Rainy	8:00	29°C	84	0	15	42	
		14:00	31°C	75	0	20	44	
		18:00	29°C	84	10	11	43	
19-Aug-2023	Cloudy	8:00	30°C	75	1	17	40	
		14:00	32°C	67	0	12	38	
		18:00	30°C	75	5	20	45	
20-Aug-2023	Cloudy	8:00	29°C	79	4	18	46	
		14:00	31°C	75	3	11	37	
		18:00	29°C	84	1	18	48	
21-Aug-2023	Cloudy	8:00	29°C	84	4	20	35	
		14:00	31°C	70	1	11	40	
		18:00	29°C	79	6	11	45	
22-Aug-2023	Cloudy	8:00	29°C	74	4	19	45	
		14:00	31°C	75	0	14	38	
		18:00	29°C	84	4	18	42	
23-Aug-2023	Cloudy	8:00	29°C	84	9	11	41	
		14:00	32°C	71	3	15	47	
		18:00	30°C	75	7	12	43	
24-Aug-2023	Cloudy	8:00	28°C	79	9	17	52	
		14:00	30°C	75	1	20	52	
		18:00	29°C	79	7	15	38	
25-Aug-2023	Cloudy	8:00	29°C	79	10	19	50	
		14:00	32°C	75	3	18	35	
		18:00	29°C	79	0	13	50	
26-Aug-2023	Rainy	8:00	29°C	84	9	20	52	
		14:00	31°C	75	8	19	49	
		18:00	28°C	94	9	19	51	
27-Aug-2023	Sunny	8:00	29°C	84	2	17	42	
		14:00	32°C	75	3	17	39	
		18:00	30°C	79	5	19	39	
28-Aug-2023	Cloudy	8:00	30°C	79	10	15	50	
		14:00	32°C	75	2	20	37	
		18:00	30°C	79	10	15	40	
29-Aug-2023	Cloudy	8:00	29°C	84	9	13	52	
		14:00	32°C	71	6	16	35	
		18:00	30°C	75	2	17	42	
30-Aug-2023	Sunny	8:00	29°C	84	5	13	52	
		14:00	31°C	75	0	14	46	
		18:00	30°C	79	6	14	37	
31-Aug-2023	Sunny	8:00	30°C	75	9	15	47	
		14:00	32°C	71	1	13	46	
		18:00	30°C	79	6	18	35	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Sep-2023	Cloudy	8:00	25°C	100	2	11	50	
		14:00	31°C	75	0	11	36	
		18:00	30°C	75	5	18	48	
2-Sep-2023	Cloudy	8:00	30°C	70	6	20	51	
		14:00	32°C	67	6	12	45	
		18:00	30°C	75	8	14	51	
3-Sep-2023	Cloudy	8:00	30°C	70	2	13	36	
		14:00	32°C	67	6	17	39	
		18:00	30°C	75	1	17	47	
4-Sep-2023	Cloudy	8:00	30°C	75	7	13	48	
		14:00	32°C	67	0	15	44	
		18:00	31°C	66	5	20	41	
5-Sep-2023	Cloudy	8:00	30°C	75	6	12	50	
		14:00	32°C	67	6	11	37	
		18:00	30°C	75	6	15	36	
6-Sep-2023	Cloudy	8:00	29°C	84	9	18	49	
		14:00	31°C	79	3	18	46	
		18:00	31°C	75	5	14	44	
7-Sep-2023	Cloudy	8:00	31°C	70	1	16	45	
		14:00	32°C	70	5	15	36	
		18:00	31°C	75	10	12	39	
8-Sep-2023	Cloudy	8:00	29°C	84	4	11	46	
		14:00	32°C	71	10	17	40	
		18:00	31°C	75	9	19	52	
9-Sep-2023	Rainy	8:00	31°C	75	2	20	35	
		14:00	30°C	79	3	11	42	
		18:00	29°C	84	2	11	39	
10-Sep-2023	Cloudy	8:00	30°C	79	4	16	41	
		14:00	33°C	67	7	17	49	
		18:00	32°C	67	3	16	39	
11-Sep-2023	Rainy	8:00	30°C	79	2	17	44	
		14:00	33°C	67	6	18	45	
		18:00	29°C	84	10	12	37	
12-Sep-2023	Cloudy	8:00	29°C	79	3	13	39	
		14:00	33°C	67	9	13	50	
		18:00	31°C	70	1	14	35	
13-Sep-2023	Cloudy	8:00	30°C	75	3	15	51	
		14:00	33°C	71	3	15	38	
		18:00	31°C	75	1	17	43	
14-Sep-2023	Cloudy	8:00	30°C	79	3	16	43	
		14:00	33°C	67	1	20	50	
		18:00	31°C	75	9	17	49	
15-Sep-2023	Rainy	8:00	31°C	79	2	18	46	
		14:00	28°C	94	3	18	50	
		18:00	29°C	84	3	12	42	
16-Sep-2023	Cloudy	8:00	30°C	79	6	14	43	
		14:00	32°C	71	8	15	40	
		18:00	30°C	75	9	16	43	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Sep-2023	Sunny	8:00	30°C	79	2	13	40	
		14:00	32°C	71	10	14	39	
		18:00	30°C	70	10	18	40	
18-Sep-2023	Rainy	8:00	30°C	79	3	12	44	
		14:00	33°C	67	0	18	49	
		18:00	30°C	79	6	12	49	
19-Sep-2023	Cloudy	8:00	29°C	75	2	12	52	
		14:00	32°C	67	5	19	35	
		18:00	32°C	67	8	11	52	
20-Sep-2023	Sunny	8:00	30°C	79	7	17	50	
		14:00	32°C	67	5	19	40	
		18:00	31°C	70	7	16	39	
21-Sep-2023	Cloudy	8:00	31°C	75	5	11	49	
		14:00	32°C	75	0	20	45	
		18:00	30°C	79	8	11	49	
22-Sep-2023	Rainy	8:00	31°C	79	7	18	51	
		14:00	33°C	71	10	19	43	
		18:00	30°C	84	4	11	35	
23-Sep-2023	Cloudy	8:00	31°C	75	4	18	37	
		14:00	33°C	71	6	20	42	
		18:00	31°C	75	1	18	50	
24-Sep-2023	Cloudy	8:00	31°C	79	8	16	50	
		14:00	34°C	67	6	11	46	
		18:00	31°C	79	2	15	49	
25-Sep-2023	Cloudy	8:00	30°C	84	3	19	43	
		14:00	33°C	71	1	14	35	
		18:00	31°C	79	8	14	52	
26-Sep-2023	Cloudy	8:00	29°C	84	2	17	41	
		14:00	33°C	71	1	15	50	
		18:00	31°C	75	8	13	48	
27-Sep-2023	Rainy	8:00	31°C	79	2	11	35	
		14:00	33°C	75	0	18	40	
		18:00	31°C	75	3	19	37	
28-Sep-2023	Cloudy	8:00	29°C	84	2	20	37	
		14:00	32°C	71	5	16	48	
		18:00	30°C	79	7	12	35	
29-Sep-2023	Rainy	8:00	29°C	75	7	20	44	
		14:00	32°C	71	7	15	38	
		18:00	30°C	80	1	20	44	
30-Sep-2023	Rainy	8:00	30°C	85	0	16	43	
		14:00	31°C	71	8	15	45	
		18:00	30°C	75	1	13	50	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Oct-2023	Rainy	8:00	30°C	79	9	14	42	
		14:00	31°C	75	4	18	41	
		18:00	30°C	79	3	11	48	
2-Oct-2023	Cloudy	8:00	30°C	79	2	14	52	
		14:00	31°C	75	9	17	42	
		18:00	30°C	79	9	17	46	
3-Oct-2023	Cloudy	8:00	30°C	79	3	11	36	
		14:00	32°C	71	10	18	42	
		18:00	30°C	79	2	15	52	
4-Oct-2023	Rainy	8:00	26°C	94	1	11	42	
		14:00	30°C	75	8	12	44	
		18:00	29°C	84	2	17	51	
5-Oct-2023	Cloudy	8:00	29°C	84	8	11	47	
		14:00	32°C	71	7	15	37	
		18:00	30°C	84	3	19	52	
6-Oct-2023	Rainy	8:00	29°C	84	9	17	38	
		14:00	30°C	75	9	17	43	
		18:00	28°C	84	0	20	48	
7-Oct-2023	Cloudy	8:00	30°C	79	7	16	39	
		14:00	32°C	71	1	13	37	
		18:00	30°C	75	9	13	50	
8-Oct-2023	Sunny	8:00	31°C	75	10	13	42	
		14:00	32°C	75	8	11	45	
		18:00	30°C	75	9	15	52	
9-Oct-2023	Cloudy	8:00	30°C	79	5	13	40	
		14:00	31°C	75	7	12	40	
		18:00	30°C	79	6	12	46	
10-Oct-2023	Rainy	8:00	30°C	84	1	11	48	
		14:00	32°C	75	9	17	51	
		18:00	30°C	79	4	15	50	
11-Oct-2023	Rainy	8:00	29°C	84	3	11	51	
		14:00	31°C	79	6	16	52	
		18:00	29°C	89	10	16	51	
12-Oct-2023	Rainy	8:00	29°C	84	3	16	38	
		14:00	28°C	89	5	14	48	
		18:00	29°C	84	6	14	40	
13-Oct-2023	Rainy	8:00	29°C	84	8	12	48	
		14:00	31°C	75	4	14	37	
		18:00	28°C	89	7	18	38	
14-Oct-2023	Rainy	8:00	29°C	84	3	14	39	
		14:00	31°C	75	6	12	37	
		18:00	29°C	79	0	12	48	
15-Oct-2023	Cloudy	8:00	29°C	84	5	14	52	
		14:00	32°C	75	7	18	52	
		18:00	30°C	79	4	14	38	
16-Oct-2023	Cloudy	8:00	30°C	84	2	12	44	
		14:00	32°C	71	3	15	44	
		18:00	30°C	79	5	15	42	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Oct-2023	Sunny	8:00	30°C	84	5	18	38	
		14:00	32°C	75	7	12	47	
		18:00	30°C	84	1	12	47	
18-Oct-2023	Sunny	8:00	30°C	84	10	19	41	
		14:00	32°C	75	2	14	47	
		18:00	30°C	79	3	14	46	
19-Oct-2023	Sunny	8:00	30°C	79	4	12	35	
		14:00	33°C	67	5	11	40	
		18:00	30°C	79	8	11	49	
20-Oct-2023	Sunny	8:00	30°C	79	2	19	39	
		14:00	32°C	71	0	14	37	
		18:00	30°C	79	2	11	46	
21-Oct-2023	Cloudy	8:00	30°C	79	9	19	44	
		14:00	32°C	75	10	15	44	
		18:00	30°C	84	9	14	42	
22-Oct-2023	Cloudy	8:00	29°C	89	2	14	43	
		14:00	30°C	79	3	13	46	
		18:00	29°C	79	10	14	47	
23-Oct-2023	Sunny	8:00	30°C	79	8	17	41	
		14:00	33°C	67	3	17	37	
		18:00	30°C	75	8	20	49	
24-Oct-2023	Rainy	8:00	31°C	70	2	12	46	
		14:00	33°C	71	2	11	39	
		18:00	31°C	75	9	17	46	
25-Oct-2023	Sunny	8:00	31°C	75	2	12	35	
		14:00	32°C	75	3	20	49	
		18:00	30°C	79	4	13	50	
26-Oct-2023	Sunny	8:00	31°C	75	5	15	42	
		14:00	33°C	67	5	11	48	
		18:00	30°C	79	10	16	37	
27-Oct-2023	Sunny	8:00	31°C	75	5	11	42	
		14:00	32°C	75	5	17	46	
		18:00	31°C	75	5	14	36	
28-Oct-2023	Cloudy	8:00	29°C	84	2	18	40	
		14:00	32°C	71	3	14	41	
		18:00	30°C	79	5	14	48	
29-Oct-2023	Cloudy	8:00	31°C	75	7	14	41	
		14:00	32°C	75	10	13	52	
		18:00	29°C	89	2	20	47	
30-Oct-2023	Rainy	8:00	29°C	80	8	16	41	
		14:00	31°C	75	2	17	37	
		18:00	30°C	79	6	15	48	
31-Oct-2023	Rainy	8:00	29°C	79	1	5	49	
		14:00	31°C	75	2	6	51	
		18:00	30°C	84	7	5	53	



Environmental Monitoring Log-Vili Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Nov-2023	Rainy	8:00	28°C	89	9	14	47	
		14:00	29°C	84	8	12	46	
		18:00	29°C	89	1	11	39	
2-Nov-2023	Rainy	8:00	28°C	89	8	18	36	
		14:00	31°C	79	0	20	49	
		18:00	29°C	84	6	15	42	
3-Nov-2023	Rainy	8:00	30°C	79	0	15	38	
		14:00	30°C	79	5	16	50	
		18:00	29°C	84	0	15	35	
4-Nov-2023	Rainy	8:00	28°C	94	10	16	43	
		14:00	31°C	79	5	11	36	
		18:00	29°C	84	8	11	47	
5-Nov-2023	Cloudy	8:00	30°C	84	9	17	45	
		14:00	32°C	75	4	19	49	
		18:00	29°C	84	4	14	49	

Air Quality

Location	Parameters	Sample Date	Analysis Results	
			Malé	Vilimalé
A1/A2	CO	Aug 17, 2023	0.500	0.500
		Sep 15, 2023	0.600	0.500
		Oct 21, 2023	0.600	0.600
A1/A2	NO ₂	Aug 17, 2023	17	10
		Sep 15, 2023	15	7
		Oct 21, 2023	10	5
A1/A2	SO ₂	Aug 17, 2023	2	1
		Sep 15, 2023	2	2
		Oct 21, 2023	1	1

Ground Water Quality

Location	Parameters	Sample Date	Analysis Results	
			Malé	Vilimalé
G1/G2	BOD	Aug 17, 2023	4	2
		Sep 15,2023	7	5
		Oct 21, 2023	2	2
G1/G2	TSS	Aug 17, 2023	< 5(LoQ 5mg/L)	< 5(LoQ 5mg/L)
		Sep 15,2023	< 5(LoQ 5mg/L)	< 5(LoQ 5mg/L)
		Oct 21, 2023	< 5(LoQ 5mg/L)	< 5(LoQ 5mg/L)
G1/G2	TPH	Aug 17, 2023	0.045	0.032
		Sep 15,2023	0.044	0.039
		Oct 21, 2023	0.052	0.042
G1/G2	Faecal Coliform	Aug 17, 2023	2420	2420
		Sep 15,2023	2420	2420
		Oct 21, 2023	2420	2420
G1/G2	Cu	Aug 17, 2023	< 0.1(LoQ 0.1 mg/L)	< 0.1(LoQ 0.1 mg/L)
		Sep 15,2023	< 0.1(LoQ 0.1 mg/L)	< 0.1(LoQ 0.1 mg/L)
		Oct 21, 2023	< 0.1(LoQ 0.1 mg/L)	< 0.1(LoQ 0.1 mg/L)
G1/G2	Cr	Aug 17, 2023	< 0.01(LoQ 0.1 mg/L)	< 0.01(LoQ 0.1 mg/L)
		Sep 15,2023	< 0.01(LoQ 0.1 mg/L)	0.052
		Oct 21, 2023	0.019	< 0.01(LoQ 0.1 mg/L)
G1/G2	Mercury	Aug 17, 2023	< 0.003mg/L	< 0.003mg/L
		Sep 15,2023	< 0.003mg/L	< 0.003mg/L
		Oct 21, 2023	< 0.003mg/L	< 0.003mg/L
G1/G2	Lead	Aug 17, 2023	< 0.005mg/L	< 0.005mg/L
		Sep 15,2023	< 0.005mg/L	< 0.005mg/L
		Oct 21, 2023	< 0.005mg/L	< 0.005mg/L

Conclusion

Based on the above results, the current Noise Level, Air Quality , and Ground Water Quality, meet the requirements, and no complaint received.



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
REPORT NUMBER: NHL/WC-2023/TR0069

NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L
 MALE'
 TEL: (+960)9132854

TIME TESTED: -
 COLLECTED BY: Qin

PURPOSE OF TESTING: Construction

LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILLMALE'	
Requisition Form No:	NHLWC-2023/RQ0062		TEST METHOD
Date sampled	17/08/2023	17/08/2023	
Time Sampled	07:00	07:30	
Type of water	Ground	Ground	
Date tested	18/08/2023		
Sample ID	10423WC010	170423WC011	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	

COMMENT: -

Authorized by



Mariyam Nisha
 Technical Manager
 Mariyam Nisha

Date: 20th August 2023

NOTE: Information supplied by the client.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
 REPORT NUMBER: NHL/WC-2023/TR0058

•NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L
 MALE'
 TEL: (+960)9132854

TIME TESTED: -
 •COLLECTED BY: Qin

•PURPOSE OF TESTING: Construction

•LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILLIMALE'	
Requisition Form No:	NHL/WC-2023/RQ0053		
•Date sampled	21/09/2023	21/09/2023	
•Time Sampled	08:00	08:30	
•Type of water	Ground water	Ground water	
Date tested	22/03/2023		
Sample ID	210323WC031	210323WC032	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	

COMMENT: Suspended Solids were observed in the sample 210323WC031& 210323WC032.

Authorized by



Thooma Adam
 Head of NHL
 Thooma Adam

Date: 26th Sep 2023

NOTE: •Information supplied by the client.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
 REPORT NUMBER: NHL/WC-2023/TR0069

NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L
 MALE'
 TEL: (+960)9132854

TIME TESTED:-
 COLLECTED BY: Qin

PURPOSE OF TESTING: Construction

LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILLIMALE'	
Requisition Form No:	NHL/WC-2023/RQ0062		
Date sampled	17/10/2023	17/10/2023	
Time Sampled	07:00	07:30	
Type of water	Ground	Ground	
Date tested	18/04/2023		
Sample ID	170423WC010	170423WC011	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	

COMMENT: -

Authorized by



Mariyam Nisha
 Technical Manager
 Mariyam Nisha

Date: 20th OCT 2023

NOTE: Information supplied by the client.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.

WATER QUALITY TEST REPORT
 Report No: 060195468

Customer Information:
 China Side Construction Engrg corp
 Platinum Residence A2-214

Report date: 26/06/2023
 Test Requisition Form No: 006187124
 Sample(s) Received Date: 23/06/2023
 Date of Analysis: 23/06/2023 - 27/06/2023

Hullumale', Maldives -

Sample Description -	WTS - Male'	WTS - Vihara	TEST METHOD	UNIT
Sample Type -	Ground Water	Ground Water		
Sample No	83237355	83237356		
Sampled Date -	20/06/2023 08:00	20/06/2023 08:00		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Clear with particles	Clear with particles		
Total Suspended Solids	< 5(LtQ 5mg/L)	< 5(LtQ 5mg/L)	HACH Method 8000	mg/L
Chromium	< 0.01(LtQ 0.1 mg/L)	< 0.01(LtQ 0.1 mg/L)	HACH Method 8023	mg/L
Copper *	< 0.1 (LtQ 0.1 mg/L)	< 0.1 (LtQ 0.1 mg/L)	HACH Method 3500	mg/L
Biological Oxygen Demand (BOD)	4	2	HACH Method 8043	mg/L
Total Petroleum Hydrocarbon (TPH)	0.045	0.032	UV Fluorescence	mg/L
Faecal Coliforms	2420	2420	Colibrev-18Querc-Treat2008	MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by

 Anurath Saha
 Senior Laboratory Executive

Approved by

 Nhas A. Zahir
 Assistant Quality Manager

Notes:
 Sampling Authority: Sampling was not done by MWSC Laboratory.
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 This test report is ONLY FOR THE SAMPLES TESTED.
 - Information provided by the customer. This information may affect the validity of the test results.
 *Parameters accredited by ISAC under ISO/IEC 17025:2017

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

Male' Water & Sewerage Company Pvt Ltd

Water Quality Assurance Laboratory

Quality Assurance Building, 1st Floor, Male' 11001, Villamale, Male' City, Maldives
Tel: +9603324209, Fax: +9603324396, Email: wqa@mwsc.com.mv



LB-TEST-090

WATER QUALITY TEST REPORT
Report No: 900195789

Customer Information:

China State Construction Engng corp
Platinum Residence A2-214

Report date: 24/09/2023

Test Requisition Form No: 900197345

Sample(s) Received Date: 17/09/2023

Date of Analysis: 17/09/2023 - 22/09/2023

Hulumale', Maldives -

Sample Description -	WTS - Male'	WTS - Villamale'	TEST METHOD	UNIT
Sample Type -	Ground Water	Ground Water		
Sample No -	83238033	83238034		
Sample Date -	17/09/2023 07:30	17/09/2023 07:30		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Clear with particles	Clear with particles		
Total Suspended Solids	<5 (LuQ 5 mg/L)	<5 (LuQ 5 mg/L)	ISO Method 8006	mg/L
Chromium	<0.01 (LuQ 0.01 mg/L)	0.002	ISO Method 8523	mg/L
Copper *	<0.1 (LuQ 0.1 mg/L)	<0.1 (LuQ 0.1 mg/L)	ISO Method 8506	mg/L
Biological Oxygen Demand (BOD)	7	5	ISO Method 8543	mg/L
Total Petroleum Hydrocarbon (TPH)	0.044	0.028	UV Fluorescence	mg/L
Faecal Coliforms	2420	3420	Colibactin-18/Quanta-Trey(2020)	MPN/100ml

Key: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by

Nashath Al
Laboratory Executive

Approved by

Niaz A. Zahir
Assistant Quality Manager

Notes:

Sampling Authority: Sampling was not done by MWSC Laboratory.

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*Parameters accredited by EIAAC under ISO/IEC 17025:2017

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

WATER QUALITY TEST REPORT
 Report No: 900187345

Customer information:
 China State Construction Engg corp
 Platinum Residence A2-214

Report date: 24/10/2023
 Test Requisition Form No: 900187345
 Sample(s) Received Date: 17/10/2023
 Date of Analysis: 17/10/2023, 23/10/2023

Hufumale', Maldives

Sample Description -	WTS - Male'	WTS - Villavale'	TEST METHOD		UNIT
Sample Type -	Ground Water	Ground Water			
Sample No	83238033	83238034			
Sampled Date -	17/10/2023 07:30	17/10/2023 08:30			
PARAMETER	ANALYSIS RESULT				
Physical Appearance	Clear with particles	Clear with particles			
Total Suspended Solids	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	HACH Method 8008		mg/L
Chromium	0.039	<0.01 (LoQ 0.01 mg/L)	HACH Method 8053		mg/L
Copper *	<0.1 (LoQ 0.1 mg/L)	<0.1 (LoQ 0.1 mg/L)	HACH Method 8038		mg/L
Biological Oxygen Demand (BOD)	2	2	HACH Method 8043		mg/L
Total Petroleum Hydrocarbon (TPH)	0.052	0.042	UV Fluorescence		mg/L
Faecal Coliforms	2420	2420	Coliform-18/Quard-Troy0300		MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by



Nashath Ali
 Laboratory Executive

Approved by



Nizar A. Zahir
 Assistant Quality Manager

Notes:

Sampling Authority. Sampling was not done by MWSC Laboratory.
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***** END OF REPORT *****



CEMP MONITORING REPORT

May to July 2023

Transfer stations in Malé and Vilimalé (incl. 6 story admin Malé) with
equipment for transfer and transport of waste

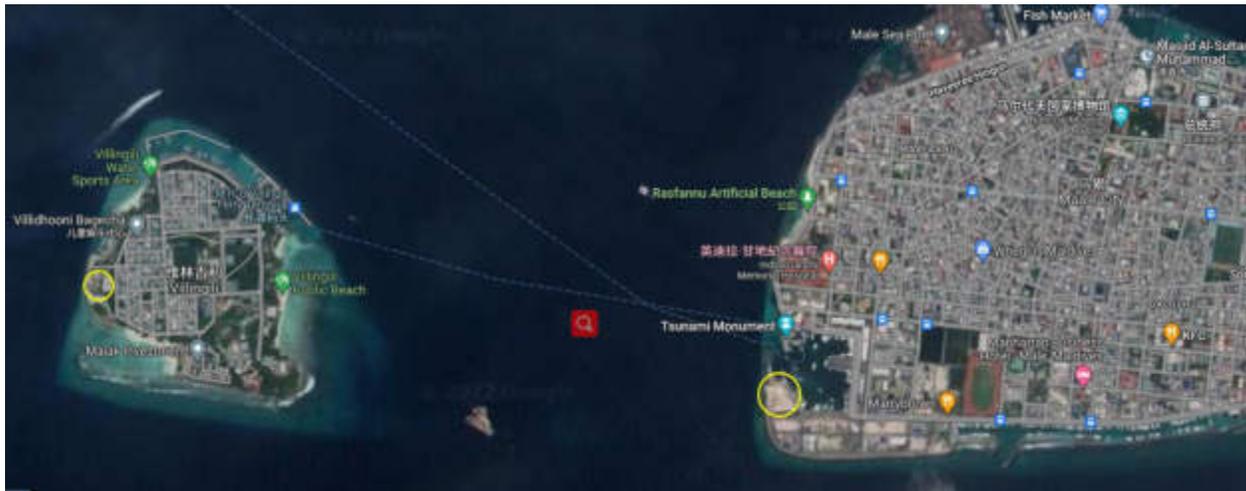
Prepared by:
China State Construction Engineering Corporation Limited

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1. Project Information

1.1. Project Location Map



1.2. Project Background

The Transfer stations in Malé and Vilimalé (incl. 6 story admin Malé) with equipment for transfer and transport of waste (the Project) will establish a sustainable regional solid waste management (SWM) system in Greater Malé by (i) improving collection, transfer, disposal, treatment, recycling, and dumpsite rehabilitation; (ii) strengthening institutional capacities for solid waste services delivery and environmental monitoring; and (iii) improving public awareness and behaviors in reduce-reuse-recycle (3R).¹ The Project will be designed to reduce disaster risk and improve climate change resilience while creating a cleaner environment and reducing greenhouse gas emissions.

1.3. Purpose of CEMP

The purpose of this monitoring report is to ensure that the environmental thresholds, as specified, in the regulations are not surpassed during the project. This will ascertain that the mitigation measures recommended in the EMP are effective and whether necessary actions need to be taken to further improve the mitigation measures.

2. Methods

2.1. Noise level

Noise levels were measured at the Malé and Vilimalé sites according to the actual construction progress. Measurements were taken during the daytime at 8 am, 2 pm, and 5 pm.

2.2. Ground Water Quality

Groundwater samples were taken in 2500ml glass bottles and specimen collection bag from Malé and Vilimalé sites to be tested monthly at the MWSC laboratory and National Health Laboratory.

2.3. Air Quality

Air quality parameters were measured in situ by the Contractor's monitoring equipment, the tested parameters included PM10 and PM2.5. Measurements were taken during the daytime at 8 am, 2 pm, and 5 pm.

3. Monitoring Locations



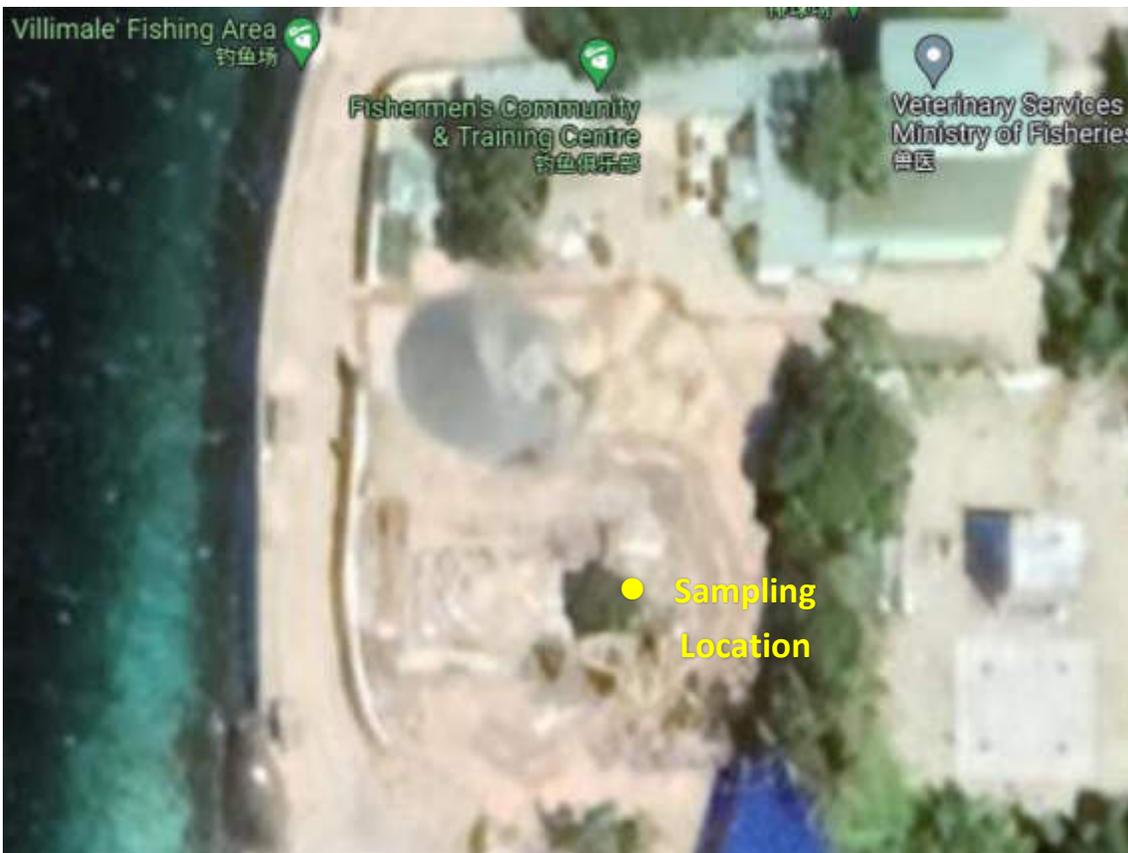
Malé Noise Sampling Location



Malé Ground Water Sampling Location



Malé Air Sampling Location



Vilimalé Sampling Location

4. Analysis and Results

Noise Levels & Air Quality

Noise levels and air quality were measured in the Malé and Vilimalé sites according to the actual construction progress and recorded in Environmental Monitoring Log every day. Measurements were taken during the daytime at 8:00 am, 11:00 am, and 6:00 pm. The Environmental Monitoring Log below shows the measured noise levels and air quality.

WHO Air Quality Guidelines 2022 Recommended: $PM_{2.5} \leq 5 \mu g/m^3$, $PM_{10} \leq 15 \mu g/m^3$;

WHO Noise Quality Guidelines 2022 Recommended: $\leq 70 \text{db}$.



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-May-2023	Rainy	8:00	30°C	79	4	18	44	
		14:00	31°C	75	2	17	36	
		18:00	30°C	79	9	13	46	
2-May-2023	Cloudy	8:00	30°C	79	9	17	40	
		14:00	31°C	75	0	13	47	
		18:00	30°C	79	8	18	45	
3-May-2023	Cloudy	8:00	30°C	79	9	11	41	
		14:00	32°C	71	0	20	38	
		18:00	30°C	79	4	13	35	
4-May-2023	Rainy	8:00	26°C	94	1	15	44	
		14:00	30°C	75	2	15	39	
		18:00	29°C	84	0	14	52	
5-May-2023	Cloudy	8:00	29°C	84	1	12	48	
		14:00	32°C	71	8	19	52	
		18:00	30°C	84	0	19	50	
6-May-2023	Rainy	8:00	29°C	84	7	12	51	
		14:00	30°C	75	9	19	43	
		18:00	28°C	84	6	15	39	
7-May-2023	Cloudy	8:00	30°C	79	5	11	38	
		14:00	32°C	71	4	12	47	
		18:00	30°C	75	3	15	47	
8-May-2023	Sunny	8:00	31°C	75	5	14	49	
		14:00	32°C	75	3	18	52	
		18:00	30°C	75	6	15	43	
9-May-2023	Cloudy	8:00	30°C	79	9	19	44	
		14:00	31°C	75	2	16	35	
		18:00	30°C	79	8	13	44	
10-May-2023	Rainy	8:00	30°C	84	9	19	37	
		14:00	32°C	75	6	18	36	
		18:00	30°C	79	6	11	35	
11-May-2023	Rainy	8:00	29°C	84	9	15	45	
		14:00	31°C	79	5	20	40	
		18:00	29°C	89	7	16	37	
12-May-2023	Rainy	8:00	29°C	84	4	15	48	
		14:00	28°C	89	2	13	42	
		18:00	29°C	84	5	19	37	
13-May-2023	Rainy	8:00	29°C	84	5	16	40	
		14:00	31°C	75	4	19	38	
		18:00	28°C	89	0	17	36	
14-May-2023	Rainy	8:00	29°C	84	3	19	47	
		14:00	31°C	75	9	18	49	
		18:00	29°C	79	1	17	38	
15-May-2023	Cloudy	8:00	29°C	84	9	17	36	
		14:00	32°C	75	4	14	44	
		18:00	30°C	79	7	13	51	
16-May-2023	Cloudy	8:00	30°C	84	0	20	46	
		14:00	32°C	71	10	15	50	
		18:00	30°C	79	5	15	38	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-May-2023	Sunny	8:00	30°C	84	1	16	37	
		14:00	32°C	75	10	16	44	
		18:00	30°C	84	2	14	42	
18-May-2023	Sunny	8:00	30°C	84	1	15	38	
		14:00	32°C	75	5	20	47	
		18:00	30°C	79	8	12	39	
19-May-2023	Sunny	8:00	30°C	79	8	18	37	
		14:00	33°C	67	10	18	45	
		18:00	30°C	79	1	19	43	
20-May-2023	Sunny	8:00	30°C	79	10	14	45	
		14:00	32°C	71	10	13	46	
		18:00	30°C	79	5	14	42	
21-May-2023	Cloudy	8:00	30°C	79	8	18	50	
		14:00	32°C	75	7	14	38	
		18:00	30°C	84	0	13	35	
22-May-2023	Cloudy	8:00	29°C	89	10	14	36	
		14:00	30°C	79	1	12	35	
		18:00	29°C	79	10	12	44	
23-May-2023	Sunny	8:00	30°C	79	6	16	39	
		14:00	33°C	67	7	19	51	
		18:00	30°C	75	7	13	47	
24-May-2023	Rainy	8:00	31°C	70	6	15	47	
		14:00	33°C	71	7	15	41	
		18:00	31°C	75	1	14	36	
25-May-2023	Sunny	8:00	31°C	75	2	12	35	
		14:00	32°C	75	4	18	38	
		18:00	30°C	79	3	18	36	
26-May-2023	Sunny	8:00	31°C	75	3	13	50	
		14:00	33°C	67	6	11	44	
		18:00	30°C	79	9	15	36	
27-May-2023	Sunny	8:00	31°C	75	10	11	40	
		14:00	32°C	75	5	13	43	
		18:00	31°C	75	0	13	43	
28-May-2023	Cloudy	8:00	29°C	84	2	13	41	
		14:00	32°C	71	3	14	38	
		18:00	30°C	79	9	16	48	
29-May-2023	Cloudy	8:00	31°C	75	0	13	48	
		14:00	32°C	75	6	16	43	
		18:00	29°C	89	9	12	49	
30-May-2023	Rainy	8:00	29°C	80	4	11	49	
		14:00	31°C	75	1	17	46	
		18:00	30°C	79	8	18	38	
31-May-2023	Rainy	8:00	29°C	79	1	5	49	
		14:00	31°C	75	2	6	51	
		18:00	30°C	84	5	5	53	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Jun-2023	Rainy	8:00	28°C	89	9	14	47	
		14:00	29°C	84	8	12	46	
		18:00	29°C	89	1	11	39	
2-Jun-2023	Rainy	8:00	28°C	89	8	18	36	
		14:00	31°C	79	0	20	49	
		18:00	29°C	84	6	15	42	
3-Jun-2023	Rainy	8:00	30°C	79	0	15	38	
		14:00	30°C	79	5	16	50	
		18:00	29°C	84	0	15	35	
4-Jun-2023	Rainy	8:00	28°C	94	10	16	43	
		14:00	31°C	79	5	11	36	
		18:00	29°C	84	8	11	47	
5-Jun-2023	Cloudy	8:00	30°C	84	9	17	45	
		14:00	32°C	75	4	19	49	
		18:00	29°C	84	4	14	49	
6-Jun-2023	Cloudy	8:00	30°C	84	2	19	39	
		14:00	32°C	79	2	20	42	
		18:00	30°C	84	1	12	47	
7-Jun-2023	Rainy	8:00	30°C	79	3	17	42	
		14:00	29°C	84	1	20	36	
		18:00	29°C	89	8	14	48	
8-Jun-2023	Rainy	8:00	30°C	84	9	14	47	
		14:00	32°C	75	7	16	44	
		18:00	29°C	89	5	13	49	
9-Jun-2023	Cloudy	8:00	30°C	84	2	14	45	
		14:00	32°C	75	2	14	45	
		18:00	30°C	84	10	14	39	
10-Jun-2023	Cloudy	8:00	30°C	84	6	19	42	
		14:00	32°C	75	0	13	43	
		18:00	30°C	84	9	12	35	
11-Jun-2023	Cloudy	8:00	30°C	84	1	20	35	
		14:00	30°C	70	10	15	49	
		18:00	30°C	84	2	14	47	
12-Jun-2023	Rainy	8:00	30°C	84	2	20	41	
		14:00	32°C	75	0	12	46	
		18:00	29°C	79	7	17	49	
13-Jun-2023	Cloudy	8:00	31°C	79	10	17	41	
		14:00	32°C	75	4	12	38	
		18:00	30°C	79	5	12	40	
14-Jun-2023	Cloudy	8:00	30°C	79	10	12	41	
		14:00	31°C	79	4	16	39	
		18:00	30°C	84	2	14	39	
15-Jun-2023	Cloudy	8:00	31°C	79	10	18	50	
		14:00	32°C	75	3	11	40	
		18:00	30°C	79	6	14	39	
16-Jun-2023	Cloudy	8:00	30°C	79	4	15	40	
		14:00	31°C	75	7	12	37	
		18:00	30°C	79	8	19	51	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Jun-2023	Cloudy	8:00	31°C	75	1	11	37	
		14:00	32°C	75	9	11	38	
		18:00	31°C	75	7	18	42	
18-Jun-2023	Cloudy	8:00	30°C	75	2	19	48	
		14:00	32°C	71	3	13	41	
		18:00	31°C	75	9	14	45	
19-Jun-2023	Cloudy	8:00	30°C	75	7	15	38	
		14:00	32°C	71	0	16	44	
		18:00	30°C	79	6	17	50	
20-Jun-2023	Sunny	8:00	30°C	79	0	20	50	
		14:00	32°C	71	6	16	47	
		18:00	30°C	79	1	19	44	
21-Jun-2023	Rainy	8:00	30°C	84	0	11	48	
		14:00	31°C	75	1	16	52	
		18:00	30°C	75	8	13	36	
22-Jun-2023	Cloudy	8:00	30°C	79	6	14	45	
		14:00	32°C	71	7	18	37	
		18:00	30°C	79	2	15	50	
23-Jun-2023	Sunny	8:00	27°C	89	0	14	39	
		14:00	31°C	75	8	14	38	
		18:00	30°C	79	1	16	40	
24-Jun-2023	Sunny	8:00	30°C	75	1	17	43	
		14:00	32°C	67	2	13	49	
		18:00	29°C	84	0	17	51	
25-Jun-2023	Rainy	8:00	27°C	84	4	16	51	
		14:00	28°C	79	6	20	43	
		18:00	28°C	84	5	15	44	
26-Jun-2023	Cloudy	8:00	28°C	84	10	15	48	
		14:00	30°C	79	0	15	41	
		18:00	28°C	89	8	17	51	
27-Jun-2023	Cloudy	8:00	29°C	84	8	20	35	
		14:00	31°C	75	7	16	48	
		18:00	29°C	79	6	19	37	
28-Jun-2023	Sunny	8:00	29°C	79	10	13	45	
		14:00	32°C	67	8	20	46	
		18:00	30°C	75	2	14	45	
29-Jun-2023	Sunny	8:00	30°C	75	9	18	35	
		14:00	32°C	67	8	11	44	
		18:00	30°C	75	1	13	51	
30-Jun-2023	Cloudy	8:00	29°C	79	9	19	46	
		14:00	32°C	67	6	15	36	
		18:00	29°C	79	6	13	36	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Jul-2023	Cloudy	8:00	29°C	74	3	19	50	
		14:00	32°C	63	0	15	36	
		18:00	30°C	75	2	17	48	
2-Jul-2023	Rainy	8:00	30°C	75	9	17	42	
		14:00	32°C	67	4	11	42	
		18:00	30°C	79	10	13	48	
3-Jul-2023	Rainy	8:00	29°C	84	3	17	52	
		14:00	29°C	74	8	13	39	
		18:00	29°C	84	8	11	49	
4-Jul-2023	Rainy	8:00	28°C	84	9	14	43	
		14:00	30°C	74	1	15	50	
		18:00	27°C	89	3	19	51	
5-Jul-2023	Rainy	8:00	27°C	94	1	15	49	
		14:00	32°C	71	6	12	42	
		18:00	30°C	79	2	18	41	
6-Jul-2023	Cloudy	8:00	28°C	84	8	17	39	
		14:00	32°C	67	5	11	52	
		18:00	29°C	84	10	15	38	
7-Jul-2023	Cloudy	8:00	29°C	84	1	16	41	
		14:00	32°C	71	3	20	47	
		18:00	30°C	79	9	14	44	
8-Jul-2023	Sunny	8:00	30°C	75	5	14	52	
		14:00	32°C	67	9	16	46	
		18:00	30°C	70	3	17	48	
9-Jul-2023	Sunny	8:00	30°C	75	8	20	40	
		14:00	32°C	67	1	18	42	
		18:00	30°C	75	10	12	44	
10-Jul-2023	Cloudy	8:00	30°C	75	4	20	49	
		14:00	31°C	70	8	20	50	
		18:00	30°C	75	4	15	47	
11-Jul-2023	Cloudy	8:00	30°C	75	4	14	46	
		14:00	31°C	70	2	19	36	
		18:00	30°C	75	7	19	51	
12-Jul-2023	Cloudy	8:00	30°C	79	8	15	44	
		14:00	32°C	67	8	13	38	
		18:00	30°C	79	6	14	44	
13-Jul-2023	Cloudy	8:00	30°C	75	9	11	45	
		14:00	33°C	67	3	14	47	
		18:00	30°C	75	3	19	43	
14-Jul-2023	Sunny	8:00	30°C	79	10	12	49	
		14:00	32°C	67	1	20	52	
		18:00	31°C	70	10	16	42	
15-Jul-2023	Cloudy	8:00	30°C	79	10	20	49	
		14:00	32°C	71	5	17	38	
		18:00	31°C	75	9	14	39	
16-Jul-2023	Cloudy	8:00	30°C	79	3	16	47	
		14:00	32°C	71	0	20	35	
		18:00	30°C	79	1	18	52	



Environmental Monitoring Log

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Jul-2023	Cloudy	8:00	30°C	79	10	13	42	
		14:00	32°C	67	6	20	43	
		18:00	30°C	75	10	15	41	
18-Jul-2023	Cloudy	8:00	29°C	84	5	13	38	
		14:00	32°C	71	10	15	46	
		18:00	30°C	79	6	14	50	
19-Jul-2023	Cloudy	8:00	30°C	79	7	12	37	
		14:00	31°C	75	5	17	42	
		18:00	30°C	79	1	19	46	
20-Jul-2023	Rainy	8:00	30°C	79	2	14	45	
		14:00	31°C	70	2	18	49	
		18:00	28°C	84	7	18	48	
21-Jul-2023	Rainy	8:00	29°C	84	10	13	48	
		14:00	27°C	89	4	16	50	
		18:00	28°C	84	9	13	47	
22-Jul-2023	Cloudy	8:00	29°C	84	4	13	36	
		14:00	31°C	75	10	16	51	
		18:00	30°C	79	7	12	37	
23-Jul-2023	Sunny	8:00	29°C	84	8	19	37	
		14:00	31°C	75	2	20	43	
		18:00	30°C	79	6	20	40	
24-Jul-2023	Cloudy	8:00	30°C	79	1	14	50	
		14:00	33°C	75	10	19	36	
		18:00	31°C	75	9	12	44	
25-Jul-2023	Cloudy	8:00	31°C	75	10	15	35	
		14:00	33°C	71	3	16	47	
		18:00	31°C	79	2	17	50	
26-Jul-2023	Cloudy	8:00	30°C	79	1	13	46	
		14:00	33°C	71	6	20	43	
		18:00	31°C	79	6	14	47	
27-Jul-2023	Cloudy	8:00	31°C	79	7	17	47	
		14:00	32°C	71	6	20	41	
		18:00	30°C	79	10	14	49	
28-Jul-2023	Sunny	8:00	30°C	79	7	15	42	
		14:00	32°C	71	4	16	51	
		18:00	29°C	79	4	15	37	
29-Jul-2023	Rainy	8:00	29°C	84	8	16	35	
		14:00	31°C	75	2	11	50	
		18:00	30°C	79	10	16	51	
30-Jul-2023	Rainy	8:00	27°C	84	8	17	38	
		14:00	32°C	71	9	12	49	
		18:00	30°C	79	4	14	50	
31-Jul-2023	Cloudy	8:00	30°C	75	1	10	48	
		14:00	32°C	71	5	10	51	
		18:00	30°C	79	1	18	43	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-May-2023	Rainy	8:00	30°C	79	9	16	51	
		14:00	31°C	75	10	20	41	
		18:00	30°C	79	7	12	48	
2-May-2023	Cloudy	8:00	30°C	79	10	14	41	
		14:00	31°C	75	0	13	45	
		18:00	29°C	79	6	13	41	
3-May-2023	Cloudy	8:00	30°C	79	0	17	36	
		14:00	32°C	71	8	17	48	
		18:00	30°C	79	5	11	51	
4-May-2023	Rainy	8:00	26°C	94	8	15	44	
		14:00	30°C	75	7	19	42	
		18:00	29°C	84	10	12	44	
5-May-2023	Cloudy	8:00	29°C	84	7	20	49	
		14:00	32°C	71	7	12	44	
		18:00	30°C	84	8	17	42	
6-May-2023	Rainy	8:00	29°C	84	8	17	49	
		14:00	30°C	75	10	18	51	
		18:00	28°C	84	10	12	49	
7-May-2023	Cloudy	8:00	30°C	79	0	19	49	
		14:00	32°C	71	4	13	42	
		18:00	30°C	75	8	15	36	
8-May-2023	Sunny	8:00	31°C	75	5	15	47	
		14:00	32°C	75	4	14	38	
		18:00	30°C	75	7	15	51	
9-May-2023	Cloudy	8:00	30°C	79	0	15	41	
		14:00	31°C	75	3	17	40	
		18:00	30°C	79	6	15	39	
10-May-2023	Rainy	8:00	30°C	84	10	12	50	
		14:00	32°C	75	5	12	49	
		18:00	30°C	79	2	13	50	
11-May-2023	Rainy	8:00	29°C	84	2	12	43	
		14:00	31°C	79	10	15	51	
		18:00	29°C	89	9	11	41	
12-May-2023	Rainy	8:00	29°C	84	1	17	35	
		14:00	28°C	89	1	15	37	
		18:00	29°C	84	7	16	36	
13-May-2023	Rainy	8:00	29°C	84	7	20	44	
		14:00	31°C	75	2	12	46	
		18:00	28°C	89	0	19	50	
14-May-2023	Rainy	8:00	29°C	84	0	20	47	
		14:00	31°C	75	3	17	38	
		18:00	29°C	79	1	17	36	
15-May-2023	Cloudy	8:00	29°C	84	7	18	41	
		14:00	32°C	75	5	15	43	
		18:00	30°C	79	0	13	50	
16-May-2023	Cloudy	8:00	30°C	84	8	14	41	
		14:00	32°C	71	3	18	42	
		18:00	30°C	79	2	18	46	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-May-2023	Sunny	8:00	30°C	84	9	17	39	
		14:00	32°C	75	2	18	50	
		18:00	30°C	84	9	13	43	
18-May-2023	Sunny	8:00	30°C	84	10	16	52	
		14:00	32°C	75	6	13	52	
		18:00	30°C	79	7	17	41	
19-May-2023	Sunny	8:00	30°C	79	2	18	51	
		14:00	33°C	67	3	18	44	
		18:00	30°C	79	9	12	48	
20-May-2023	Sunny	8:00	30°C	79	10	20	37	
		14:00	32°C	71	5	18	46	
		18:00	30°C	79	6	15	37	
21-May-2023	Cloudy	8:00	30°C	79	6	17	39	
		14:00	32°C	75	9	14	44	
		18:00	30°C	84	4	20	51	
22-May-2023	Cloudy	8:00	29°C	89	2	17	49	
		14:00	30°C	79	10	20	39	
		18:00	29°C	79	6	16	42	
23-May-2023	Sunny	8:00	30°C	79	1	19	48	
		14:00	33°C	67	7	15	37	
		18:00	30°C	75	7	16	42	
24-May-2023	Rainy	8:00	31°C	70	7	15	39	
		14:00	33°C	71	2	12	47	
		18:00	31°C	75	3	12	35	
25-May-2023	Sunny	8:00	31°C	75	7	16	39	
		14:00	32°C	75	10	11	42	
		18:00	30°C	79	6	20	40	
26-May-2023	Sunny	8:00	31°C	75	7	18	38	
		14:00	33°C	67	6	11	40	
		18:00	30°C	79	7	12	50	
27-May-2023	Sunny	8:00	31°C	75	8	17	43	
		14:00	32°C	75	8	20	41	
		18:00	31°C	75	3	20	48	
28-May-2023	Cloudy	8:00	29°C	84	10	13	50	
		14:00	32°C	71	7	16	47	
		18:00	30°C	79	10	15	46	
29-May-2023	Cloudy	8:00	31°C	75	4	15	42	
		14:00	32°C	75	6	20	46	
		18:00	29°C	89	10	14	47	
30-May-2023	Rainy	8:00	29°C	80	9	17	51	
		14:00	31°C	75	9	16	42	
		18:00	30°C	79	6	18	44	
31-May-2023	Rainy	8:00	29°C	79	1	5	49	
		14:00	31°C	75	2	6	51	
		18:00	30°C	84	1	5	53	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Jun-2023	Rainy	8:00	29°C	89	5	17	49	
		14:00	29°C	84	8	12	44	
		18:00	29°C	89	7	15	35	
2-Jun-2023	Rainy	8:00	28°C	89	3	18	47	
		14:00	31°C	79	10	17	51	
		18:00	29°C	84	3	17	49	
3-Jun-2023	Rainy	8:00	30°C	79	8	20	37	
		14:00	30°C	79	8	14	40	
		18:00	29°C	84	1	17	39	
4-Jun-2023	Rainy	8:00	28°C	94	3	13	50	
		14:00	31°C	79	1	11	50	
		18:00	29°C	84	6	19	51	
5-Jun-2023	Cloudy	8:00	30°C	84	3	17	35	
		14:00	32°C	75	8	15	52	
		18:00	29°C	84	5	14	38	
6-Jun-2023	Cloudy	8:00	30°C	84	7	19	51	
		14:00	32°C	79	5	19	39	
		18:00	30°C	84	3	18	35	
7-Jun-2023	Rainy	8:00	30°C	79	3	14	41	
		14:00	29°C	84	1	17	49	
		18:00	29°C	89	7	13	46	
8-Jun-2023	Rainy	8:00	30°C	84	9	12	42	
		14:00	32°C	75	3	14	40	
		18:00	29°C	89	3	12	44	
9-Jun-2023	Cloudy	8:00	30°C	84	5	17	50	
		14:00	32°C	75	8	11	45	
		18:00	30°C	84	7	19	49	
10-Jun-2023	Cloudy	8:00	30°C	84	3	12	36	
		14:00	32°C	75	4	15	37	
		18:00	30°C	84	0	13	42	
11-Jun-2023	Cloudy	8:00	30°C	84	6	16	43	
		14:00	30°C	70	6	11	38	
		18:00	30°C	84	8	20	42	
12-Jun-2023	Rainy	8:00	30°C	84	5	18	49	
		14:00	32°C	75	5	16	40	
		18:00	29°C	79	0	17	37	
13-Jun-2023	Cloudy	8:00	31°C	79	6	12	43	
		14:00	32°C	75	9	15	51	
		18:00	30°C	79	7	20	50	
14-Jun-2023	Cloudy	8:00	30°C	79	5	16	37	
		14:00	31°C	79	8	20	42	
		18:00	30°C	84	3	12	36	
15-Jun-2023	Cloudy	8:00	31°C	79	4	13	35	
		14:00	32°C	75	8	19	52	
		18:00	30°C	79	8	12	37	
16-Jun-2023	Cloudy	8:00	30°C	79	3	11	44	
		14:00	31°C	75	5	14	48	
		18:00	30°C	79	0	15	36	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Jun-2023	Cloudy	8:00	31°C	75	9	14	44	
		14:00	32°C	75	7	20	44	
		18:00	31°C	75	10	12	41	
18-Jun-2023	Cloudy	8:00	30°C	75	0	14	36	
		14:00	32°C	71	2	11	35	
		18:00	31°C	75	10	12	43	
19-Jun-2023	Cloudy	8:00	30°C	75	2	20	47	
		14:00	32°C	71	0	18	36	
		18:00	30°C	79	0	20	47	
20-Jun-2023	Sunny	8:00	30°C	79	10	19	47	
		14:00	32°C	71	4	20	43	
		18:00	30°C	79	2	16	48	
21-Jun-2023	Rainy	8:00	30°C	84	4	13	41	
		14:00	31°C	75	1	20	42	
		18:00	30°C	75	2	19	40	
22-Jun-2023	Cloudy	8:00	30°C	79	6	18	51	
		14:00	32°C	71	8	20	37	
		18:00	30°C	79	4	17	39	
23-Jun-2023	Sunny	8:00	27°C	89	10	15	51	
		14:00	31°C	75	8	11	36	
		18:00	30°C	79	1	14	52	
24-Jun-2023	Sunny	8:00	30°C	75	2	17	51	
		14:00	32°C	67	10	16	47	
		18:00	29°C	84	5	15	48	
25-Jun-2023	Rainy	8:00	27°C	84	0	13	38	
		14:00	28°C	79	4	18	47	
		18:00	28°C	84	6	17	43	
26-Jun-2023	Cloudy	8:00	28°C	84	9	14	41	
		14:00	30°C	79	3	20	48	
		18:00	28°C	89	5	16	41	
27-Jun-2023	Cloudy	8:00	29°C	84	1	11	37	
		14:00	31°C	75	10	12	40	
		18:00	29°C	79	2	19	47	
28-Jun-2023	Sunny	8:00	29°C	79	6	18	43	
		14:00	32°C	67	10	18	45	
		18:00	30°C	75	9	18	35	
29-Jun-2023	Sunny	8:00	30°C	75	7	19	51	
		14:00	32°C	67	1	18	50	
		18:00	30°C	75	1	19	38	
30-Jun-2023	Cloudy	8:00	29°C	79	1	15	36	
		14:00	32°C	67	4	19	44	
		18:00	29°C	79	7	12	38	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
1-Jul-2023	Cloudy	8:00	29°C	74	8	20	51	
		14:00	32°C	63	5	20	47	
		18:00	30°C	75	5	16	42	
2-Jul-2023	Rainy	8:00	30°C	75	0	17	47	
		14:00	32°C	67	10	14	41	
		18:00	30°C	79	4	15	39	
3-Jul-2023	Rainy	8:00	29°C	84	6	20	46	
		14:00	29°C	74	7	11	51	
		18:00	29°C	84	6	16	42	
4-Jul-2023	Rainy	8:00	28°C	84	10	18	50	
		14:00	30°C	74	9	14	45	
		18:00	27°C	89	1	13	50	
5-Jul-2023	Rainy	8:00	27°C	94	4	20	38	
		14:00	31°C	71	10	15	35	
		18:00	30°C	79	6	12	44	
6-Jul-2023	Cloudy	8:00	28°C	84	2	20	47	
		14:00	32°C	67	7	20	48	
		18:00	29°C	84	0	11	41	
7-Jul-2023	Cloudy	8:00	29°C	84	1	15	52	
		14:00	32°C	71	5	17	52	
		18:00	30°C	79	9	19	52	
8-Jul-2023	Sunny	8:00	30°C	75	3	17	37	
		14:00	32°C	67	6	17	37	
		18:00	30°C	70	10	16	36	
9-Jul-2023	Sunny	8:00	30°C	75	3	14	42	
		14:00	32°C	67	9	17	46	
		18:00	30°C	75	0	15	51	
10-Jul-2023	Cloudy	8:00	30°C	75	6	16	51	
		14:00	31°C	70	10	18	52	
		18:00	30°C	75	9	13	43	
11-Jul-2023	Cloudy	8:00	30°C	75	0	14	41	
		14:00	31°C	70	2	19	44	
		18:00	30°C	75	5	15	51	
12-Jul-2023	Cloudy	8:00	30°C	79	2	20	42	
		14:00	32°C	67	1	12	39	
		18:00	30°C	79	4	15	37	
13-Jul-2023	Cloudy	8:00	30°C	75	9	18	51	
		14:00	33°C	67	4	12	48	
		18:00	30°C	75	4	14	49	
14-Jul-2023	Sunny	8:00	30°C	79	3	19	37	
		14:00	32°C	67	2	18	47	
		18:00	31°C	70	7	15	46	
15-Jul-2023	Cloudy	8:00	30°C	79	3	17	50	
		14:00	32°C	71	8	13	45	
		18:00	31°C	75	6	16	45	
16-Jul-2023	Cloudy	8:00	30°C	79	5	14	51	
		14:00	32°C	71	10	18	35	
		18:00	30°C	79	9	16	51	



Environmental Monitoring Log-Villi Male

Date	Weather	Time	Temperature	Humidity %RH	PM2.5 ug/m ³	PM10 ug/m ³	Noise db	Accident
17-Jul-2023	Cloudy	8:00	30°C	79	3	13	36	
		14:00	32°C	67	5	14	42	
		18:00	30°C	75	4	20	38	
18-Jul-2023	Cloudy	8:00	29°C	84	10	14	51	
		14:00	32°C	71	6	16	41	
		18:00	30°C	79	3	17	44	
19-Jul-2023	Cloudy	8:00	30°C	79	3	16	48	
		14:00	31°C	75	8	16	38	
		18:00	30°C	79	4	15	36	
20-Jul-2023	Rainy	8:00	30°C	79	10	11	37	
		14:00	31°C	70	4	15	51	
		18:00	28°C	84	0	13	52	
21-Jul-2023	Rainy	8:00	29°C	84	3	17	38	
		14:00	27°C	89	9	16	48	
		18:00	28°C	84	9	19	37	
22-Jul-2023	Cloudy	8:00	29°C	84	8	16	42	
		14:00	31°C	75	9	17	48	
		18:00	30°C	79	1	14	45	
23-Jul-2023	Sunny	8:00	29°C	84	5	11	48	
		14:00	31°C	75	6	11	50	
		18:00	30°C	79	6	11	43	
24-Jul-2023	Cloudy	8:00	30°C	79	4	16	38	
		14:00	33°C	75	7	13	50	
		18:00	31°C	75	8	19	42	
25-Jul-2023	Cloudy	8:00	31°C	75	0	15	48	
		14:00	33°C	71	4	11	45	
		18:00	31°C	79	10	12	47	
26-Jul-2023	Cloudy	8:00	30°C	79	3	15	50	
		14:00	33°C	71	4	12	52	
		18:00	31°C	79	0	17	42	
27-Jul-2023	Cloudy	8:00	31°C	79	1	12	36	
		14:00	32°C	71	1	17	39	
		18:00	30°C	79	8	19	46	
28-Jul-2023	Sunny	8:00	30°C	79	7	16	49	
		14:00	32°C	71	7	20	45	
		18:00	29°C	79	6	14	41	
29-Jul-2023	Rainy	8:00	29°C	84	5	13	46	
		14:00	31°C	75	0	12	52	
		18:00	30°C	79	9	14	37	
30-Jul-2023	Rainy	8:00	27°C	84	10	11	44	
		14:00	32°C	71	3	17	36	
		18:00	30°C	79	4	17	50	
31-Jul-2023	Cloudy	8:00	30°C	75	1	10	48	
		14:00	32°C	71	5	10	51	
		18:00	30°C	79	1	20	43	

Ground Water Quality

Location	Parameters	Sample Date	Analysis Results	
			Malé	Vilimalé
G1/G2	BOD	May 17, 2023	6	3
		Jun 15,2023	7	6
		Jul 21, 2023	8	3
G1/G2	TSS	May 17, 2023	< 5(LoQ 5mg/L)	9
		Jun 15,2023	20	11
		Jul 21, 2023	16	8
G1/G2	TPH	May 17, 2023	0.272	0.21
		Jun 15,2023	0.29	0.37
		Jul 21, 2023	0.033	0.054
G1/G2	Faecal Coliform	May 17, 2023	2420	2420
		Jun 15,2023	2420	2420
		Jul 21, 2023	2420	2420
G1/G2	Cu	May 17, 2023	< 0.1(LoQ 0.1 mg/L)	< 0.1(LoQ 0.1 mg/L)
		Jun 15,2023	0.11	< 0.1(LoQ 0.1 mg/L)
		Jul 21, 2023	< 0.1(LoQ 0.1 mg/L)	< 0.1(LoQ 0.1 mg/L)
G1/G2	Cr	May 17, 2023	0.01(LoQ 0.1 mg/L)	0.052
		Jun 15,2023	0.027	0.083
		Jul 21, 2023	0.018	0.055
G1/G2	Mercury	May 17, 2023	< 0.003mg/L	< 0.003mg/L
		Jun 15,2023	< 0.003mg/L	< 0.003mg/L
		Jul 21, 2023	< 0.003mg/L	< 0.003mg/L
G1/G2	Lead	May 17, 2023	< 0.005mg/L	< 0.005mg/L
		Jun 15,2023	< 0.005mg/L	< 0.005mg/L
		Jul 21, 2023	< 0.005mg/L	< 0.005mg/L

Conclusion

Based on the above results, the current Noise Level, Ground Water Quality, and Air Quality meet the requirements, and no complaint received.



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
 REPORT NUMBER: NHL/WC-2023/TR0069

*NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L.
 MALE'
 TEL: (+960)9132854

TIME TESTED: -
 *COLLECTED BY: Qin

*PURPOSE OF TESTING: Construction

*LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILLI MALE'	
Requisition Form No:	NHL/WC-2023/RQ0062		
*Date sampled	17/05/2023	17/05/2023	
*Time Sampled	07:00	07:30	
*Type of water	Ground	Ground	
Date tested	18/05/2023		
Sample ID	10423WC010	170423WC011	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	Method 8317 (Adapted from DR4000™ S100™ Spectrophotometer procedure manual)

COMMENT: -

Authorized by



Mariyam Nisha
 Technical Manager
 Mariyam Nisha

Date: 20th May 2023

NOTE: Information supplied by the client.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
REPORT NUMBER: NHL/WC-2023/TR0098

•NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L
 MALE'
 TEL: (+960)9132854

TIME TESTED: -
 •COLLECTED BY: Qin

•PURPOSE OF TESTING: Construction

•LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILL/MALE'	
Requisition Form No:	NHL/WC-2023/RQ0087		
•Date sampled	15/06/2023	15/06/2023	
•Time Sampled	07:30	08:00	
•Type of water	Ground	Ground	
Date tested	15/06/2023		
Sample ID	150623WC019	150623WC020	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	

COMMENT: -

Authorized by



Mariyam Nisha
 Technical Manager
 Mariyam Nisha

Date: 18th June 2023

NOTE: •Information supplied by the client.

National Health Laboratory is accredited to the standard in accordance with the recognized International Standard ISO/IEC 17025.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.

Page 1 of 1



National Health Laboratory
 Maldives Food and Drug Authority,
 Sosun Magu, Male' 20184, Republic of Maldives
 Telephone #3014346 / 3014347, Email: nhl@health.gov.mv

WATER CHEMISTRY ANALYTICAL RESULTS
REPORT NUMBER: NHL/WC-2023/TR0058

•NAME AND ADDRESS OF CLIENT: CHINA STATE CONSTRUCTION E.P.L
 MALE'
 TEL: (+960)9132854

TIME TESTED: -
 •COLLECTED BY: Qin

•PURPOSE OF TESTING: Construction

•LOCATION OF SAMPLE	CHINA STATE CONSTRUCTION E.P.L		TEST METHOD
	MALE'	VILLIMALE'	
Requisition Form No:	NHL/WC-2023/RQ0053		
•Date sampled	21/07/2023	21/07/2023	
•Time Sampled	08:00	08:30	
•Type of water	Ground water	Ground water	
Date tested	22/07/2023		
Sample ID	210323WC031	210323WC032	
PARAMETER TESTED			
Lead	<0.005 mg/L	<0.005 mg/L	

COMMENT: Suspended Solids were observed in the sample 210323WC031& 210323WC032.

Authorized by



Thooma Adam
 Head of NHL
 Thooma Adam

Date: 26th July 2023

NOTE: *Information supplied by the client.
 This result is valid only for this sample and apply to the sample as received. National Health Laboratory does not involve in the sampling process and does not take responsibility for errors that could arise from sampling and transport of sample. This report is not for duplicate or advertisement without prior approval from National Health Laboratory.

WATER QUALITY TEST REPORT
 Report No: 900196221

Customer Information:
 China State Construction Engrg corp
 Platinum Residence A2-214

Report date: 24/05/2023
 Test Requisition Form No: 900197623
 Sample(s) Received Date: 17/05/2023
 Date of Analysis: 17/05/2023 - 23/05/2023

Hullunale, Maldives -

Sample Description -	WTS - Male'	WTS - Villunale'	TEST METHOD	UNIT
Sample Type -	Ground Water	Ground Water		
Sample No -	03209123	03209123		
Sampled Date -	17/05/2023 07:30	17/05/2023 08:30		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Clear with particles	Clear with particles		
Total Suspended Solids	<5 (LoQ 5 mg/L)	0	HACH Method 8006	mg/L
Chromium	<0.01 (LoQ 0.01 mg/L)	0.002	HACH Method 8023	mg/L
Copper *	<0.1 (LoQ 0.1 mg/L)	<0.1 (LoQ 0.1 mg/L)	HACH Method 8000	mg/L
Biological Oxygen Demand (BOD)	0	3	HACH Method 8043	mg/L
Total Petroleum Hydrocarbon (TPH)	0.272	0.21	UV Fluorescence	mg/L
Faecal Coliforms	>2420 (16/05/2023 15:00)	>2420 (16/05/2023 15:00)	Colitech-16/Quanti-Tray(2000)	MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by



Neevath Ali
 Laboratory Executive

Approved by



Nihar A. Zahir
 Assistant Quality Manager

Notes:

- Sampling Authority: Sampling was not done by MWSC Laboratory.
- This report shall not be reproduced except in full, without written approval of MWSC.
- This test report is ONLY FOR THE SAMPLES TESTED.
- * Information provided by the customer. This information may affect the validity of the test results.
- * Parameters accredited by EIAAC under ISO/IEC 17025:2017

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

WATER QUALITY TEST REPORT
 Report No: 900196626

Customer Information:
 China State Construction Engrg corp
 Platinum Residence A2-214

Report date: 20/06/2023
 Test Resolution Form No: 900197500
 Sample(s) Received Date: 16/06/2023
 Date of Analysis: 15/06/2023 - 20/06/2023

Hullarabai, Madhav -

Sample Description -	WTS - Malef	WTS - Vilasaf	TEST METHOD	UNIT
Sample Type -	Ground Water	Ground Water		
Sample No -	03239972	03239973		
Sample Date -	15/06/2023 07:30 AM	15/06/2023 08:00 AM		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Cloudy with particles	Cloudy with particles		
Total Suspended Solids	20	11	HACH Method 8006	mg/L
Chromium	0.027	0.083	HACH Method 8003	mg/L
Copper *	0.11	<0.1 (LoD 0.1 mg/L)	HACH Method 8000	mg/L
Biological Oxygen Demand (BOD)	7	6	HACH Method 8003	mg/L
Total Petroleum Hydrocarbon (TPH)	0.29	0.37	UV Fluorescence	mg/L
Faecal Coliforms	>2420 (15/06/2023 02:00 PM)	>2420 (15/06/2023 03:00 PM)	Colitech-16/Quanti-Tray(2000)	MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by

 Anish Sofis
 Senior Laboratory Executive

Approved by

 Nihar A. Zahir
 Assistant Quality Manager

Notes:
 Sampling Authority: Sampling was not done by MWSC Laboratory.
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 This test report is ONLY FOR THE SAMPLES TESTED.
 * Information provided by the customer. This information may affect the validity of the test results.
 * Parameters accredited by EIAC under ISO/IEC 17025:2017

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

Mafé Water & Sewerage Company Pvt Ltd

Water Quality Assurance Laboratory

Quality Assurance & Control, 1st Floor, Mafé Nagar, V/Phase, Mafé City, Maldives.
Tel: 9603333233, Fax: 96033334306, Email: wqa@mafe.com.mv



LB-TEST-090

WATER QUALITY TEST REPORT

Report No: 900196064

Customer Information:

China State Construction Engrg corp
Platinum Residence A2-214

Report date: 26/07/2023

Test Requisition Form No: 900190116

Sample(s) Received Date: 21/07/2023

Date of Analysis: 21/07/2023 - 27/07/2023

Hullunale, Maldives -

Sample Description -	WTS - Male'	WTS - Villunale	TEST METHOD	UNIT
Sample Type -	Ground Water	Ground Water		
Sample No -	03236613	03236614		
Sample Date -	21/07/2023 06:00	21/07/2023 06:00		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Clear with particles	Clear with particles		
Total Suspended Solids	16	8	HACH Method 8006	mg/L
Chromium	0.018	0.055	HACH Method 8003	mg/L
Copper *	<0.1 (LoQ 0.1 mg/L)	<0.1 (LoQ 0.1 mg/L)	HACH Method 8006	mg/L
Biological Oxygen Demand (BOD)	8	3	HACH Method 8043	mg/L
Total Petroleum Hydrocarbon (TPH)	0.033	0.054	UV Fluorescence	mg/L
Faecal Coliforms	>2420 (21/03/2023 15:00)	>2420 (21/03/2023 15:00)	Colitech-1M Quanti-Tray®(2000)	MPN/100ml

Keys: mg/L : Milligram Per Liter, MPN/100ml : Most Probable Number

Checked by

Amrath Sefa
Senior Laboratory Executive

Approved by

Nihar A. Zahir
Assistant Quality Manager

Notes:

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

ESMP Reporting

IWMC Project

Contractor: Central Line Pvt. Ltd.

The contractor must ensure that the mitigation measures proposed in the ESMP are fully implemented and the Ministry/PMU should closely monitor the project activities to ensure that the contractor adheres to these requirements.

1. PRECONSTRUCTION / PREPARATORY PHASE

ACTIONS NEEDED PRIOR TO MOBILIZATION

The contractor should appoint a health and safety (HS) supervisor and a work supervisor. The work supervisor and the HS supervisor can be the same staff tasked to perform these two functions. Undertaking daily HS toolbox talks to the project team and ensuring compliance to the ESMP are their responsibilities.

The complete LIST OF PROJECT TEAM (using the template provided in Form 1) should be provided along with the following supporting documents prior to site mobilization.

- Copies of National Identification Cards of local staff.
- Copies of Passport and Work Permits of expatriate staff.
- Health Insurance copies of expatriate staff.
- COVID19 vaccination certificate of all the staff.
- Signed Company Code of Conduct (refer to the sample provided in the ESMP).
- Individual Code of Conduct signed by all the project staff (refer to sample provided in the ESMP)

The information presented in this section must be provided to the Ministry/PMU prior to mobilization. The contractor should not mobilize to the site or travel to the project island until Ministry/PMU reviews and provide approval to the project team.

2. CONSTRUCTION PHASE

GRIEVANCE REDRESS MECHANISM

Project site boards and posters should contain contact details of the work supervisor, health and safety supervisor and the project manager overseeing the project from the contractor's head office, which should be first lines of contact to submit a complaint. Log records of all grievances received should be maintained, which shall include the following:

- Date of Receiving the Complaint
- Details of who received the Complaint: Name, Designation, Company

- Details of the Aggrieved Party: Name, Address, Contact Number or Email
- Details of the Complaint
- Status: Resolved or Unresolved
- How it was resolved or why it is unresolved

In addition to this, the contact details of Island Council Focal Point and Safeguards Specialist of the PMU should be included, as they will be the second lines of contact. The contractor should display the posters and the project board at various locations within the project site and their labor camp.

A template that can be used to record grievances are provided in Form 2.

IMPLEMENTATION OF CONSTRUCTION PHASE MITIGATION MEASURES

The contractor is required to implement the construction phase mitigation measures presented in the ESMP. Monthly ESMP implementation reports shall be submitted to the Ministry/PMU using the template provided in Form 3.

The Civil Engineer and the Project Coordinator of the Ministry/PMU will ensure that the contractor had submitted the monitoring reports in a timely manner prior to processing payment claims made by the contractor. The Ministry/PMU has the right to withhold a part or the full amount of the retention payment to compensate for any damage caused by the contractor to the environment.

FORM 1: PROJECT TEAM INFORMATION

Project Title: Construction of Waste Management Centers

Date: 7/10/2023

Contractor: Central Line Pvt. Ltd.

#	Staff Name	Role	Nationality	ID Card / Work Permit No	Age	COVID19 Vaccination (Specify details of dosage completed)
1	Hassan Zaid	Work Supervisor	Maldivian			
2	Akif Saeed	Health and Safety Supervisor	Maldivian			
3						
4						
5						
6						
7						
8						
9						
10						

Note: This form shall be completed and submitted along with copies of National Identification Cards / Passports and Work Permits of the project team prior to mobilization to the site. The contractor should only proceed with mobilization after attaining approval in writing from the Ministry/PMU for the project team.

Details of the Respondent

Name: Ali Azim

Designation: Managing Director

Signature:



Company Seal:



FORM 2: GRM

Project Title: Construction of Waste Management Centers

Date: 7/10/2023

Contractor: Central Line Pvt. Ltd.

#	Date of Receiving the Complaint	Details of who received the Complaint (Name, Designation and Company)	Details of Aggrieved Party (Name, Address)	Contact Details of Aggrieved Party (Phone, Email)	Details of Complaint	Status (Resolved / Unresolved with date)	How it was Resolved or Why it is unresolved
1	1/8/2023				No Complaint		
2	1/9/2023				No Complaint		
3	1/10/2023				No Complaint		
4	1/11/2023				No Complaint		
5							
6							
7							

Note: Any grievances received to the contractor from the public along with details of actions taken should be recorded using this form. The Ministry should be regularly updated regarding the progress of resolving the grievances.

Details of the Respondent

Name: Ali Azim

Designation: Managing Director

Signature:



Company Seal:



FORM 3: MONTHLY ESMP MONITORING REPORT (CONSTRUCTION PHASE)

Project Title: Construction of Waste Management Centers

Report No: 1

Contractor: Central Line Pvt. Ltd.

Date: 7/10/2023

Environmental Management Plan			
Impact	Mitigation Measure	Status (√ / X)	Comments / Photographic References
<i>Management of Impacts during Construction Phase</i>			
1. Physical / Chemical			
Note: All construction activities should be undertaken in the presence of an experienced supervisor.			
Contamination of groundwater and soil due to chemical spillage and seepage	<p>Hazardous waste such as waste oil and diesel should be stored in sealed containers and placed on an impermeable surface and transferred to the nearest regional waste management facility for final disposal.</p> <p>Stored containers should be regularly inspected to identify any leakages. Conspicuous warning signs (e.g. 'No Smoking') should also be posted around hazardous waste storage and handling facilities. Temporary area for storage of such waste is illustrated in the ESMP.</p>	√	
Noise pollution due to construction activities and use of machinery	<p>Ensure construction activities occur between 8 am and 6 pm.</p> <p>Construction workers should wear ear muffs when using machinery that produce significant noise and while undertaking welding and drilling activities.</p>	√	
Negative impact on air quality during transfer of construction materials and progression of works	<p>During transport of construction materials from the harbor to the site, all sand and aggregate should be transported in covered vehicles or wheelbarrows and vehicle movement should be via routes that are well away from community roads where possible. Transportation should be at low vehicular speeds and loading and unloading should be conducted within the site.</p> <p>All vehicles used in the project should have an up to date road worthiness certificate.</p> <p>All vehicles and machinery should be well tuned. Machines should be switched off when not in use.</p>	√	

	<p>Ensure that construction site is regularly wetted to minimize impact of dust as a result of the project.</p> <p>Materials that are stockpiled at the location for long period of time should be covered to minimize impact of dust generation due to windy conditions.</p> <p>The contractor should not burn any waste.</p>	✓	
Coastal erosion and loss of beach aesthetics due to sand mining	<p>Ensure that all construction materials including sand are sourced in compliance with the national laws and regulation.</p> <p>Sand should not be sourced from the beach or lagoon of an inhabited island, tourist resort, or any protected island. This includes the area of the island designated by EPA for sand mining of local public use.</p>	✓	
Waste Management	<p>Construction waste produced should be reused for the construction of the IWMC as much as possible. The remaining reusable materials such as (metal bars and roofing sheets) should be given to the island community or the island council free of cost.</p> <p>Leaves of felled vegetation is to be sundried and left at the forest area for natural degradation.</p> <p>Any remaining C&D waste shall be disposed at the area designated by the council for C&D waste disposal.</p>	✓	
Littering and general waste generated by construction workers	<p>Place a bin at the site to dispose general waste generated by the workers.</p> <p>Establish procedures for general waste disposal which should include actions to be taken if the procedures are breached.</p>	✓	
2. Biological			
Negative impacts to vegetation due to improper handling and driving during material transportation.	<p>Workers will be informed to avoid damaging trees and disturbances to animals and to generally avoid engaging in destructive activities to the environment intentional or unintentional.</p> <p>Avoid roads with significant vegetation during transportation within the island.</p> <p>Avoid bringing heavy vehicles to the island where possible.</p>	✓	

<p>Negative impact on fauna during material transport</p>	<p>Workers will be informed to avoid damaging trees and disturbances to animals and to generally avoid engaging in destructive activities to the environment intentional or unintentional.</p> <p>Materials shall be obtained from the closest source.</p> <p>The materials shall be brought in bulk and transported to the island within a single trip where possible.</p> <p>The materials shall be stored at the project site or in a close proximity to avoid unnecessary movement of vehicles within the island through the construction phase.</p> <p>Ensure that all construction materials imported to the island are free of any alien species or pests.</p> <p>Ensure that oils and paints are properly sealed prior to transportation.</p> <p>Ensure that materials are not kept beyond the height of the sides of the vessels and are properly covered, when transporting via sea.</p>	<p>✓</p>	
<p>3. Health and Safety</p>			
<p>Occupational Health and Safety</p>	<p>All workers should be provided with safety gear and should ensure that safety gear is utilized at all times. This includes: safety hats, boots, glasses, masks and gloves.</p> <p>Ear muffs shall be provided where equipment or machinery that emit significant amount of noise is used (welding, drilling etc.).</p> <p>Chemical-Liquid protective gloves should be used when handling any chemicals, waste oil or other liquid waste.</p> <p>First aid kit must be purchased and kept on site at all times</p> <p>No open electrical wiring or cables should be kept on site.</p> <p>Health and Safety briefing should be given to all construction workers.</p> <p>A safety inspection checklist should be prepared taking into consideration what the workers are supposed to be wearing and monitored monthly and recorded in the monitoring.</p>	<p>✓</p>	

<p>Working Conditions and Labor</p>	<p>The maximum working hours of all construction workers should be 48 hours per week as per the Employment Act of Maldives.</p> <p>Meals should be provided to construction workers 3 times a day.</p> <p>Safe drinking water should be supplied to construction workers and must be made available at the work site and the labor camp.</p> <p>Appropriate sleeping arrangements shall be made for the construction workers.</p> <p>Temporary resting arrangements for the workers shall be facilitated at the work site.</p>	<p>✓</p>	
<p>Management of COVID19</p>	<p>Travel permit must be taken from HPA for the workers if traveling from Male' or an island placed under COVID19 monitoring. The standard quarantine procedure must be followed as instructed by the authorities.</p> <p>Workers must be briefed about the safety protocols and social distancing measures that has to be enforced.</p> <p>The workers must perform frequent hand hygiene.</p> <p>All workers must wear face masks.</p> <p>The movement of workers must be restricted between the labor camp and work site as much as possible.</p> <p>Daily body temperature of all the workers should be taken and log records maintained. If a worker is having a temperature of 37.8C or above or symptoms of flu that person must not report to work and should be self-isolated and respective authorities notified.</p> <p>Handwashing or hand sanitizing facilities must be established at the work site and the labor camp.</p> <p>Labor camp should facilitate social distancing. The beds should be kept at least 3 – 6 fts apart.</p> <p>COVID19 awareness materials should be displayed in the worksite and the labor camp.</p>	<p>✓</p>	

	Construction tools should be cleaned using disinfecting solution (1:9 bleach solution) at the end of each day or when changing shifts (if shift-based work methodology is adopted).		
Health and safety of public	<p>Demarcate the site boundary through taping, hoarding or fencing.</p> <p>Place sign boards to indicate that only authorized personnel are allowed entry.</p> <p>Make sure that the general public do not have access to the site and its vicinity. Regularly monitor for entrance of residents.</p> <p>Make sure that public chairs are not found at the vicinity of the site.</p>	✓	
Fire hazard	<p>Ensure that electrical wires are installed properly by a certified person.</p> <p>Ensure that portable extinguishers are readily available in case of an emergency fire.</p> <p>Flammable hazardous waste such as used oil and diesel must be labeled with hazardous waste and fire hazard signage and regularly inspected to identify any leakages. Conspicuous warning signs (e.g. 'No Smoking') should also be posted around hazardous waste storage and handling facilities.</p> <p>National Fire Code (NFC) shall be strictly followed while handling, transporting and storing fuel. Inflammable goods such as fuel drums, portable fuel containers and cleaning solvents and chemicals will be closed off from public access.</p>	✓	
4. Sociological and Cultural			
Legal Issues	All expatriate workers must hold valid work permits		
Handling Environmental and Social Issues during Construction	<p>The contractor will appoint a suitably qualified Environmental Officer following the award of the contract. The Environmental Officer will be the primary point of contact for assistance with all environmental issues during the pre-construction and construction phases. He/ She shall be responsible for ensuring the implementation of ESMP.</p> <p>The contractor shall appoint a person responsible for community liaison and to handle public complaints regarding environmental/social related matters. All public complaints will be entered into the Complaints Register. The Environmental Officer will promptly investigate and review environmental complaints and implement the appropriate corrective actions to arrest</p>	✓	

	<p>or mitigate the cause of the complaints. A register of all complaints is to be passed to the Engineer within 24 hrs. They are received, with the action taken by the Environmental Officer on complains thereof; and</p> <p>The site supervisor may assume the on-site responsibility of the environment officer and community liaison officer, subject to being adequately trained and having thorough knowledge of the ESMP.</p> <p>Contractor shall prepare detailed Environmental Method Statement (EMS) clearly stating the approach, actions and manner in which the ESMP is implemented.</p>		
Sociocultural conflict due to arrival of expatriate workers	<p>Ensure that local workers are used as much as possible. If expatriate workers are used ensure that they respect the local culture.</p> <p>The contractor in collaboration with the Island Council shall undertake a training to sensitize the labor to the local context and customs. This training should also cover topics related to Gender-based violence.</p> <p>To mitigate conflict that may arise due to the arrival of expatriate workers, the consultant should develop a “Code of Conduct” outlining the set of rules that that the workers have to follow to persevere the social norms and religious values of the society. The Code of Conduct should also specify penalties for breaching these rules and should be thoroughly communicated to workers prior to mobilization.</p>	✓	
Code of Conduct and Communication	<p>The “Code of Conduct” developed should also cover good environmental governance and responsibilities workers have to follow to safeguard the environment. Though the number may be minimal, code of conduct and awareness in HIV related issues need to be considered.</p> <p>The contractor should ensure that all communications to the workers are presented in the local language. If expatriate workers are employed communications should be made in a language that they understand.</p> <p>Information on the project and the GRM should be displayed in the project site board, council noticed board as well as other communal place as much as possible.</p>	✓	
Loss of source of sand for local public use due to	<p>Ensure that sand is not taken from the lagoon of the island.</p>	✓	

sand mining from the area of the lagoon permitted for local public sand mining			
Grievance Redress Mechanism	<p>The GRM established by the proponent should be implemented at the construction phase. Contact details of focal points of the contractor, Island Council and the proponent should be displayed at the project site in the project board, the Council Office and common places frequented by the public (such as schools, health center etc.).</p> <p>It is recommended to change the first point of contact to the contractor, followed by Island Council and the proponent. The community liaison officer of the contractor must maintain log records of the complains received and subsequent actions taken.</p>	✓	
5. Economic			
Benefit to local economy	Ensure that construction materials are purchased from the island as much as possible. Preference shall be given to hire local construction workers from the island and the atoll or region.	✓	

Details of the Respondent

Name: Ali Azim

Designation: Managing Director

Signature:



Company Seal:



Zone 3 ESMP IWMC Construction

Section 1: General Information

PROJECT ZONE *

 Zone 3

ATOLL

 Kaafu Alifu Alifdhal VaavuISLAND NAME **Himmafushi**

Section 2: Sub Project Details

TYPE OF SUB PROJECT? *

Indicate information pertaining to the proposed technology IWMC Windrow Composting OtherOTHER SUB PROJECT **Construction of Waste Management Centers**

SUB-PROJECT DETAILS

 Construction of a new center Upgrading of an existing center

SUB PROJECT LOCATION?

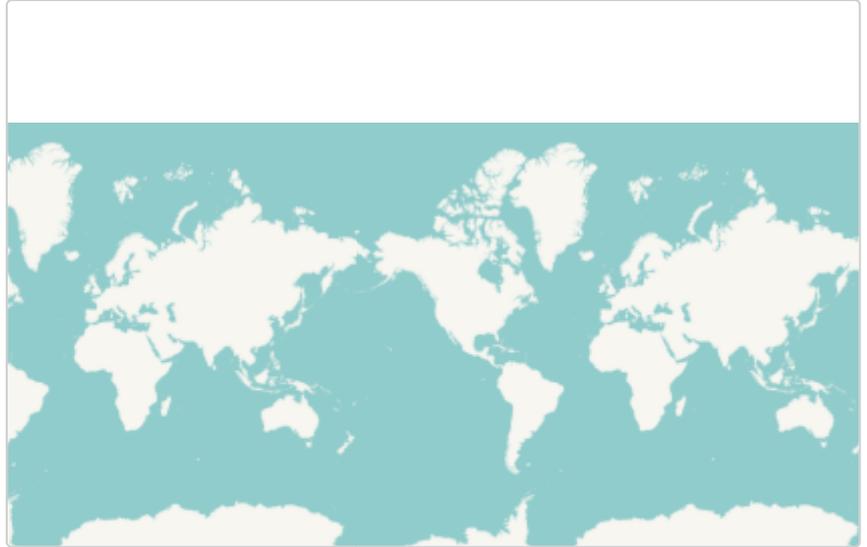
Include Atoll and select project site via map

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



PHYSICAL PROGRESS 20%

Provide Percentage

Section 3: Storage of Hazardous Chemicals during Construction

ARE FUEL USED FOR PROJECT PURPOSES STORED IN SEALED CONTAINERS?

This would mostly include oil and diesel for the cement mixing machine

- Yes
- No
- Not Applicable / Observed

IF YES ATTACH, A PHOTOGRAPH OF THE CONTAINERS

[Click here to upload file. \(< 5MB\)](#)

IF NO ATTACH A PHOTOGRAPH TO SHOW HOW FUEL IS CURRENTLY BEING KEPT

[Click here to upload file. \(< 5MB\)](#)

WERE ALL HAZARDOUS CHEMICAL CONTAINERS (PAINTS, THINNERS, LUBRICANTS) STORE IN CLOSED CONTAINERS AND PLACED ON A IMPERMEABLE SURFACE (EITHER A CONCRETE SLAB, CONTAINED BOX OR LINED AND ISOLATED AREA?)

- Yes
- No
- Not Applicable / Observed

IF YES, ATTACH PHOTOGRAPHIC PROOF

[Click here to upload file. \(< 5MB\)](#)

IF NO, ATTACH A PHOTOGRAPH TO SHOW HOW THE CHEMICALS ARE BEING KEPT

[Click here to upload file. \(< 5MB\)](#)

WERE ANY CHEMICALS STORED CLOSE TO ELECTRICAL OUTLETS, OR ANY AREAS WHERE THERE IS A RISK OF FIRE AND EXPLOSION?

- Yes
- No

INCLUDE PHOTOGRAPHIC EVIDENCE

[Click here to upload file. \(< 5MB\)](#)

Section 4: Noise Pollution Management Practices

WHAT MITIGATION MEASURES HAVE BEEN APPLIED BY THE CONTRACTOR TO REDUCE NOISE POLLUTION?

- Construction Activity Only During Day Time (8.00am-6.00pm)
- Noise Barrier Installed
- Workers involved in either drilling, welding or noisy machinery operation were wearing ear muffers
- Other measures used by contractor

SPECIFY OTHER MEASURES USED?

PHOTOGRAPH-1 OF COMPLIANCE PRACTICE

[Click here to upload file. \(< 5MB\)](#)

PHOTOGRAPH-2 OF COMPLIANCE PRACTICE

If Required[Click here to upload file. \(< 5MB\)](#)

WHAT WAS THE NOISE LEVEL OBSERVED ON THE SITE DURING THE MONITORING VISIT?

- Very Loud (heavy machinery in operation, continuous drilling and construction noise, not bearable, loud labor gangs)
- Moderate (normal construction site operation, bearable but moderately noisy)
- Low levels of noise (can hear speech over sound, low levels of noise at site)

Section 5: Air Quality and Dust

ARE VEHICLES USED FOR TRANSPORTING MATERIAL FROM HARBOUR TO PROJECT SITE?

- Yes
- No

TYPE OF VEHICLE USED?

- Contractor's vehicle
- Hired from the island

ATTACH PHOTO OF THE VEHICLE

[Click here to upload file. \(< 5MB\)](#)

DOES THE VEHICLE HAVE AN UP TO DATE ROAD WORTHINESS CERTIFICATE

- Yes
- No

IF YES, ATTACH A COPY OF THE CERTIFICATE

Take a photo and attach[Click here to upload file. \(< 5MB\)](#)

HOW WAS MATERIALS TRANSFERRED TO THE SITE?

- Covered
- Not Covered
- Not Observed

ARE MACHINERIES USED WELL TUNED / SERVICED?

Machines are operating without emissions of smoke or fumes

- Yes
 No
 Not Applicable / Not used

DID YOU OBSERVE HIGH LEVELS OF DUST GENERATED IN THE WORK SITE?

- Yes
 No

HAS DUST GENERATED FROM THE SITE OR CONSTRUCTION MATERIAL BEEN DEPOSITED AROUND THE WORK SITE?

- Yes
 No

HOW FREQUENTLY IS THE SITE BEING SPRAYED WITH WATER?

Ask the Contractor

- Daily
 Weekly
 Monthly
 Other

PLEASE SPECIFY THE DURATION

ATTACH PHOTO OF THE SITE TO INDICATE GROUND CONDITION

[Click here to upload file. \(< 5MB\)](#)

ARE STOCKPILED CONSTRUCTION MATERIALS COVERED?

- Yes
 No

ATTACH PHOTO OF HOW MATERIALS ARE STOCKPILED

[Click here to upload file. \(< 5MB\)](#)

IS THE CONTRACTOR OPEN BURNING ANY WASTE ON THE SITE OR NEAR THE SITE?

- Yes
 No

IF YES, INCLUDE PHOTOGRAPH OF OBSERVER BURNING.

[Click here to upload file. \(< 5MB\)](#)

DID YOU NOTICE ANY FUMES OR BAD SMELLS FROM THE SITE BEING GENERATED VIA THE USE OF CHEMICALS?

Yes

No

WERE THESE BEARABLE?

Did not cause difficulty in breathing or comfort while on site)

Caused discomfort like coughing and difficulty in breathing

No effect

Section 6: Source of Sand

IS SAND SOURCED FOR CONSTRUCTION IN COMPLIANCE WITH NATIONAL LAWS AND REGULATION?

(Sand should not be sourced from the beach or lagoon of an inhabited island, tourist resort, or any protected island. This includes the area of the island designated for sand mining of local public use)

Yes

No

PROVIDE PHOTOGRAPHIC EVIDENCE

Attach a photograph of sand bags

[Click here to upload file. \(< 5MB\)](#)

ACTIONS TAKEN

Non compliance noted in site log booked

Ministry of Environment to be informed

Section 7: Waste Management

IS CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE GENERATED FROM THE PROJECT?

If unsure, ask the Site Supervisor for verification

- Yes
- No

TYPE OF CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE GENERATED

If unsure, ask the Site Supervisor for verification

- Leave and trunks of removed vegetation
- Old roofing sheets
- Demolished parts of walls
- Others

PROVIDE DETAILS

ARE CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE BEING REUSED OR CONSIDERED TO BE REUSED FOR CONSTRUCTION ACTIVITIES OF THE PROJECT?

If unsure, ask the Site Supervisor for verification

- Yes
- No

TYPES OF WASTE BEING REUSED FOR CONSTRUCTION?

If unsure, ask the Site Supervisor for verification

- Wood waste
- Old roofing sheets
- Demolished parts of walls
- Other

PROVIDE DETAILS

HOW ARE C&D AND/OR GREEN WASTE (INCLUDING ANY REMAINING WASTE AFTER REUSE) BEING DISPOSED

- Leaves sun dried and left at forest area for natural degradation
- Trunks chopped into smaller pieces and left at the forest area for natural degradation
- Leave and wood given to the council or the community free of cost
- Leaves and wood sold to community or private construction workers
- Reusable materials (metal bars, roofing sheets etc.) given to the council or community free of cost
- Reusable materials (metal bars, roofing sheets etc.) sold to the community or private construction workers
- All waste disposed at council designated location
- Waste is disposed at the periphery of the site

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

IS THERE EVIDENCE OF LITTERING IN AND AROUND THE SITE?

Walk around the site and do a visual inspection

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

A BIN IS PRESENT FOR DISPOSING GENERAL WASTE GENERATED BY WORKERS?

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

Section 8: Impacts on Natural Environment

DOES THE SITE CONTAIN ANY SIGNIFICANT VEGETATION?

Only large trees and coconut palms are referred here

- Yes
 No

WAS ANY VEGETATION PRESENT AT THE SITE TRANSLOCATED TO ANOTHER AREA OF THE ISLAND?

Indicate if trees were taken to another location

- Yes
 No

SPECIFY THE NUMBER OF TREES THAT WERE TRANSLOCATED

PROVIDE A PHOTOGRAPH OF THE TRANSLOCATED AREA

[Click here to upload file. \(< 5MB\)](#)

WAS ANY VEGETATION REMOVED / CHOPPED?

- Yes
 No

SPECIFY THE NUMBER OF TREES THAT WERE REMOVED / CHOPPED

ATTACH PHOTOGRAPHIC EVIDENCE

[Click here to upload file. \(< 5MB\)](#)

WAS 2:1 REPLANTATION UNDERTAKEN?

- Yes
 No

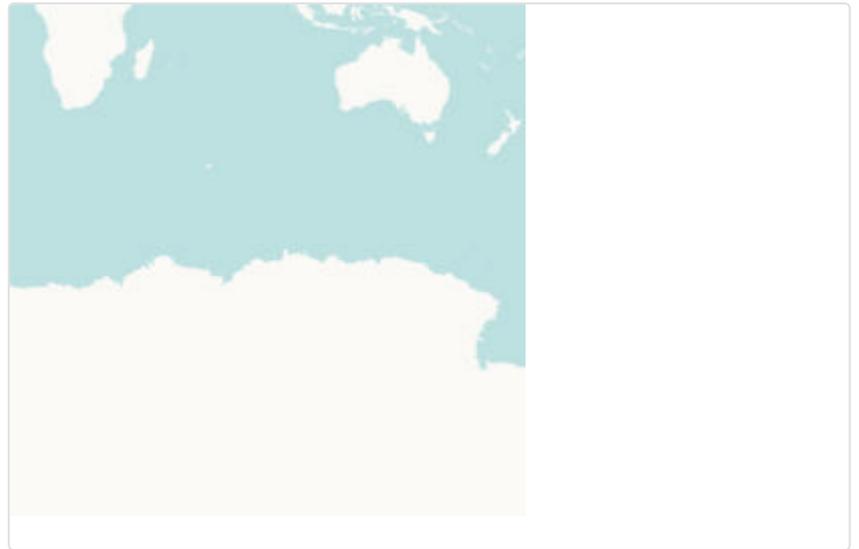
INDICATE THE LOCATION ON WHICH REPLANTATION WAS UNDERTAKEN

latitude (x.y °)

longitide (x.y °)

altitude (m)

accuracy (m)



INDICATE THE NUMBER OF TREES THAT WERE REPLANTED?

PROVIDE A PHOTOGRAPH OF THE REPLANTED AREA

[Click here to upload file. \(< 5MB\)](#)

INDICATE PLANNED DATE FOR REPLANTATION

yyyy-mm-dd

Section 9: General Health and Safety

IS THE SITE DEMARCATED AS A CONSTRUCTION SITE?

Yes

No

WHICH METHOD IS USED TO DEMARCATATE THE SITE?

Taping

Fencing

Hoarding

ATTACH A PHOTOGRAPH OF SITE DEMARCATION

[Click here to upload file. \(< 5MB\)](#)

IS NO ENTRY SIGN BOARD PRESENT?

- Yes
 No

ATTACH A PHOTOGRAPH OF NO ENTRY SIGN BOARD

Click here to upload file. (< 5MB)

IS SAFETY SIGN BOARD WITH PPE REQUIREMENT PRESENT?

- Yes
 No

ATTACH A PHOTOGRAPH OF PPE SIGN BOARD

Click here to upload file. (< 5MB)

Section 10: Occupational Health and Safety

TO WHAT LEVEL ARE SAFETY GEARS / PERSONAL PROTECTIVE EQUIPMENT (PPES) BEING USED?

- Satisfactory (All workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site.)
- Marginally Satisfactory (About 50% of workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site) U-
- Unsatisfactory (Less than 20% workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site)

WHAT ARE THE TYPES OF PPES OBSERVED BEING USED BY THE SITE WORKERS?

- Boots/Covered Shoes
- Hard hats
- Ear Mufflers (Workers operating machinery or drilling)
- Goggles (workers, drilling, welding or using sharp machinery)
- Gloves- Thick latex
- Masks
- Safety Harnesses
- Luminous Jackets
- Others

ATTACH A PHOTOGRAPH OF WORKERS WITH BOOTS/COVERED SHOES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS WITH HARD HATS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING EAR MUFFS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WELDERS USING GOGGLES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING GLOVES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING MASKS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING SAFETY HARNESS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING LUMINOUS JACKETS

[Click here to upload file. \(< 5MB\)](#)

PROVIDE DETAILS

Section 11: Working Conditions and Labor

HOW IS FOOD ARRANGEMENTS BEING MADE FOR THE CONTRACTOR'S WORKERS?

Ask the Site Supervisor and / or workers at the site

- Monthly allowance
 Contractor

SPECIFY AMOUNT IN MVR

1500

Ask the Site Supervisor and / or workers at the site

HOW MANY MEALS / BREAKS ARE PROVIDED PER DAY 1

Ask the Site Supervisor and / or workers at the site

WHAT ARE THE STANDARD PER DAY WORKING HOURS?

8:00 - 12:00 pm

1:00 - 5:00 pm

SPECIFY WORK START TIME 08:00 am

hh:mm

SPECIFY WORK END TIME 05:00 pm

hh:mm

HOW IS ACCOMMODATION BEING ARRANGED?

Ask the site supervisor and / or workers at the site

- Rented house
 Temporary accommodation block
 Single Room

WAS STAFF ACCOMMODATION CHECKED DURING MONITORING?

- Yes
 No

HOW MANY TOILETS / BATHROOMS ARE PRESENT?

ATTACH A PHOTOGRAPH OF ACCOMMODATION FACILITY

[Click here to upload file. \(< 5MB\)](#)

FACILITIES PRESENT AT THE ACCOMMODATION

- Kitchen
- Sitting room
- Television
- washing machine
- Beds
- Others

SPECIFY

IS THE SITE OF LABOR ACCOMMODATION CLEAN AND SANITARY AND KEPT NEATLY?

- Yes
- No

AT THE WORK SITE DO THE LABOR HAVE A RESTING AREA WITH ADEQUATE DRINKING WATER SUPPLIES?

Ask the Site Supervisor for verification

- Yes
- No

Section 12: Fire Safety

IS A PORTABLE EXTINGUISHER PRESENT AT THE SITE?

- Yes
- No

ATTACH PHOTOGRAPHIC OF EXTINGUISHER

[Click here to upload file. \(< 5MB\)](#)

OTHER FIRE SAFETY PRECAUTIONS TAKEN

- No open electrical wires are found
- Electrical wires installed by certified person

Section 13: Sociocultural Issues

WHAT IS THE TOTAL NUMBER OF WORKERS RECRUITED FOR THE PROJECT?

7

ARE ANY FEMALE WORKERS RECRUITED FOR THE PROJECT?

Yes

No

SPECIFY THE NUMBER OF FEMALE WORKERS

SPECIFY THE NUMBER OF LOCAL WORKERS

1

SPECIFY THE NUMBER OF EXPATRIATE WORKERS

6

DOES ALL THE EXPATRIATE WORKERS HAVE VALID WORK PERMITS AND WORK VISAS?

Yes

No

SPECIFY NAMES OF THE STAFFS WHO DO NOT HAVE VALID WORK PERMITS AND WORK VISAS

ARE ALL WORKERS ABOVE THE AGE OF 18?

Verify via the work permits / National ID cards and confirm

Yes

No

Section 14: Grievance Redress Mechanism (GRM)

IS PROJECT BOARD WITH GRM INFORMATION PRESENT AT THE SITE?

Yes

No

ATTACH PHOTOGRAPH OF THE GRM BOARD

[Click here to upload file. \(< 5MB\)](#)

WHEN DOES THE CONTRACTOR PLAN TO DO THIS?

Ask the Site Supervisor

yyyy-mm-dd

ARE GRM POSTERS PRESENT IN THE ISLAND COUNCILS NOTICE BOARD AND IN PUBLIC PLACES?

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

IF NO, WHEN DOES THE COUNCIL PLAN TO INSTALL THE SIGNAGE

yyyy-mm-dd

WAS ANY GRIEVANCE RELATED TO THE FOLLOWING ISSUES RECEIVED?

- CASE OF GENDER BASED VIOLENCE (GBV) / Sexual harassment (SH) / Sexual Exploitation and Abuse (SEA)
- CASE OF THEFT
- CASE OF VIOLENCE
- CASE OF MISCONDUCT BY PROJECT WORKERS
- CASE OF MAJOR ENVIRONMENTAL IMPACT (SPILL, FIRE Etc)

HAS THE CONCERNED AUTHORITIES BEEN NOTIFIED?

- Yes
- No

Section 15: Informants

CONTRACTOR'S INFORMANT NAME AND DESIGNATION *

COUNCIL'S INFORMANT NAME AND DESIGNATION *

NAME AND DESIGNATION OF THE PERSON WHO FILLED THE FORM

I CERTIFY THAT ALL THE DATA CAPTURES IS ACCURATE TO THE BEST OF MY KNOWLEDGE *

OK

SIGNATURE

THIS NOTE CAN BE READ OUT LOUD

Thankyou for completing the form. Please submit when completed

Zone 3 ESMP IWMC Construction

Section 1: General Information

PROJECT ZONE *

 Zone 3

ATOLL

 Kaafu Alifu Alifdhal Vaavu

ISLAND NAME Hura

Section 2: Sub Project Details

TYPE OF SUB PROJECT? *

Indicate information pertaining to the proposed technology IWMC Windrow Composting Other

OTHER SUB PROJECT Construction of Waste Management Centers

SUB-PROJECT DETAILS

 Construction of a new center Upgrading of an existing center

SUB PROJECT LOCATION?

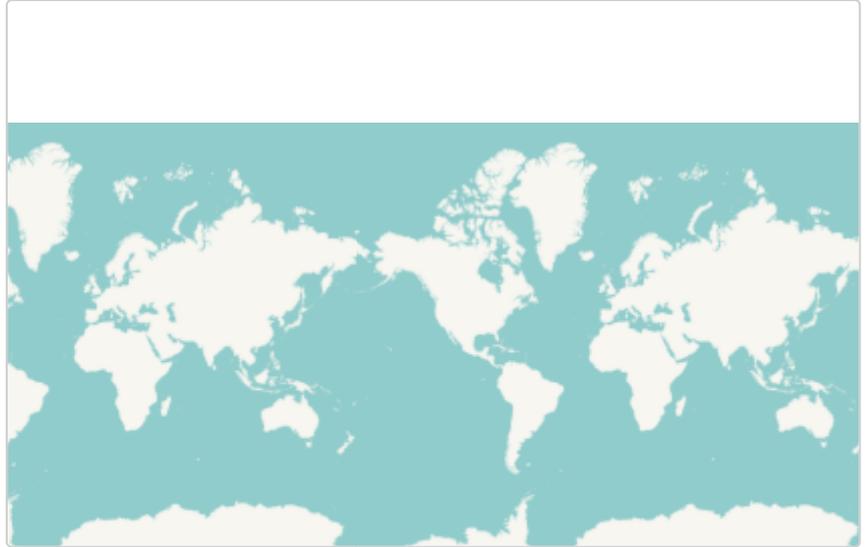
Include Atoll and select project site via map

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



PHYSICAL PROGRESS 20%

Provide Percentage

Section 3: Storage of Hazardous Chemicals during Construction

ARE FUEL USED FOR PROJECT PURPOSES STORED IN SEALED CONTAINERS?

This would mostly include oil and diesel for the cement mixing machine

- Yes
- No
- Not Applicable / Observed

IF YES ATTACH, A PHOTOGRAPH OF THE CONTAINERS

[Click here to upload file. \(< 5MB\)](#)

IF NO ATTACH A PHOTOGRAPH TO SHOW HOW FUEL IS CURRENTLY BEING KEPT

[Click here to upload file. \(< 5MB\)](#)

WERE ALL HAZARDOUS CHEMICAL CONTAINERS (PAINTS, THINNERS, LUBRICANTS) STORE IN CLOSED CONTAINERS AND PLACED ON A IMPERMEABLE SURFACE (EITHER A CONCRETE SLAB, CONTAINED BOX OR LINED AND ISOLATED AREA?)

- Yes
- No
- Not Applicable / Observed

IF YES, ATTACH PHOTOGRAPHIC PROOF

[Click here to upload file. \(< 5MB\)](#)

IF NO, ATTACH A PHOTOGRAPH TO SHOW HOW THE CHEMICALS ARE BEING KEPT

[Click here to upload file. \(< 5MB\)](#)

WERE ANY CHEMICALS STORED CLOSE TO ELECTRICAL OUTLETS, OR ANY AREAS WHERE THERE IS A RISK OF FIRE AND EXPLOSION?

- Yes
- No

INCLUDE PHOTOGRAPHIC EVIDENCE

[Click here to upload file. \(< 5MB\)](#)

Section 4: Noise Pollution Management Practices

WHAT MITIGATION MEASURES HAVE BEEN APPLIED BY THE CONTRACTOR TO REDUCE NOISE POLLUTION?

- Construction Activity Only During Day Time (8.00am-6.00pm)
- Noise Barrier Installed
- Workers involved in either drilling, welding or noisy machinery operation were wearing ear muffers
- Other measures used by contractor

SPECIFY OTHER MEASURES USED?

PHOTOGRAPH-1 OF COMPLIANCE PRACTICE

[Click here to upload file. \(< 5MB\)](#)

PHOTOGRAPH-2 OF COMPLIANCE PRACTICE

If Required[Click here to upload file. \(< 5MB\)](#)

WHAT WAS THE NOISE LEVEL OBSERVED ON THE SITE DURING THE MONITORING VISIT?

- Very Loud (heavy machinery in operation, continuous drilling and construction noise, not bearable, loud labor gangs)
- Moderate (normal construction site operation, bearable but moderately noisy)
- Low levels of noise (can hear speech over sound, low levels of noise at site)

Section 5: Air Quality and Dust

ARE VEHICLES USED FOR TRANSPORTING MATERIAL FROM HARBOUR TO PROJECT SITE?

- Yes
- No

TYPE OF VEHICLE USED?

- Contractor's vehicle
- Hired from the island

ATTACH PHOTO OF THE VEHICLE

[Click here to upload file. \(< 5MB\)](#)

DOES THE VEHICLE HAVE AN UP TO DATE ROAD WORTHINESS CERTIFICATE

- Yes
- No

IF YES, ATTACH A COPY OF THE CERTIFICATE

Take a photo and attach[Click here to upload file. \(< 5MB\)](#)

HOW WAS MATERIALS TRANSFERRED TO THE SITE?

- Covered
- Not Covered
- Not Observed

ARE MACHINERIES USED WELL TUNED / SERVICED?

Machines are operating without emissions of smoke or fumes

- Yes
 No
 Not Applicable / Not used

DID YOU OBSERVE HIGH LEVELS OF DUST GENERATED IN THE WORK SITE?

- Yes
 No

HAS DUST GENERATED FROM THE SITE OR CONSTRUCTION MATERIAL BEEN DEPOSITED AROUND THE WORK SITE?

- Yes
 No

HOW FREQUENTLY IS THE SITE BEING SPRAYED WITH WATER?

Ask the Contractor

- Daily
 Weekly
 Monthly
 Other

PLEASE SPECIFY THE DURATION

ATTACH PHOTO OF THE SITE TO INDICATE GROUND CONDITION

[Click here to upload file. \(< 5MB\)](#)

ARE STOCKPILED CONSTRUCTION MATERIALS COVERED?

- Yes
 No

ATTACH PHOTO OF HOW MATERIALS ARE STOCKPILED

[Click here to upload file. \(< 5MB\)](#)

IS THE CONTRACTOR OPEN BURNING ANY WASTE ON THE SITE OR NEAR THE SITE?

- Yes
 No

IF YES, INCLUDE PHOTOGRAPH OF OBSERVER BURNING.

[Click here to upload file. \(< 5MB\)](#)

DID YOU NOTICE ANY FUMES OR BAD SMELLS FROM THE SITE BEING GENERATED VIA THE USE OF CHEMICALS?

Yes

No

WERE THESE BEARABLE?

Did not cause difficulty in breathing or comfort while on site)

Caused discomfort like coughing and difficulty in breathing

No effect

Section 6: Source of Sand

IS SAND SOURCED FOR CONSTRUCTION IN COMPLIANCE WITH NATIONAL LAWS AND REGULATION?

(Sand should not be sourced from the beach or lagoon of an inhabited island, tourist resort, or any protected island. This includes the area of the island designated for sand mining of local public use)

Yes

No

PROVIDE PHOTOGRAPHIC EVIDENCE

Attach a photograph of sand bags

[Click here to upload file. \(< 5MB\)](#)

ACTIONS TAKEN

Non compliance noted in site log booked

Ministry of Environment to be informed

Section 7: Waste Management

IS CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE GENERATED FROM THE PROJECT?

If unsure, ask the Site Supervisor for verification

- Yes
- No

TYPE OF CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE GENERATED

If unsure, ask the Site Supervisor for verification

- Leave and trunks of removed vegetation
- Old roofing sheets
- Demolished parts of walls
- Others

PROVIDE DETAILS

ARE CONSTRUCTION AND DEMOLITION WASTE (C&D) AND/OR GREEN WASTE BEING REUSED OR CONSIDERED TO BE REUSED FOR CONSTRUCTION ACTIVITIES OF THE PROJECT?

If unsure, ask the Site Supervisor for verification

- Yes
- No

TYPES OF WASTE BEING REUSED FOR CONSTRUCTION?

If unsure, ask the Site Supervisor for verification

- Wood waste
- Old roofing sheets
- Demolished parts of walls
- Other

PROVIDE DETAILS

HOW ARE C&D AND/OR GREEN WASTE (INCLUDING ANY REMAINING WASTE AFTER REUSE) BEING DISPOSED

- Leaves sun dried and left at forest area for natural degradation
- Trunks chopped into smaller pieces and left at the forest area for natural degradation
- Leave and wood given to the council or the community free of cost
- Leaves and wood sold to community or private construction workers
- Reusable materials (metal bars, roofing sheets etc.) given to the council or community free of cost
- Reusable materials (metal bars, roofing sheets etc.) sold to the community or private construction workers
- All waste disposed at council designated location
- Waste is disposed at the periphery of the site

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

IS THERE EVIDENCE OF LITTERING IN AND AROUND THE SITE?

Walk around the site and do a visual inspection

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

A BIN IS PRESENT FOR DISPOSING GENERAL WASTE GENERATED BY WORKERS?

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

Section 8: Impacts on Natural Environment

DOES THE SITE CONTAIN ANY SIGNIFICANT VEGETATION?

Only large trees and coconut palms are referred here

- Yes
 No

WAS ANY VEGETATION PRESENT AT THE SITE TRANSLOCATED TO ANOTHER AREA OF THE ISLAND?

Indicate if trees were taken to another location

- Yes
 No

SPECIFY THE NUMBER OF TREES THAT WERE TRANSLOCATED

PROVIDE A PHOTOGRAPH OF THE TRANSLOCATED AREA

[Click here to upload file. \(< 5MB\)](#)

WAS ANY VEGETATION REMOVED / CHOPPED?

- Yes
 No

SPECIFY THE NUMBER OF TREES THAT WERE REMOVED / CHOPPED

ATTACH PHOTOGRAPHIC EVIDENCE

[Click here to upload file. \(< 5MB\)](#)

WAS 2:1 REPLANTATION UNDERTAKEN?

- Yes
 No

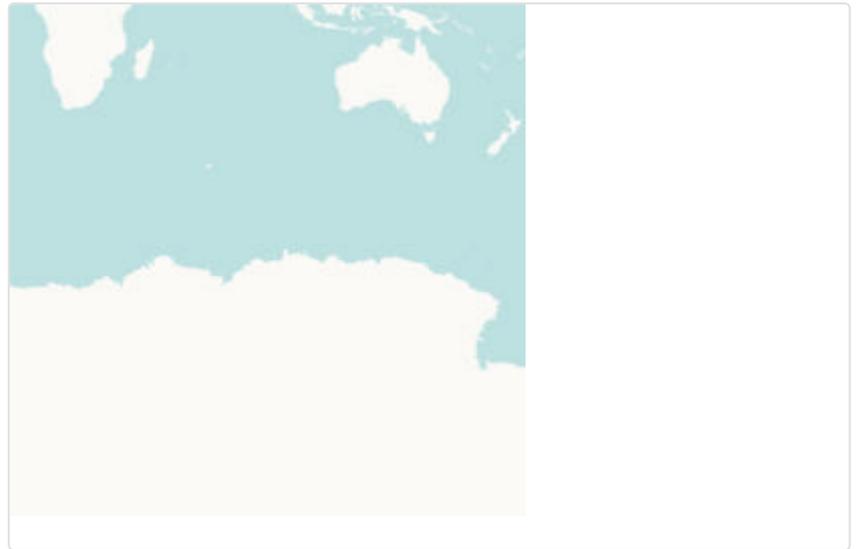
INDICATE THE LOCATION ON WHICH REPLANTATION WAS UNDERTAKEN

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



INDICATE THE NUMBER OF TREES THAT WERE REPLANTED?

PROVIDE A PHOTOGRAPH OF THE REPLANTED AREA

[Click here to upload file. \(< 5MB\)](#)

INDICATE PLANNED DATE FOR REPLANTATION

yyyy-mm-dd

Section 9: General Health and Safety

IS THE SITE DEMARCATED AS A CONSTRUCTION SITE?

Yes

No

WHICH METHOD IS USED TO DEMARCATATE THE SITE?

Taping

Fencing

Hoarding

ATTACH A PHOTOGRAPH OF SITE DEMARCATION

[Click here to upload file. \(< 5MB\)](#)

IS NO ENTRY SIGN BOARD PRESENT?

- Yes
 No

ATTACH A PHOTOGRAPH OF NO ENTRY SIGN BOARD

Click here to upload file. (< 5MB)

IS SAFETY SIGN BOARD WITH PPE REQUIREMENT PRESENT?

- Yes
 No

ATTACH A PHOTOGRAPH OF PPE SIGN BOARD

Click here to upload file. (< 5MB)

Section 10: Occupational Health and Safety

TO WHAT LEVEL ARE SAFETY GEARS / PERSONAL PROTECTIVE EQUIPMENT (PPES) BEING USED?

- Satisfactory (All workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site.)
- Marginally Satisfactory (About 50% of workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site) U-
- Unsatisfactory (Less than 20% workers are wearing dust masks, helmets, covered shoes, luminous vests and gloves at minimal while working in the site)

WHAT ARE THE TYPES OF PPES OBSERVED BEING USED BY THE SITE WORKERS?

- Boots/Covered Shoes
- Hard hats
- Ear Mufflers (Workers operating machinery or drilling)
- Goggles (workers, drilling, welding or using sharp machinery)
- Gloves- Thick latex
- Masks
- Safety Harnesses
- Luminous Jackets
- Others

ATTACH A PHOTOGRAPH OF WORKERS WITH BOOTS/COVERED SHOES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS WITH HARD HATS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING EAR MUFFS

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ATTACH A PHOTOGRAPH OF WELDERS USING GOGGLES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING GLOVES

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING MASKS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING SAFETY HARNESS

[Click here to upload file. \(< 5MB\)](#)

ATTACH A PHOTOGRAPH OF WORKERS USING LUMINOUS JACKETS

[Click here to upload file. \(< 5MB\)](#)

PROVIDE DETAILS

Section 11: Working Conditions and Labor

HOW IS FOOD ARRANGEMENTS BEING MADE FOR THE CONTRACTOR'S WORKERS?

Ask the Site Supervisor and / or workers at the site

- Monthly allowance
 Contractor

SPECIFY AMOUNT IN MVR

1500

Ask the Site Supervisor and / or workers at the site

HOW MANY MEALS / BREAKS ARE PROVIDED PER DAY 1

Ask the Site Supervisor and / or workers at the site

WHAT ARE THE STANDARD PER DAY WORKING HOURS?

8:00 - 12:00 pm
1:00 - 5:00 pm

SPECIFY WORK START TIME 08:00 am

hh:mm

SPECIFY WORK END TIME 05:00 pm

hh:mm

HOW IS ACCOMMODATION BEING ARRANGED?

Ask the site supervisor and / or workers at the site

- Rented house
 Temporary accommodation block
 Single Room

WAS STAFF ACCOMMODATION CHECKED DURING MONITORING?

- Yes
 No

HOW MANY TOILETS / BATHROOMS ARE PRESENT?

ATTACH A PHOTOGRAPH OF ACCOMMODATION FACILITY

[Click here to upload file. \(< 5MB\)](#)

FACILITIES PRESENT AT THE ACCOMMODATION

- Kitchen
- Sitting room
- Television
- washing machine
- Beds
- Others

SPECIFY

IS THE SITE OF LABOR ACCOMMODATION CLEAN AND SANITARY AND KEPT NEATLY?

- Yes
- No

AT THE WORK SITE DO THE LABOR HAVE A RESTING AREA WITH ADEQUATE DRINKING WATER SUPPLIES?

Ask the Site Supervisor for verification

- Yes
- No

Section 12: Fire Safety

IS A PORTABLE EXTINGUISHER PRESENT AT THE SITE?

- Yes
- No

ATTACH PHOTOGRAPHIC OF EXTINGUISHER

[Click here to upload file. \(< 5MB\)](#)

OTHER FIRE SAFETY PRECAUTIONS TAKEN

- No open electrical wires are found
- Electrical wires installed by certified person

Section 13: Sociocultural Issues

WHAT IS THE TOTAL NUMBER OF WORKERS RECRUITED FOR THE PROJECT?

7

ARE ANY FEMALE WORKERS RECRUITED FOR THE PROJECT?

Yes

No

SPECIFY THE NUMBER OF FEMALE WORKERS

SPECIFY THE NUMBER OF LOCAL WORKERS

1

SPECIFY THE NUMBER OF EXPATRIATE WORKERS

6

DOES ALL THE EXPATRIATE WORKERS HAVE VALID WORK PERMITS AND WORK VISAS?

Yes

No

SPECIFY NAMES OF THE STAFFS WHO DO NOT HAVE VALID WORK PERMITS AND WORK VISAS

ARE ALL WORKERS ABOVE THE AGE OF 18?

Verify via the work permits / National ID cards and confirm

Yes

No

Section 14: Grievance Redress Mechanism (GRM)

IS PROJECT BOARD WITH GRM INFORMATION PRESENT AT THE SITE?

Yes

No

ATTACH PHOTOGRAPH OF THE GRM BOARD

[Click here to upload file. \(< 5MB\)](#)

WHEN DOES THE CONTRACTOR PLAN TO DO THIS?

Ask the Site Supervisor

yyyy-mm-dd

ARE GRM POSTERS PRESENT IN THE ISLAND COUNCILS NOTICE BOARD AND IN PUBLIC PLACES?

- Yes
- No

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

ATTACH PHOTOGRAPHIC EVIDENCE

Click here to upload file. (< 5MB)

IF NO, WHEN DOES THE COUNCIL PLAN TO INSTALL THE SIGNAGE

yyyy-mm-dd

WAS ANY GRIEVANCE RELATED TO THE FOLLOWING ISSUES RECEIVED?

- CASE OF GENDER BASED VIOLENCE (GBV) / Sexual harassment (SH) / Sexual Exploitation and Abuse (SEA)
- CASE OF THEFT
- CASE OF VIOLENCE
- CASE OF MISCONDUCT BY PROJECT WORKERS
- CASE OF MAJOR ENVIRONMENTAL IMPACT (SPILL, FIRE Etc)

HAS THE CONCERNED AUTHORITIES BEEN NOTIFIED?

- Yes
- No

Section 15: Informants

CONTRACTOR'S INFORMANT NAME AND DESIGNATION *

COUNCIL'S INFORMANT NAME AND DESIGNATION *

NAME AND DESIGNATION OF THE PERSON WHO FILLED THE FORM

Ali Azim
Managing Director

I CERTIFY THAT ALL THE DATA CAPTURES IS ACCURATE TO THE BEST OF MY KNOWLEDGE *

OK

SIGNATURE



THIS NOTE CAN BE READ OUT LOUD

Thankyou for completing the form. Please submit when completed

Appendix 4: Monthly reports by PMDSC

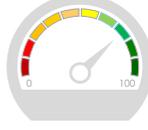
PROJECT STATUS REPORT – May 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	19.09.2023	Time Frame	May 2023	Author	Chakir Kasdarli

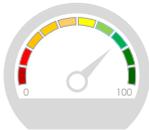
Summary/Management summary

This report summarises the activities held in May 2023

1. WTS Malé and Vilimalé project coordination work with CSCEC;
 - Conduct weekly meetings with CSCEC to check work progress.
2. PMDCSC supported PIU with C&D plant bid documents.
3. Addendum 06 - Contract extension of PMDCSC assignment approved till 30-Sep-2023
4. Conducted Thilafushi end of DNP joint inspection on 28-May-2023.
5. PMDCSC prepared GMEIWMP procurement status report 31-May-2023.

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a)	Project Management		
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
b) Geotechnical surveys and investigations, general data collection			
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	transfer system for Zone 3 including vehicle routing from outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
29	Ensure supply of goods complies with required technical specification	Support of taking over immediate measures equipment (excavator, loaders, Waste handler, shredder), equipment was taken over and overhanding protocol established	
30	Support and assist the Client in taking engineering decisions	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
31	Develop quality assurance and quality enhancement system, quality control plan, prepare quality compliance reports and progress reports	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
32	Assist the Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
e) Social, environmental, occupational health and safety aspects.			
33	Ensure compliance with ADB safeguard requirement and project safeguard frameworks (Environmental Assessment Review Framework and Resettlement Framework). Provide guidance on safeguards and issue instructions to the contractors and monitor compliance;	Work on progress.	
34	Assist in obtaining all necessary permissions and complying with statutory requirements;	Work on progress.	
35	Update the Environmental Management Plan (EMP) as necessary to reflect detailed design;	Work on progress.	

PROJECT STATUS REPORT – May 2023

Project Status as per 31.05.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
36	Prepare an initial environmental examination (IEE) including EMP for the proposed (i) Hulhumalé transfer station, and (ii) outer island projects - IWMCs (one IEE for all islands). Ensure EMP is included in the bidding documents. Ensure that assessment and provision for mitigation of risks associated with birds attracted to the transfer station on air traffic at the nearby Velana International Airport are included;	Hulhumale' TS EIA approved ISWMC EMPs completed. ISWMC EMP approval received from EPA for all 4 atolls.	
37	Ensure that relevant bidding documents and contract documents contain the EMP and such items are included in bill of quantities (BOQ);	Work is in progress.	
38	Review the contractor's Environmental Management Plan (CEMP) for adequacy in terms of compliance with the requirements of the EMP and instruct amendments and additions as necessary;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
39	Confirm the involuntary resettlement / indigenous peoples impacts based on detailed design and prepare or update social safeguards reports as required. Monitor and ensure compliance with the agreed resettlement framework;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
40	Prepare or update the environmental monitoring plan and report format to reflect detailed design and the CEMP. Monitor and ensure compliance with implementation of the EMP during the construction phase;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
41	As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by the Client and the contractor	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
42	Ensure that relevant provisions in contracts on OHS are abided by the contractors during the construction works.	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	

PROJECT STATUS REPORT – May 2023

Problems		
Existing problems	Expected problems	Solution approach
Insufficient staff to manage Thilafushi Waste Management Facility.	Though Thilafushi harbour rehabilitation project is completed, the facility cannot operate at optimum level with lack of staff.	Add mid-management personnel in WAMCO organizational structure to accommodate Thilafushi Waste Management Facility operations.
Delayed tendering process of the project procurement packages.	Cause further delay to overall project schedule.	Coordinate with Ministry of Finance to expedite the evaluation and contract award.

Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
N/A		

Planned actions/Responsible/deadline
<ol style="list-style-type: none"> 1. Complete Thilafushi Waste Management Facility Final Commissioning Report. 2. WTS Malé and Vilimalé project coordination work with CSCEC.

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader

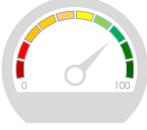
PROJECT STATUS REPORT – Jun 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	19.09.2023	Time Frame	Jun 2023	Author	Chakir Kasdarli

Summary/Management summary

This report summarises the activities held in Jun 2023

1. WTS Malé and Vilimalé project coordination work with CSCEC;
 - Conduct weekly meetings with CSCEC to check work progress.
2. PMDCSC submitted Environmental Management Plan (EMP) for Omadhoo Island Waste Management Center to EPA 15-Jun-2023.
3. PMDCSC prepared Thilafushi Waste Management Facility Final Commissioning Report 20-Jun-2023.

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a) Project Management			
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	
b) Geotechnical surveys and investigations, general data collection			

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste transfer system for Zone 3 including vehicle routing from	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
29	Ensure supply of goods complies with required technical specification	Support of taking over immediate measures equipment (excavator, loaders, Waste handler, shredder), equipment was taken over and overhanding protocol established	
30	Support and assist the Client in taking engineering decisions	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
31	Develop quality assurance and quality enhancement system, quality control plan, prepare quality compliance reports and progress reports	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
32	Assist the Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
e) Social, environmental, occupational health and safety aspects.			
33	Ensure compliance with ADB safeguard requirement and project safeguard frameworks (Environmental Assessment Review Framework and Resettlement Framework). Provide guidance on safeguards and issue instructions to the contractors and monitor compliance;	Work on progress.	
34	Assist in obtaining all necessary permissions and complying with statutory requirements;	Work on progress.	
35	Update the Environmental Management Plan (EMP) as necessary to reflect detailed design;	Work on progress.	

PROJECT STATUS REPORT – Jun 2023

Project Status as per 30.06.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
36	Prepare an initial environmental examination (IEE) including EMP for the proposed (i) Hulhumalé transfer station, and (ii) outer island projects - IWMCs (one IEE for all islands). Ensure EMP is included in the bidding documents. Ensure that assessment and provision for mitigation of risks associated with birds attracted to the transfer station on air traffic at the nearby Velana International Airport are included;	Hulhumale' TS EIA approved ISWMC EMPs completed. ISWMC EMP approval received from EPA for all 4 atolls.	
37	Ensure that relevant bidding documents and contract documents contain the EMP and such items are included in bill of quantities (BOQ);	Work is in progress.	
38	Review the contractor's Environmental Management Plan (CEMP) for adequacy in terms of compliance with the requirements of the EMP and instruct amendments and additions as necessary;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
39	Confirm the involuntary resettlement / indigenous peoples impacts based on detailed design and prepare or update social safeguards reports as required. Monitor and ensure compliance with the agreed resettlement framework;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
40	Prepare or update the environmental monitoring plan and report format to reflect detailed design and the CEMP. Monitor and ensure compliance with implementation of the EMP during the construction phase;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
41	As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by the Client and the contractor	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
42	Ensure that relevant provisions in contracts on OHS are abided by the contractors during the construction works.	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	

PROJECT STATUS REPORT – Jun 2023

Problems		
Existing problems	Expected problems	Solution approach
Delayed tendering process of the project procurement packages.	Cause further delay to overall project schedule.	Coordinate with Ministry of Finance to expedite the evaluation and contract award.

Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
N/A		

Planned actions/Responsible/deadline
<ol style="list-style-type: none">1. Complete Bid Evaluation and Procurement for C&D plant.2. WTS Malé and Vilimalé project coordination work with CSCEC.

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader

PROJECT STATUS REPORT – Jul 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	19.09.2023	Time Frame	Jul 2023	Author	Chakir Kasdarli

Summary/Management summary

This report summarises the activities held in Jul 2023

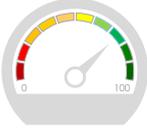
1. WTS Malé and Vilimalé project coordination work with CSCEC.
 - Conduct weekly meetings with CSCEC to check work progress.
2. Online inspection of Male' Waste Collection vehicles 6-Jul-2023.
3. TS Malé/Vilimalé inspection of completion of physical works 30-Jul-2023.
4. PMDCSC supported PIU with C&D plant bid documents.

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a) Project Management			
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	
b) Geotechnical surveys and investigations, general data collection			

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste transfer system for Zone 3 including vehicle routing from	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
29	Ensure supply of goods complies with required technical specification	Support of taking over immediate measures equipment (excavator, loaders, Waste handler, shredder), equipment was taken over and overhanding protocol established	
30	Support and assist the Client in taking engineering decisions	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
31	Develop quality assurance and quality enhancement system, quality control plan, prepare quality compliance reports and progress reports	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
32	Assist the Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
e) Social, environmental, occupational health and safety aspects.			
33	Ensure compliance with ADB safeguard requirement and project safeguard frameworks (Environmental Assessment Review Framework and Resettlement Framework). Provide guidance on safeguards and issue instructions to the contractors and monitor compliance;	Work on progress.	
34	Assist in obtaining all necessary permissions and complying with statutory requirements;	Work on progress.	
35	Update the Environmental Management Plan (EMP) as necessary to reflect detailed design;	Work on progress.	

PROJECT STATUS REPORT – Jul 2023

Project Status as per 31.07.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
36	Prepare an initial environmental examination (IEE) including EMP for the proposed (i) Hulhumalé transfer station, and (ii) outer island projects - IWMCs (one IEE for all islands). Ensure EMP is included in the bidding documents. Ensure that assessment and provision for mitigation of risks associated with birds attracted to the transfer station on air traffic at the nearby Velana International Airport are included;	Hulhumalé' TS EIA approved ISWMC EMPs completed. ISWMC EMP approval received from EPA for all 4 atolls.	
37	Ensure that relevant bidding documents and contract documents contain the EMP and such items are included in bill of quantities (BOQ);	Work is in progress.	
38	Review the contractor's Environmental Management Plan (CEMP) for adequacy in terms of compliance with the requirements of the EMP and instruct amendments and additions as necessary;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
39	Confirm the involuntary resettlement / indigenous peoples impacts based on detailed design and prepare or update social safeguards reports as required. Monitor and ensure compliance with the agreed resettlement framework;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
40	Prepare or update the environmental monitoring plan and report format to reflect detailed design and the CEMP. Monitor and ensure compliance with implementation of the EMP during the construction phase;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
41	As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by the Client and the contractor	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
42	Ensure that relevant provisions in contracts on OHS are abided by the contractors during the construction works.	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	

PROJECT STATUS REPORT – Jul 2023

Problems		
Existing problems	Expected problems	Solution approach
Delayed tendering process of the project procurement packages.	Cause further delay to overall project schedule.	Coordinate with Ministry of Finance to expedite the evaluation and contract award.

Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
N/A		

Planned actions/Responsible/deadline
<ol style="list-style-type: none">1. Complete Bid Evaluation and Procurement for C&D plant.2. WTS Malé and Vilimalé project coordination work with CSCEC.

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader

PROJECT STATUS REPORT – Aug 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	19.09.2023	Time Frame	Aug 2023	Author	Chakir Kasdarli

Summary/Management summary

This report summarises the activities held in Aug 2023

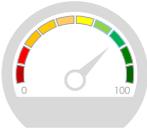
1. WTS Malé and Vilimalé project coordination work with CSCEC.
 - Conduct weekly meetings with CSCEC to check work progress.
2. Work progress meeting with ADB mission in Malé 8-Aug-2023.
3. PMDCSC supported PIU with C&D plant bid documents.

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a) Project Management			
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	
b) Geotechnical surveys and investigations, general data collection			

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste transfer system for Zone 3 including vehicle routing from	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
29	Ensure supply of goods complies with required technical specification	Support of taking over immediate measures equipment (excavator, loaders, Waste handler, shredder), equipment was taken over and overhanding protocol established	
30	Support and assist the Client in taking engineering decisions	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
31	Develop quality assurance and quality enhancement system, quality control plan, prepare quality compliance reports and progress reports	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
32	Assist the Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
e) Social, environmental, occupational health and safety aspects.			
33	Ensure compliance with ADB safeguard requirement and project safeguard frameworks (Environmental Assessment Review Framework and Resettlement Framework). Provide guidance on safeguards and issue instructions to the contractors and monitor compliance;	Work on progress.	
34	Assist in obtaining all necessary permissions and complying with statutory requirements;	Work on progress.	
35	Update the Environmental Management Plan (EMP) as necessary to reflect detailed design;	Work on progress.	

PROJECT STATUS REPORT – Aug 2023

Project Status as per 31.08.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
36	Prepare an initial environmental examination (IEE) including EMP for the proposed (i) Hulhumalé transfer station, and (ii) outer island projects - IWMCs (one IEE for all islands). Ensure EMP is included in the bidding documents. Ensure that assessment and provision for mitigation of risks associated with birds attracted to the transfer station on air traffic at the nearby Velana International Airport are included;	Hulhumalé' TS EIA approved ISWMC EMPs completed. ISWMC EMP approval received from EPA for all 4 atolls.	
37	Ensure that relevant bidding documents and contract documents contain the EMP and such items are included in bill of quantities (BOQ);	Work is in progress.	
38	Review the contractor's Environmental Management Plan (CEMP) for adequacy in terms of compliance with the requirements of the EMP and instruct amendments and additions as necessary;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
39	Confirm the involuntary resettlement / indigenous peoples impacts based on detailed design and prepare or update social safeguards reports as required. Monitor and ensure compliance with the agreed resettlement framework;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
40	Prepare or update the environmental monitoring plan and report format to reflect detailed design and the CEMP. Monitor and ensure compliance with implementation of the EMP during the construction phase;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
41	As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by the Client and the contractor	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
42	Ensure that relevant provisions in contracts on OHS are abided by the contractors during the construction works.	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	

PROJECT STATUS REPORT – Aug 2023

Problems		
Existing problems	Expected problems	Solution approach
Delayed tendering process of the project procurement packages.	Cause further delay to overall project schedule.	Coordinate with Ministry of Finance to expedite the evaluation and contract award.

Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
Addendum 05: Contract extension of PMDCSC assignment (cost neutral shifting till 31-Dec-2023) Addendum 8: Contract extension of PMDCSC assignment till 31-Dec-2024	Formal request submitted to MoE/PIU.	

Planned actions/Responsible/deadline
<ol style="list-style-type: none">1. TS Malé/Vilimalé takeover inspection 5-Sep-2023.2. WTS Malé and Vilimalé project coordination work with CSCEC.3. PMDCSC international experts' mission to Malé - Site visit for commissioning of Male' and Vilimalé' TS

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader

PROJECT STATUS REPORT – Sep 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	01.10.2023	Time Frame	Sep 2023	Author	Chakir Kasdarli

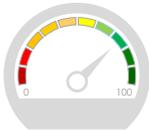
Summary/Management summary

This report summarises the activities held in Sep 2023

1. PMDCSC Mission to Malé from 4 – 7 Sep 2023.
 - PMDCSC Team Leader Chakir Kasdarli and Civil Engineering Expert Martin Duffner met with PIU Team, conducted TS Malé and Vilimalé site inspection for commissioning.
2. WTS Malé and Vilimalé project coordination work with CSCEC.
 - Provided guidance to rectify preliminary defects.
3. PMDCSC supported PIU with Greater Malé Collection Equipment documents and TS operational manual.

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a)	Project Management		
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
b) Geotechnical surveys and investigations, general data collection			
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	transfer system for Zone 3 including vehicle routing from outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
29	Ensure supply of goods complies with required technical specification	Support of taking over immediate measures equipment (excavator, loaders, Waste handler, shredder), equipment was taken over and overhanding protocol established	
30	Support and assist the Client in taking engineering decisions	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
31	Develop quality assurance and quality enhancement system, quality control plan, prepare quality compliance reports and progress reports	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
32	Assist the Client in forecasting the progress of works and finalization of periodic targets for the expenditure and disbursement	Closed for harbour rehabilitation at Thilafushi Ongoing for TS Malé and Vilimalé. Not started for other activities (ISWMCs, TS Hulhumale)	
e) Social, environmental, occupational health and safety aspects.			
33	Ensure compliance with ADB safeguard requirement and project safeguard frameworks (Environmental Assessment Review Framework and Resettlement Framework). Provide guidance on safeguards and issue instructions to the contractors and monitor compliance;	Work on progress.	
34	Assist in obtaining all necessary permissions and complying with statutory requirements;	Work on progress.	
35	Update the Environmental Management Plan (EMP) as necessary to reflect detailed design;	Work on progress.	

PROJECT STATUS REPORT – Sep 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
36	Prepare an initial environmental examination (IEE) including EMP for the proposed (i) Hulhumalé transfer station, and (ii) outer island projects - IWMCs (one IEE for all islands). Ensure EMP is included in the bidding documents. Ensure that assessment and provision for mitigation of risks associated with birds attracted to the transfer station on air traffic at the nearby Velana International Airport are included;	Hulhumalé' TS EIA approved ISWMC EMPs completed. ISWMC EMP approval received from EPA for all 4 atolls.	
37	Ensure that relevant bidding documents and contract documents contain the EMP and such items are included in bill of quantities (BOQ);	Work is in progress.	
38	Review the contractor's Environmental Management Plan (CEMP) for adequacy in terms of compliance with the requirements of the EMP and instruct amendments and additions as necessary;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
39	Confirm the involuntary resettlement / indigenous peoples impacts based on detailed design and prepare or update social safeguards reports as required. Monitor and ensure compliance with the agreed resettlement framework;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
40	Prepare or update the environmental monitoring plan and report format to reflect detailed design and the CEMP. Monitor and ensure compliance with implementation of the EMP during the construction phase;	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
41	As part of the EMP, prepare a project focused Occupational Health and Safety Plan (OHS) to be adopted by the Client and the contractor	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	
42	Ensure that relevant provisions in contracts on OHS are abided by the contractors during the construction works.	For harbour rehabilitation at Thilafushi Closed and TS Male/Vilimale started/ work in progress	

PROJECT STATUS REPORT – Sep 2023

Problems		
Existing problems	Expected problems	Solution approach
Delayed tendering process of the project procurement packages.	Cause further delay to overall project schedule.	Coordinate with Ministry of Finance to expedite the evaluation and contract award.

Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
<p>Addendum 07: Contract extension of PMDCSC assignment (cost neutral shifting till 31-Dec-2023)</p> <p>Addendum 8: Contract extension of PMDCSC assignment till 31-Dec-2024</p>	Formal request submitted to MoE/PIU.	

Planned actions/Responsible/deadline
<ol style="list-style-type: none"> WTS Malé and Vilimalé defects repair coordination work with CSCEC. PMDSC international experts' mission to Malé - Site visit for commissioning of Male' and Vilimalé' TS

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader

PROJECT STATUS REPORT – Oct 2023

Project name/N°	Project Management, Design and Construction Supervision Consultants (Firm) for the Greater Male Environmental Improvement and Waste Management Project - Phase 1				
Date	19.11.2023	Time Frame	Oct 2023	Author	Chakir Kasdarli

Summary/Management summary

This report summarises the activities held in Oct 2023

1. WTS Malé and Vilimalé project coordination work with CSCEC.
 - Provided guidance to rectify preliminary defects.
2. Addendum 07 - Contract extension of PMDCSC assignment approved till 31-Dec-2023
3. PMDCSC supported PIU with GMEIWM procurement, contractual and technical matters.

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
a) Project Management			
1	Provide project management support and capacity building for the PMU in planning and managing the project cycle (design, procurement, construction, commissioning stages, and post-defect liability period);	Throughout the entire project period	
2	Prepare a realistic project schedule (design, approval, tendering, construction, commissioning, handover) and corresponding projected cash flow in conjunction with the Client;	Updated procurement plan in Apr 2022.	
3	Establish and help PMU maintain an effective management system in accordance with the design and monitoring framework to monitor progress and project performance against key targets and indicators, including project performance management system (PPMS) to ensure timely, and high-quality implementation and completion;	Project structure established and presented to PIU. PPMS practiced throughout the project.	
4	Integrate indicators related Gender action plan in the PPMS;	Reporting on Gender action plan used in PPMS by PIU.	
5	Develop uniform working procedures, quality assurance and control system for the smooth implementation of all contracts;	All working procedures and templates established. Compilation in a project implementation manual	
6	Support to ensure compliance with all reporting requirements of the Project	Task in progress (throughout entire project period)	
b) Geotechnical surveys and investigations, general data collection			

PROJECT STATUS REPORT – Oct 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
7	Conceptualize, specify and prepare bidding documents for geotechnical survey and site investigations;	ToR for geotechnical survey and site investigations for TS Male' and Vilimale and Hulhumale as integrated part of the TS bidding documents. Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
8	Carry out boreholes or other measurements to identify and confirm water table depth and groundwater quality (for benchmarking);	Boreholes and monitoring wells for Thilafushi harbour undertaken by contractor Geotechnical survey undertaken by contractor for TS Male' and Vilimale. Hulhumale TS still pending	
9	Supervise and control site investigation and instruct contractors to abide to specified requirements;	Geotechnical surveys for TS Male and Vilimale supervised.	
10	Collect information on the facilities available on islands and resorts to streamline/ensure seamless waste collection and transfer;	Kaafu, Vaavu, Alif Alif, and Alif Dhaalu islands done Male' Atoll and Alif Atoll resorts are incomplete due to Covid 19 restrictions on travel.	
11	Assist the Client as far as required and needed in the siting of the Hulhumalé transfer site and sustained operation of the system	Additional BIM design established Tender documents updated (according ISDB templates) Additional Detailed design report prepared Comments from ISDB included Final draft tender documents at PIU for NO through ISDB	
c) Concept design and detailed engineering and design, bidding process management, procurement and contract award			
12	In line with the national regulatory framework and waste management strategy, following international best practices, and in close consultation with the client, WAMCO and other relevant stakeholders, provide concept design for waste collection system in Malé and Hulhumalé (building from previous concept designs) and seamless waste transfer system for Zone 3 including vehicle routing from	SWM expert's first mission to Malé in February 2021 and second mission in August 2021. On-going revision of Greater Male' SWM	

PROJECT STATUS REPORT – Oct 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
	outer islands and resorts to regional waste facility in Thilafushi;	strategy report as per ADB instructions.	
13	Prepare in close collaboration with the Client the concept and detail design for the outer island waste management centers (IWMC) based on a demand analysis, the seamless waste collection and transfer system design from island to the regional facility in Thilafushi subject to the relevant findings for each location,	<p>Detailed design, technical specifications, and tender documents completed.</p> <p>NO from ADB missing (completed revised appraisal report)</p> <p>Submitted final bidding document for Outer Island Waste Management Centres on 13-Feb-2022.</p> <p>Submitted revised Vessel re-tendering submitted to PIU on 28-Feb-2022.</p>	
14	Prepare in close collaboration with the Client the concept design for the transfer station in Hulhumalé in line with the procurement schedule;	<p>Additional BIM design established</p> <p>Tender documents updated (according ISDB templates)</p> <p>Additional Detailed design report prepared</p> <p>Incorporation if comments, splitting the tender into 1 DB tender and 1 procurement of goods</p>	
15	Screen eligibility (following criteria defined in the project administration manual), prepare Appraisal Reports for each outer island and submit to PMU for review as basis for the Island Council to receive support for IWMCs component (Output 2 of project).	All ISWMCs appraisal report completed and submitted to PIU 06-Mar-2022.	
16	Prepare detailed engineering designs, drawings, technical specifications and costs and quantity estimation as required	<p>Detailed design for ISWMC works completed</p> <p>Outer Island and ISWMC equipment as one single tender prepared for all atolls</p> <p>ELV facility detailed design completed</p> <p>Outer Island vessels TS completed</p> <p>C&D waste treatment plant TS completed</p>	
17	Ensure findings from community consultations including women conducted by the PACCB consultants are incorporated into the IWMC design;	PACCB starts the works with delay. 8 coordination meetings held	

PROJECT STATUS REPORT – Oct 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
18	Prepare bidding documents including technical specifications, assist MEE in evaluation and report writing as required	<p>DB TS Male/Hulhumale including equipment done</p> <p>DB TS Hulhumale done</p> <p>Equipment TS Hulhumale done</p> <p>ISWMC works tender submitted</p> <p>Outer island waste collection vessel tender floated once. Re tender docs prepared and submitted</p> <p>Tender documents for Outer Island collection systems done and submitted to PIU</p> <p>Tender documents for GM collection system and submitted</p>	
19	Review detailed design as prepared and submitted by the contractor	<p>Review of as build for harbour rehabilitation parallel to work progress</p> <p>TS Malé and Vilimalé DB reviewed</p>	
20	Assist in obtaining ADB's no-objection at various stages of procurement and construction activities	<p>Assist in obtaining ADB's no-objection for harbour rehabilitation.</p> <p>TS Male/Vilimalé: contract awarded.</p> <p>C&D waste plant expected to retender, pending ABD NO.</p>	
21	Prepare the necessary documentation assessing the justification of the works.	<p>Harbour rehabilitation</p> <p>TS Male'-Vilimalé'</p>	
d) Construction supervision and contract administration, project management and monitoring			
22	Maintain sufficient site-based staff, with clear allocation of duties, to supervise day-to-day construction activities;	<p>Engineers hired and allocated (for harbour rehabilitation at Thilafushi and TS Malé and Vilimalé DB contract)</p> <p>Regular site visit done to ensure work progress according to plan.</p> <p>Start of Male' & Vilimalé TS DB contract</p>	

PROJECT STATUS REPORT – Oct 2023

Project Status as per 30.09.2023 (one-month period)			
	Task/sub-tasks/Milestones	Comments	Status
23	Support and assist the Client in implementing its duties as Engineer/Engineer's Representative within the context of provisions of work and supply contracts;	<p>Closed for harbour rehabilitation at Thilafushi.</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
24	Co-ordinate with the stakeholders to achieve timely completion of contractual obligations on the part of contractor and the Client	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
25	Support and assist the Client in contract administration and compliance with contractual conditions	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
26	Proof checking of detailed designs and, depending on the type of contract, also carry out or suggest design modifications as necessary	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
27	Ensure that the works/contractual deliverables comply with the approved engineering designs and technical specifications mentioned in the Contract, agreed schedule of payment and timelines, terms of conditions of the Contract	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	
28	Ensure compliance with standard engineering practice by the contractors	<p>Closed for harbour rehabilitation at Thilafushi</p> <p>Ongoing for TS Malé and Vilimalé.</p> <p>Not started for other activities (ISWMCs, TS Hulhumale)</p>	

PROJECT STATUS REPORT – Oct 2023

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PROJECT STATUS REPORT – Oct 2023

Problems		
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Changes to project progress		
Suggested change request	Implementation change requests	Implemented corrections
Addendum 8: Contract extension of PMDCSC assignment till 31-Dec-2024	Formal request submitted to MoE/PIU.	

Planned actions/Responsible/deadline
<ol style="list-style-type: none"> WTS Malé and Vilimalé commissioning approval. PMDCSC international experts' mission to Malé - Site visit for commissioning of Male' and Vilimale' TS

Organisational points
N/A



Chakir Kasdarli, Team leader



Ahmed Jameel, Deputy Team leader