Environmental Monitoring Report

Project No. 47254-003
Semi-annual Report (January - June 2023)
August 2023

Bangladesh: Dhaka Water Supply Network Improvement Project

Prepared by the Dhaka Water Supply and Sewerage Authority (DWASA), Government of Bangladesh for the Asian Development Bank.

DHAKA WATER SUPPLY NETWORK IMPROVEMENT PROJECT
(DWSNIP, ADB Loan No. 3397-BAN)

PROJECT MANAGEMENT UNIT

11th

SEMI ANNUAL ENVIRONMENTAL MONITORING REPORT (SEMR)

(Period January-June, 2023)

August 2023

Dhaka Water Supply and Sewerage Authority (DWASA)

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ABBREVIATIONS

ADB	–	Asian Development Bank
ARE	-	Assistant Resident Engineer
BRM	-	Bangladesh Resident Mission
BOD_5	-	Biochemical Oxygen Demand in 5 days
CPP	-	China Petroleum Pipeline Engineering Company Ltd.;
CFMCC	-	China First Metallurgical Group Co. Ltd.
COVID	-	Corona Virus Disease of 2019
CME	-	Contract Management Expert
DWASA	-	Dhaka Water Supply and Sewerage Authority
DWSNIP	-	Dhaka Water Supply Network Improvement Project
DMA	-	District Metering Area
DMSC	-	Design, Management and Supervision Consultants
DoE	-	Department of Environment
DTW	-	Deep Tube well
ECC	-	Environmental Clearance Certificate
EMP	-	Environmental Management Plan
EIA	-	Environmental Impact Assessment
GoB	-	Government of Bangladesh
GRC	-	Grievance Redress Committee
GRM	-	Grievance Redress Mechanism
HDD	-	Horizontal Directional Drilling
ICB	-	International Competitive Bidding
IEE	-	Initial Environmental Examination
LGD	-	Local Government Division
PMU	–	Project Management Unit
PCU	-	Project Coordination Unit
PPE	-	Personnel Protective Equipment
PM	-	Project Manager
PM10	-	Particulate Matter diameter less than 10 micron
PM2.5	-	Particulate Matter diameter less than 2.5 micron
SCC	-	Site Clearance Certificate
SPM	-	Suspended Particulate Matter
SPS	-	Safeguard Policy Statement
SEMR	-	Semi Annual Environmental Monitoring Report
SEP	-	Site Environmental Plan
SEMP	-	Site Specific Environmental Management Plan
SIU	-	Safeguard Implementation Unit

EXECUTIVE SUMMARY

Dhaka Water Supply Network Improvement Project (DWSNIP) has been initiated by Dhaka Water Supply and Sewerage Authority (DWASA) in improving the water supply distribution network in various zones of Dhaka City. The estimated cost of the Project is US$ 408 million. The Government of the People's Republic of Bangladesh (GOB) has obtained a loan of US$ 275 million from the Asian Development Bank (ADB Loan: 3397-BAN) and the balance US$133 million equivalent would be financed by the GOB. The Project will implement 75 DMAs in which about 1669 km pipe lines will be rehabilitated including about 148,230 service connections. The Project has five (5) contract packages and the expectation to complete by the year 2023 (As proposed in RDPP). The Project was classified as Category Red by the Department of Environment (DoE) and a Category B project by the Asian Development Bank (ADB).

The Safeguard Experts and Executive Engineers were deployed in the PMU and PCU level along with the DMS Environmental Team, Resettlement Specialist and Social /Gender Experts are already on board. The Environmental Clearance Certificates were obtained, for different packages/batches, from DoE during 12 June 2019. As per condition of ECC provided by DoE, DWASA obtained Renewal Certificates from DoE during June 2020 (the first renewal certificate), June 2021 (second renewal certificate) and July 2022 (third renewal certificate) and June 2023 (applied for fourth renewal certificate). All renewal certificates obtained from DoE are attached in **Annex-3**

For implementation of EMP, arrangement of human safety, provision of PPE for workers engaged in construction is being implemented. Training is being provided to the contractors' representatives by DMSC's Environmental Team. Moreover, instruction has been provided to follow the specified clause of BID document to mitigate environmental and social impacts. Measures were taken to protect and facilities and locations of social and cultural importance (hot spots). Measures were taken to comply with occupational health and safety including measures to combat COVID19 situation.

Contractors have been taking mitigative measures and maintaining records through reporting of different potential environmental impacts associated with construction activities which are Air pollution, Noise pollution, Water pollution, etc. During the reporting period, ICB 2.8, ICB 2.9, ICB 2.10, NCB 2.11A, NCB 2.11B, NCB 2.11C (Lot-1&2), NCB 2.11D (Lot-1) have conducted during construction monitoring (air, noise and water quality) for DMA during civil works and construction monitoring for DMA 908, DMA 207, DMA 211, DMA 212. ICB 2.10 has conducted baseline monitoring (air, noise and water quality) for DMA during civil works and construction monitoring for DMA 104, DMA 107, DMA 110, DMA 118, DMA 119, DMA 109A, DMA 109B, DMA 111, DMA 112 and NCB 2.11A, NCB 2.11B, NCB 2.11C (Lot-1&2), NCB 2.11D (Lot-1). The Environmental Management Implementation Work Schedule has been prepared for next six months (July-December, 2023) to implement the EMP plan wise while showing precisely how and when construction period mitigation and monitoring actions will take place.

With the outbreak of COVID 19 Pandemic and subsequent lockdown, most of the activities in the country stopped temporarily until the country became normal. The Addendum Health and Safety (H&S) Plans in response to COVID-19 were developed by all civil works contractors and approved by PMU as well as ADB.

Based on the foregoing observations, findings and environmental monitoring carried out from January-June, 2023, it may be concluded that ICB 2.8, ICB 2.9, ICB 2.10 and NCB 2.11A, NCB 2.11B, NCB 2.11C (Lot-1&2), NCB 2.11D (Lot-1) under DWSNIP subprojects (DMAs) have been implemented as just satisfied.

I. INTRODUCTION

A. Background

1. Dhaka Water Supply Network Improvement Project (DWSNIP) has been initiated by Dhaka Water Supply and Sewerage Authority (DWASA) for improving the water supply distribution network in various zones of Dhaka City. The estimated cost of the Project is US$ 408 million. The Government of the People's Republic of Bangladesh (GOB) has obtained a loan of US$ 275 million from the Asian Development Bank (ADB Loan: 3397-BAN) and the balance US$133 million equivalent would be financed by the GOB. The Project will implement in 75 DMAs where 1669 km (approximately) pipe lines will be rehabilitated and installed including about 148,230 service connections and 50 PTWs. The Project has been divided into five (5) contract packages and the packages will take 17 to 36 months for implementation with an expectation to be completed December, 2023 (As proposed in RDPP). The objectives targeted from the Project are:

- To reduce NRW and achieve 24 hours water supply in the targeted 82 DMAs (As per approved DPP).
- To provide new or regular connections to low-income communities.

2. The project area of each package is shown in Figure-1 and summary of the Construction packages are depicted in Table 1.

Figure 1: Project Area

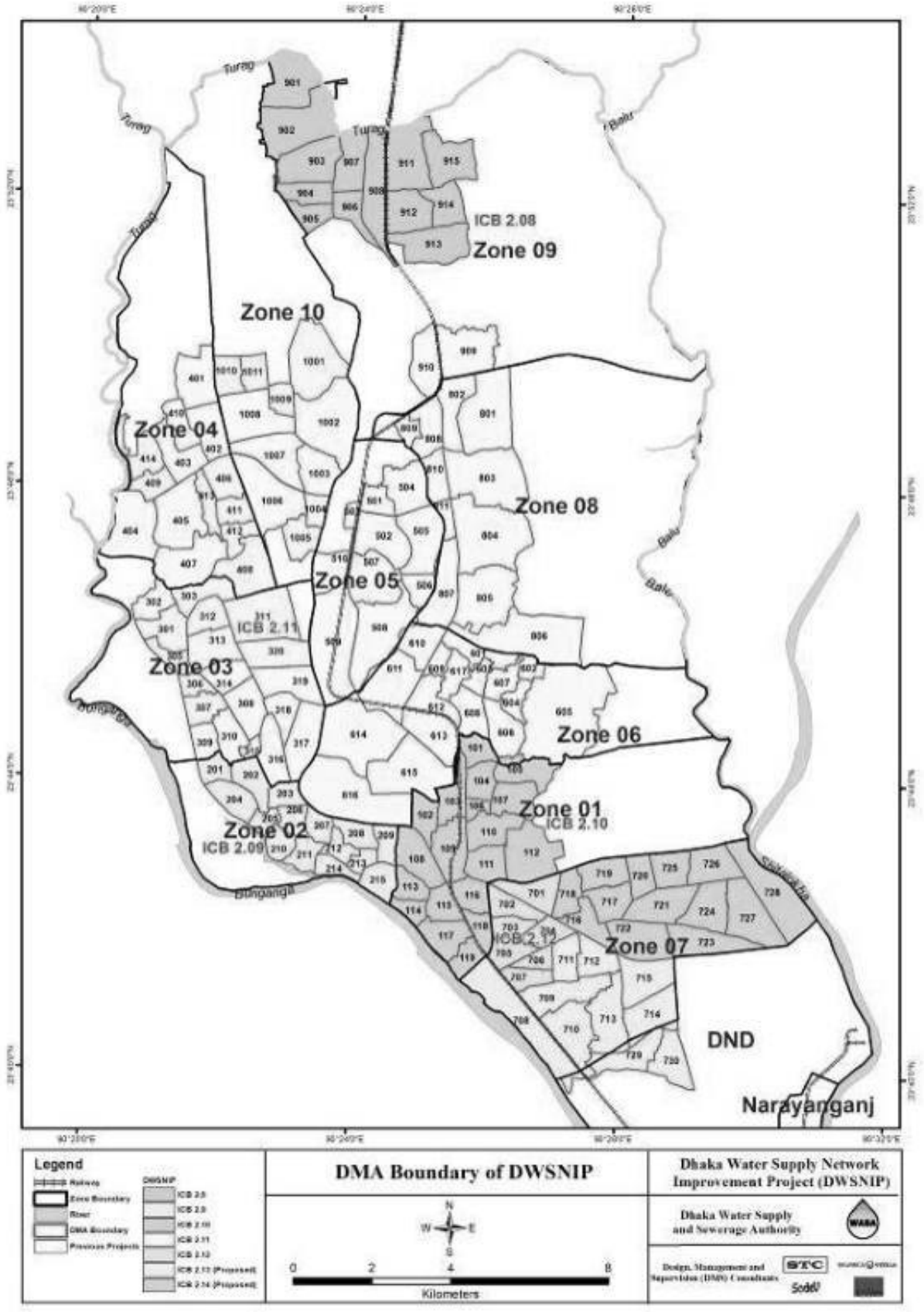

Table 1: Summary of Works in all Packages under DWSNIP (As of June, 2023)

ICB Packages	NCB Packages	MODS Zone	DMA Nos.	Design Pipeline Km	Service Connection nos. (as per BOQ)	Deep Tube well (nos.) ((as per BOQ))	Contract Amount (US$ in Million)	Construction Duration days	Name of Contractor	Remarks
ICB 2.8	-	9	16	457.41	39,297	10	46.84	1745	CPP	Awarded
ICB 2.9	-	2	19	275.3	33,903	10	27.46	1658	CFMCC	As per final design, length has been changed
ICB 2.10	-	1	21	340.75	39,067	10	45.18	1126	CCSEB-RPL (JV)	As per final design, length has been changed
ICB 2.11	NCB-2.11A to 2.11D and NCB 2.6	3,4,10	21	453.41	44,841	10	53.89	1000	The Civil Engineers Ltd, RFL Plastic Ltd, PDL-AEDL-JV., M/S MAN Enterprise	Awarded
ICB 2.12	NCB-2.12A to 2.12E	7	8	163.95	16,100	10	19.42	540	Under Evaluation	Under Evaluation
Total Civil Works			**85**	**1690.82**	**173,208**	**50**				

Source: DMS Consultants, June 2023

B. Purpose of the Report

3. This is the Semi-annual Environmental Monitoring Report (SEMR) prepared by PMU for the monitoring period of January-June 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.

C. Approach and Methodology

4. The report has been prepared through review and monitoring the necessary environmental compliances with respect to (i) Environmental safeguards, (ii) loan covenants and (iii) implementation of Environmental Management and Monitoring Plans of ADB approved IEE reports for all subprojects. The report also referred the Environmental covenants, Initial Environmental Examination report approved by ADB, Environmental Monitoring Reports and Aid- Memoires prepared by ADB. The approach and methodology include the following work plan.

5. Activity 1: Collection of relevant documents/reports included Initial Environmental Examination report approved by the ADB, Environmental Monitoring Reports and Aid-Memoires prepared by ADB etc.

6. Activity 2: On the basis of Environmental due diligence review conducted to strengthen

and followed the agreed Environmental compliances. Major decisions have been taken to address the shortfalls identified and bridging the gaps.

7. Activity 3: Site visits were carried out for the Environmental monitoring of the sub projects. Checklists were prepared to monitor the Environmental safeguards. Focused Group Discussions were carried out for public consultations. The shortcomings observed during the field visits have been communicated with the Corrective Action Plan for remedial measures. The same have already been initiated by the PMU and PCU and the concerned contractors.

D. Environmental Categorization

According to ADB Safeguard Policy Statement, 2009

8. Sub projects under Five Packages (ICB 2.8, ICB 2.9, ICB 2.10, ICB 2.11 and ICB 2.12) under DWSNIP has been classified by ADB as environmental assessment category B (some negative impacts but less significant than category A) and the impacts of subprojects were assessed through Initial Environmental Examination (IEE), prepared according to ADB Safeguard Policy (SPS 2009).

According to National Laws and Regulations

9. As per Schedule 1 of ECR, 1997 all packages under DWSNIP are likely to be classified as red category (serial number 64 under ECR) which requires Environmental Clearance Certificate (ECC) from the Department of Environment (DoE). Maintaining all the formalities (after submission of EIA report, Feasibility report, Fees etc.), DWASA obtained ECC from DoE on June 12, 2019. As per condition of ECC (requirements of Renewal of ECC in every year), DWASA obtained First Renewal Certificate from DoE during June, 2020 (validity of which was up to June 2021), Second Renewal Certificate from DoE during June, 2021 (validity of which was up to June 2022) and Third Renewal Certificate from DoE during July, 2022 (validity of which was up to June 2023). And applied for forth renewal certificate (for up to June, 2024). All renewal certificates obtained from DoE are attached in **Annex-3**

10. DWSNIP civil works is divided into five contracts (packages): ICB 2.8 covering 13 DMAs, ICB 2.9 covering 15 DMAs, ICB 2.10 covering 20 DMAs, ICB 2.11 (NCB 2.11A to 2.11D and NCB 2.6) covering 21 DMAs, and ICB 2.12 (NCB 2.12A to 2.12E) covering 8 DMAs.

11. Till 31st December 2022, construction contract agreements have been signed for all five (5) packages under DWSNIP. Among 5 packages, ICB 2.8 signed contract for zone 9 on 9th May, ICB 2.9 signed contract for zone 2 on 22nd November, ICB 2.10 signed contract for zone 1 on 30th July, 2020, ICB 2.11 signed contract for zone 3, 4 and 10 on 4th April 2018 and ICB 2.12 signed contract for zone 7 on 26th November, 2020. However, construction contract agreements for ICB 2.11 and ICB 2.12 have been terminated and then rewarded again as NCB packages. Table 2 shows various subproject progress and status of the three ICB packages which are under construction.

Table 2 A: Subprojects Implementation status till June, 2023

Package Number	Designed Interventions	Status of Implementation			% of Progress of activities	Expected Completion Date
		Pipe line (Km)	House Connection (nos.)	DTW Headworks upgradation (nos.)		
ICB 2.08	DMA Nos. – 16 nos Pipeline – 455.8km Service Connections- 30,945 nos. Upgradation of DTW pump- 63 nos	455.8	30,945	63	99.25%	30.06.2023
ICB 2.09	DMA Nos: 19-DMAs Pipeline: 275 (km) Service Connections: 33903 (nos.) Upgradation of DTW pump: 57 (nos.)	266.23	31,860	58	95.67%	30.06.2023
ICB 2.10	DMA Nos. – 21 nos Pipeline – 472 km Service Connections- 44600 nos. Upgradation of DTW pump- 85 nos	281	26,600	55	63%	30.11.2023
NCB 2.11A	DMA Nos. – 6 nos Pipeline – 29.65 Service Connections-7832 nos. Upgradation of DTW pump- 35 nos	4.387	4295	26	39.09%	31.10.2023
NCB 2.11B	DMA Nos. – 4 nos Pipeline – 94.79km Service Connections- 7,977nos. Upgradation of DTW pump- 28 nos	14.16	613	-	9%	31.12.2023
NCB 2.11C Lot 1	DMA Nos. – 3 nos Pipeline – 68.84km Service Connections-7,154	42.1	1,442	-	45%	31.12.2023

	nos. Upgradation of DTW pump- 20 nos					
NCB 2.11C Lot 2	DMA Nos. – 3 nos Pipeline – 66.67km Service Connections-7,044 nos. Upgradation of DTW pump- 16 nos	17.43	412	-	20%	11.08.2023
NCB 2.11D Lot 1	DMA Nos. – 3 nos Pipeline – 66.80km Service Connections-8,567 nos. Upgradation of DTW pump- 18 nos	18.52	312	-	20%	31.12.2023

Source: DMS Consultants, June 2023

Table 2 B: Progress on Implementation of EMP (up to June 2023)

Activity	ICB 2.08 (13-DMAs in 3-batches)	ICB 2.09 (15 DMAs in 4-batches)	ICB 2.10 (21 DMAs in 4-batches)	NCB 2.11 (21 DMAs in 6-NCB packages)	ICB 2.12 (8 DMAs in 3-batches)
Updating IEE Reports with site specific EMP	All DMAs Approved by ADB and disclosed	All DMAs Approved by ADB and disclosed	5 DMAs (1st Batch), 6 DMAs (2nd Batch) and 5 DMAs (3rd Batch) are approved and disclosed and 5 DMAs of 4th batch submitted and waiting for ADB approval.	NCB-2.11A (approved by ADB and disclosed by DWASA) NCB-2.11B, C (Lot-1 &2), D (Lot-1) - waiting for ADB approval NCB-2.11D (Lot-2)- Prepared and yet to be submitted	4 DMAs (1st Batch) approved & disclosed. Remaining two batches (4 DMAs) are yet to be prepared and submitted.
Monitoring and Reporting					
Monthly internal progress reports	All monthly reports under eight different packages (ICB 2.08, ICB 2.09, ICB 2.10, NCB-2.11A, NCB 2.11B, NCB 2.11C; Lot-1, NCB 2.11C; Lot-2, NCB 2.11D; Lot-1) prepared by the Contractors during construction, submitted to DMS and PMU. These monthly reports include; (a) physical progress of each component; (b) mitigation measures implemented; (c) grievances received and resolved as directed in GRM				
Quarterly Progress Reports (QPR)	Quarterly Progress Report on performance of contractors on EMP implementation has been submitted till March 2023 (started since commencement)				
Semi-annual Environmental Monitoring Reports (SEMR)	10th – SEMRs submitted and approved and 11th SEMR – now being sent for approval				
Environmental Quality Monitoring					
Activity	**ICB 2.08**	**ICB 2.09**	**ICB 2.10**	**NCB 2.11**	**ICB 2.12**
Air Quality Sampling and Testing (CO, $S0_2$, $N0_2$, SPM, $PM_{2.5}$, PM_{10})	Pre construction Phase monitoring – completed all DMAs Construction phase monitoring - completed in all DMAs.	Pre construction Phase monitoring – completed all DMAs Construction phase monitoring - completed in all DMAs.	Preconstruction Phase monitoring – completed in DMA101 DMA102 DMA103 DMA104 DMA105 DMA106 DMA107 DMA108A DMA108B DMA109A DMA109B DMA110 DMA111 DMA112	**NCB 2.11A** Preconstruction Phase monitoring – completed in DMA301, DMA303, DMA306, DMA311, DMA320, DMA408 Construction Phase monitoring has not been done during reporting time	Preconstruction Phase monitoring completed in DMA 701, DMA 702, DMA 703); Construction monitoring – Construction works yet to be started.

			DMA113 DMA114 DMA115 DMA116 DMA118 DMA119 Construction phase monitoring - completed in DMA108A DMA108B DMA113 DMA114 DMA115 DMA116	**NCB 2.11B** Preconstruction Phase monitoring – completed in DMA 305, DMA 307, DMA 312, DMA 313 Construction Phase monitoring has not been done during reporting time	
				NCB 2.11C, L-1 Preconstruction Phase monitoring – completed in DMA 406, DMA 411, DMA 412 Construction Phase monitoring has not been done during reporting time	
				NCB 2.11C, L-2 Preconstruction Phase monitoring – completed in DMA 409, DMA 413, DMA 414 Construction Phase monitoring has not been done during reporting time	
				NCB 2.11D, L-1 Preconstruction Phase monitoring – completed in DMA 1005, DMA 1010, DMA 1011 Construction Phase monitoring has not been done during reporting	

				time	
Noise (dBA for day and night time)	Pre construction Phase monitoring – completed all DMAs Construction phase monitoring - completed in DMA 901, DMA 902, 903, DMA 904, DMA 905, DMA 906, DMA 907, DMA 911, DMA 912, DMA 913, DMA 914 and DMA 915	Pre construction Phase monitoring completed in all DMAs Construction Phase monitoring completed in DMAs 201, 203, 204, 205, 206, 208, 209, 210, 213, 214 and 215	Preconstruction Phase monitoring – completed in DMA101 DMA102 DMA103 DMA104 DMA105 DMA106 DMA107 DMA108A DMA108B DMA109A DMA109B DMA110 DMA111 DMA112 DMA113 DMA114 DMA115 DMA116 DMA118 DMA119 Construction phase monitoring - completed in DMA108A DMA108B DMA113 DMA114 DMA115 DMA116	**NCB 2.11A** Preconstruction Phase monitoring – completed in DMA301, DMA303, DMA306, DMA311, DMA320, DMA408 Construction Phase monitoring has not been done during reporting time **NCB 2.11B** Preconstruction Phase monitoring – completed in DMA 305, DMA 307, DMA 312, DMA 313 Construction Phase monitoring has not been done during reporting time **NCB 2.11C, L-1** Preconstruction Phase monitoring – completed in DMA 406, DMA 411, DMA 412 Construction Phase monitoring has not been done during reporting time **NCB 2.11C, L-2** Preconstruction Phase monitoring – completed in DMA 409, DMA 413, DMA 414	Pre construction Phase monitoring completed in (DMAs 701, 702, 703); Construction monitoring – Construction work yet to be started.

				Construction Phase monitoring has not been done during reporting time	
				NCB 2.11D, L-1 Preconstruction Phase monitoring – completed in DMA 1005, DMA 1010, DMA 1011 Construction Phase monitoring has not been done during reporting time	
Surface Water Quality (SS, pH, DO, BOD5, COD, As, Cl, Fe, Mn)	Pre-construction phase monitoring – completed in DMA903, DMA904, DMA906, DMA907, DMA908 Construction phase –completed in DMA903, DMA904, DMA906, DMA907	Pre construction Phase monitoring-completed in (DMAs 203, 207, 208, 209 and 215); Construction Phase monitoring completed in DMAs 203, 208, 209 and 215	Preconstruction Phase monitoring completed in DMA101 DMA102 DMA103 DMA104 DMA105 DMA106 DMA107 DMA108A DMA108B DMA110 DMA113 DMA114 DMA115 DMA116 DMA118 DMA119 Construction phase monitoring - completed in DMA108A DMA108B DMA113 DMA115 DMA116	**NCB 2.11A** Preconstruction Phase monitoring has not been done during reporting time Construction Phase monitoring has not been done during reporting time	Pre construction Phase monitoring completed in (DMAs 701, 702, 703); Construction monitoring – Construction work yet to be started.
				NCB 2.11B Preconstruction Phase monitoring – completed in DMA 305, Construction Phase monitoring has not been done during reporting time	
				NCB 2.11C, L-1 Preconstruction Phase monitoring – completed in DMA 406, DMA 411 Construction Phase monitoring has not been done during reporting	

				time **NCB 2.11C, L-2** Preconstruction Phase monitoring – completed in DMA 409, Construction Phase monitoring has not been done during reporting time **NCB 2.11D, L-1** Preconstruction Phase monitoring – has not been done during reporting time Construction Phase monitoring has not been done during reporting time	
Groundwater Quality ((pH, DO, BOD5, COD, As, Cl, Fe, Mn and Total Coliform)	Pre construction Phase monitoring – completed all DMAs Construction phase monitoring - completed in DMA 901, DMA 902, DMA 903, DMA 904, DMA 905, DMA 906, DMA 907, DMA 911, DMA 912, DMA 913, DMA 914 and DMA 915	Pre construction Phase monitoring completed in all DMAs Construction Phase monitoring completed in DMAs 201, 203, 204, 205, 206, 208, 209, 210, 213, 214 and 215	Preconstruction Phase monitoring completed in DMA101 DMA102 DMA103 DMA104 DMA105 DMA106 DMA107 DMA108A DMA108B DMA110 DMA113 DMA114 DMA115 DMA116 DMA118 DMA119 Construction phase monitoring - completed in DMA108A DMA108B DMA113 DMA115 DMA116	**NCB 2.11A** Preconstruction Phase monitoring – completed in DMA301, DMA303, DMA306, DMA311, DMA320, DMA408 Construction Phase monitoring has not been done during reporting time **NCB 2.11B** Preconstruction Phase monitoring – completed in DMA 305, DMA 307, DMA 312, DMA 313 Construction Phase monitoring has	Pre construction Phase monitoring completed in (DMAs 701, 702, 703); Construction monitoring – Construction work yet to be started.

				not been done during reporting time	
				NCB 2.11C, L-1 Preconstruction Phase monitoring – completed in DMA 406, DMA 411, DMA 412 Construction Phase monitoring has not been done during reporting time	
				NCB 2.11C, L-2 Preconstruction Phase monitoring – completed in DMA 409, DMA 413, DMA 414 Construction Phase monitoring has not been done during reporting time	
				NCB 2.11D, L-1 Preconstruction Phase monitoring – completed in DMA 1005, DMA 1010, DMA 1011 Construction Phase monitoring has not been done during reporting time	

II. SAFEGUARDS COMPLIANCE STATUS

A. Compliance of Safeguard Loan Covenants

12. The loan agreement for DWSNIP was signed on 17th July 2016 between PEOPLE'S REPUBLIC OF BANGLADESH ("Borrower") and ASIAN DEVELOPMENT BANK ("ADB"). Table 3 provides a summary of compliance to the loan covenants related to environmental Safeguards.

Table 3: Compliance of Loan Covenants- Environment Part

Loan agreement schedule and Program Specific Covenants	Status / Issues
Procurement of Goods, Works and Consulting Services	
Loan Agreement Schedule 4 Item 7 **Conditions of Works' Commencement:** DWASA shall issue a notice to commence Works after having clearance from DOE: (a) Any Work involves with environmental impacts shall be granted with the DoE-approval in IEE (b) Incorporated the relevant provisions from the EMP into the Works contract	DWASA obtained Environmental clearance certificate for DWSNIP-subprojects from Department of Environment on June 12, 2019. Incorporated EMP into the Civil works contract for ICB 2.8, ICB 2.9, ICB 2.10, NCB 2.11A, NCB 2.11B, NCB 2.11C (Lot-1&2), NCB 2.11D (Lot-1&2) and ICB 2.12
Safeguards Environment	
Loan Agreement Schedule 5 Item 5 **Conditions of Works' Commencement** The Borrower shall ensure or cause the DWASA to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project, and all projects' facilities comply with all applicable laws and regulations of the Borrower relating to environment, health, and safety; Measures and requirements set forth in the EMP, including corrective measures against any impact that occurs during implementation	IEE reports are with the Environmental Management Plan which describes the specific activities to be performed in preparation and design phases including in operation phases. All the anticipated impacts were identified and mitigation measures were included in the IEE/EIA reports The DoE agreed and issued the environmental clearance certificates before commencement of works. All measures and requirements as prescribed in IEE/EIA and EMP is considered during implementation. Civil works has started for all awarded packages.
Human and Financial Resources to Implement Safeguards Requirements	
Loan Agreement; Schedule 5 Item 9 **Conditions of Works' Commencement** The Borrower shall make available, or cause the DWASA to make available, all necessary budgetary and human resources to fully implement the EMP required.	All the Environment and Social safeguard positions in the PMU and DMSC including the Safeguard People under each package has been ensured before commencement of works.
Safeguards - Related Provisions in Bidding Documents and Works Contracts	
Loan Agreement Schedule 5 Item 10 **Conditions of Works' Commencement** The Borrower shall ensure, or cause the DWASA to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: (a) comply with the measures against each item of EMP, and the final RP (to the extent they concern impacts on affected people during construction), and any corrective or	**Complied** (a) All the anticipated measures were included in the EMPs those were included in the EIA report of DOE and updated IEE reports and approval obtained from DOE and ADB. All the measures were included in the bidding documents. (b) Included in Section 8: Special Conditions of the Contract, Item 47

Loan agreement schedule and Program Specific Covenants	Status / Issues
preventative actions set forth in a Safeguards Monitoring Report; (b) make available a budget for all such environmental measures; (c) provide the Borrower 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, the EMP, and the RP; (d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and (e) Reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	(c) Included in Section 8: Special Conditions of the Contract, Item 22.1.2 (d) Included in Section 8: Special Conditions of the Contract, Item 21.1. (e) Included in Section 8: Special Conditions of the Contract, Item 24.9
Safeguards Monitoring and Reporting	
Loan Agreement Schedule 5 Item 11 **Conditions of Works' Commencement** The Borrower shall cause the D W A S A to do the following: (a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission; (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 IEE, the EMP, and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and (c) Report any actual or potential breach of compliance with the measures and requirements set forth in the EMP, and the RP promptly after becoming aware of the breach.	(a) Being complied with this is 11th Semi-annual safeguard monitoring on Environment for the period January-June, 2023. The previous SEMR were "recorded as "submitted" and disclosed on ADB/DWASA website https://www.adb.org/sites/default/files/project-documents/47254/47254-003-emr-en_14.pdf All other previous SEMRs were also approved and recorded in ADB/DWASA website. (b) and (c) Complied The requirement to report any unanticipated environmental impacts with detailed propose correction action is included in the SEMR template.
Prohibited List of Investments *(Safeguards Covenant)*	
Loan Agreement Schedule 5 Item 12 **Conditions of Works' Commencement** The Borrower shall ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.	**Complied** The condition is included in the Project Administration Manual (PAM) and the possibility of such happening is nil.

Labor Standards Health and Safety	
Loan Agreement Schedule 5 Item 13 **Conditions of Works' Commencement** The Borrower shall ensure that core labor standards and the Borrower's applicable laws and regulations are compiled during project implementation. The borrower shall include specific provisions in the bidding documents and contracts financed by ADB that the contractors shall; (a) comply with the Borrower's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; (b) not use child labor; (c) not discriminate workers in respect of employment and occupation; (d) not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate, or engage appropriate service providers to disseminate, formation 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. The Borrower shall strictly monitor compliance with the requirements set forth above and provide ADB with regular reports	**Complied in document and to be complied during implementation** Provision is included (as per EMP & BID document) to carry out HIV/AIDS awareness programs for construction contractor, application of all relevant labour laws for health and safety including child labour law and engagement of local labors (preferably from economically backward group) covering women labors. In case of any breach of provision, necessary corrective measures as per contract clauses shall be taken. All activities including awareness program is reflected in "Monitoring Report". Civil works contractor (ICB 2.8, 2.9, 2.10 and 2.11 prepared Health and Safety Plan in response to COVID 19 pandemic and approved by PMU as well as ADB.

Table: Implementation status of CAP recommended by ADB review mission

Sl.	Recommended Corrective Action Measures	January-June, 2023	Implementation Status	Remarks
1	The ECC is valid till 12 June 2023 and DWASA will submit the application to DOE for renewal of ECC by 30 April 2023,	submitted	Application is submitted to DoE for renewal of ECC.	
2	The Mission discussed construction related other issues and concerns, particularly dust problem, uncovered trenches following pipe installation, excavated soil, and inadequate traffic signage raised by local community during the stakeholder consultation and advised to take measures to improve the situation by the contractor.	During this period	Mitigation measures have been taken on regular basis; spraying water and covering soil to mitigate dust problems, covering trenches during pipe installations, removing excavated soils, placing traffic signage practicing by contractor	

3	**Preparation of IEE**. The Mission also noted that 15 IEE reports have been updated and disclosed covering all 3 batches of ICB 02.8; 4 batches of ICB 02.9; 3 batches of ICB 02.10; 4 batches of ICB 02.11, and 1 batch of ICB 02.12. Preparation of IEE for 1 batch of ICB 02.10 is ongoing. The Mission advised Dhaka WASA to prepare a comprehensive IEE for all the packages under NCB 2.11 covering separate site specific EMPs for each package and include the EMP implementation cost in the BOQ as provisional sum item. Further, the Mission recommended PMU to ensure (i) timely preparation of batch-wise IEE reports and submission to ADB for review, endorsement, and disclosure; (ii) not allowing civil works to proceed for any batch until the corresponding IEE report is approved by ADB and the EMPs are approved by PMU,		IEE Last batch of ICB 2.10 has been prepared and submitted to ADB. And the batch approved and disclosed already by ADB and DWASA For NCB 2.11, comprehension of all batches would have been difficult and would delay the submission of IEE before construction work. So DMS prepared the IEE as 3 batch wise (first batch-2.11A; second batch-2.11B, C(lot-1&2), D(lot-1); third batch- 2.11D (lot-2)). First batch and second batch of NCB 2.11 have been approved and disclosed by ADB and DWASA.	
	(iii) continuation of the environmental quality monitoring for the remaining DMAs,		Continuation ongoing of the environmental quality monitoring for the remaining DMAs.	
	(iv) timely submission of SEMRS, and		Timely submitting of SEMRs	
	(v) continue capacity building sessions for construction workers to raise awareness on OHS.		Continuation ongoing for capacity building sessions for construction workers to raise awareness on OHS by trainings and toolbox meetings	

B. Compliance status with National/Local statutory environmental requirements with Environmental Statutory Clearance

13. Before implementation of the project, compliance with environmental policy, law and legislation is necessary.

14. DWASA with the assistance of the consultant teams, has prepared EIA Report and submitted to DoE and presentation on EIA report has done at DoE office on April 1, 2019. PMU submitted revised EIA report to DoE incorporating all comments and got Environmental Clearance Certificate on June 12, 2019. DoE issued 1st ECC renewal on August 18, 2020 which is valid until June 12, 2021, 2nd ECC renewal on June 30, 2021 which is valid until June 12, 2022 and 3rd ECC renewal on July 24, 2022 which is valid until June 12, 2023 **(please refer to Annex-3 for ECC from DOE**).

15. Under DWSNIP present status of relevant permits and statutory clearance are mentioned in Table 4 on next page.

Table 4: Status of Permit and Statutory Clearance (till reporting period)

ICB & NCB packages	Compliances	Status
ICB-2.08: Batch-1, 2, 3 & 4	Environmental clearance from DOE	Obtained for all batches
	Updated IEE – approved by ADB	Done for all Batches
	Road cutting permission from City Corporation	Road cutting permission obtained for all DMAs
	Utility services – identification and measures accordingly (Gas Line, Electricity, Sewerage line etc.)	Well-identified before construction work started.
ICB-2.09: Batch-1,2,3,4	Environmental clearance from DOE	Obtained for all batches
	Updated IEE – approved by ADB	Done for all Batches
	Road cutting permission from City Corporation	Road cutting permission obtained for all DMAs.
	Utility services – identification and measures accordingly	Well-identified before construction work started.
ICB-2.10: Batch-1,2,3,4	Environmental clearance from DOE	Obtained for all batches
	Updated IEE – approved by ADB	1st, 2nd and 3rd batches – Approved, 4th batch preparation on process.
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
NCB 2.11A	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Approved
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
NCB 2.11B	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Under ADB review
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
NCB 2.11C; L-1	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Under ADB review
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
NCB 2.11C; L-2	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Under ADB review
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and	Identify the all utility before starting of

	measures accordingly	work
NCB 2.11D; L-1	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Under ADB review
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
NCB 2.11D, L-2	Environmental clearance from DOE	Environmental clearances obtained from DOE
	Updated IEE – approved by ADB	Yet to be submitted
	Road cutting permission from City Corporation	Pipe Installation is done only after having road cutting permission
	Utility services – identification and measures accordingly	Identify the all utility before starting of work
ICB-2.12: Batch-1,2	Environmental clearance from DOE	Obtained for all batches
	Updated IEE – approved by ADB	1st Batch – Approved
	Road cutting permission from City Corporation	Construction work yet to be started
	Utility services – identification and measures accordingly	Construction work yet to be started

C. Implementation Arrangements

16. The PMU have a Safeguard Implementation Unit (SIU) staffed with three officers - 1 Environmental Officer, 1 Social Officer, and 1 Gender Officer - at executive engineer level. The SIU has been assisted by relevant safeguard specialists in the DMS teams to implement safeguards.

17. The responsibilities of the Environmental Officer of SIU ensure that (i) environmental safeguard issues are addressed; (ii) EMP/approved SEP is implemented; (iii) physical and non-physical activities under the subproject are monitored; and (iv) monitoring reports are prepared on time and submitted to ADB.

18. PMU has been supported by the Design Management and Supervision Consultants (DMS). An Environment Specialist has been engaged to ensure: (i) EMP/ approved SEP is implemented; (ii) surveys and measurements are undertaken; (iii) inspections and observations throughout the construction period are recorded to ensure that safeguards and mitigation measures are provided as intended; and (iv) statutory clearances and permits from government agencies/other entities are obtained prior to start of civil works.

19. Project coordination unit (PCU) in each zone (zone 1,2,3,4,7,9,10), headed by an executive engineer, are responsible for liaising and coordinating with the contractors, DMS, NGO and other stakeholders on all day-to-day implementation of distribution network improvement work under the project.

20. The three (3) safeguards experts were hired in the PMU; seven (7) executive engineers were hired in the project coordination unit (PCU) and DMS Environmental Specialist, Resettlement Specialist, Social Development/Gender Expert and Environmental Inspector has already been mobilized. Table 5 shows detail of safeguards Team and Figure 2 shows the status of permit and statutory clearance for DWSNIP till this reporting period.

Table 5: Safeguards Team

Name	Designation/Office	Email Address	Contact Number
PMU			
1. Jeni Chakma	Executive Engineer (Environmental Expert in charge)	tongla11@yahoo.com	+8801553266545
2. Sharmin Haque Amir	Executive Engineer (Resettlement Expert in charge)	sharmine.amir@gmail.com	+880171502568
3. Sazia Afrin	Executive Engineer (Gender Expert in charge)	Sazia004@gmail.com	+8801716332483
PCUs			
1. Md. Mujahidur Rahman	Executive Engineer MODS Zone-9 (ICB 2.8)	Mujahid_buet@yahoo.com	+8801723944481
2. Md. Firoz Alom	Executive Engineer MODS Zone-2 (ICB 2.9)	firoz.alom_dw@yahoo.com	+8801819229415
3. Md. Al Amin	Executive Engineer MODS Zone-1 (ICB 2.10)	m.alamin.dwasa@gmail.com	+8801819229419
4. Jayanta Saha	Executive Engineer MODS Zone-3 (ICB 2.11)	jayanta2k7@gmail.com	+8801819229418
5. Md. Mazharul Islam	Executive Engineer MODS Zone-4 (ICB 2.11)	marufdwasaz9@gmail.com	+8801819229417
6. Md. Ashraful Habib, Choudury	Executive Engineer MODS Zone-10 (ICB 2.11)	ashraf9910127@gmail.com	+880181714495
7. Md. Shah Alam	Executive Engineer MODS Zone-7 (ICB 2.12)	abid310@gmail.com	+8801763051234
DMS Consultants			
1. Md. Emdadul Haque Bhuiyan	Resettlement Specialist	rse.dms@dwsnip.com	+8801715005682
2. Abdus Samad	Social Development/Gender Expert	Samad3364@gmail.com	+8801718644317
3. Jannatul Ferdous Barsha	Environmental Inspector	engr.barsha12@gmail.com	+8801755388383

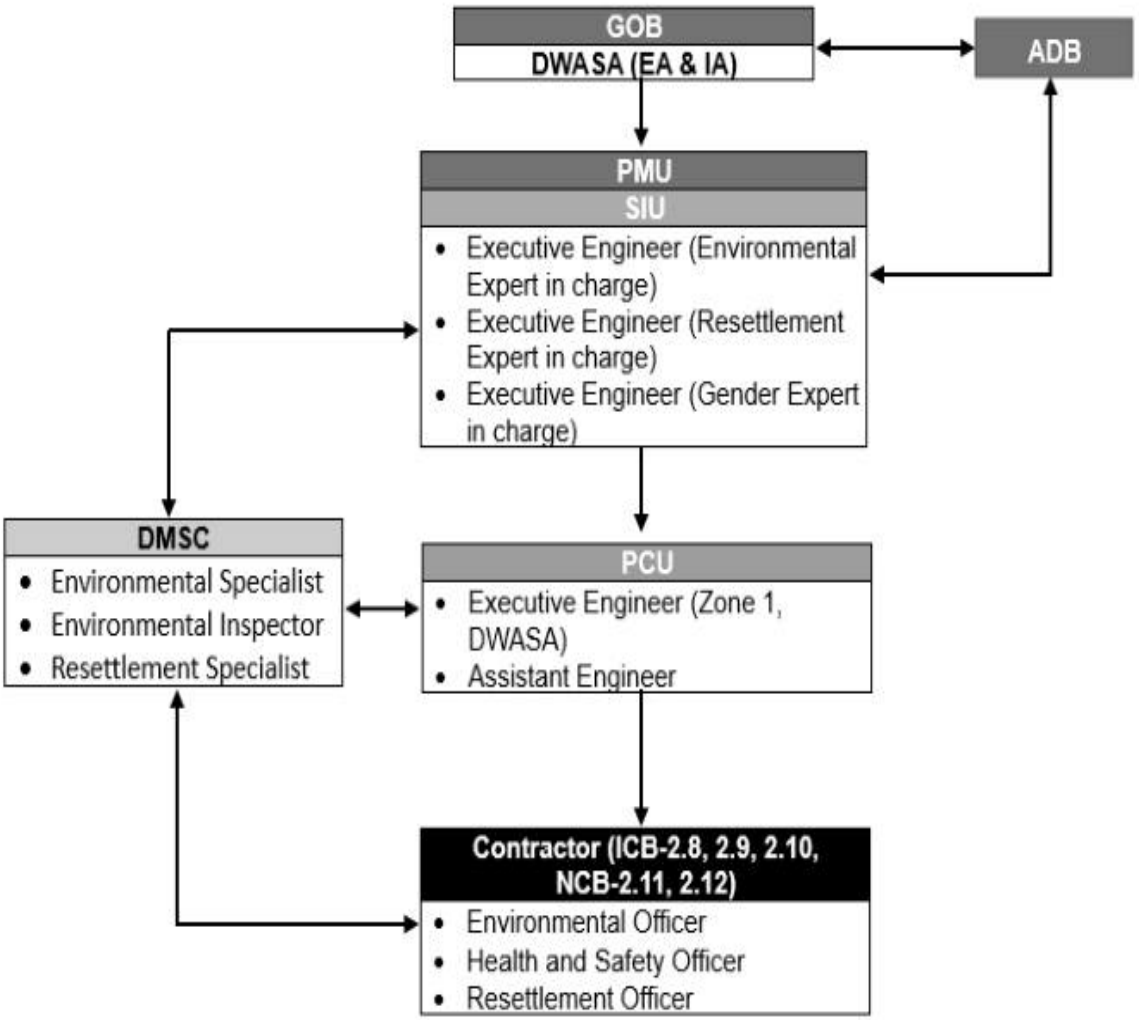

Figure 2: Safeguard Implementation Arrangements

21. The Contractor is responsible for the following activities:

(i) Submitting the Site environmental plan (SEP) for the proposed sites/locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes

(ii) Complying with all applicable legislations and requirements of the approved SEP;

(iii) Briefing the staff, employees, and laborer about the requirements of the EMP/ approved SEP;

(iv) Ensuring the sub-contractors and suppliers engaged in the works to comply with the environmental requirements as per EMP/SEP because the Contractor is held responsible for non-compliance on sub-contractors' behalf;

(v) Supply method statements for all activities requiring special attention as specified and/or requested by the DMS Environmental team during Contract period;

(vi) Provide environmental awareness training to staff, employees, and laborers;

(vii) Bear the costs of any damages/compensation resulting from non-adherence to the

EMP/ approved SEP or written site instructions;

(viii) Conduct all activities in a manner that minimizes disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment.

(ix) Ensure that the PMU Environment Officers are timely informed of any foreseeable activities that requires input from the DMS Environmental Team.

22. During reporting period, all awarded civil contract packages were mobilized Environment, Resettlement and Health and safety Officers for implementation of EMP during works implementation. The details are as follows:

Table 6: Contractor's EHS Personnel

Name	Designation	Contact no.
ICB 2.8		
Mohammad Shahidul Islam	QHSE Manager	01730150939
Mohammad Shahidul Islam	Environment Manager	01730150939
Samiul Haque Robin	HSE Engineer	01770764647
Abul Bashar	HSE Engineer	01612322067
Md. Alif	QHSE In-charge	01922654234
Nahid Siddik	HSE In-charge	01701704454
ICB 2.9		
S.M. Sofi Uddin	Quality Control Manager	+8801717241616
Sheikh Atiqur Rahman	Resettlement Officer (EHS Officer in Charge)	+8801798117871
ICB 2.10		
Shakil Kawser	Health and Safety officer	01844601811
Md. Sharif Ullah	Resettlement officer	01844659354
Anas Ahmmed Shuva	Health and Safety officer	01844664699
Istiak Arifin Hridoy	Health and Safety officer	01844606173
Farzana Islam Khan	Environmental Engineer	01847468487
Sujhon Chandra Saha	Safety officer	01844665664
Md. Tanvir Hossain	Health and Safety officer	01844200375
Parag Rana Partho	Health and Safety officer	01896007301
Md. Shamim Reza	Health and Safety officer	01841405572
NCB 2.11A		
Md. Rakibul Hassan	QHSE Manager	01737335900
Suruj Mia	Environment Manager	01710738031
Md. Emon Afroj	HSE Engineer	01925155247
Md. Abdur Rouf	HSE Engineer	01678224509
Md. Abu Saleh	QHSE In-charge	01678224529
Md. Saim Mia	HSE In-charge	01403370709
NCB 2.11B, NCB 2.11C (Lot-1&2), NCB 2.11D (Lot-1)		
Md. Kauser Hossen	QHSE Manager	01844665521

Abu Hayat Ben Zakaria	Deputy Environment Manager	01746505906
Md. Saiful Islam	QHSE In-charge	01844664558
Sayedur Rahman	HSE Engineer	01704132779
Sujoy Kumar	HSE Engineer	01704132899
Shamim Rahman	HSE Engineer	01755346743

23. **Reporting Arrangement.** Contractor of each ongoing package monitored safeguard **i**mplementation on daily basis, while DMS team reviewed safeguard implementation weekly. The Environmental Team of DMSC, after reviewing, advised contractor for corrective measures. Monthly report summarizing observation, compliance and corrective measures were prepared by Environmental Officer of Contractor. Quarterly monitoring report was prepared by the DMS Consultants on performance of contractors on EMP implementation. Then reports were forwarded to PMU from DMSC for observation, review and record. Based on monthly and quarterly reports and site observations, PMU through the support from DMS Consultants reviewed and consolidated the semi-annual environment monitoring report for submission to ADB.

III. ENVIRONMENTAL MANAGEMENT AND MONITORING COMPLIANCES

24. This section presents the compliance status of Environmental Management and Monitoring Plans of DWSNIP subprojects under 3-ICB packages and 5-NCB packages with implementation and rehabilitation of different activities mentioned below:

Table 7: Implementation and rehabilitation of different activities

Work packages	Concerned DMAs	Interventions as per Bid Document		
		Pipeline (Km)	House Connection (no.)	DTW (no.)
ICB 2.08	DMA 903, DMA 904, DMA 906, DMA 907, DMA 905, DMA 908, DMA 912, DMA 913, DMA 915, DMA 911, DMA 902, DMA 901, DMA 914 DMA 908	455.8	30,945	63
ICB 2.09	DMA 201, DMA 202, DMA 203, DMA 204A, DMA 204B, DMA 205, DMA 206, DMA 207, DMA 208A, DMA 208B, DMA 209A, DMA 209B, DMA 210A, DMA 210B, DMA 211, DMA 212, DMA 213, DMA 214 and DMA 215	266.23	31,860	58
ICB 2.10	DMA 108A, DMA 108B, DMA 113, DMA 115, DMA 116, DMA 101, DMA 102, DMA 103, DMA 105, DMA 106, DMA 114, DMA 104, DMA 110, DMA 117, DMA 118, DMA 119, DMA 107, DMA 109A, DMA 109B, DMA 111, DMA 112	281	26,600	55
NCB 2.11A	DMA301, DMA303, DMA306, DMA311, DMA320, DMA408	29.65	7832	35
NCB 2.11B	DMA 305, DMA 307, DMA 312, DMA 313	94.79	7,977	28
NCB 2.11C Lot 1	DMA 406, DMA 411, DMA 412	68.84	7,154	20
NCB 2.11C Lot 2	DMA 409, DMA 413, DMA 414	66.67	7,044	16
NCB 2.11D Lot 2	DMA 1005, DMA 1010, DMA 1011	66.80	8,567	18

25. The site inspections, for EMP compliances, were conducted on regular basis by the Assistant Resident Engineers/ Sub Assistant Resident Engineers of DMSC. Joint meetings among the PMU-PCU, DMSC and Contractors were organized whenever the environmental and safety issues were identified, and corrective actions were requested.

26. For implementation of EMP, arrangement of human safety, provision of PPE for workers engaged in construction is being implemented. Trainings were provided to the contractor by DMSC's Environmental Team. Moreover, instruction was given to contractors to follow the specified clause of BID document to mitigate environmental and social impacts.

27. Construction site monitoring is a continuous process. All ongoing construction

sites of ICB 2.08, ICB 2.09, ICB 2.10 and NCB (2.11A to 2.11D, 2.6) are monitored on a daily basis by contractors EHS team as well as assistant resident engineer/sub assistant resident engineer of DMSC to make sure the contractors are compliant according to their respective EMP. In addition to that Joint site inspections of the PMU-PCU, DMSC and contractors are conducted to evaluate the same. The summary of site visits is listed in the following table.

Table: Environment and Safety Monitoring Activities

Mission/Task	**Date**	**Location of Site Visits/DMA**	**Conducted by Whom**
Monitoring on Contractor's EMP compliance	Daily	All ongoing construction sites of ICB 2.08, ICB 2.09, ICB 2.10, NCB 2.11 Packages and LIC packages	Assistant Resident Engineer/Sub Assistant Resident Engineer of DMSC
Monitoring on EMP implementation and compliance for Semi-annual Environmental Report	**ICB 2.8**		Joint site inspections of the PMU-PCU, DMSC and Contractors
	15.02.2023	DMA 908	
	22.03.2023 & 02.03.2023	DMA 908	
	13.04.2023	DMA 908	
	ICB 2.9		
	11.01.2023	DMA 211	
	11.05.2023	DMA 211	
	ICB 2.10		
	17.01.2023 &21.01.2023	DMA 102, DMA 103 & DMA 115	
	21.02.2023 & 28.02.2023	DMA 108, DMA 106	
	16.03.2023 & 23.03.2023	DMA 106, DMA 108	
	18.05.2023 & 25.05.2023	DMA 107	
	19.06.2023	Storage	
	NCB 2.11A		
	03.01.2023	DMA 301, DMA 303	
	09.02.2023	DMA 303	
	12.06.2023	DMA 306	
	LIC Packages		
	30.03.2023	NCB 2.3	
	03.04.2023 & 04.04.2023	NCB 2.2, NCB 2.4	

28. Observation regarding Environmental Condition at different DMA sites due to construction work activities are as follows:

29. Safeguard Compliances under ICB 2.8, ICB 2.9 and ICB 2.10

ICB 2.8

- Water spraying was done regularly.
- Excavated materials were removed from the construction site immediately.
- Emergency contact details was also available on the site
- Temperature screening facility, first aid box, hand washing facilities were available on the site
- Signage and posters for precaution of COVID 19 prevention were posted in and around the construction site

ICB 2.9

- First Aid Box, fire extinguisher, drinking water for workers and help desk were available in all of the sites under ICB 2.09.
- Traffic signage (Signs, Pavement Markings, Arrow Panels, Warning Lights) was insufficient.
- Occupational health and safety trainings are provided regularly.
- Signage and posters for precaution of COVID 19 prevention were missing in and around the construction site
- Temperature screening facility, first aid box, hand washing facilities were not available on the site

ICB 2.10

- First Aid Box, fire extinguisher, drinking water for workers and Help Desk were available in the site.
- Traffic signage (Signs, Pavement Markings, Arrow Panels, Warning Lights) were sufficient
- Workers were reluctant to wear face masks
- Posters or signages regarding COVID 19 prevention measures were missing in and around the construction sites.

NCB 2.11A

- First Aid Box, fire extinguisher, drinking water for workers and help desk were available in all of the sites
- Traffic signage (Signs, Pavement Markings, Arrow Panels, Warning Lights) was insufficient.
- Occupational health and safety trainings are provided irregularly.
- Signage and posters for precaution of COVID 19 prevention were missing in and around the construction site
- Temperature screening facility, first aid box, hand washing facilities were not available on the site

30. Compliance to EMP for the Package ICB 2.8, ICB 2.9, ICB 2.10 and NCB 2.11A to 2.11D

Proper measures were undertaken during planning, design and implementation phases including measures during operation phases were maintained in all packages. In the reporting period; works were running under ICB 2.8, ICB 2.9, ICB 2.10 and NCB 2.11A to 2.11D. The implementation status of DWSNIP interventions has been illustrated in table-1 and table 2-A. Implementation of EMP as well as to follow the safeguard compliances were followed in all the DMAs under ICB 2.08, ICB 2.09 and ICB 2.10, NCB 2.11A to 2.11D

packages. A sample safeguards compliance status under both packages are illustrated in the table:

Table: Compliance to EMP for the Package ICB 2.8, ICB 2.9, ICB 2.10 and NCB 2.11 Packages (all running DMAs)

Activity	Mitigation Measures	Responsible for		Parameter to Monitor	Frequency of Monitoring	Location	Compliance Status
		Implementation	Monitoring				
Planning, Design and Operation Stages							
Contractor's Responsibility	• Familiar with traffic system, rules and regulation of Dhaka City and road cutting plans before works; • Arrangement of temporary water supply to meet any disturbance of water supply during works • Protect all utility services from damage during works • Road survey, existing utility services were recorded.	Contractor	DMS/ PCU/ PMU	Road cutting plan Arrangement for temporary water supply Precaution for utilities around	As required in the program of performance	N/A	• The Contractor prepared road cutting plans for all DMAs. • Temporary water supply arrangement made for the disconnected HH from the regular water supply. • Shifting of any utility was not required and all damages has been repaired.
Earth filling after pipe laying works (minimum depth of filling	Ensuring 1.0 m soil cover either in trench cutting or open cut after pipe laying	Contractor	DMS/ PCU/ PMU	Residual design life and proposed method of repair	As required in the program of performance	Each DMA sites	Maintained minimum coverage 1 m after pipe laying
Working hours and times	Work at night in heavy traffic road 7pm-7am and working in day time roads with less traffic volume	Contractor	DMS/ PCU/ PMU	Work hours	As required in the program of performance	Each DMA sites	Timing maintained properly and extra precautions maintained with some diversion in some places
Road Crossing	Trenchless method used on roads with heavy traffic and open cut method for narrow roads Horizontal	Contractor	DMS/ PCU/ PMU	Construction method statement	Construction method of statement	Each DMA sites	About 22% pipeline installed through open trench method

Activity	Mitigation Measures	Responsible for		Parameter to Monitor	Frequency of Monitoring	Location	Compliance Status
		Implementation	Monitoring				
	Drilling (HDD) method done taking care to other utilities						
Road Cutting	Safeguard arrangement for utility services around Preventive measures to avoid accident Traffic management plan with planning of road signage and diversion arrangement	Contractors prepared and applied for road cutting permission from DCC and works started after permission from DCC	DMS/ PMU	• Road category along pipe alignments • Road Cutting Plan & Road cutting permission from DCC	Prior to start works (trial pit and layout of pipes)	Each DMA sites	Ensured road cutting permit prior to works. Numbers of Road Blocker, safety items, Divider, Cones and other items were used at worksite.
Road Excavation	Excavation width was maintained with minimum dimension The excavation carried out in quicker mode to avoid sufferings All excavations were with precaution to avoid structure-damage or to other utilities	Contractors for preparation of road cutting plan, application for permission, and payment for pavement restoration	DMS/ PMU	Road category along pipe alignments Budget allocation for pavement restoration Road Cutting Plan Road cutting permission from DCC	Prior to start of works (trial pit and layour of pipes)	Each DMA sites	Long waiting period for road cutting permission from DCC is hampering the progress The Flag man with a road supervisor worked for traffic diversion where required
Trench-less pipe installation	Removal of excavated soil Erosion control measures Cleanup and restoration after work	Contractor	DMS/ PMU	Program of Performance Planning for pipe laying Plan for notification during trench Traffic Management Plan	As required in the program of performance	Each DMA sites	Trenchless method followed for busy roads and open cut followed for narrow roads where trenchless is not possible
Preparation of catalogues, installation and O&M manuals	The contractor should supply catalogues and installation manuals for each type of	Contractor	PMU/ DMS	Program of Performance	Completion of civil works and decommissioning	N/A	O&M manuals prepared after completion of works (during handing over to DWASA)

Activity	Mitigation Measures	Responsible for		Parameter to Monitor	Frequency of Monitoring	Location	Compliance Status
		Implementation	Monitoring				
	pipes to DWASA at the time of submission the Operation and Maintenance manuals (both in Bangla and English)						

Planning and Design Stage

31. Contractor's Responsibility (under supervision of DMS, PCU & PMU) is to be familiar with the present traffic congestion of Dhaka city, rules and regulation of City Corporation for the preparation of road cutting plans before execution of works; to arrange for temporary water supply to the households to meet up the disturbances during pipeline rehabilitation works; to conserve all existing utility services around construction works; to pay necessary compensation to the affected persons and to conduct surveys (existing pipelines, house connection, utility services etc.) prior to complete detail design.

- The Contractor prepared road cutting plans for all DMAs.
- Temporary water supply arrangement is made to the households disconnected from the regular water supply.
- Shifting of utility was not required. Compensation was given for repair etc. required for the utility services.

Pipe line rehabilitation and installation

32. The network expansion, in the residential/industrial areas, was done through trenchless or conventional trenching methods whereby the pipelines were laid with a minimum cover depth of 1.0 meters. Maintaining minimum coverage 1.00 m for all the pipes installation other than utility Ground problems areas.

Working hours and times

33. All works in major and minor roads with heavy traffic volume, were executed at night time (7pm-7am). In the minor roads with lower traffic volume, works were done during day time (except some works at night time). Alternative passageways were provided for allowing easy movement of vehicles & people. With some exceptions, working hours were maintained except places where works were allowed at night time.

34. Trenchless Technology was designed for crossing through the busy traffic roads and open trenches were followed for crossing roads with less traffic. Horizontal Directional Drilling (HDD) method was followed after ensuring no disturbance of utilities is there on the way of drilling equipment. About 22% pipeline was installed through open trench method

For pipeline rehabilitation and installation;

- Trenches were with minimum dimension.
- Safety measures for the excavation works were taken
- Safety measures were taken for preserving surrounding service facilities around

- Proper traffic signage was kept in line with traffic and walkers' movements

35. Preparation of catalogues, installation and O&M manuals (pipelines, safety valves, wash out, pump houses etc.) and all the manuals (English and Bangla version) are prepared and in the progress of preparation and those are to be supplied during handing over to DWASA.

36. Proper storage facilities for the construction works. Asbestos Cement Pipes were well located and well planned for careful installation of pipelines besides the AC pipes.

37. During installation of pipelines, proper measures to be taken to conserve surrounding environment, the environmental parameters (air, water and noise). Measures were taken to control pollution of surrounding water around the sites.

38. Proper site selection and construction of labor camp with suitable facilities for laborers. Proper handling of all excavated materials. Avoid all type of public disturbances during installation of pipelines and other interventions. Maintaining water supply undisturbed during installation of pipelines and other interventions.

39. Proper measures to protect trees and vegetation around handling of traffic and access during construction works Measures were taken to minimize noise level. Dust was suppressed through spraying water during excavation works.

40. Measures were taken to protect and facilities and locations of social and cultural importance (hot spots). Measures were taken to comply with occupational health and safety including measures to combat COVID19 situation.

41. After completion of works, the measures were taken like;

- All the excavated roads were reinstated to original condition,
- All disrupted utilities were restored to original condition
- All affected structures were rehabilitated/compensated
- Labor camp and storage areas were cleaned to original landscape
- Ensure leak detection and restoration (in case) to ensure safe water distribution

Table 8: Corrective Action Measures during Reporting Period

Problems found	Measures undertaken to enhance the situation	Timeline
1. Dust / Air pollution control with water spraying by water Bowser		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites.
2. Removing of excavated materials from site simultaneously with the excavation using skid street loader, dump / unloading truck		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites
3. Placing of Road cone, barrier, sign boards and other safety measures are taken while working on site.		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites
5. Supplying water in the mobile toilet and also provided separate mobile toilet for male and female with sign language		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites

Problems found	Measures undertaken to enhance the situation	Timeline
6. Removing rubbish by female labors		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites
7. Mild steel plates are using as a cover of open pit		Correction for any irregularity found during site visits by ADB, DWASA, PMU, NGO, DMSC etc. were done and made it mandatory at the working sites

IV. ENVIRONMENTAL MONITORING AND EVALUATION

42. In addition to desk reviews and site inspections, monitoring of selected environmental parameters has been conducted during the reporting period. Before the start of project activities baseline monitoring is being done in each Package at prominent locations identified in updated IEE to access the initial conditions of environment in the DMA areas. During construction phase, monitoring for ambient environmental conditions (air, noise and water) is conducted on quarterly duration on the locations identified in IEE/EMP. During site visit if any other requirement for environmental monitoring is found, which is not identified in IEE/EMP, the contractor is required to do monitoring after approval of PMU. Monitoring results are compared from baseline data and/or project standards and if unacceptable deviation is found, mitigation measures are prepared by Environmental team of DMSC and conveyed to contractor for compliance.

43. Air quality monitoring results for all DMAs are shown in **Table 9** at the following page.

44. It is ensured that all engaging laboratories who are conducting air, noise and water quality, are following internationally accepted sampling protocol and analysis. PMU through DMSC has already instructed all contactors to select such laboratories who will maintain international protocol for sampling and analysis environmental quality parameters.

45. Salient findings from air quality monitoring are as follows,

Table -9: Ambient Air Quality Monitoring Data

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
ICB 2.08	DMA 908	During Construction	14.06.2023	Infront of Rajuk Uttara Model School & College, Sector-6, Uttara	40.07	21.65	12.23	44.15	3.2
				Infront of Popular Diagnostic Centre, Sector-4, Uttara.	42.70	24.31	16.89	52.80	2.03
ICB 2.09	DMA 207	During Construction	15.03.2023	Dhakeshwari Road, Bakshi Bazar, Dhaka (23.721291°N, 90.389111°E)	54.81	26.12	101.7	55.3	<1
				Bakshi Bazar Bus Stand, Dhaka (23.722401°N, 90.395576°E)	52.12	26.31	105.7	62.9	1
	DMA 212	During Construction	16.03.2023	Ajgor Lane Pump Road, Chawkbazar, Dhaka (23.718402°N, 90.394384°E)	54.73	25.62	101.2	52.3	<1
				S.C.C. Road, Bangshal, Dhaka (23.716589°N, 90.402528°E)	53.71	26.23	111.5	60.9	1
	DMA 211	During Construction	04.06.2023	Shaista Khan Road, Lalbagh, Dhaka (23.718951°N, 90.390105°E)	54.27	26.64	106.7	56.5	1
				Islambag Road, Lalbagh, Dhaka (23.713781°N, 90.388487°E)	51.88	26.45	102.6	61.4	<1
ICB 2.10	DMA 104	Baseline	17.01.2023	Women's University Hatkhola Road, Tikatuli, Wari (23°43'5.06" N & 90°25'13.15" E)	136	68	54	32	1.8
				Sher-E-Bangja Girls Mohabiddaloy. Hatkhola Road, Tikatuli, Wari (23° 43' 6.81" N & 90°25'3.52" E)	142	71	57	35	2.1
				In front of Sonali Bank, Shapla Chattar Motijheel (23°43'34.8S" N & 90°25'17.61" E)	87	42	24	19	0.8
	DMA 107	Baseline	17.01.2023	Haider Ali School & College, Manda Bridge, Dhaka GPS Location:23° 43' 44.4"N& 90° 26' 7.83"E	97	48	21	18	1.1

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
				Location: Kadam Ali Jheelpar Road, Manda Road GPS Location:23° 43' 50.56"N& 90° 26' 28.45"E	83	44	23	15	0.7
				Location: Madrasha Bahrul Ulum, Manda Shes Bridge,Dhaka GPS Location:23° 43' 51.42"N& 90° 26' 45.78"E	78	39	20	17	0.6
	DMA 110	Baseline	17.01.2023	Location: Maniknagar Bus Stop, Ram Krishna Mission Road, Dhaka GPS Location:23°43' 19.96"N&90° 25' 43.31"E	148	74	52	49	2.6
				Maniknagar Wasa Road GPS Location:23°43' 31.10"N&90° 26' 01.50"E	85	43	18	17	0.7
				Maniknagar Balur Math Panir Pump at East Maniknagar, Mugda GPS Location:23°43' 31.00"N&90° 26' 14.50"E	74	37	15	13	0.5
	DMA 118	Baseline	18.01.2023	Near Dholaipar High School at Mir Hazirbag Road, West Dolaipar,Dhaka GPS Location:23° 42' 10.64"N&90°26' 00.76"E	143	71	48	37	2.1
				Near Eastern Iron Market at 65 Mir Hazirbag, Shampur GPS Location:23° 42'12.48"N&90° 25' 49.49"E	138	69	45	33	2.4
				Location: Sharnokoli Pre-Cadet & High School at West Jurain, Pipe Road, Shampur GPS Location:23° 41' 59.13"N& 90°	145	73	47	35	2.2

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
				25' 51.61"E					
	DMA 119	Baseline	18.01.2023	Near Postogola Fire Service Station at MC Road, Postogola, Shampur,Dhaka GPS Location:23° 41' 27.56"N&90° 25' 50.01"E	142	72	57	53	1.9
				Near Janata Bank Ltd at 215, Karim Ullarbag, Postagola, Smashanghat Road,Dhaka GPS Location:23° 41' 33.83"N& 90° 25' 39.55"E	139	68	50	48	2.1
				Location: Near Jurain Labur Kachabazr at 74/D IT Plot,Balurmath, Postogola, Jurain, Dhaka GPS Location:23° 41' 39.08"N &90° 25' 58.11"E	148	74	43	41	1.8
	DMA 109A	Baseline	07.03.2023	Location: Near Ramakrishna Mission High School at 27 R.K Mission Road, Gopibagh, Dhaka GPS Location: 23°43'16.50"N & 90°25'23.48"E	86	43	34	23	0.8
				Location: Near Bismillah Jame Masjid at 65, Abhay Das Lane, R.K. Mission Road, Gopibagh, Dhaka GPS Location: 23°43'12.53"N & 90°25'33.73"E	75	29	29	20	0.6
				Location: Near ISKCON Swamibag Temple at 79 Swamibag Road, Swamibag, Gendaria, Dhaka GPS Location: 23°42'48.29"N & 90°25'20.48"	71	33	23	17	0.4
	DMA 109B	Baseline	07.03.2023	Location: Near T. T Para Bus Stand by Jonopath Drainage Pumping Station at T.T	102	64	61	42	1.4

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
				Para, Gopibagh, Dhaka GPS Location: 23°43'28.69"N, 90°25'42.07"E					
				Location: Near Sayedabad Bus Terminal Masjid at Sayedabad Bus Terminal, Sayedabad, Dhaka GPS Location: 23°42'54.42"N, 90°25'37.15"E	124	67	67	46	1.7
				Location: Near Doyaganj water pump-3 (Dhaka Wasa) at Doyaganj, Jatrabari, Dhaka GPS Location: 23°42'37.37"N & 90°25'35.13"E	118	63	59	37	1.5
	DMA 111	Baseline	21.03.2023	Location: Near Jamia Ashraful Uloom Mosjid Madrasha and Etimkhana, Godindhapur, Sonir Akhra, Dania, Dhaka GPS Location: 23° 42' 56.19" N 90° 26' 20.6" E	82	39	32	25	0.9
				Location: Near Jakerin Jame Mosjid, Dholpur, Jatrabari, Dhaka GPS Location: 23° 43' 1.07" N, 90° 26' 4.6" E	73	36	26	21	0.6
				Location: Near Jatrabari Bus Stop, Jatrabari, Dhaka GPS Location: 23° 42' 40.26" N & 90° 25' 47.9"E	172	74	62	42	2.2
	DMA 112	Baseline	21.03.2023	Location: Near Demra Dumpling Site, Demra GPS Location: 23° 43' 3.17"N 90° 27' 0.1"E	65	33	22	18	0.6
				Location: Near Kajla Jame Mosque, Jatrabari GPS Location: 23° 42' 38.38"N, 90° 26' 40.13"E	54	27	16	13	0.4

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
				Location: Near Nurani Talimul Quran Madrasha, Jatrabari GPS Location: 23° 43' 3.13"N & 90° 26' 25.57"E	48	24	14	11	0.36
NCB 2.11A	DMA 320	During Construction	15.02.2023	S.J Road, Monipuripara 23°45'41.1"N 90°23'08.3"E	42.85	29.00	7.81	16.45	0.11
	DMA 408	During Construction	17.02.2023	Statistics Road, Agargaon 23°46'49.5"N 90°22'26.6"E	41.45	28.52	8.27	11.44	0.14
	DMA 311	During Construction	25.03.2023	Begum Rokeya Sarani 23°45'59.8"N 90°22'58.7"E	38.09	29.51	6.91	14.70	0.14
	DMA 306	During Construction	15.03.2023	Physical College Road 23°45'10.5"N 90°21'49.4"E	43.99	26.01	8.41	15.81	0.14
	DMA 301	During Construction	16.04.2023	Nayoun Lane 23°46'03.9"N 90°21'00.6"E	51.74	30.59	9.01	17.98	0.12
	DMA 303	During Construction	12.04.2023	Dhaka Housing Main Road 23°46'35.0"N 90°21'33.3"E	51.51	31.70	8.65	15.52	0.16
NCB 2.11C, Lot-1	DMA 406	Baseline	18.12.2022	Monipur High School & College, Ibrahimpur, Shewarapara, Mirpur, Dhaka GPS Location: 23° 48' 1.62"N 90° 21' 57.29"E	94	46	25	18	0.4
				Exim Bank Hospital, Begum Rokeya Avenue Sarani, Dhaka GPS Location: 23° 47' 54.16"N 90° 22' 20.17"E	103	51	28	21	1.1
	DMA 411	Baseline	18.12.2022	Medi Home Hospital Uttar Pirerbag, Kamal Soroni (60 foot road), Mirpur-1, Dhaka GPS Location: 23° 47' 28.00"N 90° 21' 57.40"E	113	52	33	25	1.5

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
NCB 2.11C, Lot-2	DMA 412	Baseline	18.12.2022	Anonda Bazar Road, Anonda Bazar, Shewarapara, Mirpur GPS Location: 23° 47' 30.30"N 90° 22' 14.00"E	84	41	19	16	0.6
				Baitush Sakur Jame Mosque Road, Shewarapara, Mirpur GPS Location: 23° 47' 18.05"N 90° 22' 20.6"E	72	36	18	15	0.6
				Ali Miar Tek Market, Pirerbag, West Shewarapara, Mirpur GPS Location: 23° 47' 23.19"N 90° 22' 15.79"E	79	38	16	14	0.8
	DMA 409	Baseline	18.12.2022	In front of Hazrat Shah Ali Mohila College GPS Location: 23° 47' 48.80"N 90° 20' 59.80"E	97	48	24	19	1.1
				In front of Sony Square Star Cineplex GPS Location: 23° 48' 01.40"N 90° 21' 21.40"E	112	59	27	21	1.3
	DMA 413	Baseline	18.12.2022	In front of LAZZ Pharma 60 feet Branch GPS Location: 23° 47' 56.20"N 90° 21' 50.50"E	103	52	16	15	0.8
				In front of Kidney Foundation Hospital and Research Institute 23° 48' 10.70"N 90° 21' 37.10"E	98	49	13	10	0.6
	DMA 414	Baseline	18.12.2022	In front of Kazi Fori Jame Mosque GPS Location: 23° 48' 16.60"N 90° 20' 47.90"E	93	46	13	11	0.9
				In front of BCIC College GPS Location: 23° 48' 34.30"N 90° 21' 00.20"E	82	38	15	12	0.7

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Parameters (Monitoring Results)				
					PM_{10} µg/m3	$PM_{2.5}$ µg/m3	SO_2 µg/m3	NO_2 µg/m3	CO ppm
National Standards of Ambient Air Quality*					**150**	**65**	**365**	**100**	**10**
NCB 2.11D, Lot-1	DMA 1005	Baseline	11.01.2023	DMA-1005 Sampling Location: In front of St. Lawrence's Church GPS Location: 23° 47' 10.50"N 90° 23' 04.60"E	109	53	29	23	0.8
				DMA-1005 Sampling Location: In front of Hi-Tech Multiacre Hospital GPS Location: 23° 47' 18.40"N 90° 21' 17.70"E	103	51	35	26	1.1
	DMA 1010	Baseline	11.01.2023	DMA-1010 Sampling Location: In front of Desh Politechnic College GPS Location: 23° 49' 15.40"N 90° 22' 06.20"E	117	55	25	22	1.2
				DMA-1010 Sampling Location: In front of City Club, Pallobi 23° 49' 22.40"N 90° 21' 55.60"E	102	49	29	27	1.4
	DMA 1011	Baseline	11.01.2023	DMA-1011 Sampling Location: Around D Block Eidgah Maidan GPS Location: 23° 49' 26.50"N 90° 22' 24.10"E	115	58	18	16	1.3
				DMA-1011 Sampling Location: In front of Pallobi Mohila Degree College GPS Location: 23° 49' 23.50"N 90° 22' 21.50"E	108	54	21	19	1.1

*The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997.

46. Findings: The laboratory analysis of ambient air quality shows that air quality parameters concentration of most of the locations were within allowable limits of DoE, Bangladesh. PM2.5 value has been exceeded at some locations in ICB 2.10 package. This is mainly due to emissions from motorized vehicles and other anthropogenic sources (shops, warehouse and plastic factories, vehicular movement etc.) in the area.

47. Mitigation measures, like dust suppression was applied as per EMP. Contractors are being advised regularly to take necessary action on dust suppression (during dry periods) by sprinkling of water whenever required. Moreover, aware to contractor and the local communities, applied the following mitigation measures:

- Wearing masks while working in dusty sites.
- Controlled vehicular movement and safe transportation during upload/unload construction materials;
- Regular maintenance of vehicles/equipment's and use of good quality fuel;
- Cover the excavated material and stockpiles and also cover the whenever it is transported.

48. Baseline and during construction ambient noise level data are presented in **Table 10**

Table-10: Noise Level Monitoring Data at DMA Sites

Package No.	Name of DMAs	Monitoring Stage	Date of Testing	Site Location	Land use Category	L_{eq} (dBA)	
						Day Time	Night Time
ICB 2.8	DMA 908	Construction Phase	14.06.2023	Infront Rajuk Uttara Model School & College, Sector-6, Uttara (23.870385°N 90.4013624°E)	Commercial	66.94	41.5
				Infront of Popular Diagnostic Centre Sector-4 Uttara (23.88901°N, 90.38891°E)	Commercial	74.80	59.32
ICB 2.09	DMA 207	During Construction	15.03.2023	Dhakeshwari Road, Bakshi Bazar, Dhaka (23.721261°N, 90.389113°E)	Mixed	61.9	50.6
				Bakshi Bazar Bus Stand, Dhaka (23.722400°N, 90.395574°E)	Residential	59.7	48.4
	DMA 212	During Construction	16.03.2023	Ajgor Lane Pump Road, Chawkbazar, Dhaka (23.718398°N, 90.394380°E)	Mixed	62.1	51.4
				S.C.C. Road, Bangshal, Dhaka (23.716579°N, 90.402522°E)	Residential	59.6	49.7
	DMA 211	During Construction	04.06.2023	Shaista Khan Road, Lalbagh, Dhaka (23.718949°N, 90.390147°E)	Mixed	59.7	48.9
				Islambag Road, Lalbagh, Dhaka (23.713797°N, 90.388508°E)	Mixed	61.8	50.2
ICB 2.10	DMA 104	Baseline	17.01.2023	Mugda Hospital, Mugda, Dhaka GPS Location: 23° 43' 55.9"N, 90° 25' 42.95"E	Institutional	74	63
				Buddha Mandir Bus Stop, Basabo Madertek Road, Dhaka GPS Location: 23° 44' 10.29"N, 90° 25' 42.73"E	Residential	75	64
				Kodomtola WASA Road, Basabo, Dhaka GPS Location: 23° 44' 10.29"N, 90° 25' 42.73"E	Residential	62	54
	DMA 107	Baseline	17.01.2023	Haider Ali School & College, Manda Bridge, Dhaka GPS Location: 23° 43' 44.4"N, 90° 26' 7.83"E	Institutional	64	56
				Kadam Ali Jheelpar Road, Manda Road GPS Location: 23° 43' 50.56"N, 90° 26' 28.45"E	Residential	62	53

				Madrasha Bahrul Ulum, Manda Shes Bridge, Dhaka GPS Location: 23° 43' 51.42"N, 90° 26' 45.78"E	Residential	65	54
	DMA 110	Baseline	17.01.2023	Maniknagar Bus Stop, Ram Krishna Mission Road, Dhaka GPS Location: 23° 43' 19.96"N, 90° 25' 43.31"E	Residential	73	65
				Maniknagar Wasa Road GPS Location: 23° 43' 31.10"N, 90° 26' 01.50"E	Residential	63	54
				Manknagar Balur Math Panir Pump at East Maniknagar, Mugda GPS Location: 23° 43' 31.00"N, 90° 26' 14.50"E	Residential	65	53
	DMA 118	Baseline	18.01.2023	Near Dholaipar High School at Mir Hazirbag Road, West Dolaipar, Dhaka GPS Location:23° 42' 10.64"N, 90° 26' 00.76"E	Institutional	74	64
				Near Estren Iron Market at 65 Mir Hazirbag, Shampur GPS Location:23° 42' 12.48"N, 90° 25' 49.49"E	Commercial	73	65
				Sharnokoli Pre-Cadet & High School at West Jurain, Pipe Road, Shampur GPS Location:23° 41' 59.13"N, 90° 25' 51.61"E	Institutional	72	62
	DMA 119	Baseline	18.01.2023	Near Postogola Fire Service Station at MC Road, Postogola, Shampur, Dhaka GPS Location:23° 41' 27.56"N, 90° 25' 50.01"E	Commercial	68	59
				Near Janata Bank Ltd at 215, Karim Ullarbag, Postagola, Smashanghat Road, Dhaka GPS Location:23° 41' 33.83"N, 90° 25' 39.55"E	Residential	69	58
				Near Jurain Labur Kachabazr at 74/D IT Plot, Balurmath, Postogola, Jurain, Dhaka GPS Location:23° 41' 39.08"N, 90° 25' 58.11"E	Residential	65	56
	DMA 109A	Baseline	07.03.2023	Near Ramakrishna Mission High School at 27 R.K Mission Road, Gopibagh, Dhaka GPS Location: 23°43'16.50"N & 90°25'23.48"	Institutional	72	61
				Near Bismillah Jame Masjid at 65, Abhay Das Lane, R.K. Mission Road, Gopibagh, Dhaka GPS Location: 23°43'12.53"N & 90°25'33.73"E	Residential	69	58

				Near ISKCON Swamibag Temple at 79 Swamibag Road, Swamibag, Gendaria, Dhaka GPS Location: 23°42'48.29"N & 90°25'20.48"E	Residential	70	56
	DMA 109B	Baseline	07.03.2023	Near T.T Para Bus Stand by Jonopath Drainage Pumping Station at T.T Para, Gopibagh, Dhaka GPS Location: 23°43'28.69"N, 90°25'42.07"E	Residential	78	68
				Near Sayedabad Bus Terminal Masjid at Sayedabad Bus Terminal, Sayedabad, Dhaka) GPS Location: 23°42'54.42"N, 90°25'37.15"E	Mixed	77	67
				Near Doyaganj water pump-3 (Dhaka Wasa) at Doyaganj, Jatrabari, Dhaka GPS Location: 23°42'37.37"N & 90°25'35.13"E	Residential	75	66
	DMA 111	Baseline	23.03.2023	Near Jamia Ashraful Uloom Mosjid Madrasha and Atimkhana, Godindhapur, Sonir Akhra, Dania, Dhaka GPS Location: 23°42'56.19" N, 90°26'20.6"E	Residential	74	63
				Near Jakerin Jame Mosjid, Dholpur, Jatrabari, Dhaka GPS Location: 23°43'1.07"N, 90°26'4.6"E	Residential	73	62
				Near Jatrabari Bus Stop, Jatrabari, Dhaka GPS Location: 23°42'40.26"N &90°25'47.9"E	Residential	76	65
	DMA 112	Baseline	23.03.2023	Near Demra Dumpling Site, Demra GPS Location: 23°43'3.17"N,90°27' 0.1"E	Mixed	75	65
				Near Kajla Jame Mosque, Jatrabari GPS Location: 23° 42' 38.38"N, 90° 26' 40.13"E	Residential	77	67
				Near Nurani Talimul Quran Madrasha, Jatrabari GPS Location: 23° 43' 3.13"N & 90° 26' 25.57"E	Residential	72	57

NCB 2.11A	DMA 320	During Construction	15.02.2023	S.J Road, Monipuripara 23°45'41.1"N 90°23'08.3"E	Mixed	67.02	55.45
	DMA 408	During Construction	17.02.2023	Statistics Road, Agargaon 23°46'49.5"N 90°22'26.6"E	Mixed	71.31	58.61
	DMA 311	During Construction	25.03.2023	Begum Rokeya Sarani 23°45'59.8"N 90°22'58.7"E	Mixed	68.92	57.35
	DMA 306	During Construction	15.03.2023	Physical College Road 23°45'10.5"N 90°21'49.4"E	Mixed	71.31	54.39
	DMA 301	During Construction	16.04.2023	Nayoun Lane 23°46'03.9"N 90°21'00.6"E	Mixed	65.19	51.52
	DMA 303	During Construction	12.04.2023	Dhaka Housing Main Road 23°46'35.0"N 90°21'33.3"E	Mixed	66.82	52.65
NCB 2.11C, Lot-1	DMA 406	Baseline	18.12.2022	Monipur High School & College, Ibrahimpur, Shewarapara, Mirpur, Dhaka GPS Location: 23° 48' 1.62"N, 90° 21' 57.29"E	Residential	63	51
				Exim Bank Hospital, Begum Rokeya Avenue Sarani, Dhaka GPS Location: 23° 47' 54.16"N, 90° 22' 20.17"E	Residential	68	57
	DMA 411	Baseline	18.12.2022	Medi Home Hospital Uttar Pirerbag, Kamal Soroni (60-foot road), Mirpur-1, Dhaka GPS Location: 23° 47' 28.00"N, 90° 21' 57.40"E	Residential	63	53
				Anonda Bazar Road, Anonda Bazar, Shewarapara, Mirpur GPS Location: 23° 47' 30.30"N, 90° 22' 14.00"E	Residential	62	47
	DMA 412	Baseline	18.12.2022	Baitush Sakur Jame Mosque Road, Shewarapara, Mirpur GPS Location: 23° 47' 18.05"N, 90° 22' 20.6"E	Residential	58	46
				Ali Miar Tek Market, Pirerbag, West Shewarapara, Mirpur GPS Location: 23° 47' 23.19"N, 90° 22' 15.79"E	Residential	62	48

NCB 2.11C, Lot-2	DMA 409	Baseline	18.12.2022	In front of Hazrat Shah Ali Mohila College GPS Location: 23° 47' 48.80"N, 90° 20' 59.80"E	Commercial	67	54
				In front of Sony Square Star Cineplex GPS Location: 23° 48' 01.40"N, 90° 21' 21.40"E	Commercial	76	59
	DMA 413	Baseline	18.12.2022	In front of LAZZ Pharma 60 feet Branch GPS Location: 23° 47' 56.20"N, 90° 21' 50.50"E	Commercial	69	55
				In front of Kidney Foundation Hospital and Research Institute 23° 48' 10.70"N 90° 21' 37.10"E	Commercial	72	58
	DMA 414	Baseline	18.12.2022	In front of Kazi Fori Jame Mosque GPS Location: 23° 48' 16.60"N, 90° 20' 47.90"E	Commercial	64	54
				In front of BCIC College GPS Location: 23° 48' 34.30"N, 90° 21' 00.20"E	Commercial	69	57
NCB 2.11D, Lot-1	DMA 1005	Baseline	18.12.2022	In front of St. Lawrence's Church GPS Location: 23° 47' 10.50"N, 90° 23' 04.60"E	Residential	67	54
				In front of Hi-Tech Multiacre Hospital GPS Location: 23° 47' 18.40"N 90° 21' 17.70"E	Commercial	76	59
	DMA 1010	Baseline	18.12.2022	In front of Desh Polytechnic College GPS Location: 23° 49' 15.40"N, 90° 22' 06.20"E	Commercial	69	55
				In front of City Club, Pallobi 23° 49' 22.40"N, 90° 21' 55.60"E	Commercial	72	58
	DMA 1011	Baseline	18.12.2022	Around D Block Eidgah Maidan GPS Location: 23° 49' 26.50"N 90° 22' 24.10"E	Residential	64	54
				In front of Pallobi Mohila Degree College GPS Location: 23° 49' 23.50"N, 90° 22' 21.50"E	Residential	69	57
Standard					Commercial	70	60
					Residential	55	45
					Mixed	55	45

Findings:

49. For most of the cases, noise levels during both baseline and construction stage are exceeded the national standards set for both day and night time due to different types of commercial activities, construction activities, traffic volume & other interruptions.

50. Mitigation measures need to be applied as per site specific EMP. Particular use of ear plugs by workers at high noise producing areas is necessary. Noise producing activity should be limited near residential areas, schools and healthcare facilities during working hours. Accordingly, instruction has been given to contractors. It is ensured that the contractors will strictly implement the action plan as per EMP for reduction of noise level and minimization of noise impact.

51. As per the site specific EMP, the Contractors are required to test the drinking water used by labors. Surface water test was not conducted due to no project activities was implemented during reporting period in the surrounding water bodies. The results are shown in Table 11 for drinking water.

Table-11A: Drinking Water Quality Results-at DMA Sites (ICB-2.08)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Chloride mg/L	DO	Iron, Fe mg/L	Manganese mg/L	Arsenic µg/L	Total Coliform	Turbidity (NTU)	TDS mg/L	Hardness (Total) mg/L
DMA 908	12.06.2023-13.06.2023	During Construction	PTW, Uttara-4, DMA-908	6.78	10	5.93	0.671	0.151	<0.01	0	1.85	123	98
			PTW, Uttara-6 DMA-908	6.74	5	5.47	1.134	0.192	<0.01	0	7.31	143.1	110
DMA 911A	29.01.2023-31.01.2023	During Construction	PTW, Dewan para-1 DMA-911A	6.74	-	-	0.670	-	<0.01	0	1.67	183.4	130
			PTW, Hazi Mohor Ali, DMA-911A	6.89	-	-	1.542	-	<0.01	0	6.89	147.5	102
DMA 915	29.01.2023-30.01.2023	During Construction	PTW, Chalabon (New) DMA-915	6.73	0.0	-	0.114	5.72	<0.01	0	0.65	139.7	94
			PTW, Shah Kabir Mazar (New) DMA-915	6.83	0.0	-	1.293	5.51	<0.01	0	1.84	152.7	114

Table-11B: Drinking Water Quality Results-at DMA Sites (ICB-2.09)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Chloride mg/L	DO	Iron, Fe mg/L	Mn mg/L	As µg/L	Total Coliform	Turbidity (NTU)	TDS mg/L
DMA 208B	16.03.2023-17.03.2023	Post Construction	DTW, Bangladesh Math	7.10	48	5.52	0.88	0.463	<0.01	0	6.52	247
			DTW, Kayettuli	6.94	67	5.50	0.96	0.396	<0.01	0	5.71	296
DMA 212	22.03.2023-23.03.2023	During Construction	DTW, K.M. Azam Lane	7.05	79	6.95	0.07	0.131	<0.01	0	0.61	326
	16.03.2023-17.03.2023	During Construction	DTW, Begum Bazar	6.97	21	3.19	0.49	0.176	<0.01	0	3.96	192.7
DMA 207	22.03.2023-23.03.2023	During Construction	DTW, Dhakeshwari	7.03	30	5.93	0.96	0.512	<0.01	0	5.31	185.2
	08.05.2023-09.05.2023	During Construction	DTW, Bakshi Bazar	6.79	110	5.02	0.85	0.545	<0.01	0	4.81	358
DMA 211	05.06.2023-07.06.2023	During Construction	DTW, Shaista Khan	7.01	118	5.54	0.05	0.128	<0.01	0	0.57	319
			DTW, Low Lift	6.91	32	5.36	0.03	0.081	<0.01	0	0.52	193.4
DMA 204A	11.06.2023-12.06.2023	Post Construction	DTW, Kalunagar	-	-	7.69	0.75	0.244	-	-	7.31	-
			DTW, Hazaribag-5	6.72	29	2.91	1.57	0.376	<0.01	0	0.59	190.6

Table-11C: Drinking Water Quality Results-at DMA Sites (ICB-2.10)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity (NTU)	TSS mg/L	DO mg/L	Chloride mg/L	Iron mg/L	Mn mg/L	As mg/L	BOD5 mg/L	COD mg/L	Total Coliform CFU/100ml
DMA 104	25.01.23 to 15.02.23	Baseline	PTW, Kadamtola Shangshad	7.19	8.04	10	3.56	25	0.154	0.185	< 0.01	0.35	< 1.0	0
			PTW, Bashabo-2	7.1	0.89	1	4.3	27	0.093	0.205	<0.01	0.3	< 1.0	0
			PTW, Sabujkanan	6.83	0.36	1	3.25	25	0.06	0.101	< 0.01	0.15	<1.0	0
DMA 106	25.01.23 to 15.02.23	Baseline	PTW, Mugdapara-2	7.27	12.7	10	4.12	9	0.553	0.198	< 0.01	0.39	< 1.0	21
			Network,H# 95,Atish Dipankor Road	7.19	2.25	5	8.21	59	0.038	0.087	< 0.01	0.41	7	0
			Network,H# Hazikazi jafar HighSchool, Mugdapara	6.88	1.28	1	4.95	38	0.3	0.066	< 0.01	0.2	< 1.0	0
DMA 107	31.01.23 to 15.02.23	Baseline	PTW, Manda-1	7.06	0.89	1	2.65	10	0.53	0.257	< 0.01	0.93	6	0
			PTW, Manda-2	7.12	4.99	7	2.21	7	0.6	0.132	< 0.01	0.3	< 1.0	0
			PTW, Manda-3	7.05	1	4	1.89	18	0.13	0.19	< 0.01	1.19	5	0
DMA 110	08.02.23 to 15.02.23	Baseline	PTW, Golapbag Math	6.83	6.72	1	3.9	9	0.62	0.137	< 0.01	0.22	< 1.0	0
			PTW, Dhalpur	6.81	2.7	2	9.81	16	0.13	0.168	< 0.01	1.2	4	0
			PTW,	6.85	10.5	1	3.23	8	0.26	0.165	< 0.01	0.3	< 1.0	0

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity (NTU)	TSS mg/L	DO mg/L	Chloride mg/L	Iron mg/L	Mn mg/L	As mg/L	BOD5 mg/L	COD mg/L	Total Coliform CFU/100ml
			Maniknagar-3											
			PTW, Maniknagar-	6.79	9.56	1	3.01	8	0.58	0.114	< 0.01	0.34	< 1.0	0
			Network, H#1, Eas Maniknagar	6.94	5.15	2	3.12	11	0.6	0.107	< 0.01	0.9	5	0
DMA 118	08.02.23 to 15.02.23	Baseline	PTW, West Dholaipar-1	6.9	2.81	1	4.34	34	0.22	0.079	< 0.01	0.26	< 1.0	0
			PTW, West Dholaipar-2	7.11	0.85	1	3.12	32	0.09	0.02	< 0.01	0.35	< 1.0	0
			Network, H# 108, West Dholaipar	6.92	1.38	2	3.12	36	0.17	0.057	< 0.01	1.12	18	31
DMA 119	08.02.23 to 15.02.23	Baseline	PTW, West Jurain	7.05	0.36	1	2.95	39	0.1	0.038	< 0.01	0.2	1	0
			PTW, Postogola Fire Service	6.8	18.3	4	3.7	35	1.35	0.386	< 0.01	0.25	< 1.0	0
			Network, H# 151, West jurair	7.16	1.23	7	3.75	36	0.27	0.127	< 0.01	1	17	0

Table-11D: Drinking Water Quality Results-at DMA Sites (NCB-2.11A)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Chloride mg/L	DO	Iron, Fe mg/L	Mn mg/L	As µg/L	Total Coliform	Turbidity (NTU)	TSS mg/L
DMA 320	15.02.2023	During Construction	S.J Road, Monipuripara 23°45'41.1"N 90°23'08.3"E	6.55	6	8.58	0.085	0.031	<0.01	0	0.55	02
DMA 408	17.02.2023	During Construction	Statistics Road, Agargaon 23°46'49.5"N 90°22'26.6"E	6.77	22	8.49	0.231	0.145	<0.01	0	0.83	02
DMA 311	25.03.2023	During Construction	Begum Rokeya Sarani 23°45'59.8"N 90°22'58.7"E	6.54	18	8.25	0.092	0.095	<0.01	0	1.55	01
DMA 306	15.03.2023	During Construction	Physical College Road 23°45'10.5"N 90°21'49.4"E	6.80	18	8.51	0.070	0.069	<0.01	0	0.97	02
DMA 301	16.04.2023	During Construction	Nayoun Lane 23°46'03.9"N 90°21'00.6"E	6.92	20	8.61	0.161	0.081	<0.01	0	1.46	01
DMA 303	12.04.2023	During Construction	Dhaka Housing Main Road 23°46'35.0"N 90°21'33.3"E	6.74	15	8.63	0.158	0.089	<0.01	0	1.32	03

Table-11E: Drinking Water Quality Results-at DMA Sites (NCB-2.11B)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity	TSS	Dissolved Oxygen	Chloride	Iron	Manganese	Arsenic	BOD_5	COD	Total Coliform
				-	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 ml
DMA 305	12-12-22	Pre-Construction	PTW	6.7	1.91	0.31	7.85	320	0.45	0.28	<0.1	0.3	3.36	0
			PTW	6.8	3.3	0.35	7.2	225	0.59	0.21	<0.1	0.31	3.27	0
DMA 307	12-12-22	Pre-Construction	PTW	6.8	3.32	1.52	2.82	168	0.67	0.25	<0.1	0.52	2.82	0
DMA 312	12-12-22	Pre-Construction	PTW	6.6	1.35	1.45	7.89	388	0.7	0.3	<0.1	0.57	3.5	0
			PTW	6.8	15.3	0.33	7.15	363	0.83	0.19	<0.1	0.62	2.96	0
DMA 313	18-12-22	Pre-Construction	PTW	6.8	12.6	1.46	7.6	415	0.86	0.17	<0.1	0.62	3.68	0
			PTW	6.9	8.63	0.54	7.36	201	0.57	0.33	<0.1	0.25	2.94	0

Table-11F: Drinking Water Quality Results-at DMA Sites (NCB-2.11C, Lot-1)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity	TSS	Dissolved Oxygen	Chloride	Iron	Manganese	Arsenic	BOD_5	COD	Total Coliform
				-	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 ml
DMA 406	31-12-22	Pre-Construction	PTW	6.5	2.33	1.13	8.34	424	0.58	0.19	<0.1	0.59	3.53	0
			PTW	6.6	3.47	0.48	8.03	290	0.91	0.27	<0.1	0.2	3.78	0
DMA 411	31-12-22	Pre-Construction	PTW	6.7	15.45	1.13	7.34	185	0.61	0.24	<0.1	0.35	3.33	0
			PTW	6.8	11.4	1.84	8.5	541	0.39	0.19	<0.1	0.6	2.18	0
DMA 412	29-01-23	Pre-Construction	PTW	6.6	1.6	0.34	7.87	306	0.4	0.13	<0.1	0.5	2.29	0
			PTW	6.8	2.54	1.32	7.59	445	0.91	0.32	<0.1	0.43	3.49	0

Table-11G: Drinking Water Quality Results-at DMA Sites (NCB-2.11C, Lot-2)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity	TSS	Dissolved Oxygen	Chloride	Iron	Manganese	Arsenic	BOD_5	COD	Total Coliforms
				-	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 ml
DMA 409	29-01-23	Pre-Construction	PTW	6.7	2.33	0.45	8.34	386	0.55	0.29	<0.1	0.64	2.32	0
			PTW	6.6	1.05	1.14	8.49	201	0.32	0.24	<0.1	0.3	2.41	0
DMA 413	29-01-23	Pre-Construction	PTW	6.5	3.65	0.32	7.53	325	0.72	0.31	<0.1	0.24	2.39	0
			PTW	6.8	2.12	0.64	7.52	577	0.82	0.29	<0.1	0.33	2.63	0
DMA 414	14-02-23	Pre-Construction	PTW	6.6	1.32	0.7	8.05	155	0.72	0.39	<0.1	0.36	2.39	0
			PTW	6.7	2.25	0.74	7.41	180	1	0.3	<0.1	0.49	3.77	0

Table-11H: Drinking Water Quality Results-at DMA Sites (NCB-2.11D, Lot-1)

Name of DMAs	Date of Testing	Monitoring Stage	Site Location	pH	Turbidity	TSS	Dissolved Oxygen	Chloride	Iron	Manganese	Arsenic	BOD_5	COD	Total Coliforms
				-	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100 ml
DMA 1005	14-02-2023	Pre-Construction	PTW	6.8	1.85	1.75	7.07	397	0.69	0.3	<0.1	0.25	3.03	0
			PTW	6.7	2.65	1.12	7.77	272	0.91	0.14	<0.1	0.37	3.26	0
DMA 1010	05-03-2023	Pre-Construction	PTW	6.7	3.6	1.14	7.74	558	0.58	0.3	<0.1	0.31	3.6	0
			PTW	6.6	10.58	1.63	8.51	626	0.58	0.39	<0.1	0.22	3.62	0
DMA 1011	05-03-2023	Pre-Construction	PTW	6.7	4.36	1.11	7.17	471	0.91	0.38	<0.1	0.33	2.99	0
			PTW	6.8	7.6	0.72	7.26	318	0.61	0.36	<0.1	0.47	2.48	0

Standards for drinking water

pH	Turbidity (NTU)	TSS (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	Chloride (mg/L)	Iron (mg/L)	Mn (mg/L)	Arsenic (mg/L)	BOD5 (mg/L)	COD (mg/L)	Total Coliform (mg/L)
6.5-8.5	≤10	10	1000	6.0≤	150-600	0.3-1	0.1-0.4	0.05	0.2	4.0	-

52. Findings: The laboratory analysis of water quality shows that water quality parameters concentration of most of the locations were within allowable limits of DoE, Bangladesh. DO has been surpassed in some location. This is mainly due to the concentrations are constantly affected by diffusion and aeration, photosynthesis, respiration and decomposition. While water equilibrates toward 100% air saturation, dissolved oxygen levels will also fluctuate with temperature, salinity and pressure changes in the area.

53. During Construction" air quality, noise level and water quality monitoring will be continued for the packages as per Environment Management and Monitoring Plan. All monitoring expenses will be borne by contractors which mentioned in the bidding document under the contract section 6, sub clause 2.14 (safeguards) and sub clause 2.14.1 (IEE).

54. The Environmental Management Implementation Work Schedule has been prepared by contractor for next six months (July-December, 2023) to implement the EMP plan wise while showing precisely how and when construction period mitigation and monitoring actions will take place. The following Table shows the Environmental Management Implementation Work Schedule for next six months (July-December, 2023).
Attached in annex-08

V. CONSULTATIONS AND DISCLOSURES CONDUCTED

55. During the IEE updating of various DMAs (subprojects), the stakeholders were consulted and involved through discussions on-site and public consultation at several places in the DMA. The view and feedback were incorporated into the IEEs and project design and development as appropriate. As per approved IEE, consultations and disclosure will be a continuous process throughout project implementation involving public consultations and focus group discussions. Accordingly, during the implementation phase, the consultation process has been continued to ensure that stakeholders are fully engaged in the project and have the opportunity to participate in its development and implementation.

56. Different type of stakeholders such as respective WARD representatives - elected Councilor, line departments and utility agencies, general public, residents, business, vendors etc., in were consulted. Consultations conducted mostly near the work sites such as along pipe laying sites, such consultation is basically one to one discussion with public and generally to be continued throughout the construction period. Construction phase issues, and implementation of EMP measures were discussed. The issues like requirement of restoration of utility services, removal of overburden soil, road restoration done or not, dust and noise pollution during implementation of the project, community safety arrangement, availability of public access have been discussed and views has been tabulated**.**

57. The indicative schedule for consultations and disclosure are presented in Table 14.

Table 14: Indicative Schedule for Consultations and Disclosure

Type of Consultation/Disclosure	Target Date	Location	Target Participants	Responsible Person
Local Level Consultation	Weekly – to be continued	At all construction locations	General public, shop keepers, pedestrian population	Supervisors of 'NGO Awareness'; Environment and Safety Officer of Contractor, ARE, Environmental Inspector of DMS-continuous process
Consultation-safety issues, EMP implementation	Bimonthly	DMS office, PM site office and construction site	ARE/SARE of DMS, Supervisor Engineers of Contractor, Environment and safety Officer of Contractors	Environmental Specialist, Environmental Inspector of DMS

58. During reporting period, Civil contract contractor has updated IEE report for ICB 2.10, NCB 2.11A, NCB 2.11B, NCB 2.11C (Lot-1&2) and NCB 2.11D (Lot-1) at different DMA locations. During updating of IEE report, local level consultation has been conducted at different DMA locations. List of participants, pictures etc. are provided in annex 10.

Summary of Public Consultation Meetings – January-June, 2023

Sl.	Venues	DMAs	Date	Participants (M + F)	Remarks
1.	Road no 19, Mirpur-1	1011	07/05/23	16 (m-15 + f- 1)	TSM
2.	Altaf Hossen Road,manikdi	1001	09/05/23	13 (m-10 + f- 3)	TSM
3.	Road no 06, Block –A, Mirpur-1	414	11/05/23	12 (m-11 + f -1)	TSM
4.	Pallabi Mohila college Rd	1011	11/05/23	13 (m-11 + f -2)	TSM
5.	Water Pump Rd, Mirpur-12	1011	15/05/23	11 (m-11 + f -0)	TSM
6.	Road no 19, Block –C,Bavniyabad	1009	15/05/23	12 (m-10 + f-2)	TSM
7.	West Manikdi Namapara	1001	09/05/23	16 (m-14 + f -2)	FGD
8.	Kalshi Water Pump Rd,12/E Pallabi	1011	15/05/23	17 (m-17 + f -0)	FGD
9.	Charupath Hatekhori School Rd	1011	15/05/23	16 (m-02+f-14)	FGD
10.	Road no 17, Block-E, Bavniyabad	1009	10/05/23	12 (m-12 + f -0)	TSM
11.	Road no 12, Bavniyabad	1009	10/05/23	12 (m-12 + f -0)	TSM
12.	Road no 15, Mirpur-1	414	13/05/23	10 (m- 9 + f-1)	TSM
13.	Commerce College Road, Mirpur-1	414	13/05/23	11 (m-9 + f -2)	TSM
14.	Road 19/13, Block-C, Bavniyabad	1009	10/05/23	17 (m-6 + f -11)	FGD
15.	Rainkhola Water pump Road	414	13/05/23	17 (m-07+f-10)	FGD
	Total participants in 28 consultations		**Total**	**205 (M-156 + F- 49)**	FGD- 5 TSM- 10
	Total participants in FGDs			83(m-46 + f =37)	
	Total participants in TSMs			122(m-110 + f=12)	

Sl.	Date	Time	Place	DMA	Types of Meeting	Participants		
						Male	Female	Total
1	20/12/22	02:25	Sath Mosjid Road	406	TSM	10	02	12
2	21/12/22	12:30	Amtola Mosjid Road	406	TSM	10	01	11
3	17/01/23	02:00	Baitus Sakur Road West Shewrapara	412	TSM	09	01	10
4	21/01/23	12:30	Ziya Haidar Road	411	TSM	09	02	11
5	29/01/23	12:20	Tit Bit Road	411	TSM	10	02	12
6	19/03/23	01:30	Pirerbag Road	412	TSM	10	01	11
7	21/03/23	02:00	One Link Road	411	TSM	11	01	12
8	22/03/23	10:30	Borobag Road	406	TSM	11	01	12
9	23/03/23	11:00	Amtola Road	412	TSM	13	01	14
10	19/02/23	12:30	Shoukot Ali Road	411	TSM	11	01	12
						104	13	117
1	22/01/23	12:30	Dhaka YMC	406	FGD	01	17	**18**

Sl.	Date	Time	Place	DMA	Types of Meeting	Participants		
						Male	Female	Total
			School Mirpur					
2	13/02/23	01:30	Sabdar Ali Scholar Institution School	411	FGD	01	14	**15**
						02	**31**	**33**
1	24/1/23	10:30	Dhaka YMC School Mirpur	406	PCM	20	30	**50**
						20	**30**	**50**

Sl.	Date	Time	Place	DMA	Types of Meeting	Participants		
						Male	Female	Total
1	11/04/23	2:20	1 no Road, Block-D Mirpur-1	409	FGD	14	00	**14**
2	11/04/23	10:30	Sultan Mollah School Road	1010	FGD	10	00	**14**
3	11/04/23	10:00	Harun Mollah Eidgah	1010	FGD	08	03	**11**
4	11/04/23	12:30	Road No 6, Block-D,Pollobi	1010	FGD	08	03	**11**
5	12/04/23	10:00	Kushumbag, North Bishil	409	FGD	13	01	**14**
6	12/04/23	1:30	Road no 7, North Bishil	409	TSM	**15**	**01**	**16**
						68	**08**	**80**

Sl.	VENUE	DMA NAME	DATE	TIME	PARTICIPANTS
1	Kamrunnesa Govt. Girls High School Tikatuli Dhaka	109A	25.1.2023	12:30 PM	Male:3 Female:14
2	Ramkrishna Mission High School, R.K Mission Road	109A	15.2.2023	11:00 AM	Male: 25 Female: 27
3	Kazlar Par	112	21.3.2023	12:30 PM	Male: 11 Female:1
4	Malek Sardar Road, Kazla	112	23.3.2023	2:00 PM	Male:13 Female: 1

- All stakeholders were very supportive of the project, extended full cooperation during the works, and requested the PMU to complete the works at the earliest
- Stakeholders indicated that works are being conducted without much disturbance to people, however, some stakeholder aired their grievances such as damaged to utilities (water pipelines, and house connections), non-clearance of surplus soil, delay in road restoration, dust, traffic disruptions, etc., PMU informed that these gaps in EMP implementation have already been identified by DMSC and PCU and respective Civil Works Contractor directed to improve the compliance.
- PMU also explained the grievance redress system of the project, and encouraged public to bring their grievances, if any, to the notice of project agencies for early resolution

VI. GRIEVANCE REDRESS MECHANISM

59. A project-specific grievance redress mechanism (GRM) is established to receive, evaluate, and facilitate the resolution of AP's concerns, complaints, and grievances about the social and environmental performance at the level of the project. The GRM aims to provide a time-bound and transparent mechanism to record and resolve social and environmental concerns linked to the project. A common GRM is in place for social, environmental, or any other grievances related to the project; the resettlement plans (RPs) and IEEs will follow the GRM described below. The GRM provides an accessible and trusted platform for receiving and facilitating resolution of affected persons' grievances related to the project. The multi-tier GRM for the project is outlined below, below, each tier having time-bound schedules and with responsible persons identified to address dress grievances and seek appropriate persons' advice at each stage, as required.

60. PMU will maintain a Complaint Cell headed by a designated Grievance Officer at its office. The Grievance Registration/Suggestion Form **(Annex 6)** is available at the Complaints Cell and in Zonal Offices and will also be downloadable from the DWASA website (link to DWASA website: https://dwasa.org.bd/dwsnip/).

61. PMU/PCU with assistance from NGO (Resettlement and Public Awareness Campaign) are ensuring that awareness on grievance redress procedures is generated through the campaign. PCU Safeguard Focal Person through NGO –Public Awareness (SAMAHAR) team conduct wide awareness campaigns at each DMA sites to ensure that poor and vulnerable households are made aware of grievance redress procedures and entitlements.

62. APs have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complain complaints/suggestion boxes or by e-mail, by post, by telephone, or by writing in a complaint register in PMU/PCU offices. Careful documentation mentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved are being undertaken by NGO/DMSC. The PMU Project Officers (Environment & Social) have the overall responsibility for timely grievance redress respectively on environmental and social safeguards issues and for registration of grievances, related disclosure and communication with the aggrieved party through PCU (Safeguard Nodal Person).

63. GRC was established on Dec 19, 2018 at both PMU and PCU level. The GRC committee are shown below:

GRC at PMU Level:

1.	Project Director- DWSNIP	-	Convener
2.	Deputy Project Director	-	Joint Convener
3.	Safeguard Focal Person (Concerned Executive Engineer)	-	Member
4.	Environmental Expert, DMS, DWSNIP	-	Member
5.	Resettlement Expert, DMS, DWSNIP	-	Member
6.	Team Leader, Resettlement (NGO SAMAHAR)	-	Member
7.	Affected Person (APs)/Representative (if applicable)	-	Invited Specially

GRC at PCU Level:

1.	Executive Engineer (Concerned MODS Zone)	-	Convener
2.	Safeguard Focal Person (AE/SDE, (Concerned MODS Zine)	-	Member
3.	Team Leader, Resettlement (NGO SAMAHAR)	-	Member
4.	Resettlement Officer of Concerned Civil Works Contractor	-	Member
5.	Ward Councilor/Female Ward Councilor (Concerned City Corporation)	-	Member
6.	Affected Person (APs)	-	Invited specially

Grievance Redress Process

64. Grievances received and responses provided have been documented and reported back to the affected persons. The number of grievances recorded and resolved and the outcomes have been displayed/disclosed in the offices of the different Zonal office of DWASA and web. Project-affected people can also send their grievances directly to ADB through the Bangladesh Resident Mission and/or to ADB's Accountability Mechanism

65. To resolve all project related grievances and complaints a common social and environmental grievance redress mechanism have been in place. Common and simple grievances is sorted out at project site/DMA level by the Contractor's Resettlement Supervisor, supervision staff of PMU and project NGO within 7 days. More serious complaints are sent to the safeguard officer at the PCU to be resolved in 14 days. If any unresolved grievances occur, the procedure is to forward that to PMU to resolve within 21 days. Despite the project GRM, an aggrieved person has access to the country's legal system at any stage.

66. **Consultation Arrangements.** This includes group meetings and discussions with affected persons, to be announced in advance and conducted at the time of day agreed on with affected persons and conducted to address general/common grievances; and if required with the Environment/Resettlement Specialist of PMU/DMSC for one-to-one consultations. Non-literate affected persons/ vulnerable affected persons are assisted to understand the grievance redress process, to register complaints and with follow-up actions at different stages in the process.

67. Record-Keeping. Records are kept by PMU/PCU Office/Contractors' site office of all grievances received including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were in effect, and final outcome.

68. The number of grievances recorded and resolved and the outcomes are displayed/disclosed in the offices of the different MODS zone of DWASA and web. The phone number where grievances are to be recorded are prominently displayed at the construction sites.

69. Periodic Review and Documentation of Lessons Learned**.** PMU periodically reviews the functioning of the GRM and effectiveness of the mechanism, especially on the Project's ability to prevent and address grievances.

70. All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) is borne by PMU.

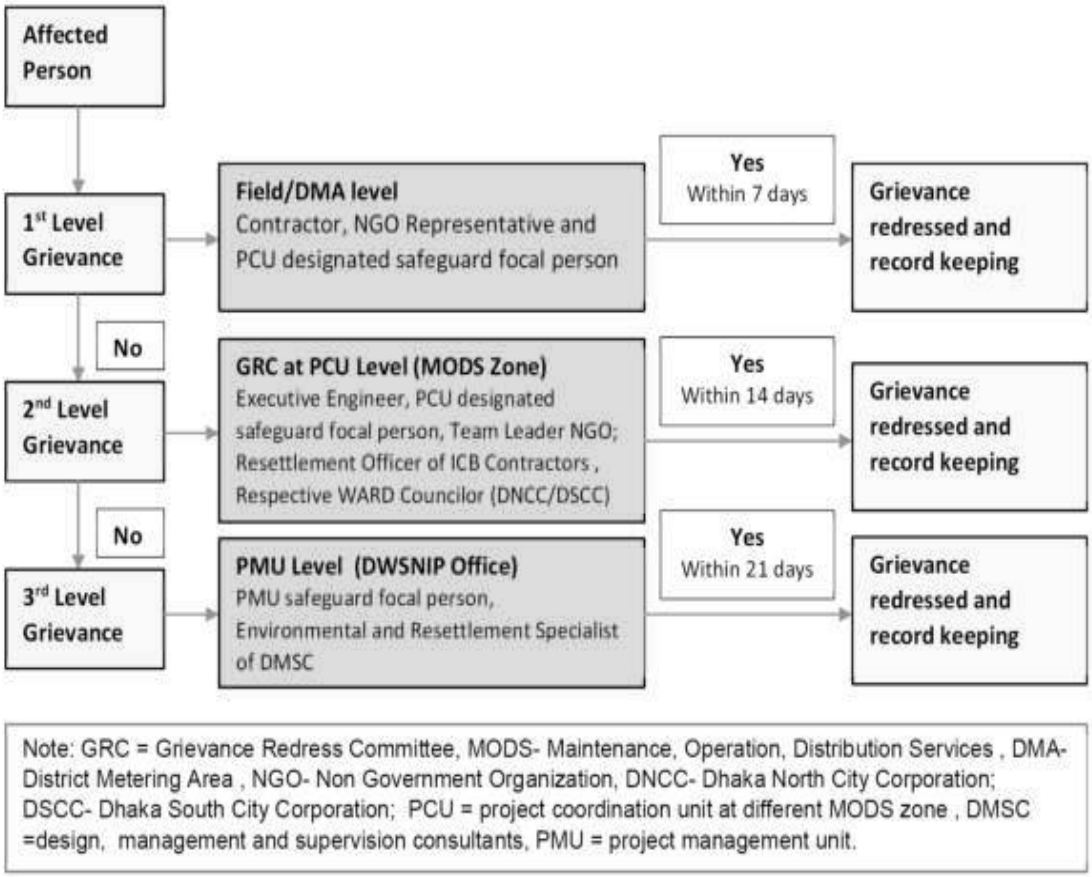

Figure 3: Flow Chart of GRM Process

Complaints Received during Reporting Period

71. All grievances – major or minor, during the project implementation are registered. Officials are maintaining a register of all grievances with the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how & when the problem was resolved, etc.

72. The initiate in the field level GRM is publicized among the local population is taken by the NGO and the contractors. The NGO firstly aware the local people of the project by tea stall meeting, focused group discussion, mosque discussion and also house to house talk. The local people aware of the fact about the complaint they may have and can be anonymously posted in the complaint box also in the complaint registration book which is available in the construction site, contractor site office, PCU, and PMU office.

No complain received during reporting period. But the arrangement was available in the construction site, contractors site office, PCU and PMU. Some pictorial evidences are presenting in the table below:

Pictorial Evidences of complaints boxes in the site office and construction sites

GRM for Labors

73. Grievance Redress Mechanism (GRM) has also been established for labourers /workers whose grievances are heard and recorded regularly, and appropriate actions are taken to redress them. All Civil works contractors discussed with Labourers during working time to receive and record their complaint if they had.

VII. TRAINING AND CAPACITY BUILDING PROGRAM AND INCIDENT SUMMARY

74. As suggested in the respective IEE and EMPs, various training and capacity building programs conducted specific to environment, health, safety and implementation of EMPs. Training program on safety and environment has been arranged for contractors, supervisors by DMSC and ADB safeguard specialists / consultants in PMU Office, DMS office and PM site office, Contractor's site office, stockyard/ camp site and construction site during the reporting period. Details are provided in the following table.

Table -16: Capacity Building/Training Activities

Training Title	Date and Venue	Training Details & Participants	No of Participants	
			Male	Female
Swift and secure methods for conducting household connection works.	03.04.23 DMA-2011 (Store)	Technicians and supervisors	10	0
Safety Precautions for HDD Works	17.05.23 DMA-2011 (Store)	Technicians and Mechanics	10	0
Environment, Health and Safety at working sites	23.03.2023 At kamalapur project office	SM, DSM, ASM, PE, APE, SE, Eng, O&M, OA	34	1
Training for Safety health and accident issues at construction	27.03.2023 At kamalapur project office	SM SE Eng. O&M OA	26	0
Mechanics training program	20.03.2023 Demra workshop	Technician & Mechanics	20	0
Maintenance 5s and Safety Security	15.05.2023 Demra workshop	Technician & Mechanics	15	0
Operation and Maintenance safety Security training	20.05.2023 DMA 108A Sutrapur	Technician & Operator	18	0
Meter Shifting training	21.05.2023	CPP SM, PE, APM Eng.	21	0
Fire Drill, Health and Environmental Management	01.06.2023	Technician, Operator & Mechanics	28	1
Environment, Health and Safety at working sites	05.06.2023 At Kamalapur project office	SM, DSM, ASM, PE, APE, SE, Eng, O&M, OA	26	1
Occupational Safety, Health & Environmental Management (OSHEM)	10.06.2023 to 13.06.2016 IEB, Engineering Staff College	Manager, ASM, APE, SO, Env. Engr.	5	1
Operation and Maintenance training of DMA 114	26.11.2022 At Komlapur Project office	Site Engineer, 2nd man, Site in Charge, Site Engineers, Supervisors of contractors, Jointer	45	1

		Plumber		
Training for construction Safety	12.01.2023 Location: DMA-303	Site In Charge, Site Engineers, Supervisors, workers of contractors	11	0
Training for construction Safety	15.02.2023 Location: DMA-306	Engineers, Supervisor, Technician and others	15	0
Training for work Safety and health safety	13.04.2023 DMA 305	Site In Charge, Site Engineers, Supervisors, workers of contractors	24	3
Training for work Safety and health safety	18.05.2023 DMA 307	Site In Charge, Site Engineers, Supervisors, workers of contractors	22	2
Training for work Safety and health safety	11.06.2023 DMA 305	Site In Charge, Site Engineers, Supervisors, workers of contractors	21	0
Training for work Safety and health safety	15.04.2023 DMA 406	Site In Charge, Site Engineers, Supervisors, workers of contractors	18	0
Training for work Safety and health safety	19.05.2023 DMA 411	Site In Charge, Site Engineers, Supervisors, workers of contractors	22	0

VIII. HEALTH AND SAFETY STATUS

75. This section presents the status of Health and Safety of DWSNIP subprojects under 3-ICB packages (ICB-2.8, ICB-2.9, ICB-2.10), NCB packages (NCB 2.11A, 2.11B, 2.11C (Lot-1&2), 2.11D (Lot-1&2)) and LIC Packages with implementation and rehabilitation of different activities mentioned below:

Objectives	Measures
Site Security Measures	Use of proper safety signage, display board, caution tape, hard barricading should be done during implementation work. The photograph of safeguard compliances attached in **Annex-5**
PPE inventories	Use of proper Personal Protective Equipment (PPEs); i.e.; Hard hat, Eye Protection, Hand Protection, Foot ware, Ear-protection, Safety Vest; should be used during implementation work. **(Annex-5)**
Medical and First Aid provision:	First aid kits are necessary so that injuries can be treated immediately to help reduce the risk of infection to the injury. A first aid assessment should be carried out to be able to provide first response to all types of accidents and injuries. First aid kits should include: Moist wipes, Disposable gloves, Medium and large sterile dressings, Sterile eye pads, Saline solution, Eye baths, Triangular bandages.
Emergency preparedness and response procedures	The following emergency protocol will be maintained. Site Manager will seal off the work area immediately; He will notify appropriate emergency mitigation team (i.e., hospital, fire department, etc.); Then he will notify Contract Manger of the incident; Contract Manager will inform the Director and the client of the incident; Contract Manager and Client will decide when to re-open work site; The emergency incident will be logged for Client's review. The Root cause analysis reports during reporting period have been enclosed in **annex-12**
Safety Checklists	Safety Checklists for Excavation work, Traffic Management Work, Electrical Work, Fire Safety, DTW works, Safety for Asbestos Cement pipe, Dust and Noise control, OHS a& CHS safety have been enclosed in **annex-14**

76. Few minor incidents occurred at DWSNIP during this reporting period. Please see the summary of all the incident/accident in the following table. And root cause analysis report has been attached in **Annex-12**

Table: Incident Report for Human (January-June, 2023)

Sl.	Date and Time	Location	Type of Work	Nature of Incident	Description	Corrective Action
1	19.01.2023 3:30 PM	DMA-908	Labour	Pain in Muscle	Got shoulder injury while pulling pipe	First Aid was applied
2	17.02.2023 01:45 PM	DMA-908	Labour	Slippery tool falls from hand into leg Pain in left leg.	He slipped his left leg while joint the pipe.	First Aid was applied and he was advised to take rest.
3	08.04.2023 11:00 AM	DMA-908	Labour	Cut and Pain in hand	Got hand injury while house connection work	First Aid was applied and he was advised to take rest
4	28.04.23 02:00 PM	DMA-211 (Water Works Road)	Labour	Burn injury in his left hand, throat and some parts of his face.	The hammer drill that he was operating to drill road punctured the power cable resulting in fire.	After first aid, he was sent to hospital.
5	10.02.2023 02:40 AM	DMA-104 76, North Mugda,Jheelpar	Labour	Burnt	From the sparky of DPDC Cable	After providing First Aid transferred him to Mugda Medical College & Hospital
6	25.02.2023 03:00 AM	DMA-101 R-18, Bashabo Main Road, near tempo station	Labour	Small wound	During OT accidentally hit the Electric Cable	First Aid was applied and he was advised to take rest
7	15.03.2023 01:00 AM	DMA-105 Kalibari pump Buddha Mondir Road.	Jointer	Pain in the leg.	During head work of pump	First Aid was applied & take medical treatment.
8	22.03.2023 11:00 AM	DMA-110 R-26, Golapbagh Road, near pump station	Work assistant	The dog bites	During pipe fitting work	First Aid was applied and send him to Dhaka Infectious Diseases Hospital, Mohakhali
9	23.04.2023 01:00 AM	On duty in Demra central store.	Tractor driver	Left hand broken	The gang of robbers strikes	First Aid was applied & take medical treatment.

Table: Summary of accident/incident record during the reporting period (January-June, 2023)

SL.	Description	During the reporting period				Cumulative (January-June 2023
		ICB 2.08	ICB 2.09	ICB 2.10	NCB 2.11	
1	Fatal accident	0	0	0	0	0
2	Lost Time injuries (LTI)	0	0	1	0	1
3	Medical Treatment	0	0	3	0	3
4	First Aid case	3	0	0	0	3
5	Fire	0	1	1	0	2
6	Security incident	0	0	0	0	0
7	Near miss	0	0	0	0	0

IX. MITIGATION MEASURES FOR PREVENTION OF COVID 19

77. With the outbreak of COVID 19 Pandemic and subsequent lockdown, most of the activities in the country stopped temporarily until the country became normalized. From around 26th March up to 31st May 2020 almost all the construction sites in the country were temporarily suspended. With the decrease of the threat of COVID 19, construction activities of the DWSNIP resumed with compliance to government's Technical Guidance for Social and Institutional Containment and Prevention of Pandemic COVID-19 Infection issued on 11 May 2020 applied by the Ministry of Health and Family Welfare and Director General Health Service (MOHFW/DGHS) and the guidelines circulated by the LGD.

78. The Addendum Health and Safety (H&S) Plans in response to COVID-19 were developed by all civil works contractors and approved by PMU as well as ADB. In summary, the following important elements in the H&S plans:

(i) The plans are not intended to replace any formalized procedures currently in place for the Contractors. If the H&S Plans do not meet or exceed the standards put forth by the Contractors in their EMPs, SEMPs or other plans, the Contractors shall abide by the most stringent procedures/standards available;
(ii) The existing Environmental Officer or health & safety officer or Site Manager of the contractors can be designated as OHS officers;
(iii) Requirement for induction of employees and workers on COVID-19 per WHO guidelines, including training and monitoring;
(iv) List of specific PPE needs of all workers on a daily basis, with estimated costs to be borne by the contractors or funded under the contingency cost of provisional sum (subject to confirmation by PMU);
(v) Specific guidance for the management teams, offices, site labourers and stock yards/construction camps, including site facilities needed, on the implementation of COVID-19 prevention measures;
(vi) Self-declaration and monitoring checklists; and
(vii) Arrangement and contact numbers in cases of emergencies.

79. Meanwhile, BRM have prepared a COVID-19 Health and Safety Advisory Guidance for Construction Workforce and provided to Project Director on July 21, 2020. The guidance includes the protocols on the following:

(i) Prerequisite measures before reopening the worksites;
(ii) Worksite entrance;
(iii) Worksite management;
(iv) Camp management;
(v) Work site awareness raising;
(vi) Risk exposure assessment guidance;
(vii) Engage an employee/staff to oversee health and safety issues; and
(viii) Monitoring and reporting mechanism.

X. OBSERVATIONS AND RECOMMENDATIONS

80. Based on the foregoing observations, findings and environmental monitoring carried out from January-June, 2023, it may be concluded that ICB 2.8, ICB 2.9, ICB 2.10, NCB 2.11A, 2.11B, 2.11C (Lot-1&2), 2.11D (Lot-1) under DWSNIP subprojects (DMAs) have been implemented as just satisfied. There are some non-compliance EMP activities noticed in the monitoring report in each DMA sites of different packages for which Corrective Action Plans have been prepared and presented in Table 8. Following are noncompliance issues for Packages

- Some trenches were found open after laying pipes improved at site
- Although Contractor has provided adequate numbers of PPEs but use of these PPEs during construction sites are inadequate.
- Management of air quality, dust and noise
- Lack of using barricade and caution tape improved
- Spoil disposal management improved

81. The concerned Contractors have been suitably advised. Contractors have also been advised to provide written commitment for implementation of corrective action plan. Contractor will mitigate the above issues according to Table 8 to remove these non-compliances.

82. At the beginning of the construction works at all DMAs, the Contractors were reluctant to comply with the EMP, HSP and use of Face Mask properly. From the initiative and continuous monitoring and supervision both from DMS and DWASA the safeguard compliances were achieved and all the safeguard compliances were found to carry out by the Contractors during reporting period.

83. Table 17 provides the recommended corrective action plan that has been devised and target dates that have been set so as to remove these non-compliances. The concerned Contractors have been suitably advised. Contractors have also been advised to provide written commitment for implementation of corrective action plan

Table 17: Implementation of Corrective Action Plans

Sl No.	Non-Compliance	Action Required	Actual mitigation taken	Time Frame	Responsibility	Compliance Status
Package ICB 2.9-						
1	Dust problem was noticed in the construction area	Sprinkling of water should be carried out at dusty sites	Sprinkling of water once in a day has been carried out.	In dusty days	Contractor-CFMCC	Improved but not enough (as per ECC of DOE) that the sprinkling should be done twice but it was done for once in a day
2	The contractor could not dispose excavated materials from sites regularly;	Ensure proper collection and disposal of excavated materials at designated disposal sites on the same working day.	Excavated materials from site collected regularly and dumped in a temporary disposal site. After that, in every night, the disposed spoil carried out from temporary site to designated disposal site.	In regular manner	Contractor-CFMCC	The situation has been improved now
3	Non availability of traffic signage (Signs, Pavement Markings, Arrow Panels etc.	Implement the Traffic Management Plan to ensure the safety of all the road users	Traffic signage has been used in front of the road as well as traffic diversion.	During construction work	Contractor-CFMCC	Improved and satisfactory
4	Pits and trenches are not always covered with steel plates	Prompt action is required to cover trenches after laying of pipes	Pits were covered with plates and barricaded with caution tape and caution signage after laying pipes	After construction where needed	Contractor-CFMCC	Improved and satisfactory
5	Lack in use of PPEs among the workers	Encourage use of PPEs on construction site in daily tool-box trainings	Trainings were carried out everyday before construction work and workers were educated on importance of using PPE by the health and officers	Daily basis before construction work	Contractor-CFMCC	Improved and to be continued

Package ICB 2.10						
1	Not available traffic signage (Signs, Pavement Markings, Arrow Panels, Warning Lights) on site	Ensure the safety of all the road users along the work zone and Mark all under construction road.	Traffic signage has been used in front of the road as well as traffic diversion.	During construction work	Contractor-CCSEB-RPL JV	Partially improved; Further improvement is required
2	No notice board installed in the construction area within DMA	Immediate arrangement of proper notice board (Project information, nature of work and duration of the activities) at all construction sites	Notice board/banner was placed in the construction site during the construction work	During construction work	Contractor-CCSEB-RPL JV	Improved
3	Dust problem was noticed in the construction area	Sprinkling of water should be carried out at dusty sites	Sprinkling of water twice in a day has been carried out.	In dusty days	Contractor-CCSEB-RPL JV	Improved
4	Noise level at some worksites was found higher	Provide Air plug to the workers and aware them to use it. Noise level needs to be monitored according to EMP	Air plugs were provided during construction work.	Where needed	Contractor-CCSEB-RPL JV	Improved
5	Incomplete use of PPEs by Workers	The Contractor to ensure the use of PPE on site	Trainings were carried out every day before construction work and workers were educated on importance of using PPE by the health and officers	Daily basis before construction work	Contractor-CCSEB-RPL JV	Partially improved; Further improvement is required
6	Poor Health and safety in COVID 19 prevention	Immediate improvement is required	Face mask, hand sanitizer, soap, disinfectants were provided to prevention.	During construction work	Contractor-CCSEB-RPL JV	Improved satisfactorily

Table 17A: Corrective action plan for the next reporting period July-December 2023

SL	Non-compliance	Action required	Target date	Responsibility	Remarks
ICB 2.10					
1	Insufficient display warning signs	Providing Warning display where construction work ongoing	During Construction	Contractor-CCSEB-RPL JV	
2	Insufficient display board, traffic diversion, clean and clear passage way	Providing traffic diversion, display board, clean & clear passage way should be placed in the work site	During construction	Contractor-CCSEB-RPL JV	
3	Insufficient distance from excavated materials and open pit	Excavated materials should be placed 1m away from the pit	During construction	Contractor-CCSEB-RPL JV	
NCB 2.11					
1	Insufficient display board, traffic diversion, clean and clear passage way	Need to provide traffic diversion, display board, clean & clear passage way should be placed in the work site	During construction	Contractor-TCEL, RFL	
2	Irregular trainings on OHS to workers	Need to provide regular toolbox talk before construction work and site-specific work-related trainings	Before construction work	Contractor-TCEL, RFL	
3	Not availability of temperature screening facility, first aid box, hand washing facilities	Need to provide proper first aid box, hand washing facilities and temperature screening facilities	On construction site	Contractor-TCEL, RFL	

84. Failure to perform the instructions, The Project Manager will take action against each Contractors. Alongside the Contractors are advised to follow the guidelines & instructions of DMS Officials. Environmental Specialist of DMS recommended the corrective measures which the contractor will do immediately for EMP and HSP compliance.

85. Prior to start works, the Contractor will recommend to provide the following information according to SEMP

- Name of Health, Safety Officer and Site Supervisors with contact details
- No. of workers (Male/Female wise)
- Copies of all permission/approvals for construction from concerned authority
- Tool box training to staff and workers
- Detail of Notice Board
- DMA wise traffic management plan
- Details of PPEs (item wise) including prevention of COVID 19

- Awareness Poster for COVID 19 prevention

Annex 01: ICB Package-wise Design and Implementation Status (Till June 2023)

ICB Package no.	Batch no. (DMAs)		Activities performed during Jan-Jun'23 (Y-done; N-not done; N.A.-not applicable)						
		DMA	Survey	Model Design	Detail Design	Joint Verification	Method of Statement	Road cutting permission	Materials Mobilization & Testing
ICB 2.8	1st Batch	DMA 903	Y	Y	Y	Y	Y	CPP obtained permissions for all DMAs	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Float Valve, Data Logger; all mobilization and testing completed Deep Tube Well 10 sets mobilization and testing completed
		DMA 904	Y	Y	Y	Y	Y		
		DMA 906	Y	Y	Y	Y	Y		
		DMA 907	Y	Y	Y	Y	Y		
	2nd Batch	DMA 905	Y	Y	Y	Y	Y	CPP obtained permissions for all DMAs	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Data Logger, Float Valve; all mobilization and testing completed.
		DMA 912	Y	Y	Y	Y	Y		
		DMA 913	Y	Y	Y	Y	Y		
		DMA 914	Y	Y	Y	Y	Y		
	3rd Batch	DMA 915	Y	Y	Y	Y	Y	CPP obtained permissions for DMA915, DMA911, DMA901, DMA902 DMA-908	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Bulk Water Meter, Data Logger, Float Valve, Domestic Water Meter; mobilization and testing completed.
		DMA 911	Y	Y	Y	Y	Y		
		DMA 901	Y	Y	Y	Y	Y		
		DMA 902	Y	Y	Y	Y	Y		
		DMA 908	Y	Y	Y	Y	Y		

ICB Package no.	Batch no. (DMAs)	DMA	Activities performed till June 2023 (Y-done; N-not done; N/A-not applicable)						
			Survey	Model Design	Detail Design	Joint Verification	Method of Statement	Road cutting permission	Materials Mobilization & Testing
ICB 2.09	1st Batch	DMA 201	Y	Y	Y	Y	Y	Obtained permissions for all DMAs	HDPE pipes & fittings, HC pipes & fittings, domestic water meters, regular valves, special valves, float valves, bulk water meters, data loggers (all mobilization and testing completed)
		DMA 202	Y	Y	Y	Y	Y		
		DMA 203	Y	Y	Y	Y	Y		
		DMA 204A	Y	Y	Y	Y	Y		
		DMA 204B	Y	Y	Y	Y	Y		
	2nd Batch	DMA 205	Y	Y	Y	Y	Y	Obtained permissions for all DMAs	HDPE pipes & fittings, HC pipes & fittings, domestic water meters, regular valves, special valves, float valves, bulk water meters, data loggers (all mobilization and testing completed)
		DMA 206	Y	Y	Y	Y	Y		
		DMA 209A	Y	Y	Y	Y	Y		
		DMA 209B	Y	Y	Y	Y	Y		
		DMA 210A	Y	Y	Y	Y	Y		
		DMA 210B	Y	Y	Y	Y	Y		
	3rd Batch	DMA 212	Y	Y	Y	Y	Y	Obtained permissions for all DMAs	HDPE pipes & fittings, HC pipes & fittings, domestic water meters, regular valves, special valves, float valves, bulk water meters, data loggers (all mobilization and testing completed)
		DMA 213	Y	Y	Y	Y	Y		
		DMA 214	Y	Y	Y	Y	Y		
	4th Batch	DMA 207	Y	Y	Y	Y	Y	Obtained permissions for all DMAs	HDPE pipes & fittings, HC pipes & fittings, domestic water meters, regular valves, special valves, float valves, bulk water meters, data loggers (all mobilization and testing completed)
		DMA 208A	Y	Y	Y	Y	Y		
		DMA 208B	Y	Y	Y	Y	Y		
		DMA 211	Y	Y	Y	Y	Y		
		DMA 215	Y	Y	Y	Y	Y		

ICB Package no.	Batch no. (DMAs)	DMA	Survey	Model Design	Detail Design	Joint Verification	Method of Statement	Road cutting permission	Materials Mobilization & Testing
ICB-2.10	1st Batch	DMA 108A	Y	Y	Y	Y	Y	Road Cutting permission obtained for all DMAs except the new Roads	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Float Valve; all mobilization and testing completed Deep Tube well 6 sets mobilization and testing completed.
		DMA 108B	Y	Y	Y	Y	Y		
		DMA 113	Y	Y	Y	Y	Y		
		DMA 115	Y	Y	Y	Y	Y		
		DMA 116	Y	Y	Y	Y	Y		
	2nd Batch	DMA 101	Y	Y	Y	Y	Y	Road Cutting permission obtained for all DMAs except the new Roads	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Float Valve; all mobilization and testing completed
		DMA 102	Y	Y	Y	Y	Y		
		DMA 103	Y	Y	Y	Y	Y		
		DMA 105	Y	Y	Y	Y	Y		
		DMA 106	Y	Y	Y	Y	Y		
		DMA 114	Y	Y	Y	Y	Y		
	3rd Batch	DMA 104	Y	Y	Y	Y	Y	Road Cutting permission obtained for all DMAs except the new Roads & DMA 117	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Bulk Water Meter, Float Valve; mobilization and testing completed.
		DMA 110	Y	Y	Y	Y	Y		
		DMA 117	Y	Y	Y	Y	Y		
		DMA 118	Y	Y	Y	Y	Y		
		DMA 119	Y	Y	Y	Y	Y		
	4th Batch	DMA 107	Y	Y	Y	Y	Y	Road Cutting permission not obtained for all DMAs except the DMA 107	
		DMA 109A	Y	Y	Y	Y	Y		
		DMA 109B	Y	Y	Y	Y	Y		
		DMA 111	Y	Y	Y	Y	Y		
		DMA 112	Y	Y	Y	Y	Y		

NCB Package no.		Activities performed during Jan-June, 2023 (Y-done; N-not done; N.A.-not applicable)						
	DMA	Survey	Model Design	Detail Design	Joint Verification	Method of Statement	Road cutting permission	Materials Mobilization & Testing
NCB 2.11A	DMA 301	Y	Y	Y	Y	Y	N	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Float Valve, Data Logger; all mobilization and testing completed
	DMA 303	Y	Y	Y	Y	Y	N	
	DMA 306	Y	Y	Y	Y	Y	N	
	DMA 311	Y	Y	Y	Y	Y	N	
	DMA 320	Y	Y	Y	Y	Y	N	
	DMA 408	Y	Y	Y	Y	Y	N	

NCB Package no.		Activities performed during Jan-June'23 (Y-done; N-not done; N.A.-not applicable)						
	DMA	Survey	Model Design	Detail Design	Joint Verification	Method Statement	Road cutting permission	Materials Mobilization & Testing
NCB 2.11B	DMA 305	Y	Y	Y	Y	Y	Road Cutting Permission received for DMA 307. Demand note issued for DMA 305, 312 & 313.	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Data Logger; mobilization and testing completed
	DMA 307	Y	Y	Y	Y	Y		
	DMA 312	Y	Y	Y	Y	Y		
	DMA 313	Y	Y	Y	Y	Y		

NCB Package no.		Activities performed during Jan-Jun'23 (Y-done; N-not done; N.A.-not applicable)						
	DMA	Survey	Model Design	Detail Design	Joint Verification	Method Statement	Road cutting permission	Materials Mobilization & Testing
NCB 2.11C Lot 1	DMA 406	Y	Y	Y	Y	Y	Road cutting permission received for DMA 406. Demand note issued for DMA 411 & 412.	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Data Logger; mobilization and testing completed
	DMA 411	Y	Y	Y	Y	Y		
	DMA 412	Y	Y	Y	Y	Y		

NCB Package no.		Activities performed during Jan-Jun'23 (Y-done; N-not done; N.A.-not applicable)						
	DMA	Survey	Model Design	Detail Design	Joint Verification	Method Statement	Road cutting permission	Materials Mobilization & Testing
NCB 2.11C Lot 2	DMA 409	Y	Y	Y	Y	Y	Applied to DNCC for Road Cutting Permission	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Data Logger; mobilization and testing completed
	DMA 413	Y	Y	Y	Y	Y		
	DMA 414	Y	Y	Y	Y	Y		

NCB Package no.		Activities performed during Jan-Jun'23 (Y-done; N-not done; N.A.-not applicable)						
	DMA	Survey	Model Design	Detail Design	Joint Verification	Method Statement	Road cutting permission	Materials Mobilization & Testing
NCB 2.11D Lot 1	DMA 1005	Y	Y	Y	Y	Y	Road Cutting Permission received for DMA 1010. Demand note has been issued for DMA 1005 & 1011	HDPE pipe & fittings, HC pipe & fittings, Regular Valve (Gate Valve & NRV), Special Valve (PSV & ARV), Domestic Water Meter, Bulk Water Meter, Data Logger; mobilization and testing completed
	DMA 1010	Y	Y	Y	Y	Y		
	DMA 1011	Y	Y	Y	Y	Y		

Annex 02: Environmental Safeguards Compliance Matrix

Package	Batch (DMAs)	Targeted pipeline length (Km)	Pipe laying (Km) till 30 June, 2023	Updated IEE (Y/N)	Disclosure (DWASA/ ADB)	Environmental Clearance from DOE (ECC)	Targeted date of Updated IEE submission
ICB 2.08	1st Batch	455.8	455.5	Y	Y	Y	NA
	2nd Batch			Y	Y	Y	NA
	3rd Batch			Y	Y	Y	NA
ICB 2.09	1st Batch	275	266.23	Y	Y	Y	NA
	2nd Batch			Y	Y	Y	NA
	3rd Batch			Y	Y	Y	NA
	4th Batch			Y	Y	Y	NA
ICB 2.10	1st Batch	472	281	Y	Y	Y	NA
	2nd Batch			Y	Y	Y	NA
	3rd Batch			Y	Y	Y	NA
	4th Batch			Prepared	-	Y	On July, 2023
NCB 2.11	NCB 2.11A	29.65	4.6	Y	Y	Y	NA
	NCB 2.11B	94.79	14.16	Updated	-	Y	Submitted to ADB
	NCB 2.11C, L-1	68.84	42.1	Updated	-	Y	Submitted to ADB
	NCB 2.11C, L-2	66.67	17.43	Updated	-	Y	Submitted to ADB
	NCB 2.11D, L-1	66.80	18.52	Updated	-	Y	Submitted to ADB
	NCB 2.11D, L-2	44.00	N/A	N	N	Y	On July, 2023
ICB 2.12	1st Batch	163.95	Yet to be started	N	N	Y	NA
	2nd Batch			N	N	Y	NA

Annex 03: Copy of Environmental Clearance Certificate and Renewal Certificate

Government of the People's Republic of Bangladesh
Department of Environment
Paribesh Bhaban, E-16, Agargaon
Sher-e-Bangla Nagar, Dhaka-1207
www.doe.gov.bd

Environmental Clearance Certificate

Section 12 of the Environment Conservation Act, 1995 (Amended 2002)

Clearance Certificate Number: 233

File number: 22.02.0000.018.72.43.19.

Clearance Certificate Issue Date: 12 June 2019

Renewal date not later than: 11 June 2020

A. Clearance Certificate Type

Environmental Clearance Certificate

B. Clearance Certificate Holder

Project Director
Dhaka Water Supply Network Improvement Project
Dhaka WASA,WASA Bhaban (8th Floor)
98, Kazi Nazrul Islam Avenue, Kawran Bazar
Dhaka-1215.

C. Premises to which this Clearance Certificate Applies

The distribution pipelines will be laid within the RoW of Government roads. Total length of 1668 km distribution pipelines and reticulation will be laid in 29 Thana under DNCC and DSCC.

D. Activities for which this Clearance Certificate Authorizes and Regulates

The following components will be implemented through Dhaka Water Supply Network Improvement Project under Dhaka WASA -

- Survey, GIS base Network Modelling and Design, Pressure Test, Pre-commissioning, commissioning/Guarantee Tests
- Supplying and laying of 75-450 mm dia HDPE pipes (approx. 1668 km) water distribution lines by using open Trench, Pipe Bursting and Horizontal Drilling Technologies
- Installation of Service connections to approx. 156,163 households including supplying of HDPE pipes, fittings and accessories etc.
- Replacement/Up-gradation of approx. 50 Deep tubewells
- Supplies of key plant of Regular and special valves, Domestic and Bulk-Water meters and welscreen are also part of the facility.

1/4

E. Terms and Conditions for Environmental Clearance Certificate

1. **Limit Condition for Discharges to Air and Water**: The Environmental Clearance Certificate must comply with schedule 2 and 10, rule 12 of the Environment Conservation Rules, 1997.

2. **Noise Limit**: The Environmental Clearance Certificate must comply with the Noise Pollution (Control) Rules, 2006.

In case of non-coverage of ECR 1997 the World Bank Environment, Health and Safety Guideline shall be adhered to.

3. **Operating conditions:**

3.1 Activities must be carried out in a competent manner. This includes:
(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

3.2 All plant and equipment installed at the premises or used in connection with the Environmental Clearance activity:
(a) must be maintained in a proper and efficient condition; and
(b) must be operated in a proper and efficient manner.

3.3 Construction works shall be restricted to day time hours so as to avoid/mitigate the disturbance of local lives as well as implementation schedules of the works shall be notified in advance to nearby residents.

3.4 Storage area for soils and other construction materials shall be carefully selected to avoid disturbance of the natural drainage.

3.5 This shall be ensured that soil is obtained from nearby areas, which are free of invasive plants. Re-vegetation and replanting shall be undertaken if rehabilitation works involve extensive vegetation clearance.

3.6 Vegetation clearance shall be minimizing at the construction phase as to minimize soil erosion. Soils for embankments shall be properly tested and compacted to ensure stability.

3.7 Proper construction practices shall be followed that minimize loss of habitats and fish breeding, feeding & nursery sites.

3.8 Proper and adequate sanitation facilities shall be ensured in labor camps throughout the proposed project period.

3.9 In order to control noise pollution, vehicles & equipment shall be maintained regularly; working during sensitive hours and locating machinery close to sensitive receptor shall be avoided.

3.10 No solid waste can be burnt in the project area. An environment friendly solid waste management should be in place during whole the period of the project in the field.

3.11 Proper and adequate on-site precautionary measures and safety measures shall be ensured so that no habitat of any flora and fauna would be demolished or destructed.

3.12 All the required mitigation measures suggested in the EIA report are to be strictly implemented and kept operative/functioning on a continuous basis.

3.13 Any heritage sight, ecological critical area, and other environmentally and/or religious sensitive places shall be avoided during project construction phase.

3.14 Resettlement plan should be properly implemented and people should be adequately compensated, where necessary.

3.15 Construction material should be properly disposed off after the construction work is over.

3.16 The Environmental Management Plan included in the EIA report shall strictly be implemented and kept functioning on a continuous basis.

4.1 Monitoring and Recording conditions:

4.1.1 The results of any monitoring required to be conducted by this Clearance Certificate must be recorded.

4.1.2 The following records must be kept in respect of any samples required to be collected for the purposes of this Clearance Certificate:
(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) the name of the person who collected the sample.

4.2 Requirement to monitor concentration of pollutants discharged

For each monitoring, the Clearance Certificate holder must monitor (by sampling and obtaining results by analysis) the following parameter: air quality, water quality and Noise.

5. Reporting Conditions: Environmental Monitoring Reports shall be made available simultaneously to Head quarters and Dhaka Metropolitan office of the Department of Environment on a quarterly basis during the whole period of the project.

6. Notification of environmental harm: The Clearance Certificate holder or its employees must notify the Department of Environment of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident.

F. <u>Recording of pollution complaints</u>

The certificate holder must keep a legible record of all complaints made to the certificate holder or any employee or agent of the certificate holder in relation to pollution arising from any activity to which this Environmental certificate applies. The record must include details of the following:

(a) the date and time of the complaint;
(b) the method by which the complaint was made;
(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
(d) the nature of the complaint;

(e) the action taken by the certificate holder in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the certificate holder, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made. The record must be produced to any authorized officer of the DOE who asks to see them.

G. Validity of the Clearance Certificate

This Environmental Clearance is valid for one year from the date of issuance and the project authority shall apply for renewal to the Dhaka Metropolitan office with a copy to Head Office of DOE at least 30 days ahead of expiry.

Violation of any of the above conditions shall render this clearance void.

12.06.19

(Syed Nazmul Ahsan)
Director (Environmental Clearance)
Phone: 8181673

Renewal Certificate

শেখ হাসিনার বাংলাদেশ
পরিচ্ছন্ন পরিবেশ

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
ঢাকা মহানগর কার্যালয়
পরিবেশ ভবন, ই/১৬, আগারগাঁও
শেরে বাংলা নগর, ঢাকা-১২০৭।
www.doe.gov.bd

স্মারক নং-২২.০২.০০০০.০৯১.৭২.০৭৫.২০/নবায়ন- ৫৭ তারিখঃ ১৮/০৮/২০২০ খ্রিস্টাব্দ।

বিষয় ঃ পরিবেশগত ছাড়পত্র নবায়ন (শ্রেণীঃ লাল) প্রসঙ্গে।

সূত্র ঃ আপনার গত ২১.০৬.২০২০ তারিখের আবেদন ও অন-লাইন(৭৯৫১৯)।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, আপনার আবেদন, দাখিলকৃত অন্যান্য কাগজপত্র ও সরেজমিন পরিদর্শন প্রতিবেদন যাচাই বাছাই করে ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি), ঢাকা ওয়াসা অনুকূলে ইস্যুকৃত পরিবেশগত ছাড়পত্রের নবায়নের কপি অন-লাইনে প্রদান করা হয়েছে, যার সনাক্তকরণ নম্বর-৭৯৫১৯। উল্লেখ্য অন-লাইনে উদ্যোক্তার আইডি দিয়ে লগইন করে পরিবেশগত ছাড়পত্রের নবায়নের কপি ডাউনলোড করে প্রিন্ট করা যাবে। ডিজিটাল ছাড়পত্র একটি সিস্টেম জেনারেটেড ছাড়পত্র হওয়ায় এতে কোন স্বাক্ষরের প্রয়োজন নেই।

১৮.০৮.২০২০
(ড. মুঃ সোহরাব আলি)
পরিচালক
ফোন ঃ ৮১৮১৭৮৯
Email: dhakametro@doe.gov.bd

জনাব মোঃ আখতারুজ্জামান
অতিরিক্ত প্রধান প্রকৌশলী
ও
প্রকল্প পরিচালক
ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক
ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি)
ঢাকা ওয়াসা
৯৮, কাজী নজরুল ইসলাম এভিনিউ
কাওরান বাজার, ঢাকা-১২১৫।

অনুলিপিঃ অবগতির জন্যঃ
১। সহকারী পরিচালক, মহাপরিচালক মহোদয়ের শাখা, পরিবেশ অধিদপ্তর, ঢাকা।

Draft

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
ঢাকা মহানগর কার্যালয়
পরিবেশ ভবন, ই/১৬, আগারগাঁও, ঢাকা ১২০৭
www.doe.gov.bd

পরিবেশগত ছাড়পত্র নবায়ন

ছাড়পত্র নং: ২০-৪৩২৫১

পরিবেশগত ব্যবস্থাপনা নিশ্চিতকরণ সাপেক্ষে সংযুক্ত শর্তে নিম্নবর্ণিত প্রতিষ্ঠান/প্রকল্পের অনুকূলে পরিবেশগত ছাড়পত্র নবায়ন প্রদান করা হলো :

প্রতিষ্ঠান/প্রকল্পের নাম	:	Dhaka water supply Network Improvement project
উদ্যোক্তার নাম	:	Dhaka Water Supply And Sewerage Authority
সনাক্তকরণ নং	:	৭৯৫১৯
প্রতিষ্ঠান/প্রকল্পের কার্যক্রম	:	Water, power and gas distribution line laying/relaying/extension
প্রতিষ্ঠান/প্রকল্পের শ্রেণী	:	Red
প্রতিষ্ঠান/প্রকল্পের ঠিকানা	:	project director,Dhaka WASA, WASA Bhaban (8th floor), 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215,Tejgaon,Dhaka
প্রদানের তারিখ	:	18.08.2020
মেয়াদ উত্তীর্ণের তারিখ	:	12.06.2021

ছাড়পত্রটি যাচাই করতে ভিজিট করুন: http://ecc.doe.gov.bd/certificate_verification

সনাক্তকরণ নং: ৭৯৫১৯ Dhaka water supply Network Improvement project ছাড়পত্র নং: ২০-৪৩২৫১

Draft

পরিবেশগত ছাড়পত্র নবায়ন জন্য প্রযোজ্য শর্তাবলী:

১ . এ ছাড়পত্র শুধুমাত্র ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি)-এর ক্ষেত্রে প্রযোজ্য হবে।

২ . বর্ণিত প্রকল্পের অনুকূলে পরিবেশ অধিদপ্তরের বিগত ১২.০৬.২০১৯ তারিখ নং-২২.০২.০০০০.০১৮.৭২.৪৩.১৯.২৩৩ সংখ্যক স্মারকে প্রদত্ত পরিবেশগত ছাড়পত্রের সকল শর্ত অপরিবর্তীত থাকবে।

৩ . প্রকল্পের কার্যক্রম দ্বারা কোন অবস্থায় রাস্তায় যানজট সৃষ্টি করা যাবেনা। এ বিষয়ে বিকল্প ব্যবস্থাপনা সার্বক্ষণিক কার্যকর রাখতে হবে।

৪ . প্রকল্পের এলাইনমেন্টে যানজট নিয়ন্ত্রণের জন্য নিজস্ব জনবল দ্বারা সার্বক্ষণিক যানজট নিয়ন্ত্রণের জন্য কার্যকর উদ্যোগ গ্রহণ করতে হবে।

৫ . কোন অবস্থায় প্রকল্পের কার্যক্রম দ্বারা কোন জলাজয়, ডোবা, নালা, বিল, খাল, পুকুর, বন্যা প্রবাহ এলাকা, ওয়াটার রিটেনশন এরিয়া ভরাট করা যাবেনা।

৬ . প্রকল্পের কার্যক্রম বাস্তবায়নের সময় রাস্তা খোড়া-খোঁড়ি করার সময় তাৎক্ষণিকভাবে রাস্তার মাটি নিরাপদে অপসারণ করতে হবে এবং কোন মাটি/বালি উন্মুক্ত অবস্থায় রাখা যাবেনা যাতে রোদে ডাষ্ট উত্থিত হয়ে বায়ু দূষণ না হয় এবং বৃষ্টির পানিতে স্ট্রম ওয়াটারের সাথে মিশে রাস্তা সংলগ্ন ড্রেনেজ ব্লক সৃষ্টি হয়ে জলাবদ্ধা সৃষ্টি না করে।

৭ . প্রকল্পের পাশের রাস্তায় কোন ধরনের নির্মাণ সামগ্রী রেখে ফুটপাত/রাস্তার প্রতিবন্ধকতা সৃষ্টি করা যাবেনা।

৮ . প্রকল্পের কার্যক্রম দ্বারা পরিবেশ ও প্রতিবেশের ক্ষতিসাধন করা হলে Polluters Pay Principle অনুসারে ক্ষতিপূরণ ধার্য করে নির্ধারিত সময়ের মধ্যে ধার্যকৃত ক্ষতিপুরণ আদায় করা হবে।

৯ . মহামান্য হাইকোর্ট বিভাগের রিট পিটিশন নম্বর ৯১৬/২০১৯ এর বিগত ২৯/০১/২০১৯ তারিখের আদেশ অনুযায়ী প্রকল্প নির্মাণকালে বায়ু/ডাষ্ট দূষণ নিয়ন্ত্রণকল্পে দৈনিক অন্ততঃ দুইবার পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১০ . প্রকল্পের কার্যক্রমের মাধ্যমে কোন প্রকার বায়ু/শব্দ দূষণ সৃষ্টি করা যাবেনা। নির্মাণ কাজ চলাকালিন নির্মাণাধীন অবকাঠামো/বালু/মাটি যথাযথভাবে ঢেকে রাখতে হবে যাতে ধূলাবালি আশেপাশে ছড়িয়ে না পড়ে।

১১ . প্রকল্পের কাজ শেষ হওয়ার সাথে সাথে তাৎক্ষণিকভাবে খোঁড়া-খোঁড়িকৃত রাস্তা পূর্বের অবস্থায় ফিরিয়ে আনতে হবে। এ বিষয়ে সংশ্লিষ্ট ঠিকাদারী প্রতিষ্ঠানকে প্রয়োজনীয় নির্দেশনা প্রদান করতে হবে। পরিবেশগত বিষয়াদি যথাযথভাবে বাস্তবায়ন করার জন্যও ঠিকাদারী প্রতিষ্ঠানকে নির্দেশনা প্রদান করতে হবে।

১২ . বায়ুদূষণ নিয়ন্ত্রণের জন্য নির্মাণ সামগ্রী ঢেকে রাখতে হবে এবং নির্মাণ সামগ্রী পরিবহনের সময়ও ঢেকে পরিবহণ করতে হবে।

১৩ . নির্মাণাধীন অবকাঠামো/প্রকল্পের এলাইনম্যান্ট এলাকায় নিয়মিত পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১৪ . প্রকল্পের নির্মাণ কার্যক্রম চলাকালে শব্দ নিঃসরণ/নির্গমন মাত্রা শব্দ দূষণ (নিয়ন্ত্রণ) বিধিমালা, ২০০৬ এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭-এ বর্ণিত মানমাত্রার মধ্যে রাখতে হবে।

১৫ . সব ধরণের বর্জ্যরে ক্ষেত্রে বিশেষতঃ কঠিন বর্জ্য ব্যবস্থাপনায়, উৎসে বর্জ্য পৃথকীকরণ করতে হবে এবং বর্জ্য হ্রাস, পুনঃব্যবহার ও পুনঃচক্রায়ন নীতিমালা তথা 3R(Reduce, Reuse, Recycle) Principles অনুসরণ করতে হবে। এছাড়া পৃথকীকৃত বর্জ্য আবৃত অবস্থায় উপযুক্ত সময় নিকটস্থ সিটি কর্পোরেশনের ট্রান্সফার ষ্টেশন/ডাম্পিং গ্রাউন্ডে স্থানান্তর/পরিবহনের বিষয়টি উদ্যোক্তা নিজস্ব উদ্যোগ/সিটি কর্পোরেশনের সহায়তায় নিশ্চিত করবেন।

১৬ . নির্মাণকাজ চলাকালে শ্রমিকদের পেশাগত স্বাস্থ্য সুরক্ষা সামগ্রী (পিপিই যেমন ইয়ার প্লাগ, নোজ মাস্ক ইত্যাদি) সার্বক্ষণিকভাবে ব্যবহার করতে হবে।

১৭ . পরিবেশগত ছাড়পত্র ও সর্বশেষ নবায়নের কপি প্রকল্প অফিসে সংরক্ষণ করতে হবে।

১৮ . ছাড়পত্র নবায়নের মেয়াদ শেষ হবার অন্ততঃ ত্রিশ দিন পূর্বে প্রাসঙ্গিক কাগজপত্রসহ অন-লাইনে নবায়নের জন্য আবেদন করতে হবে।

১৯ . উপর্যুক্ত শর্ত এবং অবস্থান বিষয়ক পরিবেশগত ছাড়পত্রের প্রদত্ত অন্যান্য শর্তাবলী প্রতিপালনে ব্যর্থ হলে ছাড়পত্র বাতিল বলে গণ্য হবে এবং বাংলাদেশ পরিবেশ সংরক্ষণ আইন, ১৯৯৫ (সংশোধিত-২০১০) এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭ অনুযায়ী আইনগত ব্যবস্থা গ্রহণ করা হবে।

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স্মারক নং-২২.০২.০০০০.০৯১.৭২.০৭৫.২০/নবায়ন-৬০ তারিখ: ৩০/৫/২০২১ খ্রিস্টাব্দ।

বিষয় ঃ পরিবেশগত ছাড়পত্র নবায়ন (শ্রেণীঃ লাল) প্রসঙ্গে।

সূত্র ঃ আপনার গত ১৪.০৬.২০২১ তারিখের আবেদন ও অন-লাইন(৭৯৫১৯)।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, আপনার আবেদন, দাখিলকৃত অন্যান্য কাগজপত্র ও সরেজমিন পরিদর্শন প্রতিবেদন যাচাই বাছাই করে ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি), ঢাকা ওয়াসা অনুকূলে ইস্যুকৃত পরিবেশগত ছাড়পত্রের নবায়নের কপি অন-লাইনে প্রদান করা হয়েছে, যার সনাক্তকরণ নম্বর-৭৯৫১৯। উল্লেখ্য অন-লাইনে উদ্যোক্তার আইডি দিয়ে লগইন করে পরিবেশগত ছাড়পত্রের নবায়নের কপি ডাউনলোড করে প্রিন্ট করা যাবে। ডিজিটাল ছাড়পত্র একটি সিস্টেম জেনারেটেড ছাড়পত্র হওয়ায় এতে কোন স্বাক্ষরের প্রয়োজন নেই।

(মোহাম্মদ আসাদুল হক)
পরিচালক(উপসচিব)
ফোন: ৮১৮১৭৮৯
Email: dhakametro@doe.gov.bd

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অতিরিক্ত প্রধান প্রকৌশলী
ও
প্রকল্প পরিচালক
ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক
ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি)
ঢাকা ওয়াসা
৯৮, কাজী নজরুল ইসলাম এভিনিউ
কাওরান বাজার, ঢাকা-১২১৫।

অনুলিপি অবগতির জন্যঃ
১। সহকারী পরিচালক, মহাপরিচালক মহোদয়ের শাখা, পরিবেশ অধিদপ্তর, ঢাকা।

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পরিবেশগত ছাড়পত্র নবায়ন

ছাড়পত্র নং: ২১-৬০৩১১

পরিবেশগত ব্যবস্থাপনা নিশ্চিতকরণ সাপেক্ষে সংযুক্ত শর্তে নিম্নবর্ণিত প্রতিষ্ঠান/প্রকল্পের অনুকূলে পরিবেশগত ছাড়পত্র নবায়ন প্রদান করা হলো :

প্রতিষ্ঠান/প্রকল্পের নাম	:	Dhaka water supply Network Improvement project
উদ্যোক্তার নাম	:	Dhaka Water Supply And Sewerage Authority
সনাক্তকরণ নং	:	৭৯৫১৯
প্রতিষ্ঠান/প্রকল্পের কার্যক্রম	:	Water, power and gas distribution line laying/relaying/extension
প্রতিষ্ঠান/প্রকল্পের শ্রেণী	:	Red
প্রতিষ্ঠান/প্রকল্পের ঠিকানা	:	project director,Dhaka WASA, WASA Bhaban (8th floor), 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215,Tejgaon,Dhaka
প্রদানের তারিখ	:	30.06.2021
মেয়াদ উত্তীর্ণের তারিখ	:	12.06.2022

এ ছাড়পত্র সনদের সাথে পৃথকভাবে সংযুক্ত প্রদত্ত শর্তাবলী যথাযথভাবে প্রতিপালন করতে হবে, অন্যথায় ছাড়পত্র বাতিল/ক্ষতিপূরণ আদায়সহ যে কোন আইনানুগ ব্যবস্থা গ্রহণ করা হবে।

বিঃদ্রঃ এটি একটি সিস্টেম জেনারেটেড ছাড়পত্র এবং এতে কোনোরূপ স্বাক্ষরের প্রয়োজন নেই।

ছাড়পত্রটি যাচাই করতে ভিজিট করুন: http://ecc.doe.gov.bd/certificate_verification

সনাক্তকরণ নং: ৭৯৫১৯ Dhaka water supply Network Improvement project ছাড়পত্র নং: ২১-৬০৩১১

পরিবেশগত ছাড়পত্র নবায়ন জন্য প্রযোজ্য শর্তাবলী:

১ . এ ছাড়পত্র শুধুমাত্র ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রুভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি)-এর ক্ষেত্রে প্রযোজ্য হবে।

২ . বর্ণিত প্রকল্পের অনুকূলে পরিবেশ অধিদপ্তরের বিগত ১২.০৬.২০১৯ তারিখ নং-২২.০২.০০০০.০১৮.৭২.৪৩.১৯.২৩৩ সংখ্যক স্মারকে প্রদত্ত পরিবেশগত ছাড়পত্রের সকল শর্ত অপরিবর্তীত থাকবে।

৩ . প্রকল্পের কার্যক্রম দ্বারা কোন অবস্থায় রাস্তায় যানজট সৃষ্টি করা যাবেনা। এ বিষয়ে বিকল্প ব্যবস্থাপনা সার্বক্ষণিক কার্যকর রাখতে হবে।

৪ . প্রকল্পের এলাইনমেন্টে যানজট নিয়ন্ত্রণের জন্য নিজস্ব জনবল দ্বারা সার্বক্ষণিক যানজট নিয়ন্ত্রণের জন্য কার্যকর উদ্যোগ গ্রহণ করতে হবে।

৫ . কোন অবস্থায় প্রকল্পের কার্যক্রম দ্বারা কোন জলাজয়, ডোবা, নালা, বিল, খাল, পুকুর, বন্যা প্রবাহ এলাকা, ওয়াটার রিটেনশন এরিয়া ভরাট করা যাবেনা।

৬ . প্রকল্পের কার্যক্রম বাস্তবায়নের সময় রাস্তা খোড়া-খোঁড়ি করার সময় তাৎক্ষণিকভাবে রাস্তার মাটি নিরাপদে অপসারণ করতে হবে এবং কোন মাটি/বালি উন্মুক্ত অবস্থায় রাখা যাবেনা যাতে রোদে ডাষ্ট উত্থিত হয়ে বায়ু দূষণ না হয় এবং বৃষ্টির পানিতে স্টীম ওয়াটারের সাথে মিশে রাস্তা সংলগ্ন ড্রেনেজ বণ্ড সৃষ্টি হয়ে জলাবদ্ধতা সৃষ্টি না করে।

৭ . প্রকল্পের পাশের রাস্তায় কোন ধরনের নির্মাণ সামগ্রী রেখে ফুটপাত/রাস্তার প্রতিবন্ধকতা সৃষ্টি করা যাবেনা।

৮ . প্রকল্পের কার্যক্রম দ্বারা পরিবেশ ও প্রতিবেশের ক্ষতিসাধন করা হলে Polluters Pay Principle অনুসারে ক্ষতিপূরণ ধার্য করে নির্ধারিত সময়ের মধ্যে ধার্যকৃত ক্ষতিপূরণ আদায় করা হবে।

৯ . মহামান্য হাইকোর্ট বিভাগের রিট পিটিশন নম্বর ৯১৬/২০১৯ এর বিগত ২৯/০১/২০১৯ তারিখের আদেশ অনুযায়ী প্রকল্প নির্মাণকালে বায়ু/ডাষ্ট দূষণ নিয়ন্ত্রণকল্পে দৈনিক অন্ততঃ দুইবার পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১০ . প্রকল্পের কার্যক্রমের মাধ্যমে কোন প্রকার বায়ু/শব্দ দূষণ সৃষ্টি করা যাবেনা। নির্মাণ কাজ চলাকালিন নির্মাণাধীন অবকাঠামো/বালু/মাটি যথাযথভাবে ঢেকে রাখতে হবে যাতে ধূলাবালি অশেপাশে ছড়িয়ে না পড়ে।

১১ . প্রকল্পের কাজ শেষ হওয়ার সাথে সাথে তাৎক্ষণিকভাবে খোঁড়া-খোঁ ড়কৃত রাস্তা পূর্বের অবস্থায় ফিরিয়ে আনতে হবে।

১২ . বায়ুদূষণ নিয়ন্ত্রণের জন্য নির্মাণ সামগ্রী ঢেকে রাখতে হবে এবং নির্মাণ সামগ্রী পরিবহনের সময়ও ঢেকে পরিবহণ করতে হবে।

১৩ . নির্মাণাধীন অবকাঠামো/প্রকল্পের এলাইনম্যান্ট এলাকায় নিয়মিত পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১৪ . প্রকল্পের নির্মাণ কার্যক্রম চলাকালে শব্দ নিঃসরণ/নির্গমন মাত্র শব্দ দূষণ (নিয়ন্ত্রণ) বিধিমালা, ২০০৬ এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭-এ বর্ণিত মানমাত্রার মধ্যে রাখতে হবে।

১৫ . সব ধরণের বর্জ্যের ক্ষেত্রে বিশেষতঃ কঠিন বর্জ্য ব্যবস্থাপনায়, উৎসে বর্জ্য পৃথকীকরণ করতে হবে এবং বর্জ্য হ্রাস, পুনঃব্যবহার ও পুনঃচক্রায়ন নীতিমালা তথা 3R(Reduce, Reuse, Recycle) Principles অনুসরণ করতে হবে। এছাড়া পৃথকীকৃত বর্জ্য আবৃত অবস্থায় উপযুক্ত সময় নিকটস্থ সিটি কর্পোরেশনের ট্রান্সফার ষ্টেশন/ডাম্পিং গ্রাউন্ডে স্থানান্তর/পরিবহনের বিষয়টি উদ্যোক্তা নিজস্ব উদ্যোগ/সিটি কর্পোরেশনের সহায়তায় নিশ্চিত করবেন।

১৬ . নির্মাণকাজ চলাকালে শ্রমিকদের পেশাগত স্বাস্থ্য সুরক্ষা সামগ্রী (পিপিই যেমন ইয়ার প্লাগ, নোজ মাস্ক ইত্যাদি) সার্বক্ষণিকভাবে ব্যবহার করতে হবে।

১৭ . পরিবেশগত ছাড়পত্র ও সর্বশেষ নবায়নের কপি প্রকল্প অফিসে সংরক্ষণ করতে হবে।

১৮ . ছাড়পত্র নবায়নের মেয়াদ শেষ হবার অন্ততঃ ত্রিশ দিন পূর্বে প্রাসঙ্গিক কাগজপত্রসহ অন-লাইনে নবায়নের জন্য আবেদন করতে হবে।

১৯ . উপর্যুক্ত শর্ত এবং অবস্থান বিষয়ক পরিবেশগত ছাড়পত্রের প্রদত্ত অন্যান্য শর্তাবলী প্রতিপালনে ব্যর্থ হলে ছাড়পত্র বাতিল বলে গণ্য হবে এবং বাংলাদেশ পরিবেশ সংরক্ষণ আইন, ১৯৯৫ (সংশোধিত-২০১০) এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭ অনুযায়ী আইনগত ব্যবস্থা গ্রহণ করা হবে।

ছাড়পত্রটি যাচাই করতে ভিজিট করুন: http://ecc.doe.gov.bd/certificate_verification

3rd Renewal Application Copy

DHAKA WATER SUPPLY NETWORK IMPROVEMENT PROJECT

Dhaka Water Supply & Sewerage Authority

WASA

WASA BHABAN

98, Kazi Nazrul Islam Avenue (8th Floor), Kawran Bazar, Dhaka-1215.
Phone: 880-2-9116033, Fax: 880-2-9116086
Website: www.dwsnip-dwasa.com

শেখ হাসিনার মূলনীতি
গ্রাম শহরের উন্নতি

Memo No : 46.113.624.00.00.G-06/DWSNIP/ 744 Date: 14/06/2022

পরিচালক
ঢাকা মহানগর
পরিবেশ অধিদপ্তর
পরিবেশ ভবন, ই-১৬, আগারগাঁও
শেরে বাংলা নগর, ঢাকা-১২০৭।

পরিবেশ অধিদপ্তর
ঢাকা মহানগর কার্যালয়
প্রাপ্তি শাখা
নং...... নথি-৪২
তাং...... ২৬/০৬/২০২২

বিষয়: ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রুভমেন্ট প্রজেক্ট এর পরিবেশগত ছাড়পত্রের নবায়ন প্রসঙ্গে।

সূত্র: পরিবেশ অধিদপ্তরের স্মারক নং- ২২.০২.০০০০.০৯১.৭২.৭৫.২০.নবায়ন-৬০, তারিখ-৩০.০৬.২০২১।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, এডিবি সাহায্যপুষ্ট ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রুভমেন্ট প্রজেক্ট ঢাকা ওয়াসার আওতাধীন সরকারের একটি অগ্রাধিকার প্রকল্প। অত্র প্রকল্পের আওতায় ঢাকা শহরের অন্তর্ভুক্ত এলাকা যথা-উত্তরা, শ্যামলী, মোহাম্মদপুর, লালবাগ, আজিমপুর, হাজারীবাগ, বংশাল, সূত্রাপুর, দনিয়া, শনির আখড়া, যাত্রাবাড়ী ও সংশ্লিষ্ট এলাকার পুরাতন জরাজীর্ণ পানির লাইন পরিবর্তনসহ গ্রাহকগণকে নতুন পানি সংযোগ প্রদানের মাধ্যমে ৮২ (বিরাশি) টি District Metered Area (DMA) প্রতিষ্ঠার কাজ করা হবে। অত্র প্রকল্পের পরিবেশগত ছাড়পত্র প্রাপ্তির লক্ষ্যে গত ২১/০৬/২০২০ তারিখ পরিবেশ অধিদপ্তর বরাবরে আবেদন করা হয়। উক্ত আবেদনের প্রেক্ষিতে সূত্রস্থ স্মারক মোতাবেক ০১ (এক) বছর মেয়াদী পরিবেশগত ছাড়পত্র ইস্যু করা হয়। কিন্তু ইস্যুকৃত পরিবেশগত ছাড়পত্র এর মেয়াদ গত ১২/০৬/২০২২ তারিখ শেষ হবে বিধায় তা নবায়ন করা প্রয়োজন। পরিবেশগত ছাড়পত্র নবায়নের জন্য ছাড়পত্রের আবেদন ফি'র উপর আরোপিত ২৫% বাৎসরিক নবায়ন ফি বাবদ ১,২৫,০০০/- টাকা (কোড নং-১-৪৫৫১-০০০০-২৬৮১) এবং সরকার কর্তৃক আরোপকৃত ১৫% ভ্যাট বাবদ ১৮৭৫০/- টাকা (কোড নং-১-১১৩৩-০০৩৫-০৩১১)-এ ট্রেজারী চালানের মাধ্যমে জমা প্রদান করে অনলাইন আবেদন পত্র পূরণ পূর্বক হার্ডকপি একসঙ্গে সংযুক্ত করা হ'ল।

এমতাবস্থায়, "Dhaka Water Supply Network Improvement Project" এর পরিবেশগত ছাড়পত্র ইস্যু নবায়ন করার জন্য আপনাকে বিশেষভাবে অনুরোধ করা হ'ল।

সংযুক্ত:
(ক) পরিবেশগত ছাড়পত্রের অনুলিপি;
(খ) Received copy of the letter for sending Quarterly Environment Monitoring Report (July to September 21);
(গ) Received copy of the letter for sending Quarterly Environment Monitoring Report (October to December 21);
(ঘ) Quarterly Environment Monitoring Report (January to March 22);
(ঙ) বিধিমোতাবেক আলোকে পরিবেশগত ছাড়পত্র নবায়ন ফি এর চালান (চালান নং T-2, তারিখ-১৫/০৬/২০২২, সোনালী ব্যাংক লিমিটেড, আওলাদ হোসেন মার্কেট শাখা, ঢাকা);
(চ) পরিবেশগত ছাড়পত্র নবায়ন ফি এর উপর আরোপিত ১৫% ভ্যাট (চালান নং T-1, তারিখ-১৫/০৬/২০২২, সোনালী ব্যাংক লিমিটেড, আওলাদ হোসেন মার্কেট শাখা, ঢাকা);
(ছ) অন-লাইন আবেদনের কপি।

মোঃ আব্দুল লতিফ
তত্ত্বাবধায়ক প্রকৌশলী ও
প্রকল্প পরিচালক
ডিডব্লিউএসএনআইপি, ঢাকা ওয়াসা।

অনুলিপি:
১. মহাপরিচালক, পরিবেশ অধিদপ্তর, ঢাকা।
২. পরিচালক (উন্নয়ন), ঢাকা ওয়াসা।
৩. উপ-প্রকল্প পরিচালক, ডিডব্লিউএসএনআইপি, ঢাকা ওয়াসা।
৪. নির্বাহী প্রকৌশলী, ডিডব্লিউএসএনআইপি, ঢাকা ওয়াসা।

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিবেশ অধিদপ্তর
ঢাকা মহানগর কার্যালয়
পরিবেশ ভবন, ই/১৬, আগারগাঁও, ঢাকা ১২০৭
www.doe.gov.bd

পরিবেশগত ছাড়পত্র নবায়ন

ছাড়পত্র নং: ২২-৮০৭৫০

পরিবেশগত ব্যবস্থাপনা নিশ্চিতকরণ সাপেক্ষে সংযুক্ত শর্তে নিম্নবর্ণিত প্রতিষ্ঠান/প্রকল্পের অনুকূলে পরিবেশগত ছাড়পত্র নবায়ন প্রদান করা হলো :

প্রতিষ্ঠান/প্রকল্পের নাম	:	Dhaka water supply Network Improvement project
উদ্যোক্তার নাম	:	Dhaka Water Supply And Sewerage Authority
সনাক্তকরণ নং	:	৭৯৫১৯
প্রতিষ্ঠান/প্রকল্পের কার্যক্রম	:	Water, power and gas distribution line laying/relaying/extension
প্রতিষ্ঠান/প্রকল্পের শ্রেণী	:	Red
প্রতিষ্ঠান/প্রকল্পের ঠিকানা	:	project director,Dhaka WASA, WASA Bhaban (8th floor), 98, Kazi Nazrul Islam Avenue, Kawran Bazar, Dhaka-1215
প্রদানের তারিখ	:	২৪/০৭/২০২২খ্রিঃ
মেয়াদ উত্তীর্ণের তারিখ	:	১২/০৬/২০২৩খ্রি

এ ছাড়পত্র সনদের সাথে পৃথকভাবে সংযুক্ত প্রদত্ত শর্তাবলী যথাযথভাবে প্রতিপালন করতে হবে, অন্যথায় ছাড়পত্র বাতিল/ক্ষতিপূরণ আদায়সহ যে কোন আইনানুগ ব্যবস্থা গ্রহণ করা হবে।

বিঃদ্রঃ এটি একটি সিস্টেম জেনারেটেড ছাড়পত্র এবং এতে কোনোরূপ স্বাক্ষরের প্রয়োজন নেই।

ছাড়পত্রটি যাচাই করতে ভিজিট করুন: https://ecc.doe.gov.bd/certificate_verification
Page 1 of 2

সনাক্তকরণ নং: ৭৯৫১৯ Dhaka water supply Network Improvement project ছাড়পত্র নং: ২২-৮০৭৫০

পরিবেশগত ছাড়পত্র নবায়ন এর জন্য প্রযোজ্য শর্তাবলী:

১ . এ ছাড়পত্র শুধুমাত্র ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রোভমেন্ট প্রজেক্ট(ডিডব্লিউএসএনআইপি)-এর ক্ষেত্রে প্রযোজ্য হবে।

২ . বর্ণিত প্রকল্পের অনুকূলে পরিবেশ অধিদপ্তরের বিগত ১২.০৬.২০১৯ তারিখ নং-২২.০২.০০০০.০১৮.৭২.৪৩.১৯.২৩৩ সংখ্যক স্মারকে প্রদত্ত পরিবেশগত ছাড়পত্রের সকল শর্ত অপরিবর্তীত থাকবে।

৩ . প্রকল্পের কার্যক্রম দ্বারা কোন অবস্থায় রাস্তায় যানজট সৃষ্টি করা যাবেনা। এ বিষয়ে বিকল্প ব্যবস্থাপনা সার্বক্ষণিক কার্যকর রাখতে হবে।

৪ . প্রকল্পের এলাইনমেন্টে যানজট নিয়ন্ত্রণের জন্য নিজস্ব জনবল দ্বারা সার্বক্ষণিক যানজট নিয়ন্ত্রণের জন্য কার্যকর উদ্যোগ গ্রহণ করতে হবে।

৫ . কোন অবস্থায় প্রকল্পের কার্যক্রম দ্বারা কোন জলাজয়, ডোবা, নালা, বিল, খাল, পুকুর, বন্যা প্রবাহ এলাকা, ওয়াটার রিটেনশন এরিয়া ভরাট করা যাবেনা।

৬ . প্রকল্পের কার্যক্রম বাস্তবায়নের সময় রাস্তা খোড়া-খোঁড়ি করার সময় তাৎক্ষণিকভাবে রাস্তার মাটি নিরাপদে অপসারণ করতে হবে এবং কোন মাটি/বালি উন্মুক্ত অবস্থায় রাখা যাবেনা যাতে রোদে ডাষ্ট উত্থিত হয়ে বায়ু দূষণ না হয় এবং বৃষ্টির পানিতে ড্রেম ওয়াটারের সাথে মিশে রাস্তা সংলগ্ন ড্রেনেজ ব্লক সৃষ্টি হয়ে জলাবদ্ধা সৃষ্টি না করে।

৭ . প্রকল্পের পাশের রাস্তায় কোন ধরনের নির্মাণ সামগ্রী রেখে ফুটপাত/রাস্তার প্রতিবন্ধকতা সৃষ্টি করা যাবেনা।

৮ . প্রকল্পের কার্যক্রম দ্বারা পরিবেশ ও প্রতিবেশের ক্ষতিসাধন করা হলে Polluters Pay Principle অনুসারে ক্ষতিপূরণ ধার্য করে নির্ধারিত সময়ের মধ্যে ধার্যকৃত ক্ষতিপূরণ আদায় করা হবে।

৯ . মহামান্য হাইকোর্ট বিভাগের রিট পিটিশন নম্বর ৯১৬/২০১৯ এর বিগত ২৯/০১/২০১৯ তারিখের আদেশ অনুযায়ী প্রকল্প নির্মাণকালে বায়ু/ডাষ্ট দূষণ নিয়ন্ত্রণকল্পে দৈনিক অন্ততঃ দুইবার পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১০ . প্রকল্পের কার্যক্রমের মাধ্যমে কোন প্রকার বায়ু/শব্দ দূষণ সৃষ্টি করা যাবেনা। নির্মাণ কাজ চলাকালিন নির্মাণাধীন অবকাঠামো/বালু/মাটি যথাযথভাবে ঢেকে রাখতে হবে যাতে ধূলাবালি আশেপাশে ছড়িয়ে না পড়ে।

১১ . প্রকল্পের কাজ শেষ হওয়ার সাথে সাথে তাৎক্ষণিকভাবে খোঁড়া-খোঁ ড়কৃত রাস্তা পূর্বের অবস্থায় ফিরিয়ে আনতে হবে।

১২ . বায়ুদূষণ নিয়ন্ত্রণের জন্য নির্মাণ সামগ্রী ঢেকে রাখতে হবে এবং নির্মাণ সামগ্রী পরিবহনের সময়ও ঢেকে পরিবহণ করতে হবে।

১৩ . নির্মাণাধীন অবকাঠামো/প্রকল্পের এলাইনম্যান্ট এলাকায় নিয়মিত পানি ছিটিয়ে বায়ু দূষণ নিয়ন্ত্রণ করতে হবে।

১৪ . প্রকল্পের নির্মাণ কার্যক্রম চলাকালে শব্দ নিঃসরণ/নির্গমন মাত্রা শব্দ দূষণ (নিয়ন্ত্রণ) বিধিমালা, ২০০৬ এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭-এ বর্ণিত মানমাত্রার মধ্যে রাখতে হবে।

১৫ . সব ধরণের বর্জ্যের ক্ষেত্রে বিশেষতঃ কঠিন বর্জ্য ব্যবস্থাপনায়, উৎসে বর্জ্য পৃথকীকরণ করতে হবে এবং বর্জ্য হ্রাস, পুনঃব্যবহার ও পুনঃচক্রায়ন নীতিমালা তথা 3R(Reduce, Reuse, Recycle) Principles অনুসরণ করতে হবে। এছাড়া পৃথকীকৃত বর্জ্য আবৃত অবস্থায় উপযুক্ত সময় নিকটস্থ সিটি কর্পোরেশনের ট্রান্সফার ষ্টেশন/ডাম্পিং গ্রাউন্ডে হ্যান্ডলিং/পরিবহনের বিষয়টি উদ্যোক্তা নিজস্ব উদ্যোগ/সিটি কর্পোরেশনের সহায়তায় নিশ্চিত করবেন।

১৬ . নির্মাণকাজ চলাকালে শ্রমিকদের পেশাগত স্বাস্থ্য সুরক্ষা সামগ্রী (পিপিই যেমন ইয়ার প্লাগ, নোজ মাস্ক ইত্যাদি) সার্বক্ষণিকভাবে ব্যবহার করতে হবে।

১৭ . পরিবেশগত ছাড়পত্র ও সর্বশেষ নবায়নের কপি প্রকল্প অফিসে সংরক্ষণ করতে হবে।

১৮ . ছাড়পত্র নবায়নের মেয়াদ শেষ হবার অন্ততঃ ত্রিশ দিন পূর্বে প্রাসঙ্গিক কাগজপত্রসহ অন-লাইনে নবায়নের জন্য আবেদন করতে হবে।

১৯ . উপর্যুক্ত শর্ত এবং অবস্থান বিষয়ক পরিবেশগত ছাড়পত্রের প্রদত্ত অন্যান্য শর্তাবলী প্রতিপালনে ব্যর্থ হলে ছাড়পত্র বাতিল বলে গণ্য হবে এবং বাংলাদেশ পরিবেশ সংরক্ষণ আইন, ১৯৯৫ (সংশোধিত-২০১০) এবং পরিবেশ সংরক্ষণ বিধিমালা, ১৯৯৭ অনুযায়ী আইনগত ব্যবস্থা গ্রহণ করা হবে।

4th renewal Application

পরিবেশ অধিদপ্তর
ঢাকা মহানগর কার্যালয়
গৃহীত হলো
নং: নবা: ৩৬০
স্বাক্ষর:
তারিখ: ২২/৬/২৩

ফরম-৫
পরিবেশগত ছাড়পত্র ছাড়পত্র নবায়নের আবেদনপত্র
[বিধি ২২ এর উপ-বিধি (১) দ্রষ্টব্য]

বরাবর,
পরিচালক
ঢাকা মহানগর, পরিবেশ অধিদপ্তর
পরিবেশ ভবন, ই-৬, আগারগাঁও, শেরে বাংলা নগর, ঢাকা-১২০৭।

জনাব,

আমি আমার বিদ্যমান শিল্প প্রতিষ্ঠান/প্রকল্পের জন্য নিম্নে প্রদত্ত তথ্যাদিসহ কাগজপত্র জমা প্রদান করিয়া পরিবেশগত ছাড়পত্র নবায়নের জন্য আবেদন করিতেছি:

১. শিল্প প্রতিষ্ঠান/প্রকল্পের নাম: ঢাকা ওয়াটার সাপ্লাই নেটওয়ার্ক ইমপ্রুভমেন্ট প্রজেক্ট
২. শিল্প প্রতিষ্ঠান/প্রকল্পের ঠিকানা: ওয়াসা ভবন, ২৮, কাজী নজরুল ইসলাম এভিনিউ (নিম্ন তলা) কাওরান বাজার, ঢাকা।
৩. (ক) শিল্প প্রতিষ্ঠানের ক্ষেত্রে উৎপাদিত পণ্যের নাম ও পরিমাণ (দৈনিক/মাসিক):
(খ) প্রস্তাবিত প্রকল্পের ক্ষেত্রে প্রকল্পের প্রধান কার্যক্রম: নতুন পানির লাইন স্থাপন ও রাইজার কানেকশন।
৪. পরিবেশগত ছাড়পত্র জারির স্মারক নম্বর: ২২.০২.০০০০.০১৮.৭২.৪৩.১৯.২৬৩ তারিখ: ২২/৬/২০১৯
৫. সর্বশেষ নবায়নের তারিখ: ২৪, ০৭, ২০২২ মেয়াদ উত্তীর্ণের তারিখ: ২২, ০৬, ২০২৩
৬. প্রকল্পের বিনিয়োগকৃত অর্থ: ৩২৮২,৩০,০০০০০.০০ টাকা
৭. ছাড়পত্র নবায়ন ফি বাবদ প্রদেয় অর্থ:
ট্রেজারী চালান নম্বর: ২২২৩-০০২১০৬৯২০৭ তারিখ: ০৪, ০৫, ২০২৩
ব্যাংকের নাম: সোনালী ব্যাংক লিমিটেড শাখা: কাওরানবাজার
৮. ছাড়পত্র নবায়ন ফি'র উপর মূসক বাবদ প্রদেয় অর্থ:
ট্রেজারী চালান নম্বর: ২২২৩-০০২১০৭৬২০৬ তারিখ: ০৪, ০৫, ২০২৩
ব্যাংকের নাম: সোনালী ব্যাংক লিমিটেড শাখা: কাওরানবাজার
৯. কারখানা বা প্রকল্পের কার্যক্রম:

কারখানা/প্রকল্পের বর্তমান কার্যক্রম	✓ চালু	○ বন্ধ	○ বন্ধ থাকিলে উহার তারিখ: ../../..
কারখানার উৎপাদন প্রক্রিয়া বা প্রকল্পের কার্যক্রমের কোনো পরিবর্তন হইয়াছে কিনা?	○ হাঁ	✓ না	○ হাঁ হইলে তথ্য প্রদান করুন:

Md. Waz Uddin
Superintending Engineer &
Project Director, DWSNIP
Dhaka WASA

Annex 04: Environmental Safeguard Compliances in the Field
ICB-02.8

Checklist for Excavation Work

DMA No. / Package: DMA-908, ICB-2.8 Date: 22.03.2023

Location: Sector-4, & 6, Uttara

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering traffic management plan and H&S plan for the excavation works?	✓			
2.	Has the contractor completed risk assessment for the excavation works?	✓			
3.	Has the RFI completed for the excavation works?	✓			
4.	Is the excavation permit/pre-dig permit obtained before starting work?	✓			
5.	Is the contractor obtained road cutting permission from city corporation?	✓			
6.	Is the contractor contacted traffic authority for the excavation work?	✓			
7.	Is tool box meeting held before starting work?	✓			
8.	Does the operator and signalman have the minimum experience for the job?	✓			
9.	Have the workers provided appropriate PPEs?	✓			Not sufficient
10.	Is there any physical barrier or caution tape deployed for the excavation pit?	✓			
11.	Whether NGO has done the IEC activities?	✓			
12.	Are there sufficient display warning signs at the excavation site?		✓		
13.	Is the first aid box with required materials kept at site?	✓	✓		Not sufficient
14.	Are the rescue procedures completed and reserved at the site?	✓			
15.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?	✓			
16.	Are excavated materials placed sufficiently away from water courses?	✓			
17.	Are debris and waste materials transported to selected disposal places from temporary disposal site?	✓			
	Trenches up to 2m:				
18.	Whether excavated material is dumped at least 1m away from trench wall?	✓			
19.	Whether the extra material is removed?			✓	
20.	In case of Ground water whether pumped water is drained properly?			✓	
	Trenches & pits depth of more than 2m:			✓	
21.	Whether firm barricades are provided?			✓	
22.	In case of loose soil strata whether shoring is provided?			✓	

Contractor's representative:
Shahidul Islam
Name, Designation and Signature

DMS representative:
22.03.2023
Name, Designation and Signature
EI, DMS-

Checklist for DTW works

DMA No. / Package: ICB-2.8 Date: 02.03.2023

Location: Sector 9 pump, Sector-7 pump

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering Deep Tube well Work and H&S plan for the DTW works?	✓			
2.	Has the contractor completed risk assessment for the DTW works?	✓			
3.	Is the contractor informed Zonal Authorities and Councillor before starting work?	✓			
4.	Is the contractor informed Electrical Authorities before starting the work	✓			
5.	Is the contractor contacted traffic authority before starting the work?	✓			
6.	Is tool box meeting held before starting work?	✓			
7.	Does the operator have the minimum experience for the job?	✓			
8.	Have the workers provided appropriate PPEs?		✓		
9.	Is there any physical barrier or caution tape deployed for the excavation pit?	✓			
10.	Whether NGO has done the IEC activities?	✓			
11.	Are there sufficient display warning signs at the DTW work site?	✓			
12.	Is the first aid box with required materials kept at site?		✓		
13.	Are the rescue procedures completed and reserved at the site?	✓			
14.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?	✓			
15.	Are excavated materials placed sufficiently away from water courses?	✓			
16.	Are debris and waste materials transported to selected disposal places from temporary disposal site?	✓			
17.	Whether firm barricades are provided?	✓			
18.	In case of loose soil strata whether shoring is provided?	✓			
19.	Do generators operate with doors closed or provided with sound barrier around them?		✓		
20.	Do workers use ear plugs/hearing protections at noise generating locations?		✓		
21.	Are neighbouring residents notified in advance of any noisy activities expected at construction sites?	✓			

Contractor's representative:

Md. Shahidul Islam

Name, Designation and Signature

Safety Manager.

DMS representative:

02.03.2023

Name, Designation and Signature

EI, DMS

ICB-02.9

Checklist for Excavation Work

DMA No. / Package: DMA - 211, Date: 11.05.2023

Location: ICB-2.9

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering traffic management plan and H&S plan for the excavation works?	✓			
2.	Has the contractor completed risk assessment for the excavation works?	✓			
3.	Has the RFI completed for the excavation works?	✓			
4.	Is the excavation permit/pre-dig permit obtained before starting work?	✓			
5.	Is the contractor obtained road cutting permission from city corporation?	✓			
6.	Is the contractor contacted traffic authority for the excavation work?	✓			
7.	Is tool box meeting held before starting work?	✓			
8.	Does the operator and signalman have the minimum experience for the job?	✓			
9.	Have the workers provided appropriate PPEs?	✓			
10.	Is there any physical barrier or caution tape deployed for the excavation pit?		✓		
11.	Whether NGO has done the IEC activities?	✓			
12.	Are there sufficient display warning signs at the excavation site?		✓		
13.	Is the first aid box with required materials kept at site?	✓			
14.	Are the rescue procedures completed and reserved at the site?	✓			
15.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?	✓			
16.	Are excavated materials placed sufficiently away from water courses?		✓		
17.	Are debris and waste materials transported to selected disposal places from temporary disposal site?		✓		
	Trenches up to 2m:				
18.	Whether excavated material is dumped at least 1m away from trench wall?	✓			
19.	Whether the extra material is removed?	✓	✓		
20.	In case of Ground water whether pumped water is drained properly?	.		✓	
	Trenches & pits depth of more than 2m:			✓	
21.	Whether firm barricades are provided?			✓	
22.	In case of loose soil strata whether shoring is provided?			✓	

Contractor's representative:
Afkon
Name, Designation and Signature
Safety officer

DMS representative:
11.05.2023
Name, Designation and Signature
ET, DMS

ICB-02.10

Checklist for Excavation Work

DMA No. / Package: DMA -107 Date: 18.05.2023

Location: ICB - 2.10

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering traffic management plan and H&S plan for the excavation works?	✓			
2.	Has the contractor completed risk assessment for the excavation works?	✓			
3.	Has the RFI completed for the excavation works?	✓			
4.	Is the excavation permit/pre-dig permit obtained before starting work?	✓			
5.	Is the contractor obtained road cutting permission from city corporation?	✓			
6.	Is the contractor contacted traffic authority for the excavation work?	✓			
7.	Is tool box meeting held before starting work?	✓			
8.	Does the operator and signalman have the minimum experience for the job?	✓			
9.	Have the workers provided appropriate PPEs?	✓			
10.	Is there any physical barrier or caution tape deployed for the excavation pit?	✓			
11.	Whether NGO has done the IEC activities?	✓			
12.	Are there sufficient display warning signs at the excavation site?				Not sufficient
13.	Is the first aid box with required materials kept at site?				
14.	Are the rescue procedures completed and reserved at the site?	✓			
15.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?	—	—	—	Not satisfied
16.	Are excavated materials placed sufficiently away from water courses?		✓		
17.	Are debris and waste materials transported to selected disposal places from temporary disposal site?		✓		
	Trenches up to 2m:				
18.	Whether excavated material is dumped at least 1m away from trench wall?	✓			
19.	Whether the extra material is removed?	✓			
20.	In case of Ground water whether pumped water is drained properly?			✓	
	Trenches & pits depth of more than 2m:				
21.	Whether firm barricades are provided?			✓	
22.	In case of loose soil strata whether shoring is provided?			✓	

Contractor's representative:
Md Shakil
Name, Designation and Signature

DMS representative:
18.05.2023
Name, Designation and Signature
EI, DMS

Checklist for Traffic Management

DMA No. / Package: DMA- 108, 106, ICB-2.10 Date: 28.02.2023

Location: ICB - 2.10

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the Contractor completed the Method Statement considering traffic management plan?	✓			
2.	Is the Contractor contacted with DMP before starting the construction work?	✓			
3.	Is there traffic control supervisor present at construction site?	✓			
4.	Is toolbox meeting held before starting the work?	✓			
5.	Have every driver and equipment operators their valid driving license?	✓			
6.	Are the traffic controllers and supervisors trained and accredited?	✓			
7.	Are traffic signages available around the construction sites and nearby roads?	✓			
8.	Are re-routing signage sufficient to guide motorists?	✓			Yes but Not sufficient
9.	Are flagmen present to direct traffic during construction hour?	✓			
10.	Are the excavation sites along roads provided with barricades with reflectors?	✓			
11.	Are Display Board, Traffic diversion, clean & clear passage way provided?	✓			
12.	Are there sufficient display warning signs available for traffic movement?	✓			
13.	Are the excavation sites provided with sufficient lighting at night?	✓			
14.	Is the first aid box with required materials kept at site?	✓			
15.	Are the rescue procedures completed and reserved at site?	✓			

Contractor's representative:
Shakil, Safety Officer
Name, Designation and Signature

DMS representative:
28.02.2023
Name, Designation and Signature
EI. DMS

NCB 2.11A

Checklist for Excavation Work

DMA No. / Package: DMA - 301 Date: 03.01.2023

Location: NCB-211A

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering traffic management plan and H&S plan for the excavation works?	✓			
2.	Has the contractor completed risk assessment for the excavation works?	✓			
3.	Has the RFI completed for the excavation works?	✓			
4.	Is the excavation permit/pre-dig permit obtained before starting work?	✓			
5.	Is the contractor obtained road cutting permission from city corporation?	✓			
6.	Is the contractor contacted traffic authority for the excavation work?	✓			
7.	Is tool box meeting held before starting work?		✓		
8.	Does the operator and signalman have the minimum experience for the job?	✓			
9.	Have the workers provided appropriate PPEs?	✓			
10.	Is there any physical barrier or caution tape deployed for the excavation pit?		✓		
11.	Whether NGO has done the IEC activities?	✓			
12.	Are there sufficient display warning signs at the excavation site?		✓		
13.	Is the first aid box with required materials kept at site?	✓			
14.	Are the rescue procedures completed and reserved at the site?	✓			
15.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?		✓		
16.	Are excavated materials placed sufficiently away from water courses?	.	✓		
17.	Are debris and waste materials transported to selected disposal places from temporary disposal site?	.	✓		
	Trenches up to 2m:				
18.	Whether excavated material is dumped at least 1m away from trench wall?	✓			
19.	Whether the extra material is removed?		✓		
20.	In case of Ground water whether pumped water is drained properly?	.		✓	
	Trenches & pits depth of more than 2m:				
21.	Whether firm barricades are provided?			✓	
22.	In case of loose soil strata whether shoring is provided?			✓	

Contractor's representative:

Abdur Rouf

Name, Designation and Signature

Safety Officer

DMS representative:

03.01.2023

Name, Designation and Signature

EI. DMS

Checklist for Traffic Management

DMA No. / Package: DMA-303 Date: 09.02.2023

Location: NCD-2.11A

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the Contractor completed the Method Statement considering traffic management plan?	✓			
2.	Is the Contractor contacted with DMP before starting the construction work?	✓			
3.	Is there traffic control supervisor present at construction site?	✓			
4.	Is toolbox meeting held before starting the work?	✓			
5.	Have every driver and equipment operators their valid driving license?	✓			
6.	Are the traffic controllers and supervisors trained and accredited?	✓			
7.	Are traffic signages available around the construction sites and nearby roads?				Not sufficient
8.	Are re-routing signage sufficient to guide motorists?				Not sufficient
9.	Are flagmen present to direct traffic during construction hour?		✓		
10.	Are the excavation sites along roads provided with barricades with reflectors?	✓			
11.	Are Display Board, Traffic diversion, clean & clear passage way provided?	✓			
12.	Are there sufficient display warning signs available for traffic movement?	.	✓		
13.	Are the excavation sites provided with sufficient lighting at night?	✓			
14.	Is the first aid box with required materials kept at site?	✓			
15.	Are the rescue procedures completed and reserved at site?	✓			

Contractor's representative:

Abdur Rouf

Name, Designation and Signature

Safety Offier

DMS representative:

09.02.2023

Name, Designation and Signature

EI, Dms

Checklist for Dust Control & Noise Control

DMA No. / Package: DMA-301 Date: 03.01.2023

Location: NCP2 - 2.11 A

	Description	Observation			Remarks
	Dust Control	Yes	No	NA	
1.	Is the construction site watered to minimize generation of dust?		✓		
2.	Are roads within and around the construction sites sprayed with water on regular intervals?		✓		
3.	Is there a speed control for vehicles carrying soils and other spoils covered?	✓			
4.	Are stockpiles of sand, cement and other construction materials covered to avoid being airborne?	✓			
5.	Are construction vehicles carrying soils and other spoiled covered?		✓		
6.	Are generators provided with air pollution control devices?	✓			
7.	Are all vehicles regularly maintained to minimize emission of black smoke? Do they have valid permits?	✓			
	Noise Control	Yes	No	NA	
1.	Is the work only taking place between 7 am to 7 pm, week days?	✓			
2.	Do generators operate with doors closed or provided with sound barrier around them?		.		Not always
3.	Do workers use ear plugs/hearing protections at noise generating locations?				Not sufficient
4.	Is idle equipment turned off or throttled down?	✓			
5.	Are neighbouring residents notified in advance of any noisy activities expected at construction sites?	✓			

Contractor's representative:

Abdur Rouf

Name, Designation and Signature

safety officer

DMS representative:

02.01.2023

Name, Designation and Signature

EI, DMS

Checklist for Occupational Health & Safety and Community Health & Safety

DMA No. / Package: DMA - 301 Date: 03.01.2023

Location: NCD- 2.11A

	Description	Observation			Remarks
1.	Supervision and Management On-Site	Yes	No	NA	
	a. Is an EHS supervisor available?	✓			
	b. Is a copy of the SEMP available at construction site?	✓			
	c. Are daily toolbox meetings conducted on site?		✓		
2.	Facilities	Yes	No	NA	
	a. Are there a medical first aid kits available on site?		✓		
	b. Are emergency contact details available on-site?	✓			
	c. Are there PPEs available; Helmet, HI-VIS Vest, Gumboots, Eye Wear, Dust Mask, Safety Gloves, Earplugs?				Not sufficient
	d. Are the PPEs in good condition?	✓			
	e. Are there firefighting equipment on site?	✓			
	f. Are there separate mobile sanitary facilities for male and female workers?	✓			
	g. Are sanitary facilities cleaned and disinfected regularly?	✓			
	h. Is drinking water supply available for workers?	✓			
3.	Occupational Health and Safety	Yes	No	NA	
	a. Are the PPEs being used by workers	✓			
	b. Is breaktime for workers provided?	✓			
	c. Is construction work site barricaded with caution tape?		✓		
4.	Community Health and Safety	Yes	No	NA	
	a. Are safety signages posted around the sites?				Not sufficient
	b. Are temporary and safe walkways for pedestrians available near work sites?	✓			
	c. Are consultation meeting/focus group discussion/tea stall meeting arranged regularly on site?	✓			
	d. Are existing users notified in advance about temporary disruption of water supply?	✓			
	e. Are Leaflets distributed on site to inform the local residents about the project work?	✓			
	f. Is complain book available on work site to receive complain from local people?	✓			

5.	Recording System	Yes	No	NA	
	a) Do the contractors have recording system for SEMP implementation?	✓			
	b) Are the daily monitoring sheets accomplished by the contractor EHS supervisor (or equivalent) properly complied?	✓			
	c) Are laboratory results of environmental sampling conducted since the commencement of construction activities properly complied?	✓			
	d) Are these records readily available at the site and to the inspection team?	✓			
	e) Are utility accidents recorded and proper actions are taken immediately?	✓			
	f) Are public complaints recorded at construction site and addressed quickly and properly?	✓			
	g) Are there any registered book available at construction site/stockyard for visitors/inspection teams?	✓			
	h) Is there any Complain box available for anonymous complain at construction site/stockyard?	✓			

Contractor's representative:
Abdur Rouf
Name, Designation and Signature
Safety officer

DMS representative:
08.01.2023
Name, Designation and Signature
E7, DMS

Prepared by: Environmental Team, DMSC

Annex 05: Pictures showing Safeguards Compliances at works level

ICB 2.08

	
Portable Toilet for workers with water supply system (for	Portable Toilet for workers with water supply system (for Male)
	
We maintain proper construction site safety and awareness leaflets in construction site	We spray water to control dust in winter (hand sprayer for small amount of dust)

	
We provide Covid-19 awareness leaflets, emergency contact numbers in construction site	We maintain proper construction site safety and awareness leaflets in construction site
	
Washing hand before and after work practice at Construction Sites	Checking Temperature before starting the construction work practice
	
Covering soil to control the dust	Covering soil to control the dust

Pictures showing Safeguards Compliances at works level (Annex 5 Cont.)
ICB 2.09

	
Covering soil to control dust	Training before construction work
	
Barrier protection	Barrier and safety signage

Pictures showing Safeguards Compliances at works level (Annex 5 Cont.)
ICB 2.10

Road Barrier, cones, caution tape and all other safety measures are taken while working

Safety vest, Hand gloves ,Helmet and Shoes are used in working site

Water spray are being used to control dust and keep the site clean

Providing sign boards for proper safety in worksite

Portable Toilet for workers with water supply system

Clean and proper housekeeping for prevention of dengue at store

Annex 06: SAMPLE GRIEVANCE REGISTRATION FORM

The Project (DWSNIP) welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback. Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "CONFIDENTIAL" above your name. Thank you.

Date	Place of registration				
Contact Information/Personal Details					
Name		Gender	* Male * Female	Age	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					
FOR OFFICIAL USE ONLY					
Registered by: (Name of Official registering grievance)					
Mode of communication: Note/Letter /E-mail /Verbal/Telephonic					
Reviewed by: (Names/Positions of Official(s) reviewing grievance)					
Action Taken:					
Whether Action Taken Disclosed: Yes ( ) No ( )					
Means of Disclosure:					

GRIVENCE REDRESS REGISTAR GRIVENCES RECORD AND ACTION TAKEN

Sr. No.	Date	Name and Contact No. of Complainer	Type of Complain	Place	Status of Redress	Remarks

Annex 07: Status on prevention of COVID 19 during reporting period

Precautionary measures taken by the Contractors (ICB 2.08, 2.09 & 2.10)

- Disinfection of site offices, Camps, Toilets, Stores, Rest room etc.
- Display all the relevant posters, leaflets, signboards on COVID 19
- Holding site meetings with social distance other health precautions
- Using of sanitizers as far as possible
- Checking body temperature of all workers daily.
- Awareness programs have been conducted
- Conducted Monitoring at the worksite according to monitoring templates

Monitoring and Reporting Template

Health and Safety Issues with COVID-19 Infection

A. Environmental Health and Safety Checklist

	Checklist		Number/ Quantity
1	Number of workers & employees available at site	260	
2	Health checkup/screening completed for all workers/employee/visitors	Every day	
3	COVID-19 posters/signboards prepared and posted at the worksite and camp	8-10 each site	
4	Washbasin, sanitizer dispenser	3 Washbasins	
5	Stock of soap, sanitizer, disinfectant, PPEs available at site	-	Stocks Available
6	Number of cleaning staff employed	3	
7	Number of covered bins with COVID sign at the site	6	

B. **Daily Monitoring: COVID -19 protocols on top of usual EHS checklist (worksite and campsite)**

Sl no.	EHS Practices Checklist*	Observations		Corrective Action	Time frame to comply
		Yes	No		
1	Medical professional is available at site		No	Workers are quickly taken to hospital after First Aid if	
2	EHS officer is available at site	Yes			
3	Entrance protocol: 6 ft distance maintained as stipulated in the COVID -19 response guidance?		No	Staff and Labours should maintain 6 ft distance between each other.	Immediate and to be continued
4	Disinfectant spray used at site entry to disinfect underneath the boots of entering persons	Partially Complied		Disinfectant spray should be used underneath the boots upon entry.	Immediate and to be continued
5	Workers & employees are using mask, gloves and shoes	Yes			
6	Workers & employees are washing their hands	Yes			
7	Used PPEs are disposed in covered bins	Yes			
8	Social distancing: workers & employees maintaining social distancing all the time	Partially Complied		There should be no physical contacts like shaking hands and sitting together etc.	Immediate and to be continued
9	Vehicle protocol: vehicle disinfection protocol followed		No	All operating vehicles should be disinfected regularly.	Immediate and to be continued

10	Tools/machineries: wiped to disinfect before and after sharing/working		No	All tools and machineries should be wiped with disinfectant.	Immediate and to be continued
11	Disinfecting work area: worksite/ common surfaces, toilets etc. are disinfected before worksite opened in the morning, before lunch and yesterday after closing for the day	Partially Complied		Should be fully complied with.	Immediate and to be continued
12	Trash bins are covered and used for disposal of PPEs	Yes			

Site Assessment for Resumption of Construction

(Guidance for Site Specific Plan)

	Site Assessment Checklist (preconditions for opening the	**Yes/No**	**Remarks**
1	Is there any hospital or health care center in close proximity that is equipped to test COVID-19 infection? a. If yes, please prepare a list of the hospitals with contact number b. If no, please make an arrangement to provide	Yes	We have prepared a list of hospitals for testing COVID-19 infection.
2	Did you locate the hospital or health care center equipped to treat COVID-19 patient? Please prepare contact details.	Yes	We have contact details of hospitals equipped to treat COVID-19.
3	Did you prepare a list of the workers/employee to be engaged at the sites? If yes, please prepare work schedule by staggering work hours (physical distance must be >1 m. to avoid crowding) If there is an issue, please contact with your EA.	Yes	We have list of workers engaged at sites.
4	Did you prepare any health checkup or screening checklist for maintaining daily health record of workers/visitors?	Yes	We use health checklist to record health conditions of workers.
5	Did you conduct worksite risk exposure using guidelines provided in Annex C? a. Construction sites with low to medium risk exposures, must follow the EHS guidelines for preventing infection. b. For a site with high-risk exposure, avoid	Yes	Complied.

6	Did you recruit any health and safety professional for managing occupational health and safety at the site? a. If yes, please engage immediately and share the EHS Manual for day-to-day implementation and reporting b. If no, dedicate an existing worker and	Yes	Health and safety team is always present at sites.
7	Is there adequate PPE, disinfectant, sanitizer, soap, covered trash bin at all worksites.	Yes	Complied
8	Did you setup washbasin, sanitizer dispenser, covered waste bin adequately at each site? If not, please setup immediately and update your EA.	Yes	Complied
9	Did you prepare post COVID-19 posters/signboards in Bangla? If yes, please place them at the entrance, worksite and camp using the samples provided in Annex D? If not, please prepare immediately.	Yes	We use posters/banners/leaflets for COVID-19 awareness.
10	Did you prepare a plan for raising awareness of your workers/employees on various measures to avoid COVID-19 infection? Please prepare weekly plan and disseminate at the worksite.	Yes	We have a plan for raising awareness on COVID-19 prevention.
11	Did you prepare the site-specific health and safety plan for your worksites? Please prepare the plan providing details of the issues discussed from Sections A to E and Annex (B – E) of this manual and submit to EA for approval.	Yes	We have site specific EHS plan.
12	Is the worksite falls under government declared YELLOW or RED zone? If yes, please consult with EA for reopening the site.	N/A	N/A
13	Did you review the monitoring and reporting template? If necessary, please update the template as per site condition and get it approved by EA.	Yes	It has been updated on a regular basis.

Annex 08: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023)

Table 13 A: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for ICB 2.10

Environmental Safeguard Implementation		June-23	July-23	August-23	September-23	October-23	November-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)		DMA 101,105,106, 114, (during construction) DMA 117 (Baseline)	DMA 102,103,104,107, 111,112,117 (During construction)	DMA 109A,109B (During construction)	DMA 111,112,117 (During construction)	
2	Noise (dBA for day and night time)		DMA 101,105,106, 114, (during construction) DMA 117 (Baseline)	DMA 102,103,104,107, 111,112,117 (During construction)	DMA 109A,109B (During construction)	DMA 111,112,117 (During construction)	
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)		DMA 114,119,110, 107,116(during construction) DMA 117 (Baseline)	DMA 102,103,104,107, 111,112,117 (During construction)	DMA 109A,109B (During construction)	DMA 111,112,117 (During construction)	
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl, Fe, Mn and Total Coliform)		DMA 114,119,110, 107,116(during construction) DMA 117 (Baseline	DMA 102,103,104,107 111,112,117 (During construction)	DMA 109A,109B (During construction)	DMA 111,112,117 (During construction)	

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities will be Prepared by the Environmental Engineer	Records of environmental activities will be prepared by the Environmental Engineer	Records of environmental activities will be prepared by the Environmental Engineer	Records of environmental activities will be Prepared by the Environmental Engineer	Records of environmental activities will be Prepared by the Environmental Engineer	Records of environmental activities will be Prepared by the Environmental Engineer
6	Quarterly Environmental Inspections and Report				Report will be generated by the Environmental Engineer according to the site inspection & requirement of the DMSC.		
7	Semi Annual Report	As per consultant requirement			Environmental Engineer will prepare the Report		

8	Contractor Training	Site Manager / Engr. O &M will organize related training every month and include in monthly report	Site manager /Engr. O&M Will organize related training every month and include in monthly report	Site manager /Engr. O&M related training every month and include in monthly report	Site manager /Engr. O&M related training every month and include in monthly report	Site manager /Engr. O&M related training every month and include in monthly report	Site manager /Engr. O&M related training every month and include in monthly report
Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.	In case of night works, prior information to be given to the locals, at Worksites that the work will be implemented with minimal level of disturbance.
10	Dust control (PM 2.5, PM 10)	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather	SE (SO) / Shakil Kawser (PE) misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil Kawser provides supplies of potable drinking water and first aid-box. CCSEB-RPL JV provides medical insurance coverage for workers	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil Kawser provides supplies of potable drinking water and first aid-box. CCSEB-RPL JV provides medical insurance coverage for workers	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil Kawser provides potable drinking water and first aid-box. CCSEB_RPL JV provides medical insurance coverage for workers	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil KAwser provides supplies of potable drinking water and first aid-box. CCSEB-RPL JV provides medical insurance coverage for workers	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil kawser provides supplies of potable drinking water and first aid-box. CCSEB-RPL JV provides medical insurance coverage for workers	CPP develops site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. SE (SO) arranges H& S training for the labor on regular basis. Shakil Kawser provides supplies of potable drinking water and first aid-box. CCSEB-RPL JV provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	Environmental Engineer provides as per consultant requirements	Environmental Engineer provides as per consultant requirements	Environmental Engineer provides as per consultant requirements	Environmental Engineer provides as per consultant requirements	Environmental Engineer provides as per consultant requirements	Environmental Engineer provides as per consultant requirements

13	Disposal of construction debris and other waste materials	Concerned 2nd man of the DMA & Shakil kawser (PE) arranges all the debris and other wastes to be removed from the site and transported to the disposal site	Concerned 2nd man of the DMA & Shakil Kawser arranges all the debris and other wastes to be removed from the site and transported to the disposal site	Concerned 2nd man of the DMA & Shakil Kawser arranges all the debris and other wastes to be removed from the site and transported to the disposal site	Concerned 2nd man of the DMA & Shakil Kawser arranges all the debris and other wastes to be removed from the site and transported to the disposal site	Concerned 2nd man of the DMA & Shakil Kawser arranges all the debris and other wastes to be removed from the site and transported to the disposal site	Concerned 2nd man of the DMA & Shakil Kawser arranges all the debris and other wastes to be removed from the site and transported to the disposal site
14	Servicing and operating equipment	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Engr. O&M ensures that all site personnel have a basic level of EHS awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task

15	COVID 19 Prevention Measures	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	SE(SO) / Environmental Engr. Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	2nd man of the DMA/ SE (SO) implements the Traffic Management Plan to ensure the safety of all the road users along the work zone
17	On-Site Supervision and Management	SM of the DMA ensures On-site supervision and management properly	SM of the DMA ensures On-site supervision and management properly	SM of the DMA ensures On-site supervision and management properly	SM of the DMA ensures On-site supervision and management properly	SM of the DMA ensures On-site supervision and management properly	SM of the DMA ensures On-site supervision and management properly

Table 13 B: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for NCB 2.11A

Environmental Safeguard Implementation		July-23	August-23	September-23	October-23	November-23	December-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)	DMA408					
2	Noise (dBA for day and night time)	DMA408					
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)	-			-		
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl,	DMA408					

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary
6	Quarterly Environmental Inspections and Report			TCEL will provide according to consultant's requirement from DMS			TCEL will provide according to consultant's requirement from DMS
7	Semi Annual Report						As per consultant requirement
8	Contractor Training	TCEL organize QHSE related training every month and include it in monthly report	TCEL organize QHSE related training every month and include it in monthly report	TCEL organize QHSE related training every month and include it in monthly report	TCEL organize QHSE related training every month and include it in monthly report	TCEL organize QHSE related training every month and include it in monthly report	TCEL organize QHSE related training every month and include it in monthly report

Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used
10	Dust control (PM 2.5, PM 10)	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	TCEL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers	TCEL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site specific EMP. TCEL arranges H& S training for the labor on regular basis. TCEL provides supplies of potable drinking water and first aid-box. TCEL provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	TCEL provides as per consultant requirements	TCEL provides as per consultant requirements	TCEL provides as per consultant requirements	TCEL provides as per consultant requirements	TCEL provides as per consultant requirements	TCEL provides as per consultant requirements

13	Disposal of construction debris and other waste materials	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site	TCEL arranges all the debris and other wastes be removed from the site and transported to the disposal site
14	Servicing and operating equipment	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	TCEL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task

15	COVID 19 Prevention Measures	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	TCEL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	TCEL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone
17	On-Site Supervision and Management	TCEL ensures On-site supervision and management properly	TCEL ensures On-site supervision and management properly	TCEL ensures On-site supervision and management properly	TCEL ensures On-site supervision and management properly	TCEL ensures On-site supervision and management properly	TCEL ensures On-site supervision and management properly

Table 13 C: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for NCB-2.11B

Environmental Safeguard Implementation		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)	-	-	DMA 307	DMA 305	-	-
2	Noise (dBA for day and night time)	-	-	DMA 305	DMA 307	-	-
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)	-	-	DMA 313	DMA 312	-	-
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl,	-	-	DMA 312	DMA 313	-	-

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary
6	Quarterly Environmental Inspections and Report			RFL will provide according to consultant's requirement from DMS			RFL will provide according to consultant's requirement from DMS
7	Semi Annual Report						As per consultant requirement
8	Contractor Training	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report

Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used
10	Dust control (PM 2.5, PM 10)	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements

13	Disposal of construction debris and other waste materials	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site
14	Servicing and operating equipment	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task

15	COVID 19 Prevention Measures	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone
17	On-Site Supervision and Management	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly

Table 13 D: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for NCB-2.11C, Lot-1

Environmental Safeguard Implementation		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)	-	-	-	-	DMA 406 DMA 411 DMA 412	DMA 406 DMA 411 DMA 412
2	Noise (dBA for day and night time)	-	-	-	-	DMA 406 DMA 411 DMA 412	DMA 406 DMA 411 DMA 412
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)	-	-	-	-	DMA 406 DMA 411 DMA 412	DMA 406 DMA 411 DMA 412
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl,	-	-	-	-	DMA 406 DMA 411 DMA 412	DMA 406 DMA 411 DMA 412

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary
6	Quarterly Environmental Inspections and Report			RFL will provide according to consultant's requirement from DMS			RFL will provide according to consultant's requirement from DMS
7	Semi Annual Report						As per consultant requirement
8	Contractor Training	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report

Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used
10	Dust control (PM 2.5, PM 10)	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements
13	Disposal of construction debris and other waste materials	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site

14	Servicing and operating equipment	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task
15	COVID 19 Prevention Measures	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone

17	On-Site Supervision and Management	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly

Table 13 E: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for NCB-2.11C, Lot-2

Environmental Safeguard Implementation		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)	-	-	-	-	DMA 409 DMA 413 DMA 414	DMA 409 DMA 413 DMA 414
2	Noise (dBA for day and night time)	-	-	-	-	DMA 409 DMA 413 DMA 414	DMA 409 DMA 413 DMA 414
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)	-	-	-	-	DMA 409 DMA 413 DMA 414	DMA 409 DMA 413 DMA 414
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl,	-	-	-	-	DMA 409 DMA 413 DMA 414	DMA 409 DMA 413 DMA 414

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary
6	Quarterly Environmental Inspections and Report			RFL will provide according to consultant's requirement from DMS			RFL will provide according to consultant's requirement from DMS
7	Semi Annual Report						As per consultant requirement
8	Contractor Training	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report

Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used
10	Dust control (PM 2.5, PM 10)	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements

13	Disposal of construction debris and other waste materials	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site
14	Servicing and operating equipment	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task

15	COVID 19 Prevention Measures	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone
17	On-Site Supervision and Management	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly

Table 13 F: Environmental Management Implementation Work Schedule (EMWS): Six months working plan (July-December, 2023) for NCB-2.11D, Lot-1

Environmental Safeguard Implementation		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
1	Air Quality (CO, S02, N02, SPM, PM2.5, PM10)	-	-	-	-	DMA 1005 DMA 1010 DMA 1011	DMA 1005 DMA 1010 DMA 1011
2	Noise (dBA for day and night time)	-	-	-	-	DMA 1005 DMA 1010 DMA 1011	DMA 1005 DMA 1010 DMA 1011
3	Surface Water Quality (pH, DO, BOD5, COD, As, Cl, Fe, Mn)	-	-	-	-	DMA 1005 DMA 1010 DMA 1011	DMA 1005 DMA 1010 DMA 1011
4	Groundwater Quality ((pH, DO, BOD5, COD, As, Cl,	-	-	-	-	DMA 1005 DMA 1010 DMA 1011	DMA 1005 DMA 1010 DMA 1011

Construction Period Reporting and Training							
5	Monthly Environmental Report	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary	Records of environmental activities are included within Monthly progress report and the Cumulative Project Summary
6	Quarterly Environmental Inspections and Report			RFL will provide according to consultant's requirement from DMS			RFL will provide according to consultant's requirement from DMS
7	Semi Annual Report						As per consultant requirement
8	Contractor Training	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report	RFL organize QHSE related training every month and include it in monthly report

Construction Period Mitigation Measures							
9	Noise attenuation measures	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used	In case of night works, prior information to locals, at worksites with minimal level of disturbance possible to locality but noise reducers are not used
10	Dust control (PM 2.5, PM 10)	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather	RFL provides misting water sprays to reduce airborne dusting from demolition work and during dry weather

11	Occupational Health and Safety	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers	RFL develops and implement site specific occupational health and safety (OH&S) Plan, and include in the Site-specific EMP. RFL arranges H& S training for the labor on regular basis. RFL provides supplies of potable drinking water and first aid-box. RFL provides medical insurance coverage for workers
12	The Environmental Management Implementation Work Schedule (EMWS) plus other work plans as specified in EMP	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements	RFL provides as per consultant requirements

13	Disposal of construction debris and other waste materials	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site	RFL arranges all the debris and other wastes be removed from the site and transported to the disposal site
14	Servicing and operating equipment	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	RFL ensures that all site personnel have a basic level of environmental awareness training and Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task

15	COVID 19 Prevention Measures	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers	RFL Provides Covid-19 banner in each construction site, distributes leaflets to workers, hand wash facilities, distribute mask, sanitizer and organize training for workers
16	Traffic Management	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone	RFL implements the Traffic Management Plan to ensure the safety of all the road users along the work zone
17	On-Site Supervision and Management	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly	RFL ensures On-site supervision and management properly

Annex 09: DMA wise Environmental parameter Testing Reports

Air Quality Monitoring: Laboratory Test report, ICB 2.08

Air Quality -DMA 908

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Name of the Project	Environmental Quality Assessment for Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Ambient Air Quality
Sample Collector	Collected by DSCL Personnel
Sampling Date	16 May 2023

Test Result of Ambient Air Quality Analysis

Parameter	Unit	DMA_908_AAQ_01 Infront of Rajuk Uttara Model School & College, Sector-2, Uttara 23.870385°N 90.4013624°E		DMA_908_AAQ_02 Infront of Popular Diagnostic Centre, Sector-4, Uttara 23.861150°N 90.400472°E		Bangladesh Standard**	Project Standards (DWSNIP)***	Duration (hours)	Method of Analysis
		Actual Result	After 24-hour conversion	Actual Result	After 24-hour conversion				
$PM_{2.5}$	µg/m³	96.65	21.65	108.57	24.31	65	25	24	OC-300 Portable Gas Detector
PM_{10}	µg/m³	178.89	40.07	190.66	42.70	150	50	24	
SO_2	µg/m³	12.23	-	16.89	-	365	20	24	OC-905 Portable Gas Detector
NO_2	µg/m³	44.15	-	52.80	-	100	200	Annual	
CO*	ppm	3.2	-	2.03	-	10	8	8	
Weather Condition	Sunny	Sunny	-	-	-	-			

** The Bangladesh National Ambient Air Quality Standards have been taken from the Air Pollution Control Rules, 2022 which was published on 20 July 2022 vide S.R.O. No. 255-Law/2022

*** Ambient Air Quality Standards for Dhaka Water Supply Network Improvement Project (DWSNIP)

Description of the surrounding Environment

Location	Sample Site Description
Infront of Rajuk Uttara Model School & College, Sector-2, Uttara **(DMA_908_AAQ_01)**	❖ The weather was sunny during the monitoring period. ❖ Visual dust particles were moderate. ❖ People movement was high. ❖ Vehicle movement was moderate, but vehicle movement was high when school dismissed. ❖ Located infront of a School.
Infront of Popular Diagnostic Centre, Sector-4, Uttara **(DMA_908_AAQ_02)**	❖ People movement was high. ❖ Vehicle (mostly rickshaw) movement was moderate. ❖ The place is in residential area. ❖ The weather was sunny ❖ Visual dust particles were high.

Air Quality Monitoring: Laboratory Test report, ICB 2.09; DMA 207, DMA 211, DMA 212

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Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	15 March 2023

Test Result of Ambient Air Quality Analysis

Parameter	Unit	DMA_207_AAQ_01 Dhakeshwari Road, Bokshi Bazar, Dhaka 23.721291°N 90.389111°E		DMA_207_AAQ_02 Bokshi bazar Bus Stand, Bokshi Bazar, Dhaka 23.722401°N 90.395570°E		Bangladesh Standard**	Project Standards (DWSNIP)***	Duration (hours)	Method of Analysis
		Actual Result	After 24-hour conversion	Actual Result	After 24-hour conversion				
$PM_{2.5}$	µg/m³	68.9	26.12	69.4	26.31	65	25	24	OC-300 Portable Gas Detector
PM_{10}	µg/m³	144.6	54.81	137.5	52.12	150	50	24	
SO_2	µg/m³	101.7	-	105.7	-	80	20	24	OC- 905 Portable Gas Detector
NO_x	µg/m³	55.3	-	62.9	-	80	200	24	
CO*	ppm	<1	-	1	-	5	8	8	
Weather	Sunny					-	-	-	

Note: * *CO concentrations and standards are 8-hourly only.*

** *The Bangladesh National Ambient Air Quality Standards have been taken from the "Air Pollution Control Rules, 2022."*

Sample site Description

Location	Sample Site Description
Dhakeshwari Road, Bokshi Bazar, Dhaka (DMA_207_AAQ_01)	➢ Vehicle Movement High. ➢ People Movement Moderate. ➢ Dust particle was visible.
Bokshi bazar Bus Stand, Bokshi Bazar, Dhaka (DMA_207_AAQ_02)	➢ People movement moderate. ➢ Visible dust particle low. ➢ Vehicle movement moderate.

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Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	04 June 2023

Test Result of Ambient Air Quality Analysis

Parameter	Unit	DMA_211_AAQ_01 Shaista Khan Road, Lalbagh, Dhaka 23.718951°N 90.390105°E		DMA_211_AAQ_02 Islambagh Road, Beside Eidgah Field, Lalbagh, Dhaka 23.713781°N 90.388487°E		Bangladesh Standard**	Project Standards (DWSNIP)***	Duration (hours)	Method of Analysis
		Actual Result	After 24-hour conversion	Actual Result	After 24-hour conversion				
$PM_{2.5}$	µg/m³	70.3	26.64	69.4	26.45	65	25	24	OC-300 Portable Gas Detector
PM_{10}	µg/m³	143.2	54.27	136.9	51.88	150	50	24	
SO_2	µg/m³	106.7	-	102.6	-	80	20	24	OC-905 Portable Gas Detector
NO_x	µg/m³	56.5	-	61.4	-	80	200	24	
CO*	ppm	1	-	<1	-	5	8	8	
Weather	Sunny					-	-	-	

Note: * CO concentrations and standards are 8-hourly only.

** The Bangladesh National Ambient Air Quality Standards have been taken from the 'Air Pollution Control Rules,26 July 2022.'

Sample site Description

Location	Sample Site Description
Shaista Khan Road, Lalbagh, Dhaka (DMA_211_AAQ_01)	➢ Vehicle movement moderate. ➢ People movement moderate. ➢ Dust particle was visible. ➢ Near lalbagh fort.
Islambagh Road, Beside Eidgah Field, Lalbagh, Dhaka (DMA_211_AAQ_02)	➢ People movement moderate. ➢ Visible dust particle moderate. ➢ Vehicle movement moderate. ➢ Beside eidgah field.

Test Performed By
Md. Bappy Rahman
Jr. Office Engineer

Checked By
Pinon Nath
Deputy Manager

Approved By
Saiful Islam Imran
Manager

DSCL

Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL LABORATORY

Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Ambient Air Quality Test
Sample Collector	Collected by DSCL Personnel
Sampling Date	16 March 2023

Test Result of Ambient Air Quality Analysis

Parameter	Unit	DMA_213_AAQ_01 Ajgor Lane, Pump Road, Chawk Bazar, Dhaka 23.718402°N 90.394384°E		DMA_212_AAQ_02 S.C.C Road, Mahuttuli, Bongshal, Dhaka 23.716589°N 90.401528°E		Bangladesh Standard**	Project Standards (DWSNIP)***	Duration (hours)	Method of Analysis
		Actual Result	After 24 hour conversion	Actual Result	After 24 hour conversion				
$PM_{2.5}$	µg/m³	67.6	25.62	69.2	26.23	65	25	24	OC-300 Portable Gas Detector
PM_{10}	µg/m³	144.4	54.73	141.7	53.71	150	50	24	
SO_2	µg/m³	101.2	-	111.5	-	80	20	24	OC-909 Portable Gas Detector
NO_x	µg/m³	52.3	-	60.9	-	80	200	24	
CO*	ppm	<1	-	1	-	5	8	8	
Weather Condition	Sunny					-	-	-	-

Note: * CO concentrations and standards are 8-hourly only.

** The Bangladesh National Ambient Air Quality Standards have been taken from the "Air Pollution Control Rules, 2022."

Sample site Description

Location	Sample Site Description
Ajgor Lane, Pump Road, Chawk Bazar, Dhaka **(DMA_212_AAQ_01)**	❖ Vehicle movement: high. ❖ People movement: Moderate. ❖ Dust particle was visible.
S.C.C Road, Mahuttuli, Bongshal, Dhaka **(DMA_212_AAQ_02)**	➢ People movement moderate. ➢ Visible dust particle low. ➢ Vehicle movement moderate.

Test Performed By
Md. Bappy Rahman
Jr. Office Engineer

Checked By
Pinon Nath
Deputy Manager

Approved By
Saiful Islam Imran
Manager

Air Quality Monitoring: Laboratory Test report, ICB 2.10; DMA 104, 107, 110, 118, 119

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO: 05.007.20

Laboratory Analysis Report (DMA 104)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 17, 2023
Sampling Time: 10.00 AM - 1.00 PM
Reporting Date: January 25, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-104 **Sampling Location:** Mugda Hospital, Mugda, Dhaka **GPS Location:** 23° 43' 55.9"N 90° 25' 42.95"E	217	136	68	54	32	1.8
DMA-104 **Sampling Location:** Buddha Mandir Bus Stop, Basabo Madertek Road, Dhaka **GPS Location:** 23° 44' 10.29"N 90° 25' 42.73"E	234	142	71	57	35	2.1
DMA-104 **Sampling Location:** Kodomtola WASA Road, Basabo, Dhaka **GPS Location:** 23° 44' 10.29"N 90° 25' 42.73"E	147	87	42	24	19	0.8
Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs) 50 µg/m³ (Annual)	65 µg/m³ (24 hrs) 35 µg/m³ (Annual)	250 µg/m³ (1 hr) 80 µg/m³ (24 hrs)	80 µg/m³ (24 hrs) 40 µg/m³ (Annual)	5 mg/m³ (8 hrs) 20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs) 15 µg/m³ (Annual)	15 µg/m³ (24 hrs) 5 µg/m³ (Annual)	500 µg/m³ (10 mins) 40 µg/m³ (24 hrs)	25 µg/m³ (24 hrs) 10 µg/m³ (Annual)	7 mg/m³ (24 hrs)

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Cert NO.:05.007.20

Laboratory Analysis Report (DMA 107)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 17, 2023
Sampling Time: 1:30.00 PM - 3.30 PM
Reporting Date: January 25, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-107 **Sampling Location:** Haider Ali School & College, Manda Bridge, Dhaka **GPS Location:** 23° 43' 44.4"N 90° 26' 7.83"E	123	97	48	21	18	1.1
DMA-107 **Sampling Location:** Kadam Ali Jheelpar Road, Manda Road **GPS Location:** 23° 43' 50.56"N 90° 26' 28.45"E	118	83	44	23	15	0.7
DMA-107 **Sampling Location:** Madrasha Bahrul Ulum, Manda Shes Bridge, Dhaka **GPS Location:** 23° 43' 51.42"N 90° 26' 45.78"E	121	78	39	20	17	0.6

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Laboratory Analysis Report (DMA 110)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 17, 2023
Sampling Time: 4:00 PM – 6:00 PM
Reporting Date: January 25, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-110 **Sampling Location:** Maniknagar Bus Stop, Ram Krishna Mission Road, Dhaka **GPS Location:** 23° 43' 19.96"N 90° 25' 43.31"E	284	148	74	52	49	2.6
DMA-110 Sampling Location: Maniknagar Wasa Road GPS Location: 23° 43' 31.10"N 90° 26' 01.50"E	139	85	43	18	17	0.7
DMA-110 Sampling Location: Manknagar Balur Math Panir Pump at East Maniknagar, Mugda GPS Location: 23° 43' 31.00"N 90° 26' 14.50"E	134	74	37	15	13	0.5

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 118)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 18, 2023
Sampling Time: 9:00 PM – 12:00 PM
Reporting Date: January 25, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-118 **Sampling Location:** Near Dholaipar High School at Mir Hazirbag Road, West Dolaipar, Dhaka **GPS Location:** 23° 42' 10.64"N 90° 26' 00.76"E	183	143	71	48	37	2.1
DMA-118 Sampling Location: Near Estren Iron Market at 65 Mir Hazirbag, Shampur GPS Location: 23° 42' 12.48"N 90° 25' 49.49"E	174	138	69	45	33	2.4
DMA-118 Sampling Location: Sharnokoli Pre-Cadet & High School at West Jurain, Pipe Road, Shampur GPS Location: 23° 41' 59.13"N 90° 25' 51.61"E	165	145	73	47	35	2.2

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 119)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 18, 2023
Sampling Time: 1:00 PM – 5:00 PM
Reporting Date: January 25, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-119 Sampling Location: Near Postogola Fire Service Station at MC Road, Postogola, Shampur, Dhaka **GPS Location:** 23° 41' 27.56"N 90° 25' 50.01"E	213	142	72	57	53	1.9
DMA-119 Sampling Location: Near Janata Bank Ltd at 215, Karim Ullarbag, Postagola, Smashanghat Road, Dhaka GPS Location: 23° 41' 33.83"N 90° 25' 39.55"E	205	139	68	50	48	2.1
DMA-119 Sampling Location: Near Jurain Labur Kachabazr at 74/D IT Plot, Balurmath, Postogola, Jurain, Dhaka GPS Location: 23° 41' 39.08"N 90° 25' 58.11"E	197	148	74	43	41	1.8

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

Air Quality Monitoring: Laboratory Test report, ICB 2.10; DMA 109A, 109B, 111, 112

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Cert NO.:05.007.20

Laboratory Analysis Report (DMA 109A)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: March 7, 2023
Sampling Time: 09.00 AM - 5.00 PM
Laboratory Analysis Date: March 10, 2023
Reporting Date: March 15, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-109A Sampling Location: Near Near Ramakrishna Mission High School at 27 R.K Mission Road, Gopibagh, Dhaka **GPS Location:** 23°43'16.50"N & 90°25'23.48"E	165	86	43	34	23	0.8
DMA-109A Sampling Location: Near Bismillah Jame Masjid at 65, Abhay Das Lane, R.K. Mission Road, Gopibagh, Dhaka **GPS Location:** : 23°43'12.53"N & 90°25'33.73"E	157	75	39	29	20	0.6
DMA-109A Sampling Location: Near ISKCON Swamibag Temple at 79 Swamibag Road, Swamibag, Gendaria, Dhaka **GPS Location:** 23°42'48.29"N & 90°25'20.48"E	135	71	33	23	17	0.4

Reference Standards						
Bangladesh Air Pollution (Control) Rules, 2022	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Ambient Air Quality Standards, Bangladesh Air Pollution (Control) Rules, 2022 (Bangladesh Gadget Additional, July 26, 2022).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Cert NO: 05.007.20

Laboratory Analysis Report (DMA 109B)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: March 7, 2023
Sampling Time: 09.00 AM - 5.00 PM
Laboratory Analysis Date: March 10, 2023
Reporting Date: March 15, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-109B **Sampling Location:** Near T.T Para Bus Stand by Jonopath Drainage Pumping Station at T.T Para, Gopibagh, Dhaka **GPS Location:** 23°43'28.69"N, 90°25'42.07"E	198	102	64	61	42	1.4
DMA-109B **Sampling Location:** Near Sayedabad Bus Terminal Masjid at Sayedabad Bus Terminal, Sayedabad, Dhaka) **GPS Location:** 23°42'54.42"N, 90°25'37.15"E	221	124	67	67	46	1.7
DMA-109B **Sampling Location:** Near Doyaganj water pump-3 (Dhaka Wasa) at Doyaganj, Jatrabari, Dhaka **GPS Location:** 23°42'37.37"N & 90°25'35.13"E	213	118	63	59	37	1.5

Reference Standards						
Bangladesh Air Pollution (Control) Rules, 2022	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Ambient Air Quality Standards, Bangladesh Air Pollution (Control) Rules, 2022 (Bangladesh Gadget Additional, July 26, 2022).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Laboratory Analysis Report (DMA 111)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: March 21, 2023
Sampling Time: 09.00 AM - 5.00 PM
Laboratory Analysis Date: March 30, 2023
Reporting Date: April 2, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-111 **Sampling Location:** Near Jamia Ashraful Uloom Mosjid Madrasha and Atimkhana, Godindhapur, Sonir Akhra, Dania, Dhaka **GPS Location:** 23° 42' 56.19" N, 90° 26' 20.6" E	162	82	39	32	25	0.9
DMA-111 **Sampling Location:** Near Jakerin Jame Mosjid, Dholpur, Jatrabari, Dhaka **GPS Location:** 23° 43' 1.07" N, 90° 26' 4.6" E	148	73	36	26	21	0.6
DMA-111 **Sampling Location:** Near Jatrabari Bus Stop, Jatrabari, Dhaka **GPS Location:** 23° 42' 40.26" N & 90° 25' 47.9"E	362	172	74	62	42	2.2

Reference Standards						
Bangladesh Air Pollution (Control) Rules, 2022	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Ambient Air Quality Standards, Bangladesh Air Pollution (Control) Rules, 2022 (Bangladesh Gadget Additional, July 26, 2022).
Note 2: WHO Ambient Air Quality Guidelines, 2021

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 112)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. ICB 2.10
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: March 21, 2023
Sampling Time: 09.00 AM - 5.00 PM
Laboratory Analysis Date: March 30, 2023
Reporting Date: April 2, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-112 **Sampling Location:** Near Demra Dumpling Site, Demra **GPS Location:** 23° 43' 3.17"N, 90° 27' 0.1"E	127	65	33	22	18	0.6
DMA-112 **Sampling Location:** Near Kajla Jame Mosque, Jatrabari **GPS Location:** 23° 42' 38.38"N, 90° 26' 40.13"E	109	54	27	16	13	0.4
DMA-112 **Sampling Location:** Near Nurani Talimul Quran Madrasha, Jatrabari **GPS Location:** 23° 43' 3.13"N & 90° 26' 25.57"E	98	48	24	14	11	0.3
Reference Standards						
Bangladesh Air Pollution (Control) Rules, 2022	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Ambient Air Quality Standards, Bangladesh Air Pollution (Control) Rules, 2022 (Bangladesh Gadget Additional, July 26, 2022).
Note 2: WHO Ambient Air Quality Guidelines, 2021

Air Quality Monitoring: Laboratory Test report, NCB-2.11A; DMA 320, 408, 311, 306, 301, 303

EnviroCare International Ltd.
A house of Inspection, Testing, Assessment &Consultancy

Ref: ECIL/2023/04-23/SW-DWASA

ENVIROCARE ENVIRONMENTAL LABORATORY

Results of Ambient Air Quality Analysis

Name of Project	: Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Activity	: Ambient Air Quality Analysis
Monitored By	: Envirocare Technical Team
Monitoring Date	: 16 April, 2023
Date of Analysis	: 17 April, 2023-16 May, 2023

Noise Level Monitoring Location

SL	Name of DMA	Location ID	GPS Coordinates
1.	320	AQ 01	23°45'41.1"N 90°23'08.3"E
2.	408	AQ 02	23°46'49.5"N 90°22'26.6"E
3.	311	AQ 03	23°45'59.8"N 90°22'58.7"E
4.	306	AQ 04	23°45'10.5"N 90°21'49.4"E
5.	301	AQ 05	23°46'03.9"N 90°21'00.6"E
6.	303	AQ 06	23°46'35.0"N 90°21'33.3"E

Result Analysis

Location ID	Name of DMAs	SPM (µg/m3)	PM 2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	CO ppm
AQ 01	320	42.85	29.00	7.81	16.45	0.11
AQ 02	408	41.45	28.52	8.27	11.44	0.14
AQ 03	311	38.09	29.51	6.91	14.70	0.14
AQ 04	306	43.99	26.01	8.41	15.81	0.14
AQ 05	301	51.74	30.59	9.01	17.98	0.12
AQ 06	303	51.51	31.70	8.65	15.52	0.16
Duration (hours)		8	24	24	24	8
Bangladesh Standards*		200	65	80	80	5

* Standard: Air Pollution Control Rules on 26th July 2022; vide S.R.O No. 255-Law/2022 and Environment Conservation Rules (ECR) 1997 through its subsequent amendment on 19th July, 2005; vide S.R.O. No 220-Law/2005

Prepared By	*Reviewed By*	*Approved By:*
Md. Sijuddin	Sanjoy Kumar Mondol	Shorov Roy
Junior Environmental Specialist	Technical Manager	Quality Manager
Envirocare International Limited	Envirocare International Limited	Envirocare International Limited

Air Quality Monitoring: Laboratory Test report, NCB-2.11C; Lot-1; DMA 406, 411, 412

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO: 05.007.20

Laboratory Analysis Report (DMA 406)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 10.00 AM - 11.00 AM
Reporting Date: December 25, 2022

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-406 **Sampling Location:** Monipur High School & College, Ibrahimpur, Shewarapara, Mirpur, Dhaka **GPS Location:** 23° 48' 1.62"N 90° 21' 57.29"E	135	94	46	25	18	0.4
DMA-406 **Sampling Location:** Exim Bank Hospital, Begum Rokeya Avenue Sarani, Dhaka **GPS Location:** 23° 47' 54.16"N 90° 22' 20.17"E	148	103	51	28	21	1.1

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 411)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 11.20 AM - 12.20 PM
Reporting Date: December 25, 2022

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-411 **Sampling Location: Medi Home Hospital** Uttar Pirerbag, Kamal Soroni (60 foot road), Mirpur-1, Dhaka **GPS Location:** 23° 47' 28.00"N 90° 21' 57.40"E	145	113	52	33	25	1.5
DMA-411 **Sampling Location:** Anonda Bazar Road, Anonda Bazar, Shewarapara, Mirpur **GPS Location:** 23° 47' 30.30"N 90° 22' 14.00"E	102	84	41	19	16	0.6

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs) 50 $\mu g/m^3$ (Annual)	65 $\mu g/m^3$ (24 hrs) 35 $\mu g/m^3$ (Annual)	250 $\mu g/m^3$ (1 hr) 80 $\mu g/m^3$ (24 hrs)	80 $\mu g/m^3$ (24 hrs) 40 $\mu g/m^3$ (Annual)	5 mg/m^3 (8 hrs) 20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs) 15 $\mu g/m^3$ (Annual)	15 $\mu g/m^3$ (24 hrs) 5 $\mu g/m^3$ (Annual)	500 $\mu g/m^3$ (10 mins) 40 $\mu g/m^3$ (24 hrs)	25 $\mu g/m^3$ (24 hrs) 10 $\mu g/m^3$ (Annual)	7 mg/m^3 (24 hrs)

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Cert NO: 05.007.20

Laboratory Analysis Report (DMA 412)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 1.40 PM - 2.40 PM
Reporting Date: December 25, 2022

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-412 **Sampling Location:** Baitush Sakur Jame Mosque Road, Shewarapara, Mirpur **GPS Location:** 23° 47' 18.05"N 90° 22' 20.6"E	139	72	36	18	15	0.6
DMA-412 **Sampling Location:** Ali Miar Tek Market, Pirerbag, West Shewarapara, Mirpur **GPS Location:** 23° 47' 23.19"N 90° 22' 15.79"E	143	79	38	16	14	0.8

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

Air Quality Monitoring: Laboratory Test report, NCB-2.11C; Lot-2; DMA 409, 413, 414

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 409)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-2)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 10.00 AM - 12.00 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-409 **Sampling Location:** In front of Hazrat Shah Ali Mohila College **GPS Location:** 23° 47' 48.80"N 90° 20' 59.80"E	131	97	48	24	19	1.1
DMA-409 **Sampling Location:** In front of Sony Square Star Cineplex **GPS Location:** 23° 48' 01.40"N 90° 21' 21.40"E	143	112	59	27	21	1.3

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Laboratory Analysis Report (DMA 413)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-2)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 12.30 PM - 2.30 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-413 **Sampling Location:** In front of LAZZ Pharma 60 feet Branch **GPS Location:** 23° 47' 56.20"N 90° 21' 50.50"E	153	103	52	16	15	0.8
DMA-413 **Sampling Location:** In front of Kidney Foundation Hospital and Research Institute 23° 48' 10.70"N 90° 21' 37.10"E	135	98	49	13	10	0.6

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Laboratory Analysis Report (DMA 414)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11C (Lot-2)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: December 18, 2022
Sampling Time: 1.00 PM - 4.00 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM ($\mu g/m^3$)	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	CO (mg/m^3)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-414 **Sampling Location:** In front of Kazi Fori Jame Mosque **GPS Location:** 23° 48' 16.60"N 90° 20' 47.90"E	126	93	46	13	11	0.9
DMA-414 **Sampling Location:** In front of BCIC College **GPS Location:** 23° 48' 34.30"N 90° 21' 00.20"E	117	82	38	15	12	0.7

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 $\mu g/m^3$ (Commercial and mixed)	150 $\mu g/m^3$ (24 hrs)	65 $\mu g/m^3$ (24 hrs)	250 $\mu g/m^3$ (1 hr)	80 $\mu g/m^3$ (24 hrs)	5 mg/m^3 (8 hrs)
		50 $\mu g/m^3$ (Annual)	35 $\mu g/m^3$ (Annual)	80 $\mu g/m^3$ (24 hrs)	40 $\mu g/m^3$ (Annual)	20 mg/m^3 (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 $\mu g/m^3$ (24 hrs)	45 $\mu g/m^3$ (24hrs)	15 $\mu g/m^3$ (24 hrs)	500 $\mu g/m^3$ (10 mins)	25 $\mu g/m^3$ (24 hrs)	7 mg/m^3 (24 hrs)
		15 $\mu g/m^3$ (Annual)	5 $\mu g/m^3$ (Annual)	40 $\mu g/m^3$ (24 hrs)	10 $\mu g/m^3$ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

Air Quality Monitoring: Laboratory Test report, NCB-2.11D; Lot-1; DMA 1005, 1010, 1011

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Laboratory Analysis Report (DMA 1005)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11D (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 11, 2023
Sampling Time: 10.00 AM - 12.00 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-1005 Sampling Location: In front of St. Lawrence's Church GPS Location: 23° 47' 10.50"N 90° 23' 04.60"E	143	109	53	29	23	0.8
DMA-1005 Sampling Location: In front of Hi-Tech Multiacre Hospital GPS Location: 23° 47' 18.40"N 90° 21' 17.70"E	136	103	51	35	26	1.1

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

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Cert NO: 05.007.20

Laboratory Analysis Report (DMA 1010)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11D (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 11, 2023
Sampling Time: 12.30 PM - 2.30 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-1010 **Sampling Location:** In front of Desh Politechnic College **GPS Location:** 23° 49' 15.40"N 90° 22' 06.20"E	165	117	55	25	22	1.2
DMA-1010 **Sampling Location:** In front of City Club, Pallobi 23° 49' 22.40"N 90° 21' 55.60"E	135	102	49	29	27	1.4

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO: 05.007.20

Laboratory Analysis Report (DMA 1011)

Project Name: Dhaka Water Supply Network Improvement Project (DWSNIP)
Package No. NCB 2.11D (Lot-1)
Description of sample: Ambient Air Quality
Sample Collector: GECL Team
Sampling Date: January 11, 2023
Sampling Time: 1.00 PM - 4.00 PM
Reporting Date: February 10, 2023

Laboratory Test Result

Sample Description	Concentration Present					
	SPM (µg/m³)	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)	CO (mg/m³)
TWA Sampling Duration	24 hrs	24 hrs	24 hrs	24 hrs	24 hrs	8 hrs
DMA-1011 **Sampling Location:** Around D Block Eidgah Maidan **GPS Location:** 23° 49' 26.50"N 90° 22' 24.10"E	153	115	58	18	16	1.3
DMA-1011 **Sampling Location:** In front of Pallobi Mohila Degree College **GPS Location:** 23° 49' 23.50"N 90° 22' 21.50"E	146	108	54	21	19	1.1

Reference Standards						
DoE, Bangladesh Standard for Ambient Air, 2021	400 µg/m³ (Commercial and mixed)	150 µg/m³ (24 hrs)	65 µg/m³ (24 hrs)	250 µg/m³ (1 hr)	80 µg/m³ (24 hrs)	5 mg/m³ (8 hrs)
		50 µg/m³ (Annual)	35 µg/m³ (Annual)	80 µg/m³ (24 hrs)	40 µg/m³ (Annual)	20 mg/m³ (1 hr)
WHO Ambient Air Quality Guideline, 2021	120 µg/m³ (24 hrs)	45 µg/m³ (24hrs)	15 µg/m³ (24 hrs)	500 µg/m³ (10 mins)	25 µg/m³ (24 hrs)	7 mg/m³ (24 hrs)
		15 µg/m³ (Annual)	5 µg/m³ (Annual)	40 µg/m³ (24 hrs)	10 µg/m³ (Annual)	

Note 1: Schedule-2 Air Quality Standards, Environmental Conservation Rules 1997 (dated 28 Aug 1997) (amended by the Notification SRO 220-Law/2005 (dated 19 July 2005)).
Note 2: WHO Ambient Air Quality Guidelines, 2021

Noise Monitoring: Laboratory Test report, ICB 2.08

Noise Quality -DMA 908

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Multidisciplinary Development Consultants

Name of the Project	Environmental Quality Assessment for Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Noise Level Measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	16 May 2023

Noise Level Analysis

Sample ID	Sample Location	GPS Location	Land Use Category	Time				Noise Level (dBA) (L Aeq)		Bangladesh Standard (dB A) **	
				Day		Night					
				Start	End	Start	End	Day	Night	Day	Night
DMA_908_NM_01	Infront of Rajuk Uttara Model School & College, Sector-2, Uttara	23.870385°N 90.4013624°E	Residential	11:03 AM	12:03 PM	09:00 PM	10:00 PM	66.94	41.5	55	45
DMA_908_NM_02	Infront of Popular Diagnostic Centre, Sector-4, Uttara	23.861150°N 90.400422°E	Commercial	01:05 PM	02:05 PM	10:07 PM	11:07 PM	74.80	59.32	70	60

Description of the Surrounding Environment

Sample Location and ID	Sample Site Description
Infront of Rajuk Uttara Model School & College, Sector-2, Uttara **(DMA_908_NM_01)**	➢ The place is in the residential area. ➢ People movemqnt was high ➢ Vehicle movement was high when school was dismissed.
Infront of Popular Diagnostic Centre, Sector-4, Uttara **(DMA_908_NM_02)**	➢ Heavy generator was on service at the hospital. ➢ People's movement was high at the day time, excessive people were there at the night time due to raining. ➢ Vehicle movement was high. ➢ The place is in commercial area.

Noise Monitoring: Laboratory Test report, ICB 2.09

Noise Quality -DMA 207, 211, 212

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Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL LABORATORY

Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Noise Measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	15 March 2023

Noise Level Analysis

Sample ID	Sample Location	GPS Location	Land Use Type	Time				Noise Level (dBA) (LAeq)		Bangladesh Standard (dBA) **	
				Day		Night		Day	Night	Day	Night
				Start	End	Start	End				
DMA_207_NM_01	Dhakeshwari Road, Bokshi Bazar, Dhaka	23.721261°N 90.389113°E	Mixed	11:11 am	11:41 am	09:02 pm	09:32 pm	61.9	50.6	60	50
DMA_207_NM_02	Bokshi bazar Bus Stand, Bokshi Bazar, Dhaka	23.722400°N 90.395574°E	Residential	03:10 pm	03:40 pm	09:55 pm	10:25 pm	59.7	48.4	55	45

Notes:
- *Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)*
- *The sound level standards for the residential area are 55 at day time and 45 at night time.*
- *The sound level standards for the mixed area are 60 at day time and 50 at night time.*
- *Noise Level is the average noise recorded throughout the monitoring period*

Sample site Description

Location	Sample Site Description
Dhakeshwari Road, Bokshi Bazar, Dhaka **(DMA_207_NM_01)**	➢ The place is in a mixed (residential & commercial) area. ➢ People movement moderate. ➢ Vehicle movement high.
Bokshi Bazar Bus Stand, Bokshi Bazar, Dhaka **(DMA_207_NM_02)**	➢ People movement was high. ➢ Vehicle movement high. ➢ The area is residential.

Test Performed By
Md. Bappy Rahman
Jr. Office Engineer

Checked By
Pinon Nath
Deputy Manager

Approved By
Saiful Islam Imran
Manager

DSCL

Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL LABORATORY

Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Noise Measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	04 June 2023

Noise Level Analysis

Sample ID	Sample Location	GPS Location	Land Use Type	Time				Noise Level (dBA) (LAeq)		Bangladesh Standard (dBA) **	
				Day		Night		Day	Night	Day	Night
				Start	End	Start	End				
DMA_211_NM_01	Shaista Khan Road, Lalbagh, Dhaka	23.718949°N 90.390147°E	Mixed	03:05 pm	03:35 pm	09:01 pm	09:31 pm	59.7	48.9	60	50
DMA_211_NM_02	Islambagh Road, Beside Eidgah Field, Lalbagh, Dhaka	23.713797°N 90.388508°E	Mixed	04:54 pm	05:24 pm	09:40 pm	10:10 pm	61.8	50.2	60	50

Notes:
- *Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)*
- *The sound level standards for the residential area are 55 at day time and 45 at night time.*
- *The sound level standards for the mixed area are 60 at day time and 50 at night time.*
- *Noise Level is the average noise recorded throughout the monitoring period*

Sample site Description

Location	Sample Site Description
Shaista Khan Road, Lalbagh, Dhaka **(DMA_207_NM_01)**	➢ The place is in a mixed (residential & commercial) area. ➢ People movement moderate. ➢ Vehicle movement high. ➢ Near lalbagh fort.
Islambagh Road,Beside Eidgah Field, Lalbagh, Dhaka **(DMA_207_NM_02)**	➢ People movement was moderate. ➢ Vehicle movement moderate. ➢ The area is Mixed. ➢ Beside eidgah field.

Test Performed By
Md. Bappy Rahman
Jr. Office Engineer

Checked By
Pinon Nath
Deputy Manager

Approved By
Saiful Islam Imran
Manager

DSCL

Development Solutions Consultant Limited

Multidisciplinary Development Consultants

DSCL LABORATORY

Name of the Project	Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Sample	Noise Measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	16 March 2023

Noise Level Analysis

Sample ID	Sample Location	GPS Location	Land Use Type	Time				Noise Level (dBA) (LAeq)		Bangladesh Standard (dBA) **	
				Day		Night					
				Start	End	Start	End	Day	Night	Day	Night
DMA_212_NM_01	Ajgor Lane, Pump Road, Chawk Bazar, Dhaka	23.718398°N 90.394380°E	Mixed	11:00 am	11:30 am	09:01 pm	09:31 pm	62.1	51.4	60	50
DMA_212_NM_02	S.C.C Road, Mahuttuli, Bongshal, Dhaka	23.716579°N 90.402522°E	Residential	03:11 pm	03:41 pm	09:55 pm	10:25 pm	59.6	49.7	55	45

Notes:
- *Land use category is based on the classificative provided in the Noise Pollution Control Rules (2006)*
- *The sound level standards for the residential area are 55 at day time and 45 at night time.*
- *The sound level standards for the mixed area are 60 at day time and 50 at night time.*
- *Noise Level is the average noise recorded throughout the monitoring period*

Sample site Description

Location	Sample Site Description
Ajgor Lane, Pump Road, Chawk Bazar, Dhaka **(DMA_212_NM_01)**	➢ The place is in a mixed (residential & commercial) area. ➢ People movement moderate. ➢ Vehicle movement high.
S.C.C Road, Mahattuli Bongshal, Dhaka **(DMA_212_NM_02)**	➢ People movement was high. ➢ Vehicle movement high. ➢ The area is residential.

Test Performed By
Md. Bappy Rahman
Jr. Office Engineer

Checked By
Pinon Nath
Deputy Manager

Approved By
Saiful Islam Imran
Manager

Noise Monitoring: Laboratory Test report, ICB 2.10; DMA 104, 107, 110, 118, 119, 109A, 109B, 111, 112

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO. 05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP). Package No. ICB 2.10. 5 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/02/7/01	**Date of Sampling**	January 17,18, 2023
Sampling Time	Day and Night (January 17,18, 2023		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	February 2, 2023	**Report Issuing Date**	February 7, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-104 **Sampling Location:** Mugda Hospital, Mugda, Dhaka **GPS Location:** 23° 43' 55.9"N, 90° 25' 42.95"E	74	63
DMA-104 **Sampling Location:** Buddha Mandir Bus Stop, Basabo Madertek Road, Dhaka **GPS Location:** 23° 44' 10.29"N, 90° 25' 42.73"E	75	64
DMA-104 **Sampling Location:** Kodomtola WASA Road, Basabo, Dhaka **GPS Location:** 23° 44' 10.29"N, 90° 25' 42.73"E	62	54
DMA-107 **Sampling Location:** Haider Ali School & College, Manda Bridge, Dhaka **GPS Location:** 23° 43' 44.4"N, 90° 26' 7.83"E	64	56
DMA-107 **Sampling Location:** Kadam Ali Jheelpar Road, Manda Road **GPS Location:** 23° 43' 50.56"N, 90° 26' 28.45"E	62	53
DMA-107 **Sampling Location:** Madrasha Bahrul Ulum, Manda Shes Bridge, Dhaka **GPS Location:** 23° 43' 51.42"N, 90° 26' 45.78"E	65	54

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.

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Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-110 **Sampling Location:** Maniknagar Bus Stop, Ram Krishna Mission Road, Dhaka **GPS Location:** 23° 43' 19.96"N, 90° 25' 43.31"E	73	65
DMA-110 Sampling Location: Maniknagar Wasa Road GPS Location: 23° 43' 31.10"N, 90° 26' 01.50"E	63	54
DMA-110 Sampling Location: Manknagar Balur Math Panir Pump at East Maniknagar, Mugda GPS Location: 23° 43' 31.00"N, 90° 26' 14.50"E	65	53
DMA-118 **Sampling Location:** Near Dholaipar High School at Mir Hazirbag Road, West Dolaipar, Dhaka **GPS Location:** 23° 42' 10.64"N, 90° 26' 00.76"E	74	64
DMA-118 Sampling Location: Near Estren Iron Market at 65 Mir Hazirbag, Shampur GPS Location: 23° 42' 12.48"N, 90° 25' 49.49"E	73	65
DMA-118 Sampling Location: Sharnokoli Pre-Cadet & High School at West Jurain, Pipe Road, Shampur GPS Location: 23° 41' 59.13"N, 90° 25' 51.61"E	72	62
DMA-119 **Sampling Location:** Near Postogola Fire Service Station at MC Road, Postogola, Shampur, Dhaka **GPS Location:** 23° 41' 27.56"N, 90° 25' 50.01"E	68	59
DMA-119 Sampling Location: Near Janata Bank Ltd at 215, Karim Ullarbag, Postagola, Smashanghat Road, Dhaka GPS Location: 23° 41' 33.83"N, 90° 25' 39.55"E	69	58
DMA-119 Sampling Location: Near Jurain Labur Kachabazr at 74/D IT Plot, Balurmath, Postogola, Jurain, Dhaka GPS Location: 23° 41' 39.08"N, 90° 25' 58.11"E	65	56

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO: 05.007.20

ANALYSIS REPORT ON
AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. ICB 2.10, 5 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/03/7/01	**Date of Sampling**	March 7, 2023
Sampling Time	Day and Night (March 7, 2023)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	March 10, 2023	**Report Issuing Date**	March 15, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-109A **Sampling Location:** Near Near Ramakrishna Mission High School at 27 R.K Mission Road, Gopibagh, Dhaka **GPS Location:** 23°43'16.50"N & 90°25'23.48"E	72	61
DMA-109A **Sampling Location:** Near Bismillah Jame Mazjid at 65, Abhay Das Lane, R.K. Mission Road, Gopibagh, Dhaka **GPS Location:** : 23°43'12.53"N & 90°25'33.73"E	69	58
DMA-109A **Sampling Location:** Near ISKCON Swamibag Temple at 79 Swamibag Road, Swamibag, Gendaria, Dhaka **GPS Location:** 23°42'48.29"N & 90°25'20.48"E	70	56

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.
Note 3: Monitoring Duration: 1 hour (Day and Night each)

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO. 05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. ICB 2.10, 5 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/03/7/02	**Date of Sampling**	March 7, 2023
Sampling Time	Day and Night (March 7, 2023)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	March 10, 2023	**Report Issuing Date**	March 15, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-109B **Sampling Location:** Near T.T Para Bus Stand by Jonopath Drainage Pumping Station at T.T Para, Gopibagh, Dhaka **GPS Location:** 23°43'28.69"N, 90°25'42.07"E	78	68
DMA-109B **Sampling Location:** Near Sayedabad Bus Terminal Masjid at Sayedabad Bus Terminal, Sayedabad, Dhaka) **GPS Location:** 23°42'54.42"N, 90°25'37.15"E	77	67
DMA-109B **Sampling Location:** Near Doyaganj water pump-3 (Dhaka Wasa) at Doyaganj, Jatrabari, Dhaka **GPS Location:** 23°42'37.37"N & 90°25'35.13"E	75	66

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.
Note 3: Monitoring Duration: 1 hour (Day and Night each)

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Cert. NO: 05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. ICB 2.10, 5 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/03/21/03	**Date of Sampling**	March 21, 2023
Sampling Time	Day and Night (March 21, 2023)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	March 28, 2023	**Report Issuing Date**	March 28, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-111 **Sampling Location:** Near Jamia Ashraful Uloom Mosjid Madrasha and Atimkhana, Godindhapur, Sonir Akhra, Dania, Dhaka **GPS Location:** 23° 42' 56.19" N, 90° 26' 20.6" E	74	63
DMA-111 **Sampling Location:** Near Jakerin Jame Mosjid, Dholpur, Jatrabari, Dhaka **GPS Location:** 23° 43' 1.07" N, 90° 26' 4.6" E	73	62
DMA-111 **Sampling Location:** Near Jatrabari Bus Stop, Jatrabari, Dhaka **GPS Location:** 23° 42' 40.26" N & 90° 25' 47.9"E	76	65

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.
Note 3: Monitoring Duration: 1 hour (Day and Night each)

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Cert NO: 05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. ICB 2.10, 5 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/03/21/03	**Date of Sampling**	March 21, 2023
Sampling Time	Day and Night (March 21, 2023)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	March 28, 2023	**Report Issuing Date**	March 28, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-112 **Sampling Location:** Near Demra Dumpling Site, Demra **GPS Location:** 23° 43' 3.17"N, 90° 27' 0.1"E	75	65
DMA-112 **Sampling Location:** Near Kajla Jame Mosque, Jatrabari **GPS Location:** 23° 42' 38.38"N, 90° 26' 40.13"E	77	67
DMA-112 **Sampling Location:** Near Nurani Talimul Quran Madrasha, Jatrabari **GPS Location:** 23° 43' 3.13"N & 90° 26' 25.57"E	72	57

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.
Note 3: Monitoring Duration: 1 hour (Day and Night each)

Noise Monitoring: Laboratory Test report, NCB-2.11A; DMA 320, 408, 311, 306, 301, 303

EnviroCare International Ltd.
A house of Inspection, Testing, Assessment &Consultancy

Ref: ECIL/2023/04-23/SW-DWASA

Results of Noise Level Analysis

Name of Project	: Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Activity	: Noise Level Analysis
Monitored By	: Envirocare Technical Team
Monitoring Date	: 16 April, 2023
Date of Analysis	: 17 April, 2023-16 May, 2023

Noise Level Monitoring Location

SL	Name of DMA	Location ID	GPS Coordinates
1.	320	NL 01	23°45'41.1"N 90°23'08.3"E
2.	408	NL 02	23°46'49.5"N 90°22'26.6"E
3.	311	NL 03	23°45'59.8"N 90°22'58.7"E
4.	306	NL 04	23°45'10.5"N 90°21'49.4"E
5.	301	NL 05	23°46'03.9"N 90°21'00.6"E
6.	303	NL 06	23°46'35.0"N 90°21'33.3"E

Result Analysis

Location ID	Duration	Noise Level Leq [dB(A)]	Standard* [dB(A)]	Land use Category
NL 01	Day	67.02	60	Mixed
	Night	55.45	50	
NL 02	Day	71.31	60	Mixed
	Night	58.61	50	
NL 03	Day	68.92	60	Mixed
	Night	57.35	50	
NL 04	Day	71.31	60	Mixed
	Night	54.39	50	
NL 05	Day	65.19	60	Mixed
	Night	51.52	50	
NL 06	Day	66.82	60	Mixed
	Night	52.65	50	

* Standard: The Environment Conservation Rules (ECR), 1997 and Subsequent amendment in 2006

Prepared By	*Reviewed By*	*Approved By:*
Md. Sijuddin Junior Environmental Specialist Envirocare International Limited	Sanjoy Kumar Mondol Technical Manager Envirocare International Limited	Shorov Roy Quality Manager Envirocare International Limited

Noise Monitoring: Laboratory Test report, NCB- 2.11C, Lot-1; DMA 406, 411, 412

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO: 05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. NCB 2.11C (Lot-1), 3 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2022/12/25/01	**Date of Sampling**	December 18, 2022
Sampling Time	Day and Night (December 18, 2022)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	December 25, 2022	**Report Issuing Date**	December 25, 2022

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-406 **Sampling Location:** Monipur High School & College, Ibrahimpur, Shewarapara, Mirpur, Dhaka **GPS Location:** 23° 48' 1.62"N, 90° 21' 57.29"E	63	51
DMA-406 **Sampling Location:** Exim Bank Hospital, Begum Rokeya Avenue Sarani, Dhaka **GPS Location:** 23° 47' 54.16"N, 90° 22' 20.17"E	68	57
DMA-411 **Sampling Location: Medi Home Hospital** Uttar Pirerbag, Kamal Soroni (60 foot road), Mirpur-1, Dhaka **GPS Location:** 23° 47' 28.00"N, 90° 21' 57.40"E	63	53
DMA-411 **Sampling Location:** Anonda Bazar Road, Anonda Bazar, Shewarapara, Mirpur **GPS Location:** 23° 47' 30.30"N, 90° 22' 14.00"E	62	47
DMA-412 **Sampling Location:** Baitush Sakur Jame Mosque Road, Shewarapara, Mirpur **GPS Location:** 23° 47' 18.05"N, 90° 22' 20.6"E	58	46
DMA-412 **Sampling Location:** Ali Miar Tek Market, Pirerbag, West Shewarapara, Mirpur **GPS Location:** 23° 47' 23.19"N, 90° 22' 15.79"E	62	48

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.

Noise Monitoring: Laboratory Test report, NCB- 2.11C, Lot-2; DMA 409, 413, 414

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO.:05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP). Package No. NCB 2.11C (Lot-2). 3 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/02/10/01	**Date of Sampling**	December 18, 2022
Sampling Time	Day and Night (December 18, 2022)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	December 30, 2022	**Report Issuing Date**	February 10, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-409 **Sampling Location:** In front of Hazrat Shah Ali Mohila College **GPS Location:** 23° 47' 48.80"N 90° 20' 59.80"E	67	54
DMA-409 **Sampling Location:** In front of Sony Square Star Cineplex **GPS Location:** 23° 48' 01.40"N 90° 21' 21.40"E	76	59
DMA-413 **Sampling Location:** In front of LAZZ Pharma 60 feet Branch **GPS Location:** 23° 47' 56.20"N 90° 21' 50.50"E	69	55
DMA-413 **Sampling Location:** In front of Kidney Foundation Hospital and Research Institute 23° 48' 10.70"N 90° 21' 37.10"E	72	58
DMA-414 **Sampling Location:** In front of Kazi Fori Jame Mosque **GPS Location:** 23° 48' 16.60"N 90° 20' 47.90"E	64	54
DMA-414 **Sampling Location:** In front of BCIC College **GPS Location:** 23° 48' 34.30"N 90° 21' 00.20"E	69	57

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM and 9 PM to 6 AM respectively.

Noise Monitoring: Laboratory Test report, NCB- 2.11D, Lot-1; DMA 1005, 1010, 1011

GLOBAL ENVIRONMENT CONSULTANTS LTD.

Cert NO.:05.007.20

ANALYSIS REPORT ON AMBIENT NOISE LEVEL

Client Name	**Dhaka Water Supply Network Improvement Project (DWSNIP), Package No. NCB 2.11D (Lot-1), 3 DMAs**		
Report ID	GECL/DWSNIP/NOISE/2023/02/10/02	**Date of Sampling**	December 18, 2022
Sampling Time	Day and Night (December 18, 2022)		
Sampling Team	Global Environment Consultants Ltd. (GECL Monitoring Team).		
Analysis Date	December 30, 2022	**Report Issuing Date**	February 10, 2023

Description of Analysis

Sampling Location	Time Weighted Average Noise Level (LAeq) dB	
	Day Time (06.00 AM – 21.00 PM)	Night Time (09.00 PM – 06.00 AM)
DMA-1005 **Sampling Location:** In front of St. Lawrence's Church **GPS Location:** 23° 47' 10.50"N 90° 23' 04.60"E	67	54
DMA-1005 **Sampling Location:** In front of Hi-Tech Multiacre Hospital **GPS Location:** 23° 47' 18.40"N 90° 21' 17.70"E	76	59
DMA-1010 **Sampling Location:** In front of Desh Polytechnic College **GPS Location:** 23° 49' 15.40"N 90° 22' 06.20"E	69	55
DMA-1010 **Sampling Location:** In front of City Club, Pallobi 23° 49' 22.40"N 90° 21' 55.60"E	72	58
DMA-1011 **Sampling Location:** Around D Block Eidgah Maidan **GPS Location:** 23° 49' 26.50"N 90° 22' 24.10"E	64	54
DMA-1011 **Sampling Location:** In front of Pallobi Mohila Degree College **GPS Location:** 23° 49' 23.50"N 90° 22' 21.50"E	69	57

Note 1: Bangladesh Gadget (Additional), September 7, 2006, Schedule-1, Rule-52 (A)
Note 2: "Day" and "Night" of Bangladesh Noise Standards indicate 6 AM to 9 PM, and 9 PM to 6 AM respectively.

Ground Water Quality Monitoring: Laboratory Test report, ICB 2.08

Drinking/Ground Water Quality- DMA 908

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/S20.00.00.001.2023.622 MCD Date 14-06-2023

Gow Liwu
Contract Manager
Dhaka Water Supply Network
Improvement Project (DWSNIP) ICB-02.8

Subject: Testing Report of Supplied DTW Water Samples (02 Nos) from DMA-908 Under ICB-02.8,DWSNIP.
Ref: CPP-BD-DSCL _ 02.8-2148-2023, Date:12-06-2023

Date of Sample Received: 12-06-2023
Date of Testing: 12-06-2023 - 13-06-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Uttara-4, DMA-908	PTW, Uttara-6, DMA-908	Analysis Methods
			Bangladesh ECR 2023	WHO-2011			
1	pH	--	6.5-8.5	6.5-8.5	6.78	6.74	Electrometric
2	Turbidity	NTU	5	5	1.85	7.31	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	123	143.1	Electrometric
4	Dissolved Oxygen	mg/L	-	--	5.93	5.47	Electrometric
5	Hardness (Total)	mg/L	500	--	98	110	EDTA Titrimetric
6	Chloride	mg/L	250	250	10	5	Argentometric
7	Iron	mg/L	0.3-1.0	0.3	0.671	1.134	AAS
8	Manganese	mg/L	0.4	0.4	0.151	0.192	AAS
9	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	Acidified
10	Total Coliforms	CFU/100 mL	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Ground Water Quality Monitoring: Laboratory Test report, ICB 2.09

Drinking/Ground Water Quality- DMA 207, 211, 212

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.448 MCD Date 29-03-2023

Xia Changhai
Contract Manager
DWSNIP, ICB-02.9
CFMCC

Subject: Testing Report of Collected DTW Water Sample From Dhakeshwari (Bakshibazar area) of DMA-207, under the Contract Package No-ICB-02.9.
Ref: DWSNIP/ICB-02.9/DMS/2023/2618, Date:12-03-2023

Date of Sample Received: 22-03-2023
Date of Testing: 22-03-2023 - 23-03-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Obtained Results	Analysis Methods
			Bangladesh ECR 2023	WHO-2011		
1	pH	--	6.5-8.5	6.5-8.5	7.03	Electrometric
2	Turbidity	NTU	5	5	5.31	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	185.2	Electrometric
4	Dissolved Oxygen	mg/L	-	--	5.93	Electrometric
5	Chloride	mg/L	250	250	30	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.96	Phenanthroline Method
7	Manganese	mg/L	0.4	0.4	0.512	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	As-test kit
9	Total Coliforms	CFU/100 mL	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

28-03-2023 12:16 PM	29-03-2023 10:01 AM	29-03-2023 09:56 AM	29-03-2023 12:17 PM	29-03-2023 02:25 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.536 MCD Date 11-05-2023

Xia Changhai
Contract Manager
DWSNIP, ICB-02.9
CFMCC

Subject: Testing Report of Collected DTW Water Sample from Bakshi Bazar DMA-207 Under the Contract Package No-ICB-02.9.
Ref: DWSNIP/ICB-02.9/DMS/2023/2618, Date:12-03-2023

Date of Sample Received: 08-05-2023
Date of Testing: 08-05-2023 - 09-05-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Obtained Results	Analysis Methods
			Bangladesh ECR 2023	WHO-2011		
1	pH	--	6.5-8.5	6.5-8.5	6.79	Electrometric
2	Turbidity	NTU	5	5	4.81	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	358	Electrometric
4	Dissolved Oxygen	mg/L	-	--	5.02	Electrometric
5	Chloride	mg/L	250	250	110	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.85	Phenanthroline Method
7	Manganese	mg/L	0.4	0.4	0.545	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	As-test kit
9	Total Coliforms	CFU/100 mL	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

10-05-2023 09:53 AM	10-05-2023 09:59 AM	10-05-2023 09:59 AM	11-05-2023 01:30 PM	11-05-2023 02:29 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.597 MCD Date 07-06-2023

Xia Changhai
Contract Manager
DWSNIP, ICB-02.9
CFMCC

Subject: Testing Report of Collected DTW Water Samples (02 Nos) from DMA-211 Under the Contract Package No-ICB-02.9, DWSNIP,Dhaka WASA.
Ref: DWSNIP/ICB-02.9/DMS/2023/2650, Date:28-03-2023

Date of Sample Received: 05-06-2023
Date of Testing: 05-06-2023 - 07-06-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Shaistakhan, DMA-211	PTW. Kamalbag Low Lift, DMA-211	Analysis Methods
			Bangladesh ECR 2023	WHO-2011			
1	pH	--	6.5-8.5	6.5-8.5	7.01	6.91	Electrometric
2	Turbidity	NTU	5	5	0.57	0.52	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	319	193.4	Electrometric
4	Dissolved Oxygen	mg/L	-	--	5.54	5.36	Electrometric
5	Chloride	mg/L	250	250	118	32	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.05	0.03	Phenanthroline Method
7	Manganese	mg/L	0.4	0.4	0.128	0.081	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	As-test kit
9	Total Coliforms	CFU/100 mL	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

07-06-2023 11:48 AM	07-06-2023 11:56 AM	07-06-2023 11:52 AM	07-06-2023 12:14 PM	07-06-2023 03:47 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.426 MCD Date 19-03-2023

Xia Changhai
Contract Manager
DWSNIP, ICB-02.9
CFMCC

Subject: Testing Report of Collected DTW Water Sample From Begum Bazar (Chawkbazar area) of DMA-212 under the Contract Package No-ICB-02.9.
Ref: DWSNIP/ICB-02.9/DMS/2023/2611, Date:11-03-2023

Date of Sample Received: 16-03-2023
Date of Testing: 16-03-2023 - 17-03-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Obtained Results	Analysis Methods
			Bangladesh ECR 2023	WHO-2011		
1	pH	--	6.5-8.5	6.5-8.5	6.97	Electrometric
2	Turbidity	NTU	5	5	3.96	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	192.7	Electrometric
4	Dissolved Oxygen	mg/L	-	--	3.19	Electrometric
5	Chloride	mg/L	250	250	21	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.49	Phenanthroline Method
7	Manganese	mg/L	0.4	0.4	0.176	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	As-test kit
9	Total Coliforms	CFU/100 mL	0	0	0	Membrane Filration

NB: Results are applicable for the above mentioned sample.

19-03-2023 12:00 PM	19-03-2023 01:01 PM	19-03-2023 01:26 PM	19-03-2023 12:41 PM	19-03-2023 03:21 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:48.113.519/520.00.00.001.2023.439 MCD Date 23-03-2023

Xia Changhai
Contract Manager
DWSNIP, ICB-02.9
CFMCC

Subject: Testing Report of Collected DTW Water Sample From K.M. Azam Lane (Chawkbazar area) of DMA-212 under the Contract Package No-ICB-02.9.
Ref: DWSNIP/ICB-02.9/DMS/2023/2611, Date:11-03-2023

Date of Sample Received: 22-03-2023
Date of Testing: 22-03-2023 - 23-03-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Obtained Results	Analysis Methods
			Bangladesh ECR 2023	WHO-2011		
1	pH	--	6.5-8.5	6.5-8.5	7.05	Electrometric
2	Turbidity	NTU	5	5	0.61	Nephelometric Method
3	Total Dissolved Solids	mg/L	1000	1000	326	Electrometric
4	Dissolved Oxygen	mg/L	-	--	6.95	Electrometric
5	Chloride	mg/L	250	250	79	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.07	Phenanthroline Method
7	Manganese	mg/L	0.4	0.4	0.131	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	As-test kit
9	Total Coliforms	CFU/100 mL	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

23-03-2023 04:14 PM	23-03-2023 04:21 PM	23-03-2023 04:17 PM	23-03-2023 04:23 PM	23-03-2023 04:42 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Ground Water Quality Monitoring: Laboratory Test report, ICB 2.10; DMA 104,

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207. Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.619.620.00.00.001.2023.363 MCD Date: 16-02-2023

Contract Manager
ICB-02.10-MODS Zone 1(19 DMAs)
Dhaka water Supply Network improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone 1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP

Subject: Testing Report of Water Samples (03 Nos) Collected from DMA-102 (Baseline Monitoring) area under the Contract Package No-ICB-02.10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/ RPL/ICB-02.10/PM/1057/2023, Date:19-01-2023

Date of Sample Received: 26-01-2023
Date of Testing: 26-01-2023 - 16-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Bangabhaban Park	Network, H# 63, Dilkusha	Network, H# Sonali Bank Shapla Chottor	Analysis Methods
			Bangladesh ECR 1997	WHO-2011				
1	pH	--	6.5-8.5	6.5-8.5	6.93	7.03	6.84	Electrometric
2	Turbidity	NTU	≤10	5	1.28	2.35	1.17	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	01	04	02	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	5.01	5.74	5.94	Electrometric
5	Chloride	mg/L	150-600	250	31	30	36	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.137	0.030	0.13	AAS
7	Manganese	mg/L	0.1	0.4	0.246	0.223	0.128	AAS
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	As-Hydride
9	BOD_5	mg/L	0.2	--	0.29	0.3	0.26	5 day BOD test
10	COD	mg/L	4.00	--	<1.0	<1.0	<1.0	Closed reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:06 PM	16-02-2023 04:23 PM	16-02-2023 02:42 PM	16-02-2023 04:38 PM	16-02-2023 04:10 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.362 MCD Date 16-02-2023

Contract Manager
ICB-02.10-MODS Zone-1(19 DMAs)
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone 1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of Water Samples (04 Nos) Collected from DMA-104 (Baseline monitoring) area under the Contract Package No-ICB-02.10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/RPL/ICB-02.10/PM/1057/2057., Date:19-01-2023

Date of Sample Received: 25-01-2023
Date of Testing: 25-01-2023 - 16-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Kadamtola Shangshad	PTW, Bashabo-2	Network, 91,92 & 93, Bashabo	PTW, Sabujkanan	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	--	6.5-8.5	6.5-8.5	7.19	7.10	7.28	6.83	Electrometric
2	Turbidity	NTU	≤10	5	8.04	0.89	3.81	0.36	Nephelometric Method
3	Suspended Solids (SS)	mg/L			10	01	08	01	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	3.56	4.30	8.31	3.25	Electrometric
5	Chloride	mg/L	150-600	250	25	27	60	25	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.154	0.093	0.216	0.06	AAS
7	Manganese	mg/L	0.1	0.4	0.185	0.205	0.088	0.101	AAS
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	As-test kit
9	BOD_5	mg/L	0.2	--	0.35	0.30	0.22	0.15	5 day BOD test
10	COD	mg/L	4.00	--	<1.0	<1.0	02	<1.0	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:08 PM	16-02-2023 04:27 PM	16-02-2023 02:42 PM	16-02-2023 04:40 PM	16-02-2023 04:12 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.360 MCD Date 16-02-2023

Contract Manager
ICB-02.10-MODS Zone 1(19 DMAs)
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of Water Samples (04 Nos) Collected from DMA-107 (Baseline Monitoring) area under the Contract Package No-ICB-02 .10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/RPL/ICB-02.10/PM/1057/2023, Date:19-01-2023

Date of Sample Received: 31-01-2023
Date of Testing: 31-01-2023 - 15-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Manda-1	PTW, Manda-2	PTW, Manda-3	Network, H# 3/7, North Manda	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	--	6.5-8.5	6.5-8.5	7.06	7.12	7.05	7.08	Electrometric
2	Turbidity	NTU	≤10	5	0.89	4.99	1.00	2.59	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	01	07	04	03	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	2.65	2.21	1.89	3.40	Electrometric
5	Chloride	mg/L	150-600	250	10	07	18	09	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.53	0.60	0.13	0.43	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.257	0.132	0.190	0.098	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	As-test kit
9	BOD_5	mg/L	0.2	--	0.93	0.30	1.19	0.37	5 day BOD test
10	COD	mg/L	4.00	--	06	< 1.0	05	02	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:08 PM	16-02-2023 04:52 PM	16-02-2023 02:40 PM	16-02-2023 04:45 PM	16-02-2023 04:18 PM
Md. Abdur Rahman	Md. Ruhal Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.358 MCD Date 19-02-2023

Contract Manager
ICB-02.10-MODS Zone 1(19 DMAs)
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone 1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (05 Nos) Collected from DMA-110 (Baseline Monitoring) area Under the Contract Package No-ICB-02.10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/RPL/ICB-02.10/PM/1057/2023, Date:19-01-2023

Date of Sample Received: 08-02-2023
Date of Testing: 08-02-2023 - 15-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, Golapbag Math	PTW, Dhalpur	PTW, Manik nagar-3	Network, H# 1,East Maniknagar	PTW, Maniknagar-1	Analysis Methods
			Bangladesh ECR 1997	WHO-2011						
1	pH	--	6.5-8.5	6.5-8.5	6.83	6.81	6.85	6.94	6.79	Electrometric
2	Turbidity	NTU	≤10	5	6.72	2.70	10.5	5.15	9.56	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	01	02	01	02	01	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	3.90	3.81	3.23	3.51	3.01	Electrometric
5	Chloride	mg/L	150-600	250	9	16	8	11	8	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.62	0.13	0.26	0.60	0.58	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.137	0.168	0.165	0.107	0.114	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	As-test kit
9	BOD_5	mg/L	0.2	--	0.22	1.12	0.30	0.90	0.34	5 day BOD test
10	COD	mg/L	4.00	--	<1.0	04	<1.0	05	<1.0	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:07 PM	19-02-2023 01:56 PM	16-02-2023 02:39 PM	16-02-2023 04:51 PM	19-02-2023 04:52 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023..357 MCD Date 19-02-2023

Contract Manager
ICB-02.10-MODS Zone 1(19 DMAs)
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (03 Nos) Collected from DMA-118 area(Baseline Monitoring) under the Contract Package No-ICB-02.10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/RPL/ICB-02.10/PM/1057/2023, Date:19-01-2023

Date of Sample Received: 08-02-2023
Date of Testing: 08-02-2023 - 15-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, West Dholaipar-1	Network, H# 108, West Dholaipar	PTW, West Dholaipar-2	Analysis Methods
			Bangladesh ECR 1997	WHO-2011				
1	pH	--	6.5-8.5	6.5-8.5	6.90	6.92	7.11	Electrometric
2	Turbidity	NTU	≤10	5	2.81	1.38	0.85	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	01	02	01	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	4.34	3.12	3.12	Electrometric
5	Chloride	mg/L	150-600	250	34	36	32	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.22	0.17	0.09	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.079	0.057	0.020	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	As-test kit
9	BOD_5	mg/L	0.2	--	0.26	1.12	0.35	5 day BOD test
10	COD	mg/L	4.00	--	<1.0	18	<1.0	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	31	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:09 PM	16-02-2023 02:54 PM	16-02-2023 02:38 PM	16-02-2023 04:15 PM	19-02-2023 04:36 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.519/520.00.00.001.2023.359 MCD Date 19-02-2023

Contract Manager
ICB-02.10-MODS Zone 1(19 DMAs)
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. ICB-02.10 (Zone 1-19 DMAs) Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (03 Nos) Collected from DMA-119 (Baseline Monitoring) area under the Contract Package No. ICB-02.10 of DWSNIP, DWASA.
Ref: CCSEB-RPL JV/RPL/ICB-02.10/PM/1057/2023, Date:19-01-2023

Date of Sample Received: 31-01-2023
Date of Testing: 31-01-2023 - 15-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		PTW, West Jurain	Network, H# 151, West jurain	PTW, Postogola Fire Service	Analysis Methods
			Bangladesh ECR 1997	WHO-2011				
1	pH	--	6.5-8.5	6.5-8.5	7.05	7.16	6.80	Electrometric
2	Turbidity	NTU	≤10	5	0.36	1.23	18.3	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	01	07	04	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	2.95	3.75	3.70	Electrometric
5	Chloride	mg/L	150-600	250	39	36	35	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.10	0.27	1.35	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.038	0.127	0.386	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.01	<0.01	<0.01	As-test kit
9	BOD_5	mg/L	0.2	--	0.2	1.0	0.25	5 day BOD test
10	COD	mg/L	4.00	--	01	17	<1.0	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

16-02-2023 02:07 PM	19-02-2023 02:01 PM	16-02-2023 02:40 PM	16-02-2023 04:49 PM	19-02-2023 05:01 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Ground Water Quality Monitoring: Laboratory Test report, NCB-2.11A; DMA 320, 408, 311, 306, 301, 303

EnviroCare International Ltd.
A house of Inspection, Testing, Assessment &Consultancy

Ref: ECIL/2023/04-23/SW-DWASA

Results of Ground Water Quality Analysis

Name of Project	: Dhaka Water Supply Network Improvement Project (DWSNIP)
Description of Activity	: Ground Water Quality
Monitored By	: Envirocare Technical Team
Monitoring Date	: 16 April, 2023
Analysis By	: DWASA Laboratory

Monitoring Location

SL	Name of DMA	Location ID	GPS Coordinates
1.	320	GW 01	23°45'41.1"N 90°23'08.3"E
2.	408	GW 02	23°46'49.5"N 90°22'26.6"E
3.	311	GW 03	23°45'59.8"N 90°22'58.7"E
4.	306	GW 04	23°45'10.5"N 90°21'49.4"E
5.	301	GW 05	23°46'03.9"N 90°21'00.6"E
6.	303	GW 06	23°46'35.0"N 90°21'33.3"E

Description of Analysis

Parameter	Unit	Concentration Present						Bangladesh ECR 1997	Analysis Method
		GW 01	GW 02	GW 03	GW 04	GW 05	GW 06		
pH	-	6.55	6.77	6.54	6.80	6.92	6.74	6.5-8.5	Electrometric
Iron, Fe	mg/L	0.085	0.231	0.092	0.070	0.161	0.158	0.3-1.0	ASS
Mn	mg/L	0.031	0.145	0.095	0.069	0.081	0.089	0.1	ASS
As	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	AS-test kit
DO	Mg/l	8.58	8.49	8.25	8.51	8.61	8.63	≥5	Electrometric
Chloride	Mg/l	6	22	18	18	20	15	150-600	Argentrometric
Total Coliform	N/100ml	0	0	0	0	0	0	0	MF Method
Turbidity	-	0.55	0.83	1.55	0.97	1.46	1.32	10	Nephelometric method
TSS	Mg/L	02	02	01	02	01	03	10	Gravimetric

* Data Source: DWASA Laboratory, Dhaka; Date: 17 May, 2023; Standard: ECR, 1997 [Schedule-3A)

Prepared By	Reviewed By	Approved By:
Md. Sijuddin Junior Environmental Specialist Envirocare International Limited	Sanjoy Kumar Mondol Technical Manager Envirocare International Limited	Shorov Roy Quality Manager Envirocare International Limited

Ground Water Quality Monitoring: Laboratory Test report, NCB-2.11B, DMA 305, 307, 312, 313

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.405/520.00.00.001.2022.152 MCD Date 18-12-2022

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (04 Nos) Collected from DMA-305, 307 & 312 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 30-11-2022
Date of Testing: 06-12-2022 - 12-12-2022

Water Quality Analysis Report

Sl.	Parameters	Units	Drinking Water Standards		Mohammadia Housing PTW	Mohammadia Homes PTW	Basaveshwar Math PTW	Humayun Road PTW	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	--	6.5-8.5	6.5-8.5	6.7	6.8	6.8	6.8	Electrometric
2	Turbidity	NTU	≤10	5	1.01	3.3	3.32	1.35	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	0.31	0.36	1.62	1.45	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	7.85	7.2	2.82	7.89	Electrometric
5	Chloride	mg/L	150-600	250	320	225	188	388	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.45	0.59	0.67	0.7	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.28	0.21	0.25	0.3	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	As-test Kit
9	BOD_5	mg/L	0.2	--	0.3	0.31	0.52	0.57	5-day BOD test
10	COD	mg/L	4.00	--	3.36	3.27	2.82	3.5	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

13-12-2022 02:28 PM	13-12-2022 12:15 PM	13-12-2022 02:12 PM	14-12-2022 03:41 PM	18-12-2022 02:22 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

NB: 1. Samples supplied to the laboratory by client.
2. This report is valid only for particular sample tested and can not be used for publicity.
3. Reports are not allowed to be used or reproduced for any commercial purpose.

Dhaka Water Supply and Sewerage Authority

Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.408/820.00.00.001.2022.193 MCD Date 23-12-2022

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (04 Nos) Collected from DMA-312, 313 & 406 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 05-12-2022
Date of Testing: 11-12-2022 - 19-12-2022

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Shyamoli Ring Road PTW	Nurjahan Road PTW	Iqbal Road PTW	Kazipara PTW	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	-	6.5-8.5	6.5-8.5	6.8	6.8	6.9	6.5	Electrometric
2	Turbidity	NTU	≤10	5	15.3	12.6	8.83	2.33	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	–	0.33	1.46	0.54	1.13	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	–	7.15	7.6	7.36	8.34	Electrometric
5	Chloride	mg/L	150-600	250	363	415	201	424	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.83	0.86	0.57	0.58	Phenathroline Method
7	Manganese	mg/L	0.1	0.4	0.19	0.17	0.33	0.19	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	As-test Kit
9	BOD_5	mg/L	0.2	–	0.62	0.62	0.25	0.59	5-day BOD test
10	COD	mg/L	4.00	–	2.66	3.68	2.94	3.53	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

19-12-2022 02:06 PM	19-12-2022 03:18 PM	19-12-2022 03:36 PM	19-12-2022 03:46 PM	22-12-2022 12:15 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Ruhman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

NB: 1. Samples supplied to the laboratory by client.
2. This report is valid only for particular sample tested and can not be used for publicity.
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Ground Water Quality Monitoring: Laboratory Test report, NCB-2.11C; Lot-1, DMA 406, 411, 412

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122731
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.405/520.00.00.001.2023.058 MCD Date 05-01-2023

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (04 Nos) Collected from DMA-406, 411 & 412 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 23-12-2022
Date of Testing: 25-12-2022 - 31-12-2022

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Beripara PTW	Monipur PTW	Pirerbag PTW	Sewrapara PTW	Analysis Methods
			Bangladesh ECR 1997	WHO 2011					
1	pH	--	6.5-8.5	6.5-8.5	6.6	6.7	6.8	6.6	Electrometric
2	Turbidity	NTU	≤10	5	3.47	15.45	11.4	1.6	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	0.48	1.13	1.84	0.34	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	8.03	7.34	8.5	7.81	Electrometric
5	Chloride	mg/L	150-600	250	290	186	541	306	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.81	0.61	0.30	0.4	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.27	0.24	0.18	0.13	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	Arsenic Kit
9	BOD_5	mg/L	0.2	--	0.2	0.35	0.6	0.5	5-day BOD test
10	COD	mg/L	4.00	--	3.78	3.33	2.18	2.26	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

02-01-2023 02:15 PM	03-01-2023 10:45 AM	03-01-2023 11:30 AM	03-01-2023 12:14 PM	05-01-2023 11:25 AM
Md. Abdur Rahman	Md. Rohat Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Ground Water Quality Monitoring: Laboratory Test report, NCB-2.11C; Lot-2, DMA 409, 413, 414

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:46.113.405/620.00.00.001.2023.242 MCD Date 31-01-2023

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (04 Nos) Collected from DMA-412, 409 & 413 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 18-01-2023
Date of Testing: 22-01-2023 - 29-01-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		South Pirerbag PTW	Kushumbag PTW	Shishupark PTW	Palkpara PTW	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	–	6.5-8.5	6.5-8.5	6.8	6.7	6.8	6.5	Electrometric
2	Turbidity	NTU	≤10	5	2.54	2.33	1.05	3.65	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	–	1.32	0.45	1.14	0.32	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	–	7.59	8.34	8.49	7.53	Electrometric
5	Chloride	mg/L	150-600	250	445	386	201	325	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.91	0.55	0.32	0.72	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.32	0.29	0.24	0.31	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	Arsenic Kit
9	BOD_5	mg/L	0.2	–	0.43	0.64	0.3	0.24	5-day BOD test
10	COD	mg/L	4.00	–	3.49	2.32	2.41	2.39	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

29-01-2023 02:30 PM	29-01-2023 11:00 AM	30-01-2023 12:50 PM	30-01-2023 1:30 PM	31-01-2023 12:10 PM
Md. Abdur Rahman	Md. Ruhul Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:48.113.405/520.00.00.002.2023.131 MCD Date:16-02-2023

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1)– 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP.

Subject: Testing Report of water Samples (04 Nos) Collected from DMA-413, 414 & 1005 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 06-02-2023
Date of Testing: 07-02-2023 - 14-02-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Monipur PTW	Priyanka Housing PTW	DWP PTW	Kachukhet PTW	Analysis Methods
			Bangladesh ECR 1997	WHO-2011					
1	pH	--	6.5-8.5	6.5-8.5	6.8	6.6	6.7	6.8	Electrometric
2	Turbidity	NTU	≤10	5	2.12	1.32	2.25	1.85	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	0.64	0.7	0.74	1.75	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	7.52	6.68	7.41	7.07	Electrometric
5	Chloride	mg/L	150-600	250	577	155	180	197	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.82	0.72	1	0.69	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.29	0.39	0.3	0.3	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	Arsenic test Kit
9	BOD_5	mg/L	0.2	--	0.33	0.38	0.49	0.25	5-day BOD test
10	COD	mg/L	4.00	--	2.83	2.38	3.77	3.03	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

14-02-2023 11:30 AM	14-02-2023 12:10 PM	14-02-2023 12:35 PM	14-02-2023 1:00 PM	15-02-2023 2:10 PM
Md. Abdur Rahman	Md. Ruhal Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

Ground Water Quality Monitoring: Laboratory Test report, NCB-2.11D; Lot-1, DMA 1005, 1010, 1011

Dhaka Water Supply and Sewerage Authority
Office of the Deputy Chief Microbiologist
Microbiology & chemical Division
(Dhaka WASA Central Laboratory)
Asad gate, Mohammadpur
Dhaka-1207, Tel-48122751
E-mail: dwasacentrallaboratory@gmail.com

Memo No:48.113.405/620.00.00.002.2023.144 MCD Date 07-03-2023

Contract Manager
NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs
Dhaka water Supply Network Improvement Project (DWSNIP)
Dhaka WASA

Project: Contract package no. NCB-02.11 B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs Rehabilitation of Distribution networks for NRW reduction with O & M support under DWSNIP

Subject: Testing Report of water Samples (05 Nos) Collected from DMA-1005,1010 & 1011 (Baseline Monitoring) area Under the Contract Package No-NCB-2.11B, C (Lot 1 & 2), D (Lot 1) - 13 DMAs of DWSNIP,DWASA.
Ref: RPL/NCB-02.11/2022, Date:15-11-2022

Date of Sample Received: 26-02-2023
Date of Testing: 27-02-2023 - 05-03-2023

Water Quality Analysis Report

SN	Parameters	Units	Drinking Water Standards		Lalashara PTW	Ceramic Water Pump	Road 5 PTW	Pallabi PTW	Section 12/D PTW	Analysis Methods
			Bangladesh ECR 1997	WHO-2011						
1	pH	--	6.5-8.5	6.5-8.5	6.7	6.7	6.8	6.7	6.8	Electrometric
2	Turbidity	NTU	≤10	5	2.65	3.6	10.56	4.36	7.6	Nephelometric Method
3	Total Suspended Solids (TSS)	mg/L	10	--	1.12	1.14	1.63	1.11	0.72	Gravimetric
4	Dissolved Oxygen	mg/L	≥6.00	--	7.77	7.74	8.51	7.17	7.28	Electrometric
5	Chloride	mg/L	150-600	250	272	558	626	471	318	Argentometric
6	Iron	mg/L	0.3-1.0	0.3	0.91	0.58	0.58	0.91	0.61	Phenanthroline Method
7	Manganese	mg/L	0.1	0.4	0.14	0.3	0.39	0.38	0.36	PAN Method
8	Arsenic	mg/L	0.05	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	As-test Kit
9	BOD_5	mg/L	0.2	--	0.37	0.31	0.22	0.33	0.47	5-day BOD test
10	COD	mg/L	4.00	--	3.26	3.6	3.62	2.98	2.49	Closed Reflux, colorimetric
11	Total Coliforms	CFU/100 mL	0	0	0	0	0	0	0	Membrane Filtration

NB: Results are applicable for the above mentioned sample.

05-03-2023 11:10 AM	05-03-2023 12:00 PM	05-03-2023 1:15 PM	05-03-2023 2:00 PM	05-03-2023 3:10 PM
Md. Abdur Rahman	Md. Rahat Amin	Hasna Hena Rahman	Tahmina Begum	Dr. Md. Alamgir Hossain
Lab. Assistant	Assistant Chemist	Assistant Microbiologist	Chemist	Deputy Chief Microbiologist

NB: 1. Samples supplied to the laboratory by client.
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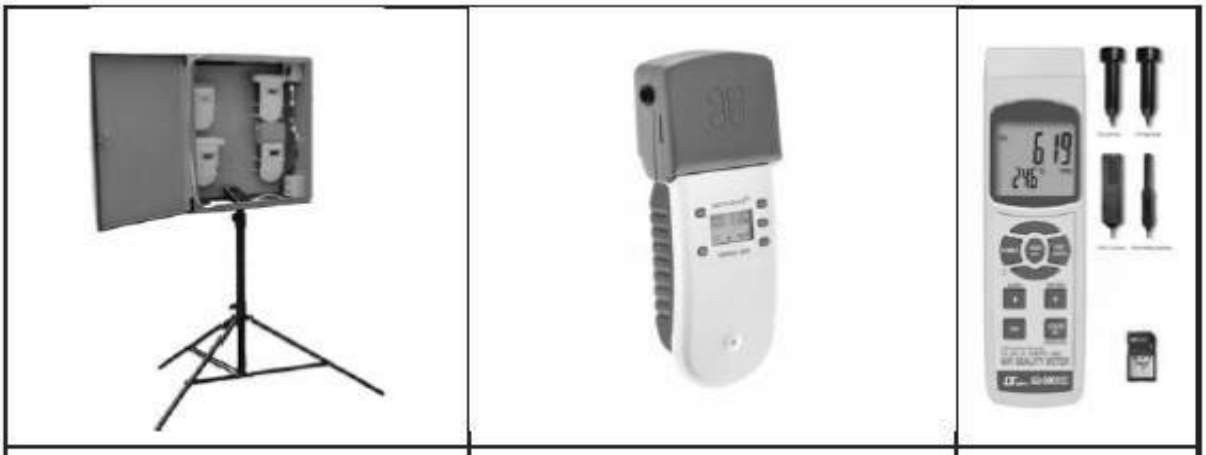
Annex 9A: Methodology of Air quality monitoring including sample calculation

2 METHODOLOGY

2.1 Air Quality

The ambient air quality monitoring was carried out at two (02) locations at the project corridor on 04 July 2022. The parameters were SO_X, NO_X, PM_{10}, $PM_{2.5}$ and CO. AEROQUAL series 500 portable air quality monitors were used to measure particulate matters (PM_{10} and $PM_{2.5}$) and gaseous pollutants (SO_2 and NOx) (Figure 2.1). Lutron AQ-9901 meter was used to monitor carbon monoxide (CO). The locations of sample collection are showed in the map (Figure 2.2). The weather was sunny during the monitoring period. Proper Personal Protective Equipment (PPE) including vests, face musk, hand gloves and helmets were used during the monitoring period.



OC-905 Portable Gas Detector	OC-500 Portable Gas Detector	Lutron AQ-9901

Figure 2.1: Equipment used for Air Quality Sampling

Conversion of Hourly to 24-hour Averages - Agencies, including the GoB's DoE, use the 24-hour collection period as the standard for establishing ambient air quality levels. Many agencies (e.g. New York State Dept. of Environmental Conservation, California Office of Environmental Health Hazards Assessment, USEPA, Ontario Ministry of Environment) face the same problems and have had to adapt by applying a conversion process using Pasquill's (1961) air mass dispersion tables defining six air mass stability classes (Table 2.1) and a set of meteorological conditions (Table 2.2). Using the simple power law principal Schroeder and Jugloff (2012) described the steps for converting one-hour readings to 24-hour values the stability classes (Table 2.1) are related to average wind speed, daytime solar radiation and night-time cloud cover and a second table (Table 2.2), refining these relationships, was also developed by Pasquill.

Table 2.1: Pasquill-Gifford Air Dispersion Stability Classes and Associated Dispersion Exponents

Stability Class	p	Definition
A	0.5	Very unstable
B	0.5	Unstable
C	0.333	Slightly unstable
D	0.2	Neutral
E	0.167	Slightly stable
F	0.167	Stable

Table 2.2: Meteorological Conditions Used to Define the Stability Classes

Surface wind Speed Cloud		Day time solar radiation		Night time Cover	
m/s	Strong	moderate	slight	>50%	<50%
< 2	A	A – B	B	E	F
2 – 3	A – B	B	C	E	F
3 – 5	B	B – C	C	D	E
5 – 6	C	C – D	D	D	D
> 6	C	D	D	D	D

Note: Grey highlight indicates condition selected for Bangladesh

Therefore, taking the simple average of these three values from Table 1, the Project stability class was calculated as 0.39 (see below).

$$P= \frac{0.5 +0.5+0.2}{3} = 0.4$$

This suggests a somewhat unstable air mass, resulting in considerable dilution of a one-hour sample when spread out over a 24-hour period. In order to provide 24- hour averages for the seven parameters the following power-law equation, as defined in Schroeder and Jugloff was applied

$$C_{24h}=C_{1h}(t_{short}/t_{long})^{0.4}$$

Where C 1h is the measured 1-hour concentration and C 24 h is the estimated average using the exponent 0.370, and "t" is time. Therefore:

$$C_{24h}= C_{2h}\ (2/24)^{0.4}$$
$$= C_{2h\,x}\,(0.0833)^{0.4}$$
$$= C_{2h\,x}0.370$$

So, for example for the two-hour measurement of $PM_{2.5}$ of 188.37 µg/m3 the 24- hour average would be:

$$\text{24hr Avg. } PM_{10} = 188.37x\ 0.370$$
$$= 69.7\ \mu g/m^3$$

This generalized approach was applied to all data, and the 24-hour averages generated, in order to be able to compare Project results to GoB standards.

Annex 9B: Photograph of air quality, noise and water quality monitoring during the reporting period (January-June, 2023)

Air Quality Monitoring

Noise Level Monitoring

Water Sample Collection

Annex 10: Photographs and Attendance of the Consultation Meetings

Public Consultation Meeting Photos

Public Consultation Meeting at Sabdar Ali Scholar's Institute DMA-411, Date-23-3-2023.

Public Consuitation Meeting at DMA-406 Dhaka YMC school areas (24-1-2023)

Public Consuitation Meeting at DMA-406 Dhaka YMC school areas (24-1-2023)

Public Consuitation Meeting at DMA-406 Dhaka YMC school areas (24-1-2023)

Public Consuitation Meeting at DMA-406 Dhaka YMC school areas (24-1-2023)

A PAP of DMA 103 of ICBP-2.10 areas is receiving her Compensation cheque at DMS office (April 07, 2023)

PAPs of the 2nd Batch DMAs of ICB-2.10 areas with their Compensation cheque after receiving at DMS office (April 07, 2023)

Tea Stall Meeting at DMA-412, Amtola Road areas (23-03-23)

Tea Stall Meeting at DMA-406 One Link Lan Road area (21-03-23)

ATTENDENCE SHEETS OF CONSULTATION MEETINGS (SCANNED COPIES)

SAMAHAR

Dhaka Water Supply Network Improvement Project (DWSNIP)

NGO Services for Resettlement Works

ICB Package / DMA: 2-ICL 406

Type of Meeting : Public Consultation Meeting

Place / Venue : Dhaka YMCA School, Mirpur.

Date : 24 January, 2023 Time: 10.30 AM

Participant's Attendance

Sl. No.	Participant's Name	Occupation / Position	Address / Organization	Mobile No	M / F	Signature
1	Md. Farhad Hossain	SARE	DMS	01819130505	M	[illegible]
2	Md Abu Shadat	SARE	DMS	01830260192	M	[illegible]
3	Md Mizanur Rahman	SE	RFL	01704173019	M	[illegible]
4	Milton Mondal	Service	Mirpur-10	01716830496	M	[illegible]
5	Dona Naimee	Housewife	Mirpur-10,	01910641342	F	Dona Naimee
6	Sumona Samad	Lawyer	Mirpur 1	01776306407	F	[illegible]
7	ফিরোজা বেগম	Teacher	Mirpur	01957818075	F	[illegible]
8	Sinthia Kabir	"	Mirpur-14	01744367008	F	[illegible]
9	Tomi	"	Mirpur-2	01323349352	F	Tomi
10	Akhi	"	Mirpur-2	01677280082	F	[illegible]
11	Payel Bain	"	Mirpur-10	01997101084	F	[illegible]
12	Sarmistha Ghosh	"	Mirpur-10	01764008816	F	[illegible]
13	Gloria Samaddar	"	Mirpur-10	01749011006	F	Gloria
14	Sanjida mollick	Housewife [illegible]	Mir Pur - Pre-bag	01882527959	F	Sanjida
15	Zenifar Mouri	Housewife	Mirpur-10	01835018833	F	[illegible]
16	Kalpana Halder	"	1032/1 Kathaltola	01791406407	F	K Halder
17	Mousumi Roy	"	Mirpur-10	01929238884	F	[illegible]
18	Nadima Akter	Teacher	Mirpur-10	0191398733 00	F	[illegible]
19	Rekha Halder	"	Mirpur-10	01673563101	F	[illegible]
20	Asma Akter	Housewife	84 Barobag	01925935498	F	Asma
	Total / Continued -		|||||||||||	||||||||||		M- F-

Conducted by: Farrukh Akbar

Designation: TL-RW DWSNIP

SAMAHAR

Dhaka Water Supply Network Improvement Project (DWNSIP)

NGO Services for Resettlement Works

Participant's Attendance (continued)

SL.No	Participant's Name	Occupation / Position	Address / Organization	Mobile No	M/F	Signature
21	Apurbo	student	Sompura parbota	.	m	Apurbo
22	Sahfin	"	1/91 Monipur	01916718462	M	Shafin
23	Rajesh	"	Mirpur-13	—	M	[illegible]
24	Apu	"	mirpur-10	01627279185	M	[illegible]
25	Sopno	"	"	91788858304	m	[illegible]
26	Nirob	"	mirpur-13	01704608192	M	Nirob
27	Kousik Mojumder	"	Mirpur-2	01645593883	M	Koushik
28	Ishan	"	Sovenup goli	01628389297	M	[illegible]
29	Bithamas	"	Mirpur-2	01710251677	M	[illegible]
30	Yashin	"	Mirpur-10	01610908186	M	Yeasin
31	Munmun	teacher	Mirpur-10	01711123033	F	[illegible]
32	Sandha	"	Mirpur-10	01717225897	F	[illegible]
33	Bikul Manjeur	service	Mirpur-10	01781112819	M	[illegible]
34	Komol Roy	service	Uttara	01726654936	M	[illegible]
35	Muni Roy	teacher	Mirpur-10	01731928989	F	[illegible]
36	Violed	teacher	Mirpur-10	01753716244	F	[illegible]
37	Alijabeth	teacher	Mirpur-10	0187146054	F	Violed
38	Mira Baida	Masi	Mirpur-10	01939401662	F	[illegible]
39	Rita Barai	Masi	Mirpur-10	01937426141	F	[illegible]
40	Palina Sarker	Masi	Mirpur-10	01964442983	F	[illegible]
41	MD Emon	Student	"	01908975192	M	[illegible]
42	Mahan Afroze	Job	SAMAHAR	01997692542	M	Mahan
43	Farrukh Akhtar	TL-RW	Samahar	01715717020	M	[illegible]
44	Khurshida Khatun	FO	"		F	Khurshida
45	Mahan Afroze	FO	"		M	[illegible]
46	Nasima Khanom	FS	"	01642418413	F	[illegible]
47	Fatema	Housewife	Mirpur-10	—	F	[illegible]
48	Saharanessa	"	"	01716578958	F	[illegible]
49	Jahana Khatun	"	"	—	F	Jahanara
50	Maleka Begum	"	"	01310880139	F	[illegible]
	Total / Continued - 50		////////////	//////////	M-20 F-30	

Conducted by: Farrukh Akhtar Designation: TL-RW

SAMAHAR

Dhaka Water Supply Network Improvement Project (DWSNIP)

NGO Services for Resettlement Works

ICB Package / DMA: 2.11 / 411

Type of Meeting : public Consultation Meeting at
Place / Venue : Sabdar Ali Schokars Institute
Date : 23.03.2023 Time: 10:30

Participant's Attendance

SL. No.	Participant's Name	Occupation / Position	Address / Organization	Mobile No	M/F	Signature
1	Jesmin	Housewife	95/B Tasnim lun 70	01745220099	F	Jesmin
2	Sharea	〃	Bondhon Apartment	01792304077	F	Sara
3	Hasnaalom	〃	〃	01716892710	F	[illegible]
4	Nafisha	Teacher	Borderbazar	01615355332	F	[illegible]
5	Mahrufa Islam	Housewife	95/A Moddhopirer Bag	01678607741	F	Islam
6	Sumi	〃	Bombai goli	01883223533	F	[illegible]
7	Rita	〃	〃	01700749942	F	[illegible]
8	Yasmin	〃	65/D. Janata Road	01822255980	F	Yasmin
9	Tumpa	〃	〃	01713579266	F	[illegible]
10	Nipa Akter	〃	〃	01740911040	F	[illegible]
11	Shible Akter		95/9A	01780167866	F	[illegible]
12	Rifat Shirin	〃	89	01718972033	F	[illegible]
13	NazmunNaher Tani	〃	365/5 West Shewrapara	01758337090	F	[illegible]
14	Rumana	〃	141/4 S. Pirerbag	01728748429	F	[illegible]
15	Suraya	〃	370/1/1 Shewrapara	01717-800006	F	Suraya
16	Juthy Das.	〃	481/2/A Shewrapara	01733912407	F	Juthy Das.
17	Farzana Islam	〃	95/4/1 Middlepirerbag	01723599372	F	Farzana
18	Hafizur Rahman	Job	95/4 middle pirerbag	01774661212	M	[illegible]
19	Md. Yusuf Ali	Caretaker	96/4 middle pirerbag	01319706714	M	[illegible]
20	Mozammel Hosen	〃	95 middle pirerbag	01731076082	M	[illegible]
21	Sanaullaha	Service	Boombegoli	01767705195	M	Sanaullah
22	Haran	〃	Moddhe Pirerbag	01748381240	M	Haran
23	Bonna	Service	〃	01735680362	F	Bonna
24	Rokeya Begum	〃	Mirpur - 1	01754588246	F	Rokeya
25	Maleka Begum		〃	—	F	[illegible]
	Total / Continued -		///////////	M- +F-		

Conducted by: Designation:

SAMAHAR

Dhaka Water Supply Network Improvement Project (DWSNIP)

NGO Services for Resettlement Works

Participant's Attendance (continued)

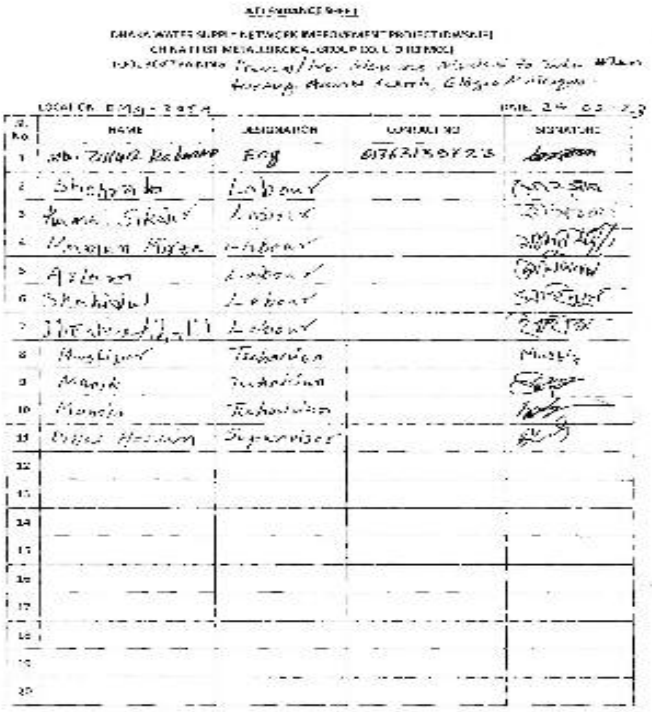
Sl. No.	Participant's Name	Occupation / Position	Address / Organization	Mobile No	M / F	Signature
26	Shadat Hossain	APM	RFL	01844601821	M	
27	[illegible] Hasan	APE	RFL	01844607009	M	
28	md. Dipon mia	SAFE	DMS	01746995610	M	
29	Farouk Akbor	TL-RW	Samahar - DWSNIP	01715 717020	M	
30	Nasima Khanom	FS - RW	"	01642418613	F	
31	[illegible]	Business	50/2 pirerbag	01711112684	M	
32	[illegible]	Teacher	"	—	M	
33	[illegible]	"	"	01712390011	F	
34	[illegible]	Business	"	—	M	
35	[illegible]	Job	Modekhe pirer bag	—	M	
36	Kamrunnahar	Housewife	"	01962777078	F	
37	Namita Debbarma	Teacher	"	01716354811	F	
38	Munira Islam	"	"	01752551039	F	
39	Monirul Islam	"	"	01727556162	F	
40	Sukonna	"	"	01987817686	F	
41	Saima hug Anni	"	"	01300980202	F	
42	Runa Hasan Joarder		"	01737883308	F	
43	Nafisa Sultana	Teacher	"	01615355337	F	
44	[illegible]	Business	"	—	M	
45	Talka	Job	2/5 pirerbag	—	M	
46	Sajol Islam	"	pirerbag	01300158389	M	
47	Mahan Akter	FO - RW	Samahar - DWSMP	01608509358	M	
48	Khushida Khatun	FO - RW	Samahar DWSMP	01629259773	F	
49	Salam Begum	Housewife	Modekhe pirer bag	—	F	
50	Roksona Begum	"	"	—	F	
	Total / Continued -		//////////	//////////	M - F -	

Conducted by: Designation:

Annex 11: Photographs and Records of Training and Workshop Carried out on Environmental Compliance During the Reporting period

<table>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Training for How to Avoid Hazards During Interconnection Works. on 11.03.23</td><td>Training for Resolving Safeguard Issues During House Connection Works on 02.04.23</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Preventive Measures Needed to Take When Working Around Schools, Colleges and Mosques</td><td>Training for Safety health and accident issues at construction</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Environment, Health and Safety at working sites</td><td>Maintenance 5s and Safety Security</td></tr>
</table>

Date: 26.02.2023, Location: DMA-208A, Nazimuddin Road Lane-4



Date: 11.03.2023, Location: DMA-204A, Hazaribagh Sewerage Pump

Participant List of Operation and Maintenance training of DMA 114 (19.06.2023)

Participant list: **Training on Operation and Maintenance Of DMA-114** Date - 19/06/2023

SL No	Name	Designation	Organization	Mobile No	Signature
1	Md. Al Amin	Executive Engineer MODS Zone -1	DWASA	01819229419	[signature]
2	Shyamal Kumar Ghosh	CME /BCB-0240	DMS, DWSNIP	01711228753	[signature]
3	Kyaw Sha Ching	OCM/CCSEB-RFL JV	CCSEB-RFL JV	01844661754	[signature]
4	Md. Enamul Haque	AE	D.WASA	01912575956	[signature]
5	Abul Hasnat	SM	SWBG/RFL	01844200476	[signature]
6	Tapas Saha	SAE	DWASA	01915913479	[signature]
7	Md. Mizanur Rahman	SAE	DWASA, Mods Z-1	01758496025	[signature]
8	Md. Mehedi Hasan	SAE	DWASA MODS Z-1	0194-8898501	[signature]
9	Subroto Kumar Deb	SAE	DWASA	01843441175	[signature]
10	Mubarak Hossain Bhuiyan	Dy. Manager	DWASA, Mods Zone-01	01707606236	[signature]

Training on Operation and Maintenance Of DMA-114

SL No	Name	Designation	Organization	Mobile No	Signature
11	Md. Shafiul Islam Bijoy	DYM - RFL	RFL/2.10	01834939407	[signature]
12	Md. Mominul Islam	SE	RFL DTW	01894930436	[signature]
13	Md. Humayun Kabir	APE	RFL/DTW	01899-661581	[signature]
14	[illegible]	P.L.M	[illegible]	01677454292	[signature]
15	Md. Zakir Hossain	APLM	Zone - 1	01921848711	[signature]
16	[illegible]	AP.LM	জোন-২	01215852769	[signature]
17	[illegible]	APLM	জোন ২	01840772596	[signature]
18	[illegible]	APLM	জোন ২	01775836502	[signature]
19	[illegible]	APLM	জোন ২	01819431977	[signature]
20	[illegible]	PLM	জোন ২	01816352777	[signature]

Training on Operation and Maintenance Of DMA-114

SL No	Name	Designation	Organization	Mobile No	Signature
21	মো: কামরুজ্জামান আলম	A.P.L.M	জোন-১	01716432879	কামরুজ্জা
22	শ্রী রতি লাল	"	"	01716271232	[illegible]
23	মো: বাকির	"	"	01823228243	মো: বাকির
24	মো: আবু মুনিম	A.P.L.M	"	০১৭১২ ৭৫৬৬৫৮	[illegible]
25	মো: মিজানুর	APLM	জোন-১	01780620803	মো: মিজানুর
26	মো: আলমগীর	A P L M	জোন-১	01797304169	[illegible]
27	মো: আরিফুর রহমান ভূঁইয়া	A P-L M	জোন-১	01919421760	[illegible]
28	Ishtiak Arifin Hridoy	AE	PDL- SWDG	01844606173	Hridoy
29	Farzana Islam Khan	Environmental Engr.	PDL-SWDG	01864235208	Fa
30	Sujhon chandra Saha	SE (Safety officer)	PDL - SWDG	0184466 5664	[illegible]

Training on Operation and Maintenance Of DMA-114

SL No	Name	Designation	Organization	Mobile No	Signature
31	Ariful Islam	APM	RFL	01844601889	[illegible]
32	Md. Sabbir Ahmed	ARE	DMS, DWSNIP	01683469228	[illegible]
33	Arif Ahmed	AE	RFL	0184601990	Arif
34	md. Shahid hossain	AE	RFL	01896007885	Shahid
35	Ajoy Karmakar	Manager	RFL	01844663431	[illegible]
36	Md. Abdul Mottalib	SM	RFL	01844602790	[illegible]
37	Md. Arifuzzaman	SAE	PMU, DWSNIP	01725-313815	[illegible]
38	Noor Muhammad	ARE, DMS	DMS, DWSNIP	01684-107378	Anar
39	KAZI HABIB ULLAH	Chief Project Planner	PDL RFL	0184460149	[illegible]
40	Zakaria Hasan	SAPE	DMS	01918787741	Zakaria

Annex 12: Records of Incident Report

HEALTH AND SAFETY FORM Copy

NAME OF THE PROJECT: Dhaka Water Supply Network Improvement Project (DWSNIP)

CONTRACT NO.: ICB-02.10 **Date:** 10.02.2023

DMA: 104 **LOCATION:** 76, North Mugda. Jheelpar.

INCIDENT REPORT –INJURY

INCIDENT Involving injury or illness to WORKERS
INCIDENT Involving injury or illness to NON-Workers at our workplace
(i.e. those not covered by our workers compensation, e.g. Visitor, volunteer, student, contractor)

Date of Incident: 10.02.2023. Time of Incident: 02:40 am/pm

PERSON AFFECTED BY INCIDENT

Given Name: ANTAMUL Surname: N/A.

Gender: Male. Both the legs were.

Injury Sustained: 2 Legs are burnt.

Treatment Administered:
After initial treatment, the burnt victim was immediately taken to Mugda Hospital with proper precautions.

Location of Incident: 76, North Mugda, Jheelpar. DMA-104

Description of Incident: To lay the Pipe, Concrete breakers were used to break up the concrete Road. Causing immediate ignition of gas line under the road.

First Aider Name: Md. Sohel Khan AFM

First Aider Signature: Date: 10.02.23.

Other Staff present a time of incident: Rubel Hossain

Authorized Supervisor Signature: Date:

Signature of HS Inspector: Date: 10.02.23

HEALTH AND SAFETY FORM Copy

NAME OF THE PROJECT: Dhaka Water Supply Network Improvement Project (DWSNIP)

CONTRACT NO.: ICB-02.10 **Date:** 25-02-23.

DMA: 101. **LOCATION:** R-18, Badabo Main Road.

INCIDENT REPORT –INJURY

INCIDENT Involving injury or illness to WORKERS
INCIDENT Involving injury or illness to NON-Workers at our workplace
(i.e. those not covered by our workers compensation, e.g. Visitor, volunteer, student, contractor)

Date of Incident: 25-02-23 Time of Incident: 3:00 ☑ am/pm

PERSON AFFECTED BY INCIDENT

Given Name: Shahalom. Surname: _____
(Sohag Enterprise.
Gender: Male.

Injury Sustained: Small wound on the left foot due to minor electric shock.

Treatment Administered: First aid was taken to the hospital.

Location of Incident: R-18, Basabo Main road, near taempu stand.

Description of Incident: Accidentally hitting the UPVC line while making open cuts for laying pipes all night.

First Aider Name: MD. Shahariar Hossain.

First Aider Signature: Shahariar Date: 25-02-23

Other Staff present a time of incident: MD. Faruk Hossain. (Jointer)

Authorized Supervisor Signature: _____ Date: _____

Signature of HS Inspector: _____ Date: 25-02-23

HEALTH AND SAFETY FORM

Copy

NAME OF THE PROJECT: Dhaka Water Supply Network Improvement Project (DWSNIP)

CONTRACT NO.: ICB-02.10 **Date:** 15/3/23

DMA: 105 **LOCATION:** DMA-105, Kalibari pump, Buddha Mondir Road

INCIDENT REPORT –INJURY

INCIDENT Involving injury or illness to **WORKERS**
INCIDENT Involving injury or illness to NON-Workers at our workplace
(i.e. those not covered by our workers compensation, e.g. Visitor, volunteer, student, contractor)

Date of Incident: 15/3/23 **Time of Incident** 1:00 am/pm

PERSON AFFECTED BY INCIDENT

Given Name: Md. Manik Surname: N/A

Gender: Male

Injury Sustained: Pain in the leg

Treatment Administered:
First Aid was applied and take medical treatment

Location of Incident: Kalibari pump, Buddha Mondir Road

Description of Incident: During head work of pump it occurs.

First Aider Name: Ariful Islam Robin, APM

First Aider Signature: _____ Date: 15/3/23

Other Staff present a time of incident: Masum (SF)

Authorized Supervisor Signature: _____ Date: _____

Signature of HS Inspector: _____ Date: 15/3/23

HEALTH AND SAFETY FORM Copy

NAME OF THE PROJECT: Dhaka Water Supply Network Improvement Project (DWSNIP)

CONTRACT NO.: ICB-02.10 **Date:** 22/03/23

DMA: 110 **LOCATION:** Golapbagh Pump station.

INCIDENT REPORT –INJURY

INCIDENT Involving injury or illness to WORKERS

INCIDENT involving injury or illness to NON-Workers at our workplace
(i.e. those not covered by our workers compensation, e.g. Visitor, volunteer, student, contractor)

Date of Incident: 22/03/23 Time of Incident: 11:00am/pm

PERSON AFFECTED BY INCIDENT

Given Name: MD. Yeasin (Al-amin enterprise) Surname:

Gender: Male.

Injury Sustained: During pipe fitting work the dog bites.

Treatment Administered: First aid was applied in site then send him to Dhaka Infectious Diseases Hospital, Mohakhali.

Location of Incident: DMA-110. Road no-26, Golapbagh Road near - pump station.

Description of Incident: when they are working pipe fitting on the Road side. suddenly a dog bite (?) his leg.

First Aider Name: Saiman.

First Aider Signature: [signature] Date: 22/03/23.

Other Staff present a time of incident: work assistant - Md. Nur Mohammad.

Authorized Supervisor Signature: ________ Date: ________

Signature of HS Inspector: [signature] Date: 22/03/23

HEALTH AND SAFETY FORM

Copy

NAME OF THE PROJECT: Dhaka Water Supply Network Improvement Project (DWSNIP)

CONTRACT NO.: ICB-02.10 **Date:** 23/04/2023

DMA: Demra Central store **LOCATION:** Demra.

INCIDENT REPORT –INJURY

INCIDENT involving injury or illness to WORKERS

INCIDENT involving injury or illness to NON-Workers at our workplace
(i.e. those not covered by our workers compensation, e.g. Visitor, volunteer, student, contractor)

Date of Incident: 23/04/2023 Time of Incident: ~~1:00~~ am/pm 1:00 Pm

PERSON AFFECTED BY INCIDENT

Given Name: MD Rezaul Hossain Surname: Reza.

Gender: Male.

Injury Sustained: Left hand broken.

Treatment Administered: First aid was applied in the store, and send him to Dhaka medical.

Location of Incident: Demra central store.

Description of Incident: The gang of Robbers wanted to car key & don't pick the phone. The robbers hit the stick.

First Aider Name: Md. Noor islam.

First Aider Signature: [signature] Date: 23/04/2023.

Other Staff present a time of incident: almost 10 staff present in the demra store.

Authorized Supervisor Signature: ____________ Date: ____________

Signature of HS Inspector: [signature] Date: 23/04/2023

Annex 13: Calibration certificate of Air & Noise Quality Equipment


CALIBRATION TECHNOLOGY PVT. LIMITED

CERTIFICATE OF CALIBRATION


CALIBRATION TECHNOLOGY PVT. LIMITED

CERTIFICATE OF CALIBRATION


CALIBRATION TECHNOLOGY PVT. LIMITED

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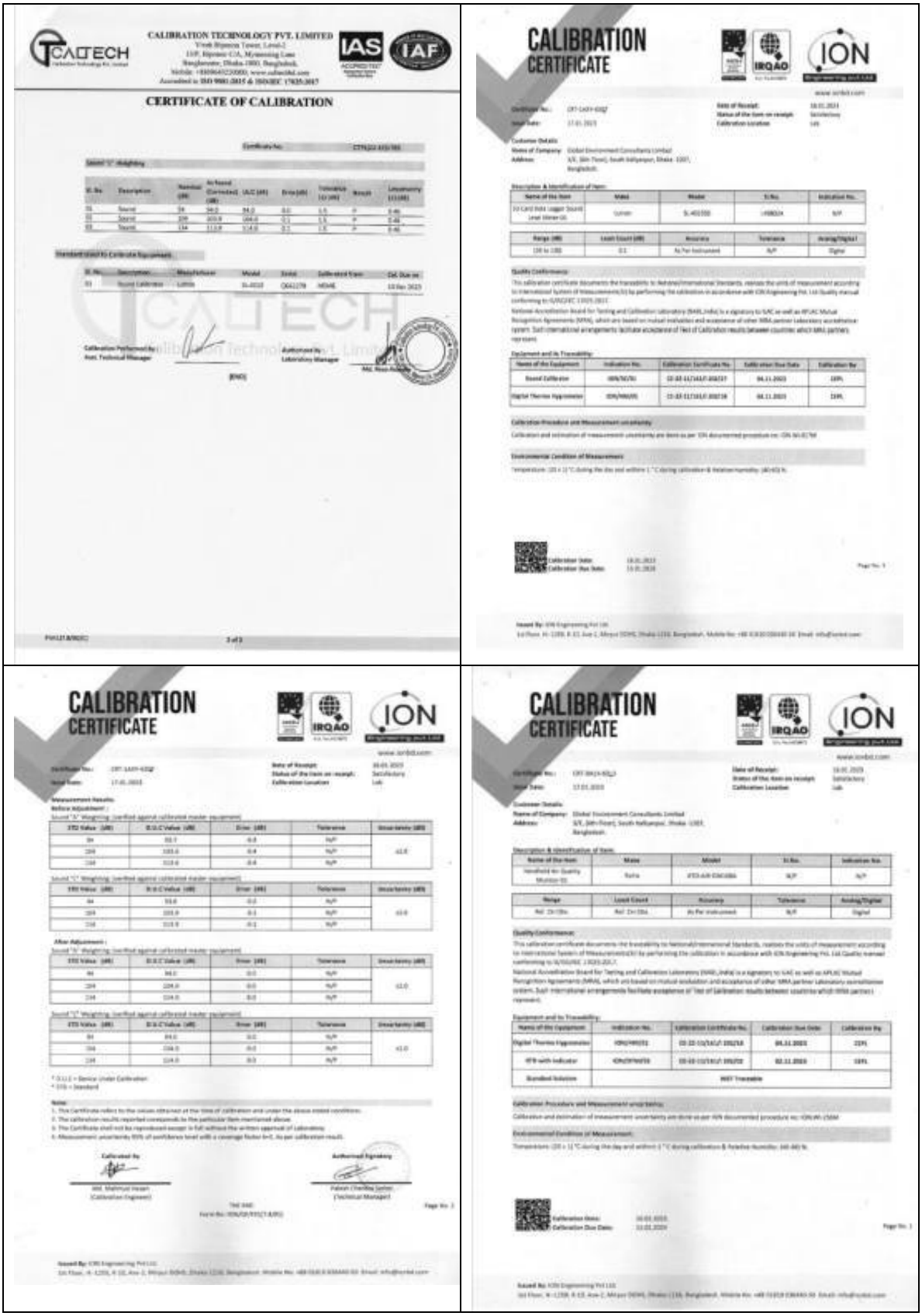
CERTIFICATE OF CALIBRATION



CALIBRATION TECHNOLOGY PVT. LIMITED

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Annex 14: Task specific Health and Safety Checklists

Checklist for Excavation Work

DMA No. / Package: _____ Date: _____

Location: _____

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering traffic management plan and H&S plan for the excavation works?				
2.	Has the contractor completed risk assessment for the excavation works?				
3.	Has the RFI completed for the excavation works?				
4.	Is the excavation permit/pre-dig permit obtained before starting work?				
5.	Is the contractor obtained road cutting permission from city corporation?				
6.	Is the contractor contacted traffic authority for the excavation work?				
7.	Is tool box meeting held before starting work?				
8.	Does the operator and signalman have the minimum experience for the job?				
9.	Have the workers provided appropriate PPEs?				
10.	Is there any physical barrier or caution tape deployed for the excavation pit?				
11.	Whether NGO has done the IEC activities?				
12.	Are there sufficient display warning signs at the excavation site?				
13.	Is the first aid box with required materials kept at site?				
14.	Are the rescue procedures completed and reserved at the site?				
15.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?				
16.	Are excavated materials placed sufficiently away from water courses?				
17.	Are debris and waste materials transported to selected disposal places from temporary disposal site?				
	Trenches up to 2m:				
18.	Whether excavated material is dumped at least 1m away from trench wall?				
19.	Whether the extra material is removed?				
20.	In case of Ground water whether pumped water is drained properly?				
	Trenches & pits depth of more than 2m:				
21.	Whether firm barricades are provided?				
22.	In case of loose soil strata whether shoring is provided?				

Contractor's representative:

_____

Name, Designation and Signature

DMS representative:

_____

Name, Designation and Signature

Checklist for Traffic Management

DMA No. / Package: _____ Date: _____

Location: _____

Description		Observation			Remarks
		Yes	No	NA	
1.	Has the Contractor completed the Method Statement considering traffic management plan?				
2.	Is the Contractor contacted with DMP before starting the construction work?				
3.	Is there traffic control supervisor present at construction site?				
4.	Is toolbox meeting held before starting the work?				
5.	Have every driver and equipment operators their valid driving license?				
6.	Are the traffic controllers and supervisors trained and accredited?				
7.	Are traffic signages available around the construction sites and nearby roads?				
8.	Are re-routing signage sufficient to guide motorists?				
9.	Are flagmen present to direct traffic during construction hour?				
10.	Are the excavation sites along roads provided with barricades with reflectors?				
11.	Are Display Board, Traffic diversion, clean & clear passage way provided?				
12.	Are there sufficient display warning signs available for traffic movement?				
13.	Are the excavation sites provided with sufficient lighting at night?				
14.	Is the first aid box with required materials kept at site?				
15.	Are the rescue procedures completed and reserved at site?				

Contractor's representative:

_____

Name, Designation and Signature

DMS representative:

_____

Name, Designation and Signature

Checklist for Electrical Work

DMA No. / Package: _____ Date: _____

Location: _____

Description		Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed risk assessment for the electrical works?				
2.	Are all the electrical equipment operated by licensed electrician?				
3.	Are all electrical components certified?				
4.	Are all the electrical equipment checked before operation?				
5.	Whether the workers are using proper gloves and goggles?				
6.	Whether required earthing is provided for equipment?				
7.	Whether proper wiring & connections boards with RCCB (30mA) fuse are being used?				
8.	Is the electrical equipment are kept on dry place, barricaded to avoid accidental contact by stakeholder?				
9.	Is the area barricaded and using flags where electrical work is conducting?				
10.	Are emergency contact details available on-site in case of electrocutions or burns?				
11.	Is toolbox meeting held before starting the work?				
12.	Are there a medical first aid kits available on site for primary medical care?				
13.	Are the rescue procedures completed and reserved at the site?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature

Checklist for Fire Safety

DMA No. / Package: _____ Date: _____

Location: _____

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering fire safety plan and H&S plan for the fire safety?				
2.	Has the contractor completed risk assessment for the fire?				
3.	Is toolbox meeting held before starting the work?				
4.	Are there firefighting equipment on site?				
5.	Are there fire extinguisher available at labour shed?				
6.	Are all the firefighting equipment operated by trained & experienced operators?				
7.	Are emergency contact details available on-site in case of fire burns?				
8.	Are emergency contact details available at labour shed in case of fire burns?				
9.	Are there a medical first aid kits available on site for primary medical care?				
10	Are the rescue procedures completed and reserved at the site?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature

Checklist for DTW works

DMA No. / Package: _____ Date: _____

Location: _____

Description		Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering Deep Tube well Work and H&S plan for the DTW works?				
2.	Has the contractor completed risk assessment for the DTW works?				
3.	Is the contractor informed Zonal Authorities and Councillor before starting work?				
4.	Is the contractor informed Electrical Authorities before starting the work				
5.	Is the contractor contacted traffic authority before starting the work?				
6.	Is tool box meeting held before starting work?				
7.	Does the operator have the minimum experience for the job?				
8.	Have the workers provided appropriate PPEs?				
9.	Is there any physical barrier or caution tape deployed for the excavation pit?				
10.	Whether NGO has done the IEC activities?				
11.	Are there sufficient display warning signs at the DTW work site?				
12.	Is the first aid box with required materials kept at site?				
13.	Are the rescue procedures completed and reserved at the site?				
14.	Are Display Board, Traffic diversion, Clean & Clear passage way provided?				
15.	Are excavated materials placed sufficiently away from water courses?				
16.	Are debris and waste materials transported to selected disposal places from temporary disposal site?				
17.	Whether firm barricades are provided?				
18.	In case of loose soil strata whether shoring is provided?				
19.	Do generators operate with doors closed or provided with sound barrier around them?				
20.	Do workers use ear plugs/hearing protections at noise generating locations?				
21.	Are neighbouring residents notified in advance of any noisy activities expected at construction sites?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature

Checklist for Asbestos Cement Pipe

DMA No. / Package: _____ Date: _____

Location: _____

	Description	Observation			Remarks
		Yes	No	NA	
1.	Has the contractor completed the Method Statement considering safety for asbestos cement pipe?				
2.	Has the RFI completed for the asbestos cement pipe?				
3.	Has the contractor identified presence, location & quantity of all asbestos cement pipe?				
4.	Is the marked map of AC pipe available on site?				
5.	Is the safety procedure of AC pipe available on site?				
6.	Has the safety supervisor conducted toolbox meeting regarding AC pipe?				
7.	Has the contractor attached signs or labels so workers and supervisors know to avoid the area of AC pipe?				
8.	Is sufficient distance maintained between existing AC pipes and newly installed pipes?				
9.	Is the area of AC pipe marked and barricaded?				
10	Is drinking and smoking prohibited in the work areas?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature

Checklist for Dust Control & Noise Control

DMA No. / Package: _____ Date: _____

Location: _____

Description		Observation			Remarks
	Dust Control	Yes	No	NA	
1.	Is the construction site watered to minimize generation of dust?				
2.	Are roads within and around the construction sites sprayed with water on regular intervals?				
3.	Is there a speed control for vehicles carrying soils and other spoils covered?				
4.	Are stockpiles of sand, cement and other construction materials covered to avoid being airborne?				
5.	Are construction vehicles carrying soils and other spoiled covered?				
6.	Are generators provided with air pollution control devices?				
7.	Are all vehicles regularly maintained to minimize emission of black smoke? Do they have valid permits?				
	Noise Control	Yes	No	NA	
1.	Is the work only taking place between 7 am to 7 pm, week days?				
2.	Do generators operate with doors closed or provided with sound barrier around them?				
3.	Do workers use ear plugs/hearing protections at noise generating locations?				
4.	Is idle equipment turned off or throttled down?				
5.	Are neighbouring residents notified in advance of any noisy activities expected at construction sites?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature

Checklist for Occupational Health & Safety and Community Health & Safety

DMA No. / Package: _____ Date: _____

Location: _____

	Description	Observation			Remarks
1.	Supervision and Management On-Site	Yes	No	NA	
	a. Is an EHS supervisor available?				
	b. Is a copy of the SEMP available at construction site?				
	c. Are daily toolbox meetings conducted on site?				
2.	Facilities	Yes	No	NA	
	a. Are there a medical first aid kits available on site?				
	b. Are emergency contact details available on-site?				
	c. Are there PPEs available; Helmet, HI-VIS Vest, Gumboots, Eye Wear, Dust Mask, Safety Gloves, Earplugs?				
	d. Are the PPEs in good condition?				
	e. Are there firefighting equipment on site?				
	f. Are there separate mobile sanitary facilities for male and female workers?				
	g. Are sanitary facilities cleaned and disinfected regularly?				
	h. Is drinking water supply available for workers?				
3.	Occupational Health and Safety	Yes	No	NA	
	a. Are the PPEs being used by workers				
	b. Is breaktime for workers provided?				
	c. Is construction work site barricaded with caution tape?				
4.	Community Health and Safety	Yes	No	NA	
	a. Are safety signages posted around the sites?				
	b. Are temporary and safe walkways for pedestrians available near work sites?				
	c. Are consultation meeting/focus group discussion/tea stall meeting arranged regularly on site?				
	d. Are existing users notified in advance about temporary disruption of water supply?				
	e. Are Leaflets distributed on site to inform the local residents about the project work?				
	f. Is complain book available on work site to receive complain from local people?				

5.	Recording System	Yes	No	NA	
	a) Do the contractors have recording system for SEMP implementation?				
	b) Are the daily monitoring sheets accomplished by the contractor EHS supervisor (or equivalent) properly complied?				
	c) Are laboratory results of environmental sampling conducted since the commencement of construction activities properly complied?				
	d) Are these records readily available at the site and to the inspection team?				
	e) Are utility accidents recorded and proper actions are taken immediately?				
	f) Are public complaints recorded at construction site and addressed quickly and properly?				
	g) Are there any registered book available at construction site/stockyard for visitors/inspection teams?				
	h) Is there any Complain box available for anonymous complain at construction site/stockyard?				

Contractor's representative:

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Name, Designation and Signature

DMS representative:

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Name, Designation and Signature