

14th Semi Annual Environmental Monitoring Report (SEMR)

**Project Number: ADB Loan No. 3051-BAN
August / 2022**

**Dhaka Environmentally Sustainable Water Supply Project (DESWSP)
Reporting Period: January – June'2022**



**Dhaka Water Supply and Sewerage Authority
WASA BHABAN, Kawran Bazar, Dhaka**

Prepared by Project Management Unit (PMU) & Management Design and Supervision
Consultant (MDSC), DESWSP, DWASA for the Asian Development Bank.

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CURRENCY EQUIVALENTS
(As of June 2021)

Currency unit	–	Equivalent
INR 1.00	=	\$ 0.0144
\$1.00	=	INR. 69.00

leP

ABBREVIATIONS

ADB	-	Asian Development Bank
AFD	-	Agence Française de Développement
AP	-	Affected Person
BIWTA	-	Bangladesh Inland Waterway Transport Authority
BR	-	Bangladesh Railways
BRT	-	Bus Rapid Transport
BWDB	-	Bangladesh Water Development Board
CCL	-	Cash Compensation under Law
D&B	-	Design and Build
DBO	-	Design-Build-Operate or Design-Build-Operation
DC	-	District Commissioner
DDR	-	Detailed Design Reports
DED	-	Detailed Engineering Designs
DESWSP	-	Dhaka Environmentally Sustainable Water Supply Project
DMA	-	District Metered Area
DNCC	-	Dhaka North City Corporation
DORP	-	Development Organization for the Rural Poor
DP	-	Displaced Persons
DSCC	-	Dhaka South City Corporation
DWASA	-	Dhaka Water Supply and Sewerage Authority
EA	-	Executing Agency
EIA	-	Environmental Impact Assessment
EIB	-	European Investment Bank
EM	-	Entitlement Matrix
EMA	-	External Monitoring Agency
EP	-	Entitled Person
FGD	-	Focus Group Discussion
FIDIC	-	Fédération Internationale Des Ingénieurs-Conseils (French)
GAP	-	Gender Action Plan

GEM	-	General Entitlement Matrix
GRC	-	Grievance Redresses Committee
ICB 2.7	-	Package International Contract Bid 2.7
(I)NGO	-	(Implementing) Non-Governmental Organization
JVC	-	Joint Verification Committee
LA	-	Land Acquisition
LGED	-	Local Government Engineering Division
MDSC	-	Management, Design and Supervision Consultant
MLD	-	Million Litres Per Day
MML	-	Mott MacDonald Limited
MODS	-	Maintenance Operations and Distribution Services
MOL	-	Ministry of Land
MDSC	-	Management, Design and Supervision Consultant
MLD	-	Million Litres Per Day
MML	-	Mott MacDonald Limited
MODS	-	Maintenance Operations and Distribution Services
MOL	-	Ministry of Land
MoN	-	Minutes of Negotiations
MSC	-	Management Supervision Consultant
MOU	-	Memorandum of Understanding
MR	-	Monitoring Report
MRT	-	Mass Rapid Transport
NGO	-	Non-Governmental Organization
P1	-	Package 1
P2	-	Package 2
P3	-	Packages 3.1 and 3.2
P3.1	-	Package 3 Lot 1
P3.2	-	Package 3 Lot 2
PD	-	Project Director (DWASA)
PEDS	-	Preliminary Engineering Designs
PIC	-	Project Implementation Committee
PMC	-	Project Management Consultant
PMU	-	Project Management Unit
PPMS	-	Project Performance Management System
PVAC	-	Property Valuation Advisory Committee
QA	-	Quality Assurance
QPR	-	Quarterly Progress Report

RAC	- Resettlement Advisory Committee
RAG	- Red Amber Green (Traffic light status)
RAJUK	- Rajdhani Unnayan Kartripokkho
REB	- Rural Electrification Board
RHD	- Roads and Highways Division
RP	- Resettlement Plan
RWP	- Raw Water Pipeline
SDE	- Sub Division Engineer
SDWP	- Shandong Water Conservancy Construction
SEMR	- Semi Annual Environmental Monitoring Report
SIU	- Safeguard Implementation Unit
SNC	- Société en Nom Collectif (French)
SPS	- Safeguard Policy Statement
SWIP	- Surface Water Injection Points
TA	- Technical Assistance
TOR	- Terms of Reference
WIA	- Water Intake Area
WTP	- Water Treatment Plant

WEIGHTS AND MEASURES

°C	degree centigrade
dB	Decibels
dia	diameter
kg	kilo gram
Kl	kilolitre
km	kilometre
kmph	kilometre per hour
ha	hectares
HP	Horse Power
LPCD	liters per capita per day
lps	liters per second
m	meter
m ³	Cubic meter
mg	milli gram
mm	milli meter
mcm	million cubic meters
sq.km	Square Kilometer

NOTE{S}

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

TABLE OF CONTENTS

I. <u>INTRODUCTION</u>	7
A. <u>PROJECT NAME</u>	7
B. <u>PROJECT OUTPUTS AND OUTCOME</u>	7
C. <u>ENVIRONMENTAL CATEGORY</u>	9
D. <u>ABOUT THIS REPORT</u>	9
II. <u>PROJECT IMPLEMENTATION ARRANGEMENTS</u>	11
III. <u>PROJECT IMPLEMENTATION STATUS</u>	17
<u>The MSC service (Output 2: Distribution network strengthened) has achieved:</u>	17
A. <u>AT A GLANCE WORK STATUS:</u>	17
B. <u>CONSTRUCTION OF PIPE LINE AT ZONE-6 UNDER PACKAGE ICB 2.7, PTW:</u>	20
C. <u>PIPE LENGTH OF DMAS (km) UNDER PACKAGE 2.7:</u>	21
D. <u>MAIN WORKS CONDUCTED UNDER PACKAGE ICB 2.7:</u>	21
E. <u>PIPE INSTALLATION UNDER PACKAGE ICB 2.7:</u>	22
F. <u>PRE-COMMISSIONING AND COMMISSIONING:</u>	22
G. <u>TRENCH FILL</u>	22
H. <u>EXCAVATED MATERIALS</u>	22
I. <u>LAND ACQUISITION AND RESETTLEMENT UNDER PACKAGE ICB 2.7:</u>	22
J. <u>AFFECTED PERSONS (APS) & RP UNDER PACKAGE ICB 2.7:</u>	23
K. <u>SEMI-ANNUAL ENVIRONMENTAL SAFEGUARD MONITORING REPORTS (SEMRS) UNDER PACKAGE ICB 2.7:</u>	23
L. <u>COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS/ STATUS CLEARANCE FOR PACKAGE ICB 2.7:</u>	23
M. <u>STATEMENT OF ENVIRONMENTAL COMPLIANCE AND HOW TO MITIGATE IMPACTS UNDER PACKAGE ICB 2.7:</u>	24
N. <u>AT A GLANCE WORK STATUS INCLUDING EMP & IEE UNDER PACKAGE ICB 2.7:</u>	24
<u>Installation of Deep Tube Wells (DTWs) under NCB package No.04.1:</u>	25
A. <u>DESCRIPTION</u>	25
<u>The MDSC services to achieve Output 1 and Output 3, include:</u>	29
<u>Package 1: River intake, raw water pipeline and Gandharbpur treatment plant</u>	30
<u>Package 2: Treated water transmission pipeline to Dhaka</u>	30
IV. <u>COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS</u>	34
A. <u>STATUS OF CLEARANCES</u>	34
B. <u>COMPLIANCE WITH CLEARANCE CONDITIONS</u>	35
V. <u>COMPLIANCE WITH LOAN COVENANTS</u>	36
A. <u>LOAN COVENANTS</u>	36
B. <u>PREPARATION AND APPROVAL OF ENVIRONMENTAL ASSESSMENT REPORTS</u>	38
C. <u>STATUS OF DISCLOSURE OF SAFEGUARD DOCUMENTS</u>	38
D. <u>SAFEGUARDS IN BID DOCUMENTS AND CONTRACTS</u>	39
VI. <u>STATUS OF EMP IMPLEMENTATION</u>	40
A. <u>PREPARATION OF SITE ENVIRONMENTAL MANAGEMENT PLAN</u>	40
B. <u>EMP IMPLEMENTATION SUPERVISION AND MONITORING</u>	40
C. <u>CONTRACTORS COMPLIANCE WITH STATUTORY AND CONTRACTUAL REQUIREMENTS</u>	41
D. <u>IMPLEMENTATION OF EMP MEASURES AND COMPLIANCE STATUS</u>	41
E. <u>FINDINGS ON EMP COMPLIANCE</u>	47
F. <u>IMPLEMENTATION OF HEALTH & SAFETY COVID-19 PLAN</u>	48

G.	<u>CONSTRUCTION WORK-RELATED ACCIDENTS</u>	49
H.	<u>BEST PRACTICES / ENVIRONMENT IMPROVEMENT ACTIVITIES</u>	52
VII.	<u>ENVIRONMENTAL MONITORING</u>	54
A.	<u>ENVIRONMENTAL QUALITY MONITORING</u>	54
B.	<u>MONITORING RESULTS</u>	56
VIII.	<u>TRAINING AND CAPACITY BUILDING ACTIVITIES</u>	62
IX.	<u>PUBLIC CONSULTATION</u>	73
X.	<u>GRIEVANCE REDRESS</u>	75
A.	<u>GRIEVANCE REDRESS MECHANISM</u>	75
B.	<u>COMPLAINTS RECEIVED DURING REPORTING PERIOD</u>	76
C.	<u>GRC MEETINGS</u>	76
XI.	<u>FINDINGS, KEY ISSUES & REMEDIAL MEASURES</u>	77
A.	<u>FINDINGS</u>	77
B.	<u>CORRECTIVE ACTION PLAN</u>	78

LIST OF TABLES

Table 1:	DESWSP Total Funding at approval of additional funding	7
Table 2:	Project Environmental Safeguards Team	16
Table 3:	At a glance Work Status of package ICB 2.7 (Up-to June 30, 2021):	17
Table 4:	Construction of Pipe Line at Zone-6 under package ICB 2.7, PTW:	20
Table 5:	Pipe Length of DMAs (km) under package ICB 2.7:	21
Table 6:	Status of EMP & IEE under package ICB 2.7	24
Table 7:	Construction/ Replacement of DTW/PTW (As of the schedule/Plan)	25
Table 8:	List of Deep Tube Wells (DTWs) Constructed/ Replaced at the 1 st step:	27
Table 9:	List of Deep Tube Wells to be Constructed/ Replaced at 2 nd step:	28
Table 10:	List of Deep Tube Wells to be constructed/ replaced at 3 rd step:	29
Table 11:	Status of All Subprojects / Packages	32
Table 12:	Implementation Status of Awarded Subprojects/ Packages	33
Table 13:	Status of Statutory Clearances	35
Table 14:	Conditions of Clearances	35
Table 15:	Status of Compliance with Loan Covenants	36
Table 16:	Status of IEEs	38
Table 17:	Status of Disclosure of IEEs	38
Table 18:	Status of including IEEs in bid documents and contracts	39
Table 19:	Status of SEMP	40
Table 20:	Status of EHS Staff, SEMP Preparation and Monitoring	40
Table 21:	Status of compliance with statutory requirements	41
Table 22:	Construction Stage Mitigation Measures: Compliance Status	42
Table 23:	Package-wise Compliance with Construction stage EMP	48
Table 24:	Status of H&S COVID-19 Plan	48
Table 25:	Construction work related Incident / Accident records	50
Table 26:	Status of Environmental Monitoring of Awarded Packages	54
Table 27:	Environmental Monitoring details of DESWSP Project	54
Table 28:	Sampling and Analysis Methods	56
Table 29:	Air Monitoring Results	57
Table 30:	Noise Monitoring Results	58
Table 31:	Surface Water Monitoring Results	61
Table 32:	Training / Capacity Building Activities Conducted	62
Table 33:	Public Consultations Conducted	73
Table 34:	GRM Operationalization	76

Table 35: Details of Complaints Resolved.....	76
Table 36: GRC Meetings.....	76
Table 37: Findings and Key Issues	77
Table 38: Corrective Action Plan.....	78

LIST OF FIGURES

Figure 1: Location of Project Towns.....	10
Figure 2: Project Implementation Arrangements	14
Figure 3: Environmental Safeguards Implementation Arrangement of the Overall Project.....	15
Figure 4: Operational Zones of DWASA.....	19
Figure 5: DMAs in MODS Zone 6 (ICB-02.7)	20
Figure 6: 3D view of Meghna river Intake	30
Figure 7: 3D view of Water Treatment plant.....	30
Figure 8: 3D view of a River Crossing	31
Figure 9: Twin 1.6m diameter Pipelines	31
Figure 10: Project GRM	75

LIST OF APPENDIX

APPENDIX 1: REGULATORY CLEARANCES / APPROVALS/PERMITS.....	80
APPENDIX 2: DETAILS OF SITE VISITS CONDUCTED BY MDSC & PMU SAFEGUARD STAFF IN THE REPORTING PERIOD	81
APPENDIX 3: CONTRACTOR'S MONTHLY EMP IMPLEMENTATION REPORT & MDSC SITE VISIT REPORT	83
APPENDIX 4: IMPLEMENTATION OF COVID-19 HEALTH & SAFETY MEASURES.....	84
APPENDIX 5: INCIDENT INVESTIGATION REPORT	88
APPENDIX 6: MONITORING REPORTS (AIR, NOISE, WATER TESTING LAB REPORTS) ..	89
APPENDIX 7: DETAILS OF TRAINING AND CAPACITY BUILDING PROGRAMS	99
APPENDIX 8: DETAILS OF CONSULTATIONS CONDUCTED.....	104
APPENDIX 9: COPIES OF NOTIFICATIONS / ORDERS FOR ESTABLISHING GRM AND GRCS	105
APPENDIX 10: PUBLIC COMPLAINTS RECEIVED DURING REPORTING PERIOD AND PENDING IN PREVIOUS REPORTS.....	106
APPENDIX 11: PMU APPROVED SITE SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN OF PACKAGE-1	107
APPENDIX 12: ENVIRONMENT HEALTH AND SAFETY (EHS) INSPECTION CHECKLIST OF MDSC	108

I. INTRODUCTION

A. PROJECT NAME

1. The title of the project is Dhaka Environmentally Sustainable Water Supply Project (DESWSP). The objective of the project is to contribute to the environmentally sustainable provision and operation of urban water supply, particularly in Dhaka City from surface water instead of ground water resources.
2. Currently, the Dhaka City water supply sources 79% from ground water and only 21% from surface water. The Government of Bangladesh has intension of reducing the dependency on rapidly depleting (2-3m per year) ground water to 30% and increase the level of use of surface water to 70% by 2030.
3. The Government of Bangladesh (GoB) and the Asian Development Bank (ADB), Agence Française de Développement (AFD), and European Investment Bank (EIB) signed a loan agreement during April 2014 - January 2015, towards the cost of the Dhaka Environmentally Sustainable Water Supply Project. Dhaka Water Supply and Sewerage Authority (DWASA) is the Implementing Agency (IA) of the DESWSP. ADB administers procurement and disbursement of the AFD loan and overall implementation on behalf of all three financiers.
4. On a further request from GoB, ADB's November 2020 Mission signed an Aide Memoire on 1 December 2020 to provide Additional Funds amounting to USD 280.9 million. Thus, the total funding for the project will stand at USD 1,104 million from GoB and the Development Partners (ADB, AFD and EIB). The funding split is given in the Table 1 below.

Table 1: DESWSP Total Funding at approval of additional funding

Funding Source	Original	Additional	<i>Figures are in Million US\$</i>	
			Total	Share of Total
ADB	250.00	140.00	390.00	35.3%
<i>Regular loan (OCR)</i>	-	<i>85.00</i>	<i>85.00</i>	
<i>Concessional Loan (OCR)</i>	<i>250.00</i>	<i>50</i>	<i>300.00</i>	
<i>Special Funds Resources (ADF grant)</i>	-	<i>5.00</i>	<i>5.00</i>	
AFD	64.00	140.90	204.90	18.5%
EIB	136.00	-	136.00	12.4%
Government	224.90	149.10	374.00	33.8%
Total	674.90	430.00	1 104.90	100%

Source: Aide Memoire signed on 1 December 2020

B. PROJECT OUTPUTS AND OUTCOME

5. The Project outputs are as follows:
6. **Output 1: New surface water supply system developed**

7. The scope includes, (i) 1,050 MLD river water intake; (ii) 21.5 Km raw water transmission pipeline; (iii) 500 MLD Water Treatment Plant (WTP); (iv) 34 Km of treated water transmission mains; and (v) 43 Km of treated water feeder mains.

8. Output 2: Distribution network strengthened

9. The scope includes, (i) Rehabilitation of 376 Km (revised 495.89km) of water distribution network at MODS Zone 6; (ii) 32,000 (revised actual 37337) household and community connections rehabilitated, including replacement of meters at MODS Zone 6; (iii) NRW reduced to 15% or less in 16 district metered areas from the 2013 level estimated at about 35%; (iv) 3,700 new or legalized household and community connections, including 17 in low-income communities (Target: benefitting 300 women); and (v) Public awareness on water use and conservation raised in all 16 district metered areas.

10. Output 3: Project management and administration adequately supported

11. The scope includes, (i) establishing a special management unit for the new surface water system; (ii) implementing capacity development programs on financial management and gender mainstreaming; and (iii) integrating a Project Performance Management System (PPMS) with social and gender indicators and sex-disaggregated data into DWASA's existing management information system.

12. Output 4: Empowerment of women and vulnerable groups supported

13. The scope includes, (i) construction of at least 1,000 community toilets and bathing chambers with separate units for male/female in low-income communities; (ii) development and implementation of an inclusive and gender responsive COVID-19 risk communication strategy and emergency response plan; (iii) 30% women and individuals from vulnerable groups reported increased participation in community-level decision-making bodies; (iv) 300 representatives of key stakeholder groups reported increased legal literacy on the rights of women and vulnerable groups; and (v) at least 150 men/boys from schools and madrasahs (Islamic colleges) in project areas reported increased awareness of and support for the empowerment of women and gender equality.

14. The impact of the project will be:

- **Dust Generation:** Any dust escaping the site boundaries and identify dust suppression techniques followed for site/s.
- **Muddy water:** Any muddy water escaping site boundaries or if muddy tracks are seen on adjacent roads.
- **Erosion and Sediment:** Erosion and sediment control measures installed on site/s, condition of erosion and sediment control measures including if these are intact following heavy rain;
- **Area identification:** Identify designated areas for concrete works, chemical storage, construction materials, and refueling.
- **Spill Kits:** Confirm spill kits on site and site procedure for handling emergencies.

- Chemical Storage: Identify any chemical stored on site and provide information on storage condition.
- Stockpile Management: Describe management of stockpiles (construction materials, excavated soils, spoils, etc.).
- Waste Management: Describe management of solid and liquid wastes on-site (quantity generated, transport, storage and disposal).
- Provide information on barricades, signage, and on-site boards.
- Indicate if there are any activities being undertaken out of working hours and how that is being managed.

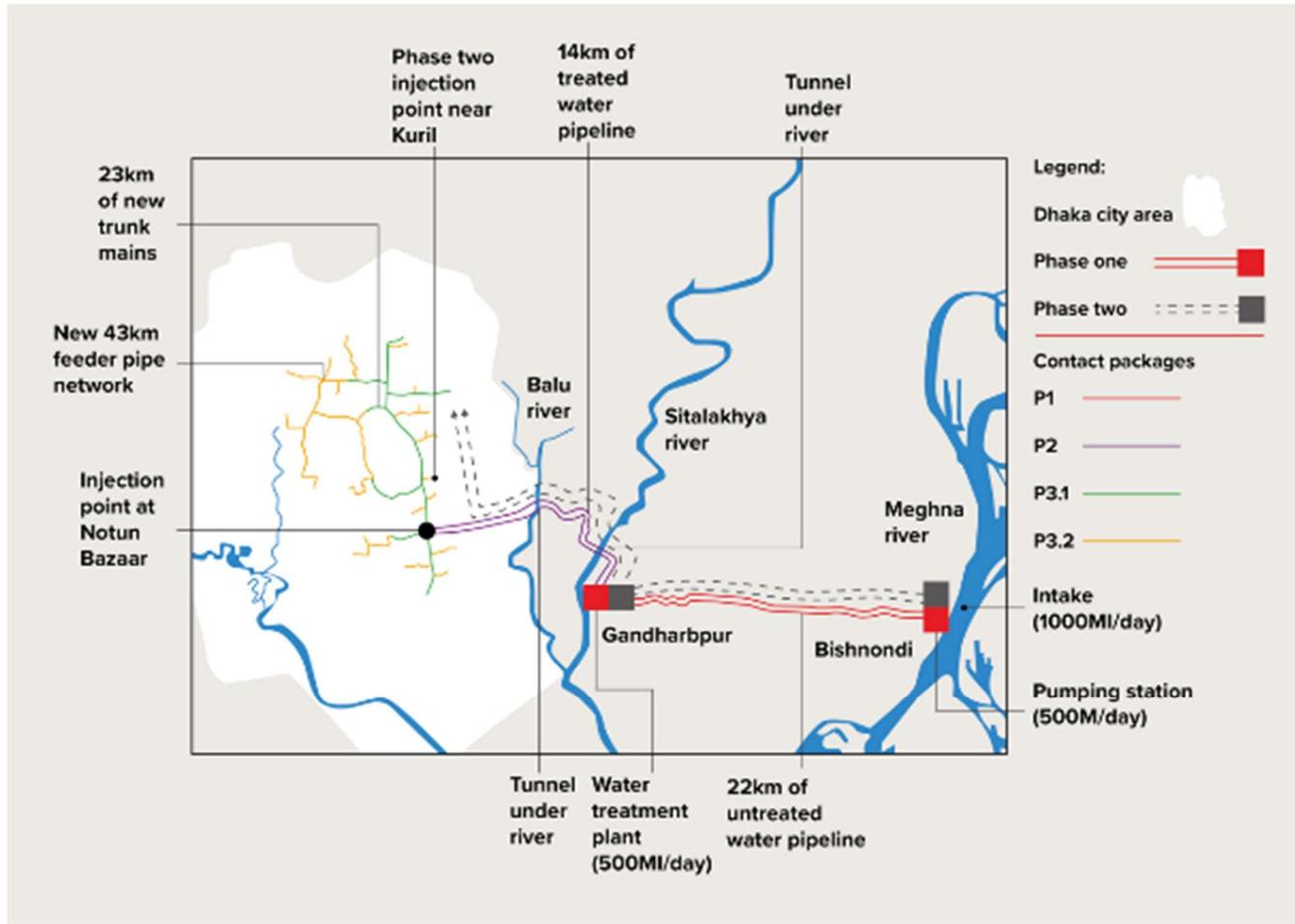
C. ENVIRONMENTAL CATEGORY

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

D. ABOUT THIS REPORT

16. This is the Semi-annual Environmental Monitoring Report (SEMR) prepared by PMU & MDSC, DEWSP, DWASA for the monitoring period of January' 2022–June' 2022. This is the 14th SEMR since the loan effectiveness on 23rd February 2015. This SEMR provides the status of project, presents preparation and implementation of environmental management, mitigation and monitoring actions, and reports status of compliance with Environmental Management Plans (EMPs) and loan covenants.

Figure 1: Location of Project Towns



II. PROJECT IMPLEMENTATION ARRANGEMENTS

17. The management organizations of the DESWSP Project are listed below:

18. **Overall guidance and supervision:** Ministry of Local Government, Rural Development and Cooperatives (MLGRDC).

19. **Executing Agency:** Dhaka Water Supply and Sewerage Authority (DWASA).

20. **The Financier:** Asian Development Bank and co-financiers, Agence Française de Développement and European Investment Bank.

21. Project Implementation Partners:

22. The following service providers are helping implement DESWSP:

- **Non-government Organizations (NGO):** to implement Social Safeguard aspects of the project.
- **Design, Management and Supervision Consultants:** to assist the Executing Agency in detailed design, procurement, management and supervision of contractors throughout project implementation.
- **Contractors:** in design (design and build contract), construction and operation (operation & maintenance contract) of the project packages as applicable.
- **Independent Project Monitoring and Evaluation Agency:** To evaluate and monitor works of NGOs.

23. Roles and Responsibilities of Each Organization:

Project Implementation Organizations	Management Roles and Responsibilities
Executing agency: DWASA	i) Executes the overall project. ii) makes timely decisions on all matters relating to overall project implementation and administration; iii) ensures minimum staff turnover of PMU and adequate staffing during the entire period of project implementation; iv) coordinates with ADB, other financiers, stakeholders, and agencies for smooth project implementation; v) administers loan disbursements; vi) ensures compliance with project covenants, including safeguard measures; vii) supervises PMU through Project Director; and viii) takes full responsibility for O&M of project facilities.
Project Steering Committee Chair: Secretary, LGD under MLGRDC Members: (i) Bangladesh Inland Water Transport Authority; (ii) Bangladesh Water Development Board; (iii) Department of Environment; (iv) Dhaka North City Corporation; (v) Dhaka South City Corporation; (vi) DWASA;	(i) meets at least once in every three months and whenever deemed necessary; (ii) provides guidelines or formulates policies required for smooth project implementation and institutional strengthening; (iii) reviews the recommendation of PMU for addressing issues during project implementation and takes necessary and timely decisions; (iv) ensures allocation of adequate government budget for project implementation; and

Project Implementation Organizations	Management Roles and Responsibilities
(vii) Economic Relations Division and Finance Division under the Ministry of Finance; (viii) Implementation, Monitoring and Evaluation Division; (ix) Local Government Division; Local Government Engineering Department; (x) Ministry of Land; Planning Commission; (xi) Power Grid Company Bangladesh Ltd.; (xii) RAJUK (capital development authority); (xiii) Roads and Highways Department; (xiv) Rural Electrification Board	(v) discusses and reviews any other matters related to project implementation.
Project Implementation Committee Chair: Managing Director, DWASA Members: From DWASA: (i) Deputy Managing Director (ii) Project Director (iii) Assistant Chief From LGD: (iv) Deputy Secretary (WS) (v) Deputy Chief From IMED: (vi) Director Representatives of the: (vii) Physical Infrastructure Division, Planning Commission (viii) DNCC, DSCC (ix) Department of Environment (x) NEC-ECNEC and Coordination Wing of Planning Division (xi) ERD	(i) meets at least once in every three months; (ii) monitors progress of project implementation and provides necessary assistance or suggestions for smooth project implementation; (iii) prepares recommendations to PSC for addressing issues during project implementation, including on remedial actions when any indication of delay is identified; and (iv) makes necessary decisions to resolve implementation issues.
Project Coordination Unit, DWASA	(i) Supports the contract execution at the zonal level especially for ICB 2.7 area. (ii) Ensures smooth and efficient O&M.
PMU, DWASA	(i) Responsible for the project implementation to ensure timely completion of the project; (ii) monitors and ensures the compliance of project covenants; (iii) ensures project activities comply with the government laws and regulations, particularly on environment; (iv) updates the procurement plan and implements the procurement in accordance with the plan; (v) serves as point of contact with ADB and co-financiers on project related matters, maintains project documents, and prepares and submits reports (QPRs and PCR); (vi) assists ADB during project review missions; (vii) engages the community for public awareness activities; (viii) consolidates accounts and submits withdrawal applications to ADB; (ix) undertakes budgeting and financial planning and management;

Project Implementation Organizations	Management Roles and Responsibilities																										
	<p>(x) opens and manages a project account (sub-advance account);</p> <p>(xi) submits all audited project accounts and financial statements on</p> <p>(xii) the project within 6 months of the end of each fiscal year;</p> <p>(xiii) establishes, maintains, and updates the project performance monitoring;</p> <p>(xiv) supports consultants and NGOs in all surveys, data collection exercises, studies, and other agreed activities; and</p> <p>(xv) ensures smooth and efficient O&M.</p> <p>Key members of PMU are below:</p> <table border="1" data-bbox="824 621 1417 1182"> <thead> <tr> <th>Position</th> <th>Number of Staffs</th> </tr> </thead> <tbody> <tr> <td>Project Director</td> <td>1</td> </tr> <tr> <td>Deputy Project Director</td> <td>2</td> </tr> <tr> <td>Executive Engineer</td> <td>3</td> </tr> <tr> <td>Senior Finance and Accounts Officer</td> <td>1</td> </tr> <tr> <td>Procurement Officer</td> <td>1</td> </tr> <tr> <td>Safeguard Officer (Social & Gender)</td> <td>1</td> </tr> <tr> <td>Safeguard Officer (Environment Specialist)</td> <td>1</td> </tr> <tr> <td>Assistant Engineer</td> <td>4</td> </tr> <tr> <td>Accounts Officer</td> <td>1</td> </tr> <tr> <td>Accountant</td> <td>1</td> </tr> <tr> <td>Sub-Assistant Engineer</td> <td>9</td> </tr> <tr> <td>Land Acquisition and Resettlement Officer</td> <td>1</td> </tr> </tbody> </table>	Position	Number of Staffs	Project Director	1	Deputy Project Director	2	Executive Engineer	3	Senior Finance and Accounts Officer	1	Procurement Officer	1	Safeguard Officer (Social & Gender)	1	Safeguard Officer (Environment Specialist)	1	Assistant Engineer	4	Accounts Officer	1	Accountant	1	Sub-Assistant Engineer	9	Land Acquisition and Resettlement Officer	1
Position	Number of Staffs																										
Project Director	1																										
Deputy Project Director	2																										
Executive Engineer	3																										
Senior Finance and Accounts Officer	1																										
Procurement Officer	1																										
Safeguard Officer (Social & Gender)	1																										
Safeguard Officer (Environment Specialist)	1																										
Assistant Engineer	4																										
Accounts Officer	1																										
Accountant	1																										
Sub-Assistant Engineer	9																										
Land Acquisition and Resettlement Officer	1																										
ADB	<p>(i) monitors and supervises overall project implementation;</p> <p>(ii) takes the lead in coordinating with co-financiers;</p> <p>(iii) conducts field review missions, midterm review mission, and project completion review mission to assess project</p> <p>(iv) implementation progress and compliance of project covenants;</p> <p>(v) reviews PMU submissions for procurement of goods, civil works and services, provides comments and no objection on such;</p> <p>(vi) approves and monitors safeguards documents and implementation compliance; and</p> <p>(vii) checks statement of expenditure and disburses the loan funds as per Loan Agreement and Grant Agreement.</p>																										

ADB = Asian Development Bank, ERD = Economic Relations Division, IMED = Implementation Monitoring and Evaluation Division, DNCC = Dhaka North City Corporation, DSCC = Dhaka South City Corporation, DWASA = Dhaka Water Supply and Sewerage Authority, LGD = Local Government Division, MLGRDC = Ministry of Local Government, Rural Development and Cooperatives, NEC-ECNEC = National Economic Council–Executive Committee of National Economic Council, O&M = operation and maintenance, PCR = project completion report, PMU = project management unit, PSC = project steering committee, QPR = quarterly progress report, WS = water supply. Sources: ADB and DWASA

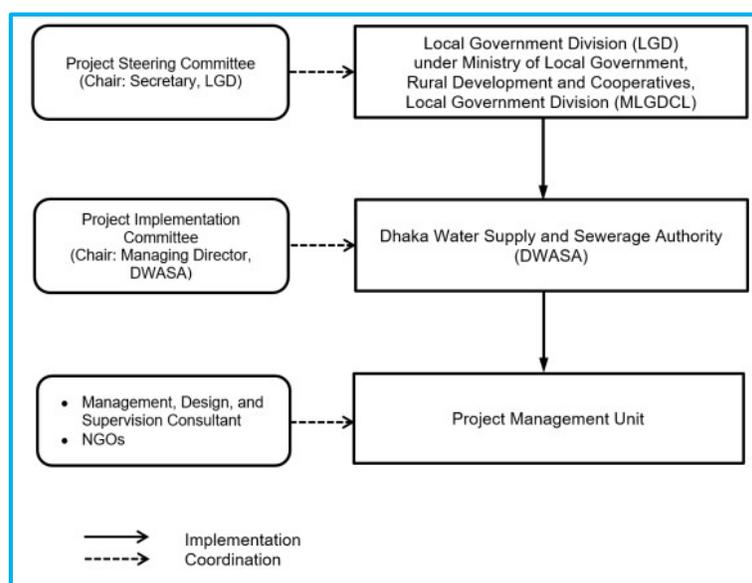
24. Key Persons Involved in Implementation:

Executing Agency	
DWASA	Mr. Md. Mahmudul Islam Project Director Tel: +880 02 8189095 Email: pddeswspgwt@gmail.com WASA Bhaban, 98 Kazi Nazrul Islam Avenue, Karwan Bazar, Dhaka-1215, Bangladesh
Asian Development Bank	
Urban Development and Water Division South Asia Department	Mr. Norio Saito Director Tel: +632 632 6923 E mail: nsaito@adb.org 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines
Mission Leader	Ms. Momoko Tada Urban Development Specialist Tel: +632 632 6507 E mail: mtada@adb.org 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines

25. Project Organization Structure:

26. Figure 2 shows the reporting lines and essential internal structures of key organizations involved in implementation including PMU.

Figure 2: Project Implementation Arrangements



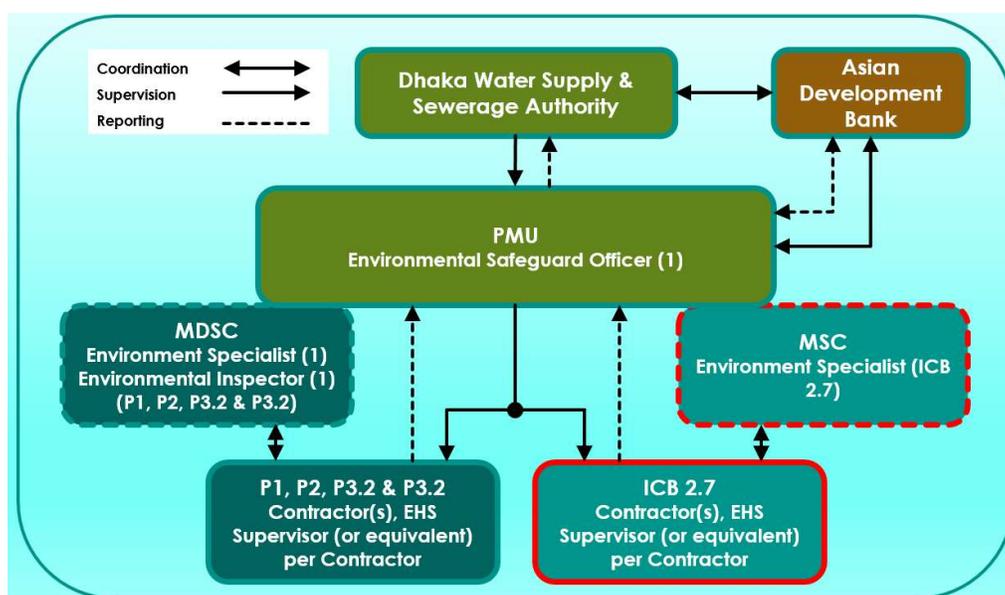
27. Safeguards Implementation Arrangements

28. This project has a setup of Project Management Unit (PMU) which includes Safeguard Officer (Environment Specialist) to manage day-to-day coordination, implementation, and monitoring and administration activities of the project. The Safeguard Officer (Environment Specialist) of

PMU will get support from MDSC. The environmental team of MDSC in coordination with PMU will check the overall initial works and site activities considering the environmental perspectives. HSE inspector of MDSC will regularly inspect the HSE issues of the construction sites with a comprehensive checklist. The Contractor's H&S Manger is engaged in acquiring field data and information of the project and update the MDSC through a monthly progress report. In the monthly progress report, contractor addresses HSE manpower status; audit status; incident/accident status; safety inspections & meetings; HSE training; HIV/AIDS, STI & Covid-19 awareness program; air, noise & water quality monitoring; dust suppression; waste (hazardous, non-hazardous & sewage) management etc. as per the guidelines of site specific EMPs.

29. The responsible environmental safeguard officer/Specialist of PMU reviews the environmental reports related to the project and reviewed monitoring of compliance of the contractors' performance with the approved EMPs, environmental standards and other environmental commitments of the contractor. Environmental monitoring in the field is among the work scope of the Engineer (MDSC-MML), and the tasks of actual monitoring is undertaken by the Contractor in association with international and national environmental specialists and environmental field inspector. The international environmental specialist is mobilized on an intermittent basis to undertake field audit. The Environmental safeguard implementation arrangement of this project is shown in figure and the information of the safeguard team is shown in a tabulated below.

Figure 3: Environmental Safeguards Implementation Arrangement of the Overall Project



ADB = Asian Development Bank, EHS = environmental, health and safety, ICB = international competitive bidding, MDSC = management, design and supervision consultant, MSC = management and supervision consultant, P = package, PMU = project management unit.

Note: ICB 2.7 was completed in Q1 2021, thus it will not be funded by the additional financing.

Table 2: Project Environmental Safeguards Team

Sl. No	Position	Office	Name	Contact number	Email / Remarks
A	PMU				
1	Safeguard Officer (Environment Specialist) of DESWSP	DWASA	Mr. Md. Saidur Rahman	+880 1715149604	saidur.r.m.plc@gmail.com
B	MDSC				
1	Int. Environmental Specialist, MDSC	Mott Macdonald	Dr. Detlev Paulsch	+49 1520 4909789	d.paulsch@gefaoe.de
2	National Environmental Specialist, MDSC	Mott Macdonald	Mohammad Nurul Alam Siddique	+8801819463345	nurul.siddique@mottmac.com
3	Environmental Inspector, MDSC	Mott Macdonald	Md. Shahin Matubber	+8801812181284	matubber.shahin@mottmac.com
4	Environmental Inspector, MDSC	Mott Macdonald	Sk. Abu Md. Julkernine	+880 1730055366	julkernine_bd@live.com
C	CONTRACTOR				
1	HSE Manager, GWTSNC	GWT (WTP / INTAKE/RWP)	Nwokedi Uchefuna	+8801300567751	nwokedi.uchefuna@gwtsnc.com
2	Deputy HSE Manager, GWTSNC	GWT (WTP / INTAKE/RWP)	Abul Kalam Azad	+8801313210652	kalam.azad@gwtsnc.com
3	HSE Supervisor	GWT (WTP)	Sharashij Chakma	+8801321134712	sharashij.chakma@gwtsnc.com
4	Lead HSE Supervisor	GWT (INTAKE/RWP)	Md Omar Faroque	+8801313404997	omar.faroque@gwtsnc.com
5	HSE Supervisor	GWT (INTAKE)	Md. Sohel Rana	+8801324249971	
6	HSE Supervisor	GWT (RWP)	Md Abu Bakkar Siddique	+8801321134711	
7	HSE Supervisor	GWT (RWP)	Md Al Amin Hossain	+8801324249970	
8	HSE Supervisor	GWT (RWP)	Sawrab Chakma	+8801324249974	
9	Site Doctor	GWT (WTP)	Md. Rezwanul Islam	+8801313210648	
10	Site Doctor	GWT (INTAKE/RWP)	Md. Zahidul Islam	+8801713002431	

Sl. No	Position	Office	Name	Contact number	Email / Remarks
11	HSE Manager	CAMCE	Md. Ashraful Alam Rumon	+88-01715455969	rumon_ashraf@yahoo.com
12	HSE Engineer	CAMCE	Nurullah Tarek	+8801827810260	nurullahtarek@gmail.com
13	HSE Officer	CAMCE	Tanmay Majumder	+8801748015297	mazumdertanmay297@gmail.com
14	HSE Officer	CAMCE	Md Shakil Ahmed	+8801745477748	mdshakilahmed11117@gmail.com

III. PROJECT IMPLEMENTATION STATUS

The scope of MSC & MDSC services includes financial management support, training and capacity building to strengthen PMU and DWASA, and developing a Project Performance Management System (PPMS). It also includes preparation of bidding documents, procurement of contractors and oversight of resettlement NGOs, social and environmental safeguards.

The MSC service (Output 2: Distribution network strengthened) has achieved:

31. The actual work for the package ICB 2.7 was managing and supervising. The original work completion schedule of package ICB 2.7, DESWSP was earmarked within 1129 days from the starting of the project activities. It was assumed to complete the work by July 19, 2018. Finally, the project completion of 16 DMA's⁴ ICB 2.7 was June 30, 2021. The project was covering DMAs (1-16) in MODS Zone-6. As physical work has increased in Detailed Design & Modelling, so, network of distribution of water line had increased from 376 km to 496km covering demanding area with network facilities. So, project period was extended upto 2272 days starting from April 12, 2015, which stands a total 1134 days more than that of actual contract times. Detail of MSC service:

A. AT A GLANCE WORK STATUS:

Table 3: At a glance Work Status of package ICB 2.7 (Up-to June 30, 2021):

Components	Work Status								
Survey, Model & Detailed Design	16 DMAs (DMA 601-DMA 616) has been completed								
Total Pipe installation	495.89km [16 DMAs (DMA 601-DMA 616)] has been completed								
Pipe Diameter (mm)	75	110	160	200	250	315	400	450	560
Length (km)	106.83	158.29	92.28	54.67	38.14	36.73	7.07	0.92	0.94
Pipe Installation Method:	HDD			PB			OT		
Length:	212.657km			32.981km			250.251km		
(i) At Contract:	17.00%			45.00%			38.00%		
(ii) At Detailed Design:	41.00%			8.00%			51.00%		
(iii) At Construction:	43.00%			7.00%			50.00%		
Total PTW (nos)	105 [N.B. The contractor was responsible for replace all the fitting from existing deep tube wells/ head to the delivery main (200 to 250mm dia								

⁴ A DMA is defined as a Geographical area served by water distribution network which can be isolated hydraulically from bulk surface water transmission mains from neighbouring areas by inter DMA connections. Each interconnection point is being controlled by bulk meter & valve which may in future be used and operated. Each DMA will be sufficient itself on water supply with number of PTWs and future surface water connection, Each DMA is self-sufficient in importing & exporting water to the nearest DMA when necessary.

	pipe), non-return valve, pressure meter, flow meter, gate valve, wash out pipe, air release valve, bends, flange adapter and support etc. as per standard connection details of DTW]
Total House connection (nos)	37337 [Range (20mm, 25mm, 38mm, 50mm, 75mm, 100mm & 150mm)]
Pre-commissioning & Commissioning	16 DMAs (DMA 601-DMA 616) has been completed
Post Modelling & Handover	16 DMAs (DMA 601-DMA 616) has been completed
Progress	100%
NRW	Average 5%

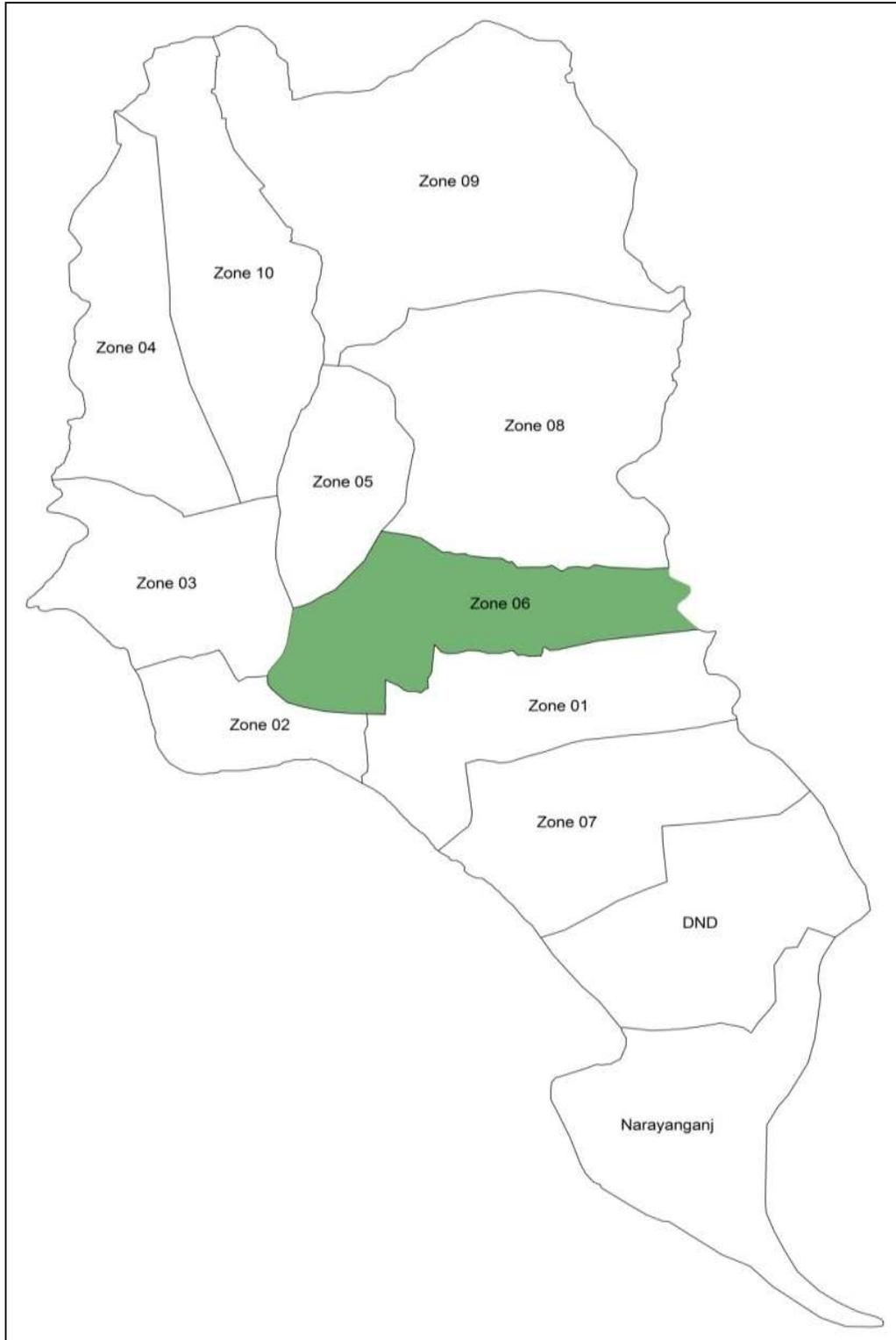


Figure 4: Operational Zones of DWASA

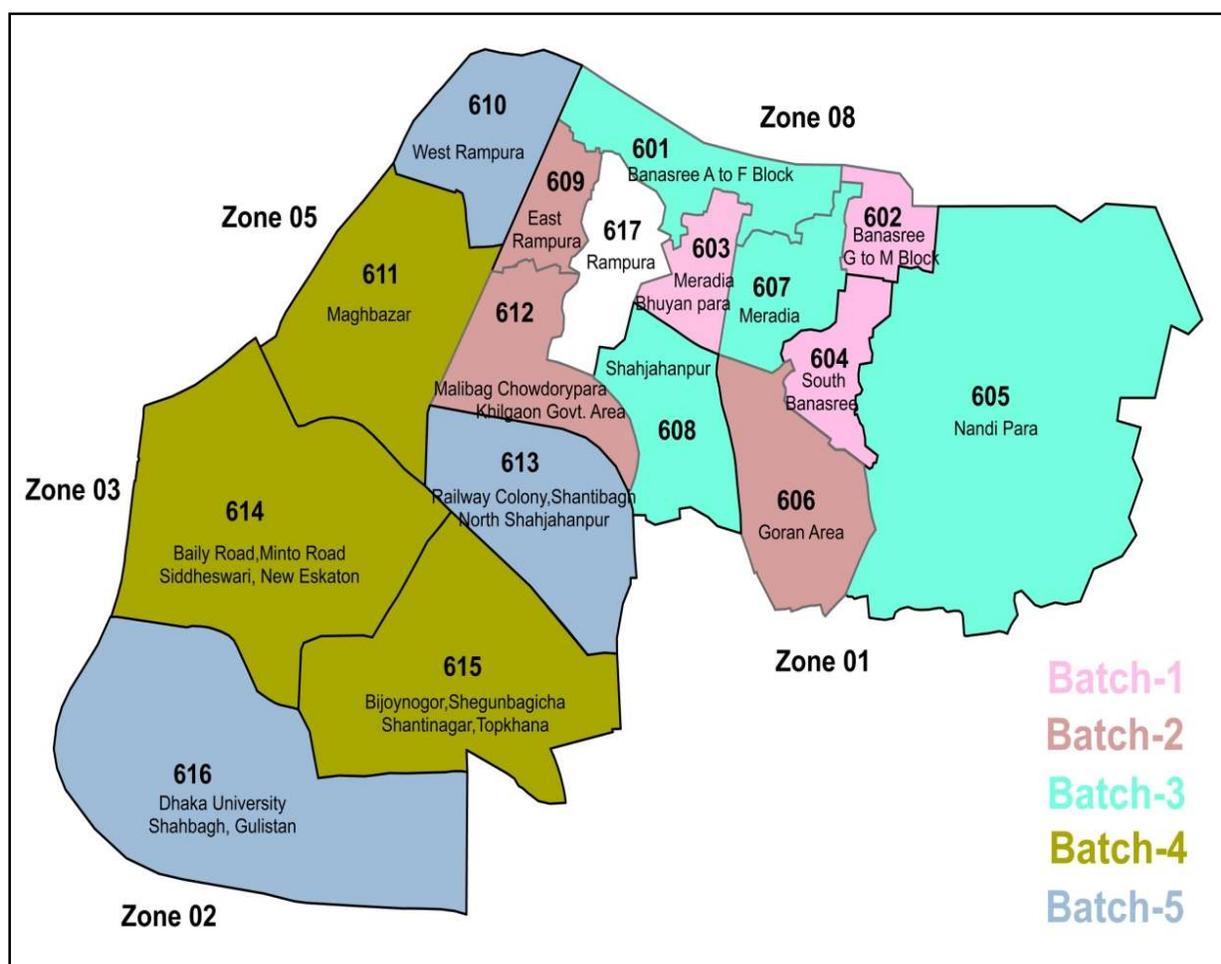


Figure 5: DMAs in MODS Zone 6 (ICB-02.7)

B. CONSTRUCTION OF PIPE LINE AT ZONE-6 UNDER PACKAGE ICB 2.7, PTW:

Table 4: Construction of Pipe Line at Zone-6 under package ICB 2.7, PTW:

SL. No.	DMAs	Location	Existing DTW	Water demand % of increase of water from base year 2014 to 2030
1	601	Banasree Block A-F	9	178
2	602	Banasree Block G-M	2	187
3	603	Meradia Bhuyanpara	3	225
4	604	South Banasree	4	175
5	605	Nondipara	4	236
6	606	Goran Area	6	148
7	607	Meradia	3	225
8	608	Khilgaon Bloock-A, Goran	6.5	179
9	609	East Rampura	2	198

10	610	West Rampura	4	198
11	611	Moghbazar	11	162
12	612	Khilgaon A & C Block	6	185
13	613	Gulbagh, Shajahanpur, Malibagh	9	131
14	614	Eskaton, BSMMU Hospital, Govt. Building etc.	12	163
15	615	Segunbagicha Area, Naya/Purana Palton	11	119
16	616	Dhaka University & BUET Area, Suprem/High Court	6	181

C. PIPE LENGTH OF DMAS (km) UNDER PACKAGE 2.7:

Table 5: Pipe Length of DMAs (km) under package ICB 2.7:

SL. No.	DMAs	Contract	Design	As-built
1	601	23.931	24.5967	23.5565
2	602	9.488	8.8491	8.8631
3	603	8.341	11.475	11.6684
4	604	13.407	16.2453	16.8492
5	605	31.917	59.9504	61.6674
6	606	27.409	37.0789	38.1342
7	607	6.02	16.3569	16.3647
8	608	25.113	30.0576	32.3262
9	609	12.001	12.8541	12.2829
10	610	24.075	27.6154	28.337
11	611	38.06	48.3706	50.3155
12	612	24.761	30.3577	30.8001
13	613	29.497	40.5818	36.7089
14	614	43.277	49.0814	47.8537
15	615	38.578	53.6696	53.5975
16	616	20.41	24.8849	26.5653
	Total:	376.285	492.0254	495.8906

D. MAIN WORKS CONDUCTED UNDER PACKAGE ICB 2.7:

32. The main works were (1) Installing of service connections, (2) Backfilling of pits/trenches with backfilling materials (sand FM 1.0 FM), (3) Constructions of various valve chambers for 300 mm and above, (4) Water pipe line testing with 6 bar for 2 hours, (5) Pre-commissioning (3bar), Chlorination with residual chlorine-o.2ppm, (6) Commissioning (1 bar), (7) Joint measurement MSC, PMU, PCU, Contractor's site engineers and site managers, (8) Preparation of as-built drawing, (9) Cost variation report etc.

E. PIPE INSTALLATION UNDER PACKAGE ICB 2.7:

33. For pipe line the HDPE pipes [ISO 4427-2:2007(E) of PN 10 nominal pressure] were used. Nominal sizes were very from 75mm to 560mm with wall thickness from 4.5 mm to 36.70mm in minimum. To make the joint of the pipe were used butt Fusion Joint. Equipment certified with ISO 12176-1. Jointing was done in accordance with ISO 11413. Testing was done with ISO 13953. Pipes jointed with ISO 4427:2007. Installation was carried out with ISO 11414. In electro-fusion fittings incorporated integral healing elements to enable fusion with PE pipes.

F. PRE-COMMISSIONING AND COMMISSIONING:

34. During pre-commissioning of a segment of around 10kms pipelines, pressure 3 bars were exerted with conduit, Again the system was tested with all fittings and house connections. Commissioning of the whole DMA was conducted under pressure of one (1) bar after all house connections, meter shifting arrangement and by the isolation of old line.

G. TRENCH FILL

35. Filling materials were certainly sand of F M 1.0. After laying the water pipe line contractor managed to fill the trench with sand in layers, compacting and watering, layers for the sake of complete compaction.

H. EXCAVATED MATERIALS

36. As per contract contractor removed the excavated materials from the site by 12/24 hours of cutting the road side or preferable location of road after getting road cutting permission from road owing authority. Filling materials were compacted by mechanical rollers, vibrating plate compactors etc. So, as to produce a dry density not less than 97% (standard protocol) of the maximum dry density according to DIN 18126 for main road/ carriage ways. Flow loggers were provided for installation of in the DMAs for 3 months monitoring period.

I. LAND ACQUISITION AND RESETTLEMENT UNDER PACKAGE ICB 2.7:

37. There was no land acquisition under the project package ICB 2.7. The main resettlement impact was the potential reduction in the income of shops and other businesses, if the presence of trenches, excavated soil and machineries make access difficult for customers. Initial design indicated that the only areas where the project was expected to cause resettlement impacts was in 25% of the roads (equivalent to 94 km out of 376 km) in which pipes were installed using open cut method. Issues of involuntary resettlement have been addressed according to the national legislation (Government of Bangladesh's Acquisition of Immoveable Property Ordinance, (1982), and ADB's Safeguard Policy Statement (SPS), 2009 and DWASA's Policy (Resettlement Policy Framework 2013).

J. AFFECTED PERSONS (APS) & RP UNDER PACKAGE ICB 2.7:

38. A series of Focus Group Discussions (FGDs) were held in the form of tea stalls, community meetings, public consultations etc. with the stakeholders. The NGO SHAMAR collected data on numbers, types and ownerships of affected shops and other business, income, rent paid by tenants, and number of employees, number of types of affected hawkers, average income and any rent paid; number of type of affected structures and replacement costs; any other resettlement impacts. Since inception up-to June 30, 2021 a total 360 APs have been compensated. Among them 50 (14%) were women, elderly and disable. About 100% of them were aware about their entitlement and compensation. A total number of 16 RP were prepared and submitted to ADB for approval and uploaded in website. These RPs were prepared based on Government of Bangladesh's Acquisition of Immoveable Property Ordinance, (1982), and ADB's Safeguard Policy Statement (SPS), 2009.

K. SEMI-ANNUAL ENVIRONMENTAL SAFEGUARD MONITORING REPORTS (SEMRS) UNDER PACKAGE ICB 2.7:

39. From the inception up-to July 31, 2021, a total 12 (twelve) Semi-annual Environmental Safeguard Monitoring Reports (SEMRs) has been prepared and were submitted to ADB for disclosure in the website.

L. COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS/ STATUS CLEARANCE FOR PACKAGE ICB 2.7:

40. The consultant (MSC) suggested to ensure in procurement process that all information required for environmental safeguard stated in the environmental assessment report and site specific Environmental Management Plans (EMP) which have been prepared earlier under the respective pipeline rehabilitation clauses have to be incorporated in the work schedule so that contractors can adopt mitigation measures associated with construction works. Management and Supervision Consultants (MSC) have been monitored the implementation of SEMP's which were used to work by contractors; and ensure that the SEMP's were implemented throughout project implementation period. Half yearly Environmental Safeguard Report has been prepared by the Consultant to be forwarded to PMU and ADB. It could be mentioned that IEE with EMP has been prepared according to ECA'95 (Environmental Conservation Act) & ECR'97 (Environmental Conservation Rules) and it was mandatory to follow the rules ordered by GoB and ADB guidelines. To follow the rules, contractors have been collected no objection certificates from local authorities (like DESA, City Corporations and Housing Society etc.) before starting the works of the sub-projects.

41. As stated in the funding document, prior to commencing a civil work all the required statutory clearances have been obtained with regard to the ICB 2.7 contract, classified by ADB as 'B' Category project. As such, environmental statutory clearances for the Project are related construction of removal and replacement of trees, excavation of raw water transmission line, vegetation clearance at MODS ZONE-6 site, and temporary acquisition and rental for contractor's camp and office, material stockpile, equipment storage area etc. However, clearances and no-objection letters for these activities have been obtained from the DNCC/DSCC, WARPO, DoE, LGED, Dhaka District where the alignment were passed (Detailed in IEE). ECC has been extended by DoE for one year which will be valid till 10-12-2022. It refers to the project of DESWSP which covers all packages of this project.

M. STATEMENT OF ENVIRONMENTAL COMPLIANCE AND HOW TO MITIGATE IMPACTS UNDER PACKAGE ICB 2.7:

42. The package ICB 2.7 of the project has been classified by ADB as Category B, because it was not expected to have major negative environmental impacts. Under ADB procedures such projects require an Initial Environmental Examination (IEE) to identify and mitigate the impacts and to determine whether further study or a more detailed Environmental Impact Assessment (EIA) may be required.

43. The IEE report was prepared for Package ICB 2.7 only which was included i) survey and documentation including detailed design, specifications, preparation of quality assurance and design report, design control services of 16 DMAs (DMA 601-616); ii) supply, laying and commissioning of distribution, transmission and reticulation pipes (376 km, which has been revised for 494 km); iii) Rehabilitation of service connections and iv) rehabilitation of production tube wells (PTWs) headwork.

44. During construction phase the IEE has been updated on the basis of the DMA and construction batch. As the environmental compliance was concern to the site, it took time to train the working group for adaptation of the project site engineers (PSEs) for the road block, road cones, security tapes for encircling the working spot, removing excavated, placing of steel sheets over the open trench, bailing out of water to the nearest drainage lines. Spraying water to the working area for dust reduction and other indicators were monitored by MSC, PMU and DWASA, Ambient air quality and noise level monitoring has been conducted to all the 16 DMAs by the professional environmental monitoring organization.

N. AT A GLANCE WORK STATUS INCLUDING EMP & IEE UNDER PACKAGE ICB 2.7:

Table 6: Status of EMP & IEE under package ICB 2.7

Sl. No.	Construction Batch	DMA No.	Status up-to June 30, 2021			Remarks
			Physical Work	RP/AP	EMP & IEE	
1	Construction Batch-1	602	Handed Over to PCU (Zone-6) on January 04, 2017	Done	Completed & published in ADB's/ DWASA's website	Works completed
2		603	Handed Over to PCU (Zone-6) on March 16, 2017	Done		Works completed
3		604	Handed Over to PCU (Zone-6) on January 25, 2017	Done		Works completed
4	Construction Batch-2	606	Handed Over to PCU (Zone-6) on August 28, 2017	Done	Completed & published in ADB's/ DWASA's website	Works completed
5		609	Handed Over to PCU (Zone-6) on January 03, 2019	Done		Works completed
6		612	Handed Over to PCU (Zone-6) on September 17, 2019	Done		Works completed

7	Construction Batch-3	601	Handed Over to PCU (Zone-6) on February 07, 2018	Done	Completed & published in ADB's/ DWASA's website	Works completed
8		605	Handed Over to PCU (Zone-6) on September 21, 2020	Done		Works completed
9		607	Handed Over to PCU (Zone-6) on December 13, 2017	Done		Works completed
10		608	Handed Over to PCU (Zone-6) on October 23, 2018	Done		Works completed
11	Construction Batch-4	610	Handed Over to PCU (Zone-6) on September 01, 2019	Done	Completed & published in ADB's/ DWASA's website	Works completed
12		611	Handed Over to PCU (Zone-6) on April 15, 2021	Done		Works completed
13		613	Handed Over to PCU (Zone-6) on November 02, 2020	Done		Works completed
14	Construction Batch-5	614	Handed Over to PCU (Zone-6) on June 28, 2021	Done	Completed & published in ADB's/ DWASA's website	Works completed
15		615	Handed Over to PCU (Zone-6) on June 17, 2021	Done		Works completed
16		616	100% completed	Done		Works almost completed

Installation of Deep Tube Wells (DTWs) under NCB package No.04.1:

A. DESCRIPTION

45. Usually Dhaka WASA used to install Deep Tube Wells on land obtained from various individuals, institutes and Housing Societies. Dhaka WASA does not install Deep Tube Well at the own purchasing land. Under Package NCB 4.1 of Dhaka Environmentally Sustainable Water Supply Project there was supposed to be installed/replaced 50 Deep Tube Wells where 15 were imagined to be new and 35 were to be replaced. But land was not available for new 15 Deep Tube Wells. Seven new Deep Tube Wells were installed because of receiving the land for these 7 new Deep Tube Wells. So, about 7 new and 43 replacements were incorporated instead of 15 new and 35 replacements of Deep Tube Wells.

Table 7: Construction/ Replacement of DTW/PTW (As of the schedule/Plan)

As of the original plan	New DTW/PTW	Replacement DTW/PTW	Total
	15	35	50
Revised plan	07	43	50

46. As such, a sampling analysis plan was developed based upon several site inspections conducted on October 01, 2020 –January 15, 2021 and review of historical aerial photos. The objective of investigation was to assess the presence of random objects for the purpose of internal due diligence. At the time of commencement of investigation PMU-NGO had undertaken a site visit and reviewed historical aerial photos as part of works. The scope of work was prepared in consultation with local people; public representatives, MOD Zone 6 and old pump houses

employees and others with based on the known information at the time of visits. The Site was located at the Area of MODS Zone 6 & surrounding areas under DWASA jurisdiction where were installed 07 New & replaced 43 old Deep Tube Wells (DTWs) under NCB package No.04.1 based on detailed design during implementation.

47. The objective of the component of the project was to install 15 New (revised 07) Deep Tube Wells (DTW) and reinstallation of 35 (revised 43) existing DTWs under NCB package No.04.1.

48. DTW/PTW works included drilling of tube wells in all the locations. The installation and replacement work of 50 DTWs including commissioning has been completed on August 30, 2021. The replacement tube wells also were required drilling at a location adjacent to the existing tube wells. For putting up a DTW/PTW minimum land requirement was 1080 sqft. Under NCB 4.1 work components included DTW/PTW delivery lines, electrical installations such sub stations, transformers, High Tension lines, control cubicle/ Variable Frequency Drive (VFD), chlorination system, joist for pump maintenance, pump house, SCADA etc. Contractor will be responsible for 12 (twelve) months operation & maintenance after construction & completion of each DTW. Contractor will also handle all types' breakdowns with supply of equipment's at the time of defect liability period and will supply all necessary spares, manpower & bear expenses for operation maintenance.

49. The consultant for package NCB 4.1 suggested to ensure in procurement process that all information required for environmental safeguard stated in the environmental assessment report and site specific Environmental Management Plans (EMP) which have been prepared earlier under the respective DTWs installation/ replacement clauses have to be incorporated in the work schedule so that contractors can adopt mitigation measures associated with construction works. Consultant for package NCB 4.1 (Hydrologist) have been monitored the implementation of SEMP's which were used to work by contractors; and ensure that the SEMP's were implemented throughout project implementation period. Half yearly Environmental Safeguard Report has been prepared by the Consultant to be forwarded to PMU and ADB. It could be mentioned that EMP's has been prepared according to ECA'95 (Environmental Conservation Act) & ECR'97 (Environmental Conservation Rules) and it was mandatory to follow the rules ordered by GoB and ADB guidelines. To follow the rules, contractors have been collected no objection certificates from local authorities (like DESA, City Corporations and Housing Society etc.) before starting the works of the sub-projects.

50. As stated in the funding document, prior to commencing a civil work all the required statutory clearances have been obtained with regard to the NCB 4.1 contract, and classified by ADB as 'C' Category project. As such, environmental statutory clearances for the Project are related construction of DTWs excavation of raw water transmission line, vegetation clearance at MODS ZONE-6 site, and temporary acquisition and rental for contractor's camp and office, material stockpile, equipment storage area etc. However, clearances and no-objection letters for these activities have been obtained from the DNCC/DSCC, WARPO, DoE, LGED, Dhaka District where the DTWs installed/ replaced (Detailed in IEE). ECC has been extended by DoE for one year which will be valid till 10-12-2022. It refers to the project of DESWSP which covers all packages of this project.

51. The package NCB 4.1 of the project has been classified by ADB as Category C, and Green by Government of Bangladesh's Environmental law, because it was not expected to have major negative environmental impacts. Under ADB procedures such projects require an Environmental Due Diligence Report (EDDR) to identify and mitigate the impacts and to determine whether further study or a more detailed Initial Environmental Examination (IEE) may be required.

52. The EDDR was prepared for Package NCB 4.1 only which was included i) survey and documentation including detailed design, specifications, preparation of quality assurance and design report, design control services of 16 DMAs (DMA 601-616); ii) report of supply, laying and commissioning of distribution, transmission and reticulation pipes; iii) Rehabilitation of service connections and iv) rehabilitation of production tube wells (PTWs) headwork.

53. During construction phase the EDDR has been updated on the basis of the DMA. As the little bit environmental compliance was concern to the site, it took time to train the working group for adaptation of the project site engineers (PSEs) for the road block, road cones, security tapes for encircling the working spot, removing excavated, mechanical & electric works including machineries for installation/ replacement of DTWs, chlorination, bailing out of water to the nearest drainage lines. Spraying water to the working area for dust reduction and other indicators were monitored by MSC, PMU and DWASA, Ambient air quality and noise level monitoring has been conducted to all the site of 50 DTWs by the PMU/DWASA engineers/officers.

Table 8: List of Deep Tube Wells (DTWs) Constructed/ Replaced at the 1st step:

Sl. No.	Deep Tube Well Name & Location	DMA No.	Work Status (New/ Replacement)	Land Use rights
1.	Bonasree-5 Water Pump, Bonasree, Dhaka.	DTW-691/ DMA-601	Replacement Completed	DWASA
2.	Meradia Bhuiyan Para 2 No. Water Pump, Meradia, Dhaka.	DTW-687/ DMA-603	Replacement Completed	DWASA
3.	Goran-8 Water Pump, Goran, Dhaka.	DTW-678/ DMA-606	Replacement Completed	DWASA
4.	Rampura Bangladesh Television Road (TV road) Water Pump, Rampura, Dhaka.	DTW-627/ DMA-609	Replacement Completed	DWASA
5.	Rajuk Quarter Water Pump, West Malibag, Malibag, Dhaka.	DTW-659/ DMA-611	Replacement Completed	DWASA
6.	Khilgaon 3 No. Water Pump, Khilgaon, Dhaka.	DTW-667/ DMA-612	Replacement Completed	DWASA
7.	Khilgaon 7 No. Water Pump, Khilgaon, Dhaka.	DTW-629/ DMA-612	Replacement Completed	DWASA
8.	Gulbag-1 Water Pump, Gulbag, Malibag, Dhaka.	DTW-639/ DMA-613	Replacement Completed	DWASA
9.	Maruf Market Water Pump, Malibag, Dhaka.	DTW-669/ DMA-613	Replacement Completed	DWASA
10.	Kakrail SOC compound Water Pump, Kakrail, Dhaka.	DTW-643/ DMA-614	Replacement Completed	DWASA
11.	Rajarbag-1 Water Pump, Rajarbag, Dhaka.	DTW-645/ DMA-615	Replacement Completed	DWASA
12.	Arambag Balur Math Water Pump, Arambag, Dhaka.	DTW-661/ DMA-615	Replacement Completed	DWASA
13.	Dhaka Medical College & Hospital Compound Water Pump, Dhaka.	DTW-631/ DMA-616	Replacement Completed	DWASA
14.	East Rampura, Titas Road Water Pump, Dhaka.	DTW-679/ DMA-617	Replacement Completed	DWASA

15.	Bonasree E Block, Bonasree, Dhaka.	DTW-DMA-601	New (Installation Completed)	DWASA
16.	Bonasree M Block, South Bonasree, Dhaka.	DTW-DMA-602	New (Installation Completed)	DWASA
17.	Bonasree K Block, South Bonasree, Dhaka.	DTW-DMA-604	New (Installation Completed)	DWASA
18.	Protik Housing (South Bonasree), Bonasree, Dhaka.	DTW-DMA-607	New (Installation Completed)	DWASA

Table 9: List of Deep Tube Wells to be Constructed/ Replaced at 2nd step:

Sl. No.	Deep Tube Well Name & Location	DMA No.	New/ Replacement	Land Use rights
19.	Goran 10 No. Water Pump, Dhaka	DMA-606	Replacement Completed	DWASA
20.	Mothertek Water Pump, Dhaka.	DMA-606	Replacement Completed	DWASA
21.	Moghbar Wireless Gate, Water Pump, Dhaka.	DTW-611	Replacement Completed	DWASA
22.	Modhubag Old Water Pump, Moghbazar, Dhaka.	DTW-611	Replacement Completed	DWASA
23.	Khilgaon 04 No. Water Pump, Dhaka	DMA-612	Replacement Completed	DWASA
24.	New Eskaton Water Pump, Ramna, Dhaka	DMA-614	Replacement Completed	DWASA
25.	Eskaton Garden Water Pump, Ramna, Dhaka	DMA-614	Replacement Completed	DWASA
26.	AGB Colony (Al-Helal Zone) Water Pump, Dhaka	DMA-615	Replacement Completed	DWASA
27.	Fakirapul Water Pump, Palton, Dhaka	DMA-615	Replacement Completed	DWASA
28.	Segunbagicha Water Pump, Palton, Dhaka	DMA-615	Replacement Completed	DWASA
29.	Mouloveertek Water Pump, Moulovirtek, Dhaka	DMA-617	Replacement Completed	DWASA
30.	Dhaka Uddan Water Pump, Mohammadpur, Dhaka	MODS Zone-3	Installation Completed (New)	DWASA.
31.	Salimullah Road Water Pump, Mohammadpur, Dhaka	MODS Zone-3	Replacement Completed	DWASA
32.	Dhaka College Campus Water pump, Dhanmondi, Dhaka	MODS Zone-3	Installation Completed (New)	DWASA

33.	Salauddin Ahmed Adorsho School Water Pump, Dhaka	MODS Zone-7	Replacement Completed	DWASA
34.	Rayerbag Water Pump, Kadomtoli, Dhaka	MODS Zone-7	Replacement Completed	DWASA
35.	Joyersahara 01 No. Water Pump, Kuril, Dhaka	MODS Zone-8	Replacement Completed	DWASA
36.	Mirpur 11/C, (Avenue-5) Water Pump, Dhaka	MODS Zone-10	Replacement Completed	DWASA
37.	Matikata 2No. Water Pump, Dhaka Cantonment, Dhaka	MODS Zone-10	Replacement Completed	DWASA

Table 10: List of Deep Tube Wells to be constructed/ replaced at 3rd step:

Sl. No.	Deep Tube Well Name & Location	DMA No.	New/ Replacement	Land Use rights
38.	Banosree-2 No. Water Pump, Dhaka	DMA-601	Replacement Completed	DWASA
39.	Goran 01, Water Pump	DMA-606	Replacement Completed	DWASA
40.	Goran 11, Water Pump	DMA-606	Replacement Completed	DWASA
41.	North Goran (Adorshobag) Water Pump	DMA-606	Installation Completed (New)	DWASA
42.	Goran Noorbah Water Pump	DMA-606	Replacement Completed	DWASA
43.	Khilgaon -01, (Near Taltola Graveyard) Water Pump	DMA-608	Replacement Completed	DWASA
44.	Rampura TV Bhabon Water Pump	DMA-609	Replacement Completed	DWASA
45.	Modhubag Old Water Pump	DMA-611	Replacement Completed	DWASA
46.	Moghbazar Wireless More Water Pump	DMA-611	Replacement Completed	DWASA
47.	Khilgaon 06, Water Pump	DMA-612	Replacement Completed	DWASA
48.	Motijhil Adeal Zone Water Pump	DMA-615	Replacement Completed	DWASA
49.	Pirgongi Mazar Water Pump	DMA-615	Replacement Completed	DWASA
50.	Gobindapur Water Pump	MODS Zone-7	Replacement Completed	DWASA

The MDSC services to achieve Output 1 and Output 3, include:

- Procure, design review and supervise the DBO contract of Package 1;
- Design, procure and supervise the construction contract Packages P2 and P3.1;

- Model, concept design, procure and supervise DBO contract Package P3.2.
- Capacity development of PMU, DWASA.

Package 1: River intake, raw water pipeline and Gandharbpur treatment plant

P1 comprises 4 years Design & Build, plus 3 years operation of:

- 1000 MLD river intake in the Meghna river at Bishnandi, Araihasar Upozila, with a 500MLD raw water pumping station, stand-by power, workshops, offices and accommodation for DWASA staff (see impression of the proposed Intake at the right).



Figure 6: 3D view of Meghna river Intake

Figure 7: 3D view of Water Treatment plant



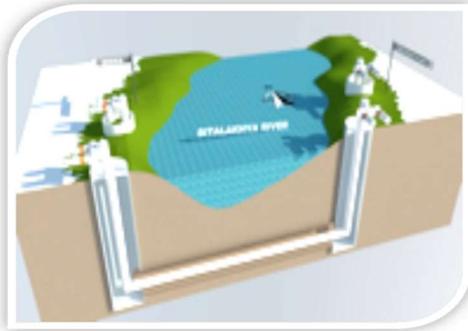
- 21 km raw water transmission pipeline (twin 1600 mm pipes sized for 500 MLD) through rural areas with an access road beside from the river intake to the water treatment plant and
- 500 MLD surface water treatment plant (WTP) at Gandharbpur, Rupgonj Upozila, with storage reservoir, treated water pumping station, stand-by power supply, workshop, chemical storage, offices and accommodation for DWASA staff (see impression of the proposed WTP top left).

Package 2: Treated water transmission pipeline to Dhaka

P2 comprises 36 months construction of:

- 14 km treated water transmission pipeline (twin 1600mm pipes) from Gandharbpur WTP to Dhaka (Progoti Sarani and Madani Avenue crossings at Natun Bazar, where it connects to P3.1 pipeline.
- Two under-river tunnels for the pipeline: one at Murapara - Isakhali under the Sitalakhya river, and one at Beraid under the Balu river.

Figure 8: 3D view of a River Crossing

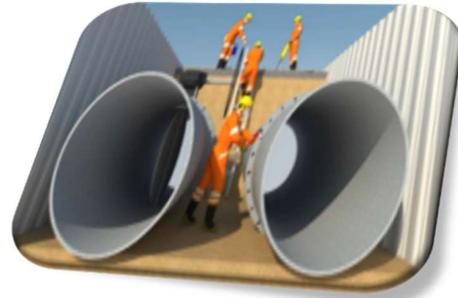


Primary distribution pipelines in Dhaka

54. P3.1 comprises 36 months construction of:

- 23Km of large diameter pipes of 0.8m to 1.6m diameter, all under major Dhaka highways to transfer the potable water to the P3.2 feeder pipelines.

Figure 9: Twin 1.6m diameter Pipelines



Package 3.2: Feeder pipelines distribution in Dhaka

55. P3.2 comprises 30 months construction of:

- 43 km of feeder pipes from 350 to 800mm diameter, all under Dhaka roads, to deliver water to the District Metering Areas (DMAs) that feed individual water supply zones of Dhaka City.

Capacity development of PMU, DWASA

56. Development of PMU, DWASA staff capacity of technical and financial management through staff training and establishment of a Project Progress Performance Management System.

57. Details of all subprojects / packages, type of bid/contract and current status of implementation of packages is presented in the Table 11, and detailed implementation progress of each of the awarded packages are given in

58.

59. **Table 12.**

Table 11: Status of All Subprojects / Packages

Package/ Subproject	Subproject / Package components	Current Status	Bid / contract type
Package 1	(i) Intake (ii) WTP (iii) Raw water pipeline (RWP)	under implementation	DBO
Package 2	(i) treated water transmission pipeline	Under construction	Works
Package 3.1	(i) Primary distribution pipeline inside Dhaka	awarded (awaiting commencement date)	Works
Package 3.2	(i) Feeder pipeline inside Dhaka	bidding (bid evaluation at the final stage)	DBO

Table 12: Implementation Status of Awarded Subprojects/ Packages

Package	Package status 1. Date of Award 2. Date of mobilization 3. Scheduled completion 4. Duration 5. Contractor	Design progress to date	Construction progress to date	Components completed to date	Works conducted during the reporting period
Package 1	1. 16-May-2018 2. 15-June-2018 3. 24-April-2024 4. 72 months (60months+12months EoT) as per approved program 5. GWTSNC	99.14%	59.23%	<ul style="list-style-type: none"> • Intake 54.74% • WTP 67.83% • RWP 39.55% 	<ul style="list-style-type: none"> • Intake works • WTP works • Raw water main
Package 2	1. 6-May-2021 2. 15-Sep-2021 3. 15-Mar-2025 4. 42 months (36months+6months EoT) as per approved program 5. CAMCE	MDSC: 100% CAMCE: 30.5%	10.55%	<ul style="list-style-type: none"> • Treated water transmission pipeline (1km+) • Culvert crossing casing pipe arrangement 	<ul style="list-style-type: none"> • Pipe laying in Section C
Package 3.1	1. 9-September-2021 2. Not done yet 3. Unknown 4. 36 months 5. Chine Geo	MDSC: 100% China Geo: 0%	0%	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Package 3.2 (Covered by additional financing)	1. Not yet completed (Technical Bid Evaluation Report approved on 30 November 2021 and Financial Bid under Evaluation. (Expected by August 2022)) 2. Not done yet 3. Unknown 4. 36 months 5. Under evaluation	MDSC: 100%	0%	<ul style="list-style-type: none"> • Secondary distribution line 	<ul style="list-style-type: none"> • N/A

IV. COMPLIANCE STATUS WITH STATUTORY ENVIRONMENTAL REQUIREMENTS

A. STATUS OF CLEARANCES

60. According to the environmental guidelines of ADB the project falls under Category B and hence an IEE is sufficient to meet the environmental requirements. An IEE report was prepared by the consultant engaged by the ADB during appraisal. However, during the detailed design stage updated IEEs for all packages were prepared. The project is also in conformity with the latest Guideline of ADB i.e., Safeguard Policy Statement 2009.
61. At the time of project preparation at feasibility stage, the PPTA consultants were deputed for the survey and preparation of IEE for the DESWSP (Ref: IEE, DWASA, 2006). As part of detailed project preparation, environmental screening and assessment reports, IEEs were prepared by environmental consultant engaged by the DWASA supported by ADB. Further, the consultant suggested to ensure in procurement process that all information required for environmental safeguard stated in the environmental assessment report and site specific Environmental Management Plans (EMP) which have been prepared earlier under the respective pipeline rehabilitation clauses have to be incorporated in the work schedule so that contractors can adopt mitigation measures associated with construction works. Management and Supervision Consultants (MSC) have to monitor the implementation of SEMP which are used to work by contractors; and ensure that the SEMP are implemented throughout project implementation period. Half yearly Environmental Safeguard Report has to be prepared by the Consultant to be forwarded to PMU and ADB. It could be mentioned that IEE with EMP has been prepared according to ECA'95 (Environmental Conservation Act) & ECR'97 (Environmental Conservation Rules) and it is mandatory to follow the rules ordered by GoB and ADB guidelines. To follow the rules, contractors have to collect no objection certificates from local authorities (like DESA, City Corporations and Housing Society etc.) before starting the works of the sub-projects.
62. As stated in the funding document, prior to commencing a civil work all the required statutory clearances have to be obtained with regard to the P1 & P2 contracts, classified by ADB as 'B' Category project. As such, environmental statutory clearances for the Project are related construction of intake, to removal and replacement of trees, excavation of raw water transmission line, vegetation clearance at GWTP site, and acquisition of land, temporary acquisition and rental for contractor's camp and office, material stockpile, equipment storage area etc. However, clearances and no-objection letters for these activities have been obtained from the WARPO, DoE, LGED, Arai hazar and Rupganj Upazillas of Narayanganj District where the alignment will pass (Detailed in IEE P1). ECC has been extended by DoE for one year which will be valid till 10-12-2022. It refers to the project of DESWSP which covers all packages of this project.
63. Detailed status of each clearance/permission is provided in Table 13. Copies of clearances/permissions attached in **Appendix 1**.

Table 13: Status of Statutory Clearances

Package / Subproject	List of Clearances / permission required	Status	Validity period	Remarks
Package-1	1. ECC from DoE	Approved	10-12-2022	Yearly renewal
	2. Permit of RHD	Approved	-	
	3. Permit of LGED	Approved		
	4. Permit of BWDB	Applied		
Package-2	1. ECC from DoE	Approved	10-12-2022	Yearly renewal
	2. Permit of RAJUK	Approved with conditions	-	
	3. Permit of LGED	Applied, Partially approved	-	
	4. Permit of BIWTA	Applied	-	
	5. Permit of BWDB	Applied	-	
Package-3.1	1. Permit of DoE	Approved	10-12-2022	Yearly renewal
	2. Permit of RHD	Applied, approval pending	Till project completion	
	3. Permit of RAJUK	Not applied	-	
	4. Permit of DNCC	Applied		
Package-3.2 (Covered under additional financing)	1. Permit of DoE	Approved	10-12-2022	Yearly renewal
	2. Permit of RAJUK	Not applied	-	

B. COMPLIANCE WITH CLEARANCE CONDITIONS

64. Following Table 14 provides a summary of clearance / consent conditions specified by statutory agencies that are required to be complied with and/or monitored during implementation and/or operation, and the status of compliance.

Table 14: Conditions of Clearances

Package / Subproject	Clearances / permission	Conditions of Clearance / Permission	Status of Compliance
Package-1	Environmental Clearance Certificate of DoE	Approved (clearance period till 10-12-2022)	Complied and attached in this report
Package-2	Environmental Clearance Certificate of DoE	Approved (clearance period till 10-12-2022)	Complied and attached in this report
Package-3.1	Environmental Clearance Certificate of DoE	Approved (clearance period till 10-12-2022)	Complied and attached in this report
Package-3.2 (Covered under additional financing)	Environmental Clearance Certificate of DoE	Approved (clearance period till 10-12-2022)	Complied and attached in this report

V. COMPLIANCE WITH LOAN COVENANTS

A. LOAN COVENANTS

65. Status of compliance with environmental safeguard related loan covenants is given in the below Table 15. Project is being implemented in compliance with all the covenants.

Table 15: Status of Compliance with Loan Covenants

Schedule No.	Covenant	Status of Compliance	Action Required
Schedule-4 for DBO:8 (a) & (b)	<p>Conditions for Issuance of Notice to Commence Works: The Borrower shall not issue a notice to commence Works under:</p> <p>(a) any Works contracts which involve environmental impacts until: (i) the Borrower's Department of Environment has granted the approval of the IEE (including approval of separate environmental impact assessment required to be prepared under Bangladesh law); and (ii) the Borrower has incorporated the relevant provisions from the EMP into the Works contract; and</p> <p>(b) any Works contracts which involve involuntary resettlement impacts, until the Borrower has prepared and submitted to ADB the final RP based on the Project's detailed design, and obtained ADB's clearance of such RP.</p>	(a) Being complied (b) Being complied	
Schedule 5 for DBO:8 (a) & (b)	<p>Environment: The Borrower and DWASA shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with</p> <p>(a) all applicable laws and regulations of the Borrower relating to environment, health and safety;</p> <p>(b) the Environmental Safeguards; and</p> <p>(c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions set forth in any Safeguards Monitoring Report to be provided to ADB.</p>	(a) Being complied (b) Being complied (c) Being complied	
Schedule 5	<p>Human and Financial Resources to Implement Safeguards Requirements The Borrower and DWASA shall make available necessary budgetary and human resources to fully implement the EMP and the RP.</p>	Complied	
Schedule 5	<p>Safeguards – Related Provisions in Bidding Documents and Works Contracts The Borrower and DWASA shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) Comply with the measures relevant to the contractor as set forth in the IEE, the EMP, and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report;</p> <p>(b) Make available a budget for all such environmental and social measures;</p> <p>(c) Provide the Borrower and DWASA with a written notice</p>	(a) Complied (b) being complied (c) being complied (d) being complied (e) Being Complied (addressed as required)	

Schedule No.	Covenant	Status of Compliance	Action Required
	<p>of any unanticipated environmental, resettlement or small ethnic community peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, and RP;</p> <p>(d) Adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) Fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>		
Schedule 5	<p>Safeguards Monitoring and Reporting: The Borrower shall do the following or cause DWASA to do the following:</p> <p>(a) Submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(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 in accordance with the SPS; and</p> <p>(c) Report any actual or potential breach of compliance with the measure and requirements set forth in the EMP, or the RP promptly after becoming aware of the breach.</p> <p>(d) The Contractor shall appoint its own environmental safeguards officer (EHS).</p>	<p>(a) Complied (Sent to ADB on 7.1.16 and 18.1.16)</p> <p>(b) Complied (Addressed in due time.)</p> <p>(c) Being Complied (will be addressed whenever situation arises.)</p> <p>(d) Complied (appointed).</p>	
Schedule 5	<p>Prohibited List of Investments 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.</p>	Complied	
Schedule 5	<p>Grievance Redress Mechanism: Within 6 months of Effectiveness Date, the Borrower shall establish and maintain a grievance redress committee with representation from all stakeholders in the Project facilities for the purpose of addressing any grievances, from affected peoples concerning land acquisition, environment and any other social issues, in a timely manner.</p>	Being Complied	
Schedule 5	<p>Labor Standards The Borrower and DWASA shall ensure that</p> <p>(a) civil works contractors comply with all applicable labor laws and regulations of the Borrower, do not allow employment of child labor for construction and maintenance activities, encourage the employment of the poor, particularly women, and provide appropriate facilities for women and children in construction campsites, disseminate information on sexually transmitted diseases (including HIV/AIDS) and human trafficking to employees and local communities surrounding the project construction sites;</p> <p>(b) people directly affected by the Project are given priority to be employed by the Project;</p>	<p>(a) Being complied</p> <p>(b) Being complied</p> <p>(c) Being complied</p> <p>(d) Being complied</p>	

Schedule No.	Covenant	Status of Compliance	Action Required
	(c) contractors do not differentiate wages between men and women for work of equal value; and (d) specific clauses ensuring these are included in bidding documents.		

B. PREPARATION AND APPROVAL OF ENVIRONMENTAL ASSESSMENT REPORTS

66. **Subproject Category:** The DESWSP project has been categorized as category B according to ADB guidelines (ADB SPS 2009) and hence an IEE was prepared to meet the environmental requirements. During the detailed design stage, the updated IEEs for all packages was prepared. The project is also in conformity with the latest ADB Safeguard Policy Statement 2009.

67. Package-wise status of preparation, submission, and approval of IEE Reports of Category B subprojects, **Table 16** and **Table 17**.

Table 16: Status of IEEs

Package Number	Bid type	Package Status	Draft IEE submitted to ADB	Draft IEE cleared by ADB	Updated IEE submitted to ADB	Updated IEE cleared by ADB	Remarks
Package 1	DBO	Construction	Yes, August 2013	Yes, August 2013	Yes, January 2020	Yes, January 2020	
Package 2	Work	Construction	Yes, August 2013	Yes, August 2013	Yes, May 2017/ Sep 2019	Yes, Sep 2019	
Package 3.1	Work	Detailed design	Yes, August 2013	Yes, August 2013	Yes, Sep 2019	Yes, Sep 2019	
Package 3.2 (Covered under additional financing)	DBO	Preliminary design	Yes, August 2013	Yes, August 2013	Yes, March 2021	Yes, March 2021 (Additional Financing)	

C. STATUS OF DISCLOSURE OF SAFEGUARD DOCUMENTS

68. Status of disclosure of safeguard documents presented in the following **Table 17**. All the documents have been disclosed on ADB and Project/PMU websites (<http://www.deswsp-dwasa.com/> & <https://www.adb.org/projects/42173-013/main>)

Table 17: Status of Disclosure of IEEs

Package Number	Draft Disclosed on ADB website	Draft Disclosed on Project website	Updated /Final Disclosed on ADB website	Updated /Final Disclosed on Project website
Package 1	Yes	Yes	Yes	Yes
Package 2	Yes	Yes	Yes	Yes
Package 3.1	Yes	Yes	Yes	Yes
Package 3.2	Yes	Yes	Yes	Yes

D. SAFEGUARDS IN BID DOCUMENTS AND CONTRACTS

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

Table 18: Status of including IEEs in bid documents and contracts

Package Number	Type of Bid / Contract	Bid / Contract Clauses related to environment, health and safety; labour standards	IEE / EMP included in Bid / contract
Package 1	DBO	Yes	Yes
Package 2	Work	Yes	Yes
Package 3.1	Work	Yes	Yes
Package 3.2	DBO	Yes	Yes

VI. STATUS OF EMP IMPLEMENTATION

A. PREPARATION OF SITE ENVIRONMENTAL MANAGEMENT PLAN

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

Table 19: Status of SEMP

Package Number	Contractor	Current Status	Status of SEMP	Status of HSP	Remarks
Package 1	GWTSNC, a Joint venture of SUEZ International & OTV-VEOLIA	Construction	Approved	Approved	
Package 2	China CAMC Engineering Co., Ltd.	Construction	Approved with comments	Approved with comments	
Package 3.1	China Geo-Engineering Corporation	Preconstruction	Submitted	Submitted	Under evaluation
Package 3.2 (Covered under additional financing)	Under Evaluation	Tender process	Not applicable	Not applicable	

B. EMP IMPLEMENTATION SUPERVISION AND MONITORING

71. Of the 2 packages awarded, construction works are being conducted in one package. Package-wise status is presented in the below Table 20, and details of site visits conducted by safeguard staff is given in Appendix 2.

Table 20: Status of EHS Staff, SEMP Preparation and Monitoring

Package Number	Current Status	Contractor EHS Supervisor Appointed & Mobilized on Site	Monthly EMP implementation reports submitted by contractor	Site Monitoring/ Verification Conducted by MDSC	Remarks
Package 1	Construction	Yes	Yes	Yes	
Package 2	Construction	Yes	Yes	Yes	
Package 3.1	Design	Not applicable	Not applicable		Evaluation of Contractor is underway
Package 3.2 (Covered under additional financing)	Design	Not applicable	Not applicable		Contractor appointed is underway

C. CONTRACTORS COMPLIANCE WITH STATUTORY AND CONTRACTUAL REQUIREMENTS

72. Following table shows the compliance with statutory requirements in terms of obtaining licenses, permissions, clearances and insurance coverage etc., required to conduct construction work.

Table 21: Status of compliance with statutory requirements

Requirement	Package-1		Package -2		Package-3.1		Package-3.2	
	GWTSNC, a Joint venture of SUEZ International & OTV-VEOLIA		China CAMC Engineering Co., Ltd.		China Geo-Engineering Corporation		Tender process	
	status	Validity	status	Validity	status	Validity	status	Validity
Labour license	Yes	Up to date	Yes	Up to date	N/A	N/A	N/A	N/A
Workmen compensation policy	Yes	Up to date	Yes	Up to date	N/A	N/A	N/A	N/A
Contractor all risk insurance	Insurance covered	Up to date	Insurance covered	Up to date	N/A	N/A	N/A	N/A
Pollution control certificate for Construction vehicles & equipment	Yes	Under process of renewal	Yes	Under process of renewal	N/A	N/A	N/A	N/A

D. IMPLEMENTATION OF EMP MEASURES AND COMPLIANCE STATUS

73. Implementation of measures as per the approved IEE & EMP / SEMP are reviewed for each package and status is presented in the following Tables. Table 22 presents the implementation and compliance status of construction stage mitigation measures. This compliance is based on the monthly checklists submitted by Contractors and site verification visits and monitoring conducted by PMC, and periodic visits by PIU/PMU safeguard team. Contractor's Monthly EMP Implementation Reports and PMC Site Verification / Monitoring Reports are presented package-wise in **Appendix 3**. For each package one sample monthly report (latest of reporting period) of contractor and one site visit report of PMC is provided in the Appendix.

Table 22: Construction Stage Mitigation Measures: Compliance Status

Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures							
		1. S / Satisfactory- mitigation measures implemented satisfactorily 2. PS / Partially Satisfactory - mitigation measures implemented but requires improvement 3. US / Unsatisfactory- Mitigation measures not implemented / poorly implemented							
		Package 1		Package 2		Package 3.1		Package 3.2	
		Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks
Contractor compliance with regulations (clearances/ permits/licenses to conduct work)	Contractor	S		S		N/A		N/A	
SEMP available at work sites	Contractor	S		S		N/A		N/A	
Utilities shifting (avoiding disruption, prior info, contingency arrangements etc.,)	Contractor	S		S		N/A		N/A	
Work site organization (designated areas for material / debris /equipment, roads, walkways, facilities, fencing / barricades, rest area, first aid, complaints & accident register, etc.,)	Contractor	S		S		N/A		N/A	
Chemical, fuel storage & handling (secured areas with easy identification & caution signs, spill control, MSDS display)	Contractor	S		S		N/A		N/A	
Project information & compliant registration (information boards, contact info, complaint register etc.,)	Contractor	S		S		N/A		N/A	
Sourcing construction materials / borrow areas (existing approved quarries / avoiding new quarries, documentation)	Contractor	S		S		N/A		N/A	
Implementation of chance find protocol (workers/staff awareness, protocol implementation etc.,)	Contractor	S		S		N/A		N/A	
Dust control at work sites (site organization, and dust suppression measures, visible dust etc.,)	Contractor	S		S		N/A		N/A	
Dust control in material / waste transport (covering, cleaning measure, visible dust)	Contractor	S		S		N/A		N/A	
Air pollution / emission control (pollution control equipment and certificate for machinery, equipment, and vehicles)	Contractor	S		S		N/A		N/A	

Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures							
		1. S / Satisfactory- mitigation measures implemented satisfactorily 2. PS / Partially Satisfactory - mitigation measures implemented but requires improvement 3. US / Unsatisfactory- Mitigation measures not implemented / poorly implemented							
		Package 1		Package 2		Package 3.1		Package 3.2	
		Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks
Water pollution control (earthwork schedule, containment of silt/contaminated water in site, erosion control, chemical spill control, etc.,)	Contractor	S		S		N/A		N/A	
Measures related to works in / near water bodies (scheduling, construction method, spill & silt containment, safe disposal etc.,)	Contractor	S		S		N/A		N/A	
Noise control (scheduling, prior public info, control measures, PPEs, no high noise near sensitive areas etc.,)	Contractor	S		S		N/A		N/A	
Traffic management (work site isolation/separation of public areas, traffic diversions, public information, etc.,)	Contractor	S		S		N/A		N/A	
Access to building & properties (temporary access maintenance over trenches, no blockage of access etc.,)	Contractor	S		S		N/A		N/A	
Occupational Health & safety (safe work site set-up, eliminated/protected unsafe/risky areas, equipment / machinery / electrical / safety, standard construction methods, PPEs, toolbox talks, trainings & site awareness etc.,)	Contractor	S		S		N/A		N/A	
Incident management (First aid box, accident / incident registers, review of accident cases, near misses, and training & awareness, fire safety, emergency contacts, health check-ups, tie up with hospital, etc.,)	Contractor	S		S		N/A		N/A	
Core labour standards (no child labour, no discrimination, no forced labour, equal pay for equal work, etc.,)	Contractor	S		S		N/A		N/A	
Workers facilities at work site (water, sanitation, rest areas, separate toilets for women, etc.,)	Contractor	S		PS		N/A		N/A	
Implementation of COVID19 H&S Plan at work sites (hygiene, distancing, PPEs, testing, isolation, treatment etc.,)	Contractor	S		S		N/A		N/A	

Impact fields and Mitigation Measures	Responsible for mitigation	Compliance rating for implementation of EMP Measures							
		1. S / Satisfactory- mitigation measures implemented satisfactorily 2. PS / Partially Satisfactory - mitigation measures implemented but requires improvement 3. US / Unsatisfactory- Mitigation measures not implemented / poorly implemented							
		Package 1		Package 2		Package 3.1		Package 3.2	
		Rating	Remarks	Rating	Remarks	Rating	Remarks	Rating	Remarks
Community health & safety (secured work sites, protection measures for public/building/road safety, information, caution and awareness boards, public info etc.)	Contractor	S		S		N/A		N/A	
Solid waste, debris & soil management (proper stocking/storage at site, reuse, disposal site identification, timely disposal etc.,)	Contractor	PS	Waste littering observed during HSE inspection at sites	PS		N/A		N/A	
Workers camps set-up (site approval, camp organization & facilities as per standards)	Contractor	S		S		N/A		N/A	
Worker camp maintenance (health, hygiene, leisure etc.)	Contractor	S		PS	Sanitation and water supply system found inappropriate	N/A		N/A	
COVID measures implementation at camp sites	Contractor	S		S		N/A		N/A	
Post construction restoration of work and camp sites (sites cleared, restored, documented, and approved by PIU/PMC & closed)	Contractor	S		S		N/A		N/A	

Photographs of Partially Complied issues with closeout of contractor is listed down below and their corrective measures are proposed in Section-XI.

Partially Complied Solid Waste Management Issues of Construction Sites

5. No waste disposal bin provided at smoking area



GWT Close out the Issue Immediate after Inspection on 13th January 2022 at WTP

4. Medical waste found in many places of site. Workers should encourage to stop dropping outside of designated medical waste bin.



25th April 2022 at WTP Site

Partially Complied Water Supply and Sanitation Issues of Construction Sites



Exposed soak well pit of portable Toilet maintained after inspection (11th January 2022 at RWP Site at section 2.1 and 2.2)



Regular Drinking Water Supply ensured after inspection of MDSC (11th January 2022 at RWP Site at Section 2.3)



3. Workers need to be aware of the need to dispose of medical waste to prevent the spread of germs.



3. Housekeeping conducted all around intake site and workers are briefed about waste segregation during toolbox.

16th March 2022 at Intake

7. Waste bin cover found neglected, signage missing and proper covering should be ensured.



2. Poor hand washing facilities found on W96 area's toilet. Also, toilet door lock found broken.



15th February 2022 at WTP Site



5. Toilets are unhygienic and without hand wash facilities at Bishnondi.



5. Hand wash facility provided and advised to maintain hygienic condition.

5th March 2022 at RWP Site



Unhygienic workers Toilet at CAMCE camp construction Area of P-2 (12th March 2022)



Unmanaged Solid Waste at CAMCE Camp Area of P-2 (2nd April 2022)

E. FINDINGS ON EMP COMPLIANCE

Construction stage measures:

74. GWT-SNC complied almost all the impact fields listed in Table 22 as per the prescription of EMPs of Package-1. Summary findings are listed below.

- Maintaining the Improvement Action Report, or Corrective Action Log, or Prevention Action Log;
- Incident and accident policy of the contractor/ subcontractor;
- Emergency Response Plan, Materials Safety Data Sheet (MSDS) information are available in the construction sites of GWT;
- Regular Air and Noise Monitoring in the construction sites;
- Regular dust control at the construction sites;
- Standard Accommodation facilities of GWT;
- Maintaining Complaints Register, Monitoring Register, Waste Management Register, Waste Management Plan and Temporary Facility Plan;
- Covid-19 prevention measures;
- Onsite training of Waste Management for all staff;
- Waste water treatment facilities at the Construction Sites.

75. Summary of the opportunities for improvements of GWT-SNC contractor are listed below:

- Solid waste management and appropriate housekeeping at the construction site;
- Safe and sufficient drinking water supply with regular maintenance at the construction work site;
- Adequate sanitation facilities at the construction work site;
- Reduce the plastic use to the greatest extent (Camp almost plastic free) by GWT.

76. CAMCE complied almost all the impact fields listed in Table 22 as per the prescription of EMPs of Package-2. Summary findings are listed below.

- Maintaining the Improvement Action Report, or Corrective Action Log, or Prevention Action Log;
- Regular dust control at the construction site;
- Covid-19 prevention measures;
- Sewage Management at the Construction Sites.

77. Summary of the opportunities for improvements of CAMCE contractor of Package-2 are listed below:

- Need to improve the Toilet and Water Supply facilities of the Workers Camps at CAMCE office area;

- Waste Management should be improved;
- Immediate adoption of Noise and air quality monitoring at site;
- Reduce the plastic use to the greatest extent (Camp almost plastic free) by CAMCE.

78. Overall implementation and compliance of Package-1 is good⁵ and Package-2 is fair².

Table 23: Package-wise Compliance with Construction stage EMP

Sl. No.	Package	Overall compliance with preconstruction stage EMP	Overall compliance with construction stage EMP
1	Package 1	Not applicable	Good
2	Package 2	Not Applicable	Fair
3	Package 3.1	Not Applicable	Not Applicable
4	Package 3.2	Not Applicable	Not Applicable

F. IMPLEMENTATION OF HEALTH & SAFETY COVID-19 PLAN

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

Table 24: Status of H&S COVID-19 Plan

H&S COVID-19 Plan	Preparation	Approval	Update	Remarks
Project level Plan	Yes	Yes	Yes	
Package/contractor plan	Yes	Yes	Yes	
Package 1	Yes	Yes	Yes	
Package 2	Yes	Yes	Yes	
Package 3.1	Under process	Not Applicable	Not Applicable	
Package 3.2	Not Applicable	Not Applicable	Not Applicable	

H&S COVID-19 Plan Implementation

80. On an average fifteen (15) HSE Contractor's personnel worked in this reporting period at the Intake, RWP and at WTP sites of Package-1. All through this reporting period, the health and safety measures were emphasized in managing COVID-19 situation at sites. The following progress/ measures were achieved/ in place in the period.

- Display of awareness campaign banners;
- Body temperature screening at WTP Security Gate (93,605 persons); WTP Life Camp (3,186 persons); Intake Security Gate (53,297 persons) and at Intake Life Camp (5,261 persons);
- Restricted access to site;
- Screening the visitors before granting access to site;
- Enforcing the use of COVID-19 PPEs, hand sanitizing and vehicles disinfection;

-
- (i) ⁵ Very Good (all measures implemented satisfactorily)
(ii) Good (most (>75%) measures implemented satisfactorily & none unsatisfactorily)
(iii) Fair (many (50-75%) measures implemented satisfactorily & none unsatisfactorily)
(iv) Poor (few (<25%) measures implemented unsatisfactorily)
(v) Very Poor (most (>25%) measures implemented unsatisfactorily or not implemented)

- Disinfecting of common areas (Intake and WTP);
- Total 1,827 site personnel were tested for COVID – 19 and fifty-two (52) found Covid-19 positive in this reporting period.
- 98.40% staff of GWT-SNC are vaccinated whereas site personnel's vaccination is 51%, 81% and 68.27% of WTP, Intake and RWP respectively of Package-1.

81. In addition to the above 578 numbers of various HSE trainings were conducted for 6,406 numbers of contractors' personnel in Package-1 of DESWSP project.

82. In package-2, body temperature screening at the construction site were 4,898 and in the contractor's camp site/ office site were 3,340.

83. **Appendix 4** shows the implementation of COVID 19 measures of package-1.

G. CONSTRUCTION WORK-RELATED ACCIDENTS

84. The construction work related Incident/ Accident records of the 14th SEMR working period is tabulated in table below. A sample incident investigation report is attached in **Appendix 5** of this report.

Table 25: Construction work related Incident / Accident records

Occurrence Date/ Site	Description	Consequence	Action Taken	Present Status
15Jan 2022 15:20 Hrs 300 meters from PK 2+779 (RWP Site)	A third party tractor operator transported pipe through Uchitpura bridge and at the time of ascending the bridge just after the Bazar, a Nosimon tractor bumped into the trolley from behind resulting in the detachment of the trolley from the tractor. The trolley bearing the pipe rolled back from the bridge into shopping areas and consequently ramming into an auto rickshaw with a single passenger. A second auto rickshaw in the proximity of the incident was toppled to its side but without damage or injury to the operator and the only passenger.	<ul style="list-style-type: none"> Rickshaw operator sustained a minor first aid injury to his right-hand index finger. The passenger had a slight trauma to the left elbow, and the shutter of a local shop owner was slightly dented. 	<ul style="list-style-type: none"> Emergency safety stand-down meeting has been conducted with all pipes carrying tractor operator Terminated the incident related tractor operator for the offensive decision that he took by himself. After receiving first Aid treatment from the nearest hospital, the Auto-rickshaw driver and the passenger got back to their family safely. 	New tractor operator is working for the pipe carrying.
28 Jan. 2022 15:35 Hrs WTP Site (E-45 Area)	During concrete pouring at C-6 & C-2 top slab using electric concrete pump stationed on the main road with concrete extension pipes suspended by tower crane #3, one of the collar joints of the elbow connecting the extension pipes broke suddenly and became an independent piece from the elbow.	<ul style="list-style-type: none"> It caused dropping of one portion of the pipe to the ground while the other half overhead the main pouring area remained suspended by the crane. There was no injury or damage to properties during the incident. 	<ul style="list-style-type: none"> Immediately removed the workers from the incident area Replaced another elbow pipe of concrete pump Instruct workers to use the tag line for control the concrete pump pipes and always maintain safe distance from suspended loads. Instructed the crane operator 	After maintenance the concrete pouring works started after adequate measures.
14 Mar. 2022 11:35 Hrs WTP Site	During the transportation of concrete from CAMCE batching Plant to concrete pump stationed at W40 site access, the mixer truck fully loaded with 6 cubic meters without slowing down and with the same speed (7km/h) crossed the road intersection and bumped into GWT camp fence, behind the generator building.	<ul style="list-style-type: none"> Damaged the fence 	<ul style="list-style-type: none"> The mixer truck brings out from the broken fence area and send the operator to the hospital for alcohol test. 	Fence repaired and Operator back to his regular work
5 th April 2022 15:50 Hrs Zone C-2 under slab	A piece of wood bar landed on the left ring finger of a carpenter working off a platform at under slab of zone C-2.	Crushed Fingertip with laceration not longer than ½ inch (12 mm).	Immediately given first aid and subsequently referred to the hospital for sutures	Get back to his work after complete cure
18 th May 2022 04:07Hrs River Crossing-3	An inundation occurred underground through openings between sheet piles during excavation for preparation and	The rapid flow of water resulted in underground soil washout, significant level of	Area exclusion has been set up with only essential works. Flagman and Banksman has been deployed to ensure the safety.	The site has been restored without any damage of property,

Occurrence Date/ Site	Description	Consequence	Action Taken	Present Status
	installation of the first line of H-beam & struts.	water and sand retention in the cofferdam as well as sink holes sparsely appearing at the periphery of the cofferdam.	All site equipment were removed from the site.	equipment and working crews.
25 th May 2022 18:40Hrs River Crsossing-3	After sheet piles driving and when the workforce was about closing from the site, a sudden sound of rushing water was heard at the south side of sheet pile driving area. This was followed by a sudden formation of sink hole and an outburst of water which rapidly flooded the cofferdam. At the time of the event, there was no activities at the epicentre of the flood. Generally, there was no assigned job at the exact incident location.	The rapid flow of water resulted in the complete flooding of the cofferdam and surrounding areas. No personnel injuries or property damage was recording.	<ul style="list-style-type: none"> • Immediately the sheet pile activities were halted and river was opened for river to flow in its natural course • Works to resume during improved environmental condition • Ensured the seamless use of high-capacity dewatering pumps at the site 	The site has been restored without any damage of property, equipment and working crews.
8 th June 2022 23:35 Hrs River Crossing 3 of RWP	A worker sustained a minor electric shock when he grabbed a 2X2.5RM double insulated cable with broken insulation and exposed wires in an attempt to shift a light pole from one work area to another.	Electric shock	The affected worker was checked for health threat. Cable was replaced immediately. Disjointed and defective cables were removed from the site.	Worker is safe and he has no life-threatening situation.
17 th June 2022 09:50Hrs Intake (CH 0082)	A worker sustained a minor abrasion to his left cheek when a chain and hook accessory of a lever block used for pipe alignment got broken, retracted and hit him on his helmet	Cracked helmet and minor abrasion to a worker left cheek (First Aid Case). The event did not result in physical injury to the lever block operator or any other personnel.	Worker received first aid treatment by site Doctor for abrasion sustained on his left cheek.	Return to the work after First Aid treatment

H. BEST PRACTICES / ENVIRONMENT IMPROVEMENT ACTIVITIES

85. Apart from the EMP guidance, Contractor of Package-1 does the following things in the construction sites as the best practices/activities for the improvement of environment.

- Tree plantation at the construction sites;
- Plantation of trees in GWTSNC Camp area;
- Plantation of trees in the Subcontractor Camp area;
- Celebrate World Environment Day at the Construction Site;
- Initiative of Zero Plastic on Site (Personal water bottle for all employees on site and provide Water dispensers on main site and offices).
- Make sure the personalized drinking water bottles for the workers;
- Waste skips with segregation labels;
- Site without plastics and general wastes littering.

86. Some photographs of best practices are shown below.

PHOTOGRAPHS OF BEST PRACTICES





Tree Plantation at the Camp Area



Every work with personalized drinking water bottles



Zero Plastic on Site. (Personal water bottle for all employees on site)
Water dispensers provided on main site and offices.

Personalized drinking water bottles in the Project Working Area

VII. ENVIRONMENTAL MONITORING

A. ENVIRONMENTAL QUALITY MONITORING

87. IEE and EMP / SEMP (Appendix 11) require conduct of ambient environmental quality monitoring throughout implementation. These includes monitoring ambient air, water, noise, etc., in and around project sites to assess the quality and changes with respect to baseline conditions. Per the EMP and contract, Contractors are responsible to conduct the monitoring, and following Table 26 shows the status of environmental monitoring conducted by contractors, package-wise for all awarded contracts.

Table 26: Status of Environmental Monitoring of Awarded Packages

Package No	Baseline Monitoring		Periodic Monitoring in Reporting Period	
	Date/period of monitoring	Environmental parameters	Dates/period of monitoring	Environmental parameters
Package 1	August 2017	Air Quality	Jan'22 –Jun'22	Air
	December 2019	Noise Level	Jan'22 –Jun'22	Noise
	August 2017	Surface Water Quality (Meghna River)	Jan'22 –Jun'22	Surface Water Quality (Meghna River)
Package 2	August 2017	Air Quality	Jan'22 –Jun'22	Air
	December 2019	Noise Level	Jan'22 –Jun'22	Noise
Package 3.1	August 2017	Air Quality	Not Applicable	Not Applicable
	December 2019	Noise Level	Not Applicable	Not Applicable
Package 3.2	August 2017	Air Quality	Not Applicable	Not Applicable
	December 2019	Noise Level	Not Applicable	Not Applicable

88. SEMPs for RWP, Intake and WTP were prepared for package-1 and submitted to PMU. SEMPs for the Treated Water Pipeline of package-2 were reviewed by MDSC and the SEMPs were approved with conditions. All SEMPs of package-1 ([Appendix-11](#)) were approved by PMU on 19-06-2020. ADB was informed of this approval during the ADB mission in November 2020. The information of monitoring parameters/ frequency/ locations are detailed out in Table 27.

Table 27: Environmental Monitoring details of DESWSP Project

Sl. No.	Monitoring field prescribed in SEMP	Monitoring Parameters	Location			Monitoring Frequency
Package-1						
1	Noise	Noise level	WTP	INTAKE	RWP	Quarterly
2	Ambient air quality	SPM, PM ₁₀ , PM _{2.5} , NO _x , SO ₂ , CO	Upwind at WTP site Downwind at WTP site Worksite area	Upwind at INTAKE (if other air pollution sources are present) Downwind at Intake (if other air pollution sources are present) Worksite area	RWP	Quarterly
3	Water Quality of Meghna River (Intake Location)	TDS, TSS, pH, Hardness, BOD5 and Fecal Coliform, total nitrogen, total phosphorus,	-	Upstream of INTAKE Downstream of Intake	-	Semiannually

Sl. No.	Monitoring field prescribed in SEMP	Monitoring Parameters	Location			Monitoring Frequency
		heavy metals, temperature, DO, hydrocarbons, mineral oil, phenol, cyanide				
4	Water Quality of Sitalakhya River (WTP Location)	TDS, TSS, pH, Hardness, BOD5 and Fecal Coliform, total nitrogen, total phosphorus, heavy metals, temperature, DO, hydrocarbons, mineral oil, phenol, cyanide	Upstream of WTP Downstream of WTP		-	Semiannually
5	Water quality (River crossings required for the transmission lines at various canals at RWP alignment)	TDS, TSS, pH, Hardness, BOD and Fecal Coliform	-	-	Upstream of river crossing Downstream of river crossing	Semiannually
6	Wastewater Quality	As per BD ECR 97; DoE Standards Inland Surface Waters	WTP	Discharge location at INTAKE	-	-
Package-2						
1	Noise	Noise level	Worksite			Monthly
2	Ambient air quality	PM ₁₀ , PM _{2.5} , NO _x , SO ₂ , CO	Worksite			Monthly
3	Surface Water Quality	pH, Turbidity, Temperature, DO, BOD, COD, TSS, TDS	River/Canal water Xing site			Every 6 months during construction
4	Ground Water Quality	(pH, TP, Mn, Fe, As, E. Coli)	At the construction sites			Every 6 months during construction

89. Monitoring (Sampling & Analysis) Methodology. Sampling and analysis have been carried out by the contractors via the recognized / approved / accredited laboratories and standard equipment at the sites, which adopted acceptable and standard methods for sampling, analysis, and results. Sampling and adopted are presented in Table 28.

Table 28: Sampling and Analysis Methods

Parameter	Sampling and testing method
Ambient air	Portable electronic air quality monitoring meter
Ambient noise	Portable electronics noise level meters
Surface water	Analyses and sample collections were selected by following the standard methods for the examination of water and wastewater proposed by APHA (American Public Health Association), AWWA (American Water Works Association) & WEF (Water Environment Federation).
Ground water	Analyses and sample collections were selected by following the standard methods for the examination of water and wastewater proposed by APHA (American Public Health Association), AWWA (American Water Works Association) & WEF (Water Environment Federation).

B. MONITORING RESULTS

90. Ambient air quality. Ambient air quality monitoring results are presented in the following table. Particulate matter (PM₁₀ and PM_{2.5}), are measured in this SEMR period. During the construction period impacts on air quality, caused by the project, are mainly due to movement of materials. It affects air quality over a small area, though, not in significant levels. Increased dust levels along the haul roads, the borrow areas and dumping areas is as expected. Emissions from construction machinery, such as generators, bulldozers, rollers, crane, trucks etc. also cause air pollution while they are operating. But air pollution levels measured in the WTP site are particularly high due to high ambient air pollution levels outside the project area due to the following reasons:

- The WTP construction site is in the Tarabo Industrial zone. Industries like cement factory, edible oil mills, paper mills, sugar mills, rice mills, pulse mills etc. are north and south of the WTP site.
- In the east of the WTP site LGED road widening work adjacent to W83 is underway and for this huge earth moving activities are generating significant dust.
- The bumpy and dusty roads frequently used by these different industries (particularly City Group heavy trailers and trucks) contribute a lot of dust to the project area.



City Group & their Truck on the Road

91. The persistent ambient air quality of the WTP site was monitored in late December'21 and attached along with the onsite Test reports in **Appendix 6** of this SEMR report.

Table 29: Air Monitoring Results

Sl. No.	Package / Monitoring Site	Monitoring date	Type	PM ₁₀ (µg/m ³)	PM _{2.5} (µg/m ³)	SPM (µg/m ³)	SO _x ppm	NO _x ppm	CO ppm
A	AAQ Standard (24 hours)			150	65	500(Industrial and mixed) /200 (Residential and Rural)	0.14	0.053	35
B	IFC/WHO Guideline			50	25				
C	Package 1								
C.1	WTP site	August 2017	B	43.34	19.85				
C.2	WTP site (CAMCE Area)	January 2022	M	Range (126-241)	Range (65-127)				
C.3	RWP site (Uchitpur Site, Elomdi Site, Stockyard-2 Area)	January 2022	M	Range (103-164)	Range (39-67)				
C.4	WTP site (CAMCE Area)	February 2022	M	Range (78-147)	Range (46-61)				
C.5	Intake Site	February 2022	M	Range (78-150)	Range (24-65)				
C.6	RWP site	February 2022	M	Range (103-150)	Range (32-59)				
C.7	WTP site (CAMCE Area)	March 2022	M	Range (112-150)	Range (55-65)				
C.8	Intake Site	March 2022	M	Range (61-150)	Range (36-65)				
C.9	RWP site	March 2022	M	Range (56-150)	Range (35-65)				
C.10	WTP site (CAMCE Area)	April 2022	M	Range (57-139)	Range (36-53)				
C.11	Intake Site	April 2022	M	Range (35-85)	Range (29-58)				
C.12	RWP site	April 2022	M	Range (16-150)	Range (15-60)				
C.13	WTP site (CAMCE Area)	May 2022	M	Range (48-72)	Range (37-56)	Range (103-285)	Range (0.4-0.5)	Nil	Nil
C.14	Intake Site	May 2022	M	Range (35-85)	Range (29-58)	Range (95-184)	Range (0.1-0.3)	Nil	Nil
C.15	RWP site	May 2022	M	Range (13-153)	Range (13-77)	Range (104-230)	Range (0.1-0.3)	Nil	Nil
C.16	WTP site (CAMCE Area)	June 2022	M	Range (51-47)	Range (40-42)	Range (75-145)	Range (0.4-0.8)	Range (0-0.3)	Nil
C.17	Intake Site	June 2022	M	Range (24-129)	Range (23-80)	Range (47-209)	Range (0.1-0.3)	Nil	Nil
C.18	RWP site	June 2022	M	Range (12-190)	Range (12-168)	Range (24-358)	Range (0.1-0.3)	Nil	Nil
C.19	Persistent Air Quality around the WTP Site	December 2021	M	Range (160-349)	Range (102-156)				
C.20	Intake Site	August 2017	B	56.81	22.21				
D	Package 2			Not Applicable	Not Applicable				
C.21	Treated Water Pipeline	Jan-Jun 2022	M		No Monitoring at TWP was carried out during this period. Monitoring Devices is under process of purchase and calibration. In the next SEMR the monitoring data shall be presented.				
E	Package 3.1			Not Applicable	Not Applicable				
F	Package 3.2			Not Applicable	Not Applicable				

Note: B=Baseline; M=Monitoring

92. Corrective Action Plan for Air Pollution: To curb the PM₁₀ and PM_{2.5} concentration within the BNAQS, the Contractor will be made to increase dust suppression by spraying water during the dry season when required, limiting speed of heavy vehicles and cars inside the construction sites, posting sign boards to limit vehicle's speed (5km/h), paving internal roads (if possible) for the movement of heavy vehicles and training the workers on dust prevention and air quality. To reduce the impact of air pollution on the workers, the contractor will be required to provide appropriate PPE to protect their health and safety. Furthermore, the Contractor will be asked to take simultaneous air quality readings upwind of the site, to check the ambient air quality entering the site, to determine what deterioration is caused by project activities

93. Ambient noise quality. Ambient noise quality monitoring results are presented in the following table. During the construction phase, there are also increased noise levels due to construction machinery operation and movement of construction vehicles. Measured noise levels in the WTP site are high, but some of this is due to high ambient noise coming from outside the project area such as:



Noise Monitoring near City Group Industry

- The WTP construction site is in the Tarabo Industrial zone. Industries like cement factory, edible oil mills, paper mills, sugar mills, rice mills, pulse mills etc. are north and south of the WTP site.
- The bumpy and dusty access roads frequently used by nearby industries (e.g. City Group heavy trailers and trucks) contribute additional noise close to the project site.

94. Onsite test reports are presented in **Appendix 6**.

Table 30: Noise Monitoring Results

Sl. No.	Package /Monitoring Location	Type	Monitoring date	Land use	Noise Level LA _{eq} (dB(A))			
					Day time		Night time	
					Min	Max	Min	Max
1	Package 1							
1.1	WTP site	B	December 2019	Industrial	-	73.41	-	68.91
1.2	Intake Site	B	December 2019	Residential	-	68.76	-	65.52
1.3	Persistent Noise level outside the WTP Site	M	August 2021	Industrial	-	91.7		
1.4	Intake Site	M	January 2022	Residential	45	76		
1.5	RWP Site	M	January 2022	Residential	30	81		
1.6	WTP site (CAMCE Area)	M	January 2022	Industrial	45	82		
1.7	Intake Site	M	January 2022	Residential	48	77		
1.8	RWP Site	M	January 2022	Residential	27	80		

Sl. No.	Package /Monitoring Location	Type	Monitoring date	Land use	Noise Level LA _{eq} (dB(A))			
					Day time		Night time	
					Min	Max	Min	Max
1.9	WTP site (CAMCE Area)	M	January 2022	Industrial	46	78		
1.10	Intake Site	M	February 2022	Residential	38	78		
1.11	RWP Site	M	February 2022	Residential	44	77		
1.12	WTP site (CAMCE Area)	M	February 2022	Industrial	40	81		
1.13	Intake Site	M	March 2022	Residential	44	79		
1.14	RWP Site	M	March 2022	Residential	45	73		
1.15	WTP site (CAMCE Area)	M	March 2022	Industrial	43	80		
1.16	Intake Site	M	April 2022	Residential	47	77		
1.17	RWP Site	M	April 2022	Residential	23	80		
1.18	WTP site (CAMCE Area)	M	April 2022	Industrial	40	78		
1.19	Intake Site	M	May 2022	Residential	32	80		
1.20	RWP Site	M	May 2022	Residential	44	79		
1.21	WTP site (CAMCE Area)	M	May 2022	Industrial	47	74		
1.22	Intake Site	M	June 2022	Residential	47	80		
1.23	RWP Site	M	June 2022	Residential	52	91		
1.24	WTP site (CAMCE Area)	M	June 2022	Industrial	30	81		
2	Package 2		No Monitoring started yet. Monitoring Devices is under process of purchase and calibration. In the next SEMR the monitoring data shall be presented.	Residential				
3	Package 3.1				Not Applicable	Not Applicable		
4	Package 3.2				Not Applicable Not	Not Applicable		
National Ambient Noise Standard				Industrial	75	70		
				Commercial	70	60		
				Residential	55	45		
				Sensitive area	50	40		
IFC/WHO Guideline				Industrial Commercial	70	70		
				Residential	55	45		
				Sensitive area	55	45		

Note: B=Baseline; M=Monitoring

95. Corrective Action Plan for Noise Pollution: Noise shall be mitigated through avoidance of night works, especially noisy works as pile driving. Use earmuff in the high noise area particularly for the workers of Batching plant and Generator area and use of canopy for Generator. To reduce the impact of noise on the workers, the Contractor will be required to provide appropriate PPE to protect their health and safety. Furthermore, the Contractor will be asked to take simultaneous noise measurements at the perimeter of the site, to check the ambient noise entering the site, to determine what extra is caused by project activities.

96. Surface water quality.

Surface water quality monitoring conducted as required by the EMP during reporting period. TDS & TSS parameters concentration are high in compare to the baseline data but complied the standard. It would be because of changes of land use in the upstream particularly industry establishment beside the bank of the Meghna River branch which were not evident in 2017. The TDS & TSS data of upstream and downstream of the Intake site found almost same. It implies that Intake construction work is not impacting the surface water quality of the Meghna River. Monitoring reports are included in **Appendix 6**, and the results and inferences are discussed in the below in comparison with baseline values or standards as applicable.

Table 31: Surface Water Monitoring Results

Sl. No.	Package / Water body and monitoring Location	Monitoring Parameters	Monitoring Date			Standard (Schedule-3 & 10, ECR'97)	Inferences on water quality results in comparison with baseline / applicable standards
			B	M	M		
			Aug'17	August 2021 (Upstream/Downstream)	April 2022 (Upstream/Downstream)		
1	Package 1						
1.1	Meghna River	pH	7.5	7.51	7.69	6.5-8.5	Complied the standard
				7.5	7.85		
1.2		DO (mg/l)	6.5	7.5	6.90	6 or above	Complied the standard
				7.33	7.20		
1.3		BOD ₅ (mg/l)	3.7	<0.2	0.52	3 or less	Complied the standard
				<0.2	0.83		
1.4		TDS (mg/l)	36	88	77	2100mg/l	Increased compare to the baseline
				76	80.5		
1.5	TSS (mg/l)	49	84	53	150mg/l	Increased compare to the baseline but complied the standard	
			85	23			
1.6	Iron (Fe) (mg/l)	<LOD	0.76	0.46	2.0mg/l	Complied the standard	
			0.88	0.30			
2	Package 2		NA	The monitoring will be at the crossing of river/canal areas.		NA	
3	Package 3.1		NA			NA	
4	Package 3.2		NA			NA	

Note: B=Baseline; M=Monitoring

VIII. TRAINING AND CAPACITY BUILDING ACTIVITIES

97. Training and capacity building programs (workshops, seminars, on/off-site trainings, awareness etc.) related to environmental safeguards, implementation of EMPs, health and safety etc., conducted during the report period of presented in the Table below. All the programs are documented, and details are included **Appendix 7**.

Table 32: Training / Capacity Building Activities Conducted

Package No.	Date	Training activity	Venue & duration	Trainer	Target Group	Number of participant (M / F)
Package-1	Every month	578 nos. of Training on: -HSE Induction -Working at Height -Excavation -Working around Heavy Equipment -Manual Handling -Rigger & Signalman -Scaffolding Erector & Dismantling Training -Refresher HSE Induction -Kitchen Safety -WTSNC Life Saving Rules -Workplace Ergonomics	WTP, INTAKE and RWP SITES	Mr. Nwokedi Uchefuna HSE Manager of GWT-SNC	Contractor, Subcontractors work personnel and Refreshers at site	6,406
Package-1	Every month	Awareness Campaign on Covid-19 and HIV campaign	WTP and INTAKE SITES	Mr. Nwokedi Uchefuna, HSE Manager of GWT-SNC	Contractor and Subcontractors work personnel and MDSC site experts	All the Contractors personnel and MDSC site experts
Package-2	Every Month	22 nos. of Training on: - HSE Induction -Working at Height -Lifting and Crane Safety -Manual material Handling -Ladder Safety -First Aid Training (CPR) -Risk Assessment and Risk Matrix for Management -Firefighting and use of fire extinguisher	TWP Sites and CAMCE Office	Mr. Ashraful Alam	Contractor and Subcontractors work personnel and MDSC site experts	179

Package No.	Date	Training activity	Venue & duration	Trainer	Target Group	Number of participant (M / F)
		<ul style="list-style-type: none"> -Mock Drill of Fire Fight. -HSE Project Management & Supervisory training -Covid-19 Prevention, Our Responsibility, and necessary Precaution 				
Package-3.1 &3.2	NA	NA	NA	NA	NA	NA

TRAINING/AWARENESS PHOTOGRAPHS:



SAFETY TRAINING: GWT WTP HSE Induction & HSE Induction Refresher (April - 2022)



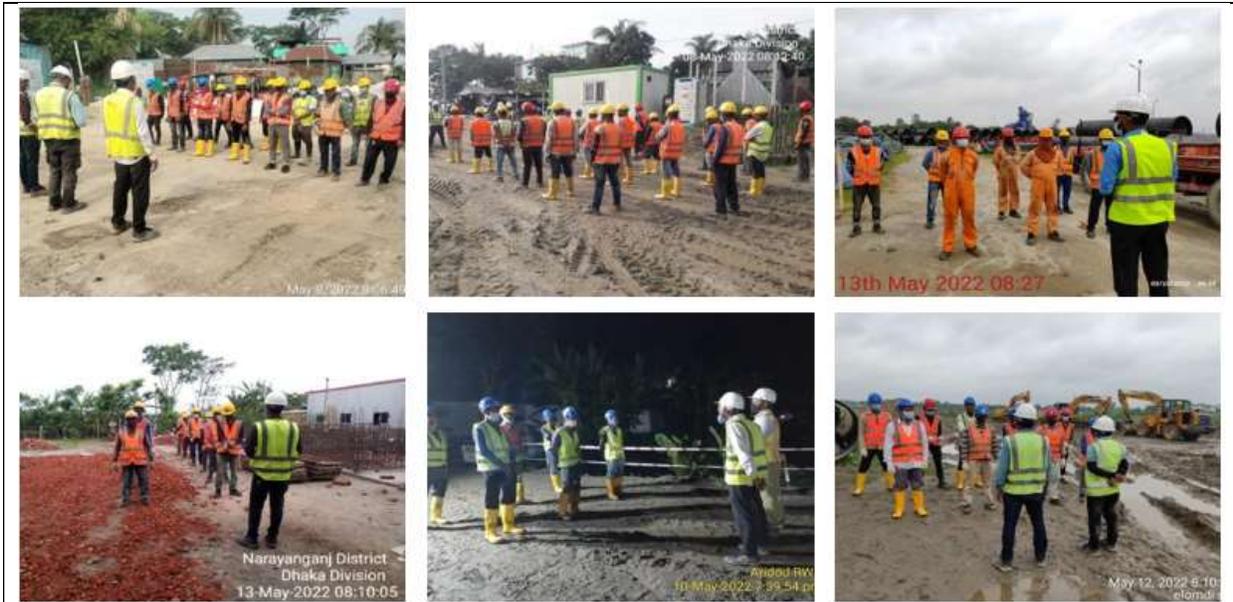
SAFETY TRAINING: GWT INTAKE – Heat Stress Training (April -2022)



SAFETY MEETING: Safety Moment - Hazards of Respirable Crystalline Silica (RCS) - 13 Jun 2022



SAFETY TRAINING: 3rd Party Lifting and Rigging Competency Training Attendance (23rd & 24th May)



SAFETY MEETING: RWP Daily Toolbox Talk (May 22)



Lifting and Crane Safety, Ladder Safety and First Aid Training (CPR) of CAMCE (package-2) (June'22)



SAFETY INSPECTION: Weekly Joint Walkabout (INTAKE May 22)



SAFETY INSPECTIONS: WTP Internal Electrical Installations Inspection (May 2022)



SAFETY INSPECTIONS: WTP Smoke Detector Inspection (May 2022)



SAFETY INSPECTIONS: WTP Monthly Fire Extinguisher Inspection (April & May 2022)



SAFETY INSPECTIONS: WTP - Camp Daily Fogging – June 2022



SAFETY INSPECTIONS: WTP First Aid Box & Ambulance Inspections- (June 2022)



COVID-19 AWARENESS CAMPAIGN: Enforcing COVID-19 Prevention Protocols and COVID-19 Lateral Flow Test



SAFETY MEETING: GWT Campaign- Road Safety Campaign- 30 May 2022



SAFETY TRAINING: GWT WTP HSE Induction (June - 2022)



COVID-19 AWARENESS CAMPAIGN: WTP – COVID-19 Lateral Flow Test



SAFETY MEETING: INTAKE Daily Toolbox Talk (SBPL June 22)



SAFETY INSPECTION: Weekly Joint Walkabout (WTP June 22)

Gandharbpur Water Treatment SNC
SUEZ **OTV** **VEOLIA**

MOTT MACDONALD DWASA

Congratulations
5 SUCCESSFULLY ACHIEVED
MILLION SAFE MAN HOURS
WITHOUT LTI

For
 Design and Build of Intake, Raw Water Pipeline, and 500
 MLD Water Treatment Plant at Gandharbpur
 under Dhaka Environmentally Sustainable Water Supply
 Project (DESWSP)
 On
 02nd April 2022

5 Million Safe Man Hour Without LTI Achieved



5 Million Safe Man Hour Award and Incentive Program (INTAKE Site) (May 2022)



COVID-19 AWARENESS CAMPAIGN: Enforcing COVID-19 Prevention Protocols (April & June 2022)

IX. PUBLIC CONSULTATION

98. One Public consultation activity was done during the reporting period at the RWP site of Package-1.

Table 33: Public Consultations Conducted

Package No.	Date	Venue	Target group	Number of participants (M/F)	Details (purpose, and main feedback/outcome)
Package-1	26-02-2022-	Atadi, Araihasar, Narayanganj -	Local Residence	Total 18 (14/4)	<p>Objective: Purpose of the meeting was to receive feedback from the local peoples about environmental issues if any due to the ongoing project interventions in their locality.</p> <p>Feedback: -Local people are happy with the Environmental health and Safety protocols maintained by the Contractors during their construction works. Construction workers are maintaining good relations with the local residences. -One technical concern was addressed during the consultation. It was about the water logging in the rainy season due to dividing the low lands by the RWP. -This issue was shared with the technical team and assured that there will be no water logging due to the project intervention.</p>
Package-2, 3.1& 3.2	N/A	N/A	N/A	N/A	N/A



Public Consultation at the RWP Site

Participant List of the Public Consultation

List of PC Participants of DESWSP Project
(অংশগ্রহণকারীদের তালিকা)

তারিখ: ১৫/০১/২০২২

সংস্থ: [Handwritten]

ক্রমিক নং	নাম	পদ	যোগাযোগ নং	স্বাক্ষর
১	শ্রী সত্যজিৎ	সহ	৯৮৫৬৩২১০	[Signature]
২	শ্রী অমল	সহ	০১০১৬৩৫৩৩৫	[Signature]
৩	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৪	শ্রী সোহাগ	সহ	-	[Signature]
৫	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৬	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৭	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৮	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৯	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
১০	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]

List of PC Participants of DESWSP Project
(অংশগ্রহণকারীদের তালিকা)

ক্রমিক নং	নাম	পদ	যোগাযোগ নং	স্বাক্ষর
১	শ্রী সত্যজিৎ	সহ	৯৮৫৬৩২১০	[Signature]
২	শ্রী অমল	সহ	০১০১৬৩৫৩৩৫	[Signature]
৩	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৪	শ্রী সোহাগ	সহ	-	[Signature]
৫	শ্রী সোহাগ	সহ	-	[Signature]
৬	শ্রী সোহাগ	সহ	-	[Signature]
৭	শ্রী সোহাগ	সহ	-	[Signature]
৮	শ্রী সোহাগ	সহ	০১০১৬৩২২৬৫৭	[Signature]
৯	শ্রী সোহাগ	সহ	-	[Signature]
১০	শ্রী সোহাগ	সহ	-	[Signature]

X. GRIEVANCE REDRESS

A. GRIEVANCE REDRESS MECHANISM

99. A Project-specific grievance redress mechanism (GRM) is established in to provide a time bound and transparent mechanism to voice and resolve social and environmental concerns linked with the project. GRC members are DWASA representatives (Deputy Project Director/Executive Engineer, INGO representatives (Team Leader/Deputy Team Leader), Union Parishad Chairpma/Ward Councilor, Women Union Parishad Member, Affected Person/Displaced person and Representative from MDSC. Before any GRC meeting, the representatives are confirmed with their details. GRM notification is under process and will be added as appendix in the next SEMR. (Notification will be attached at **Appendix 9**). Project GRM is presented in the following Figure. Accordingly, responsibilities are allocated to project agencies, consultants and contractors, and grievance redress committee(s) established at subproject/town level or project level. Status of establishment of GRCs are presented in Table 34.

Figure 10: Project GRM

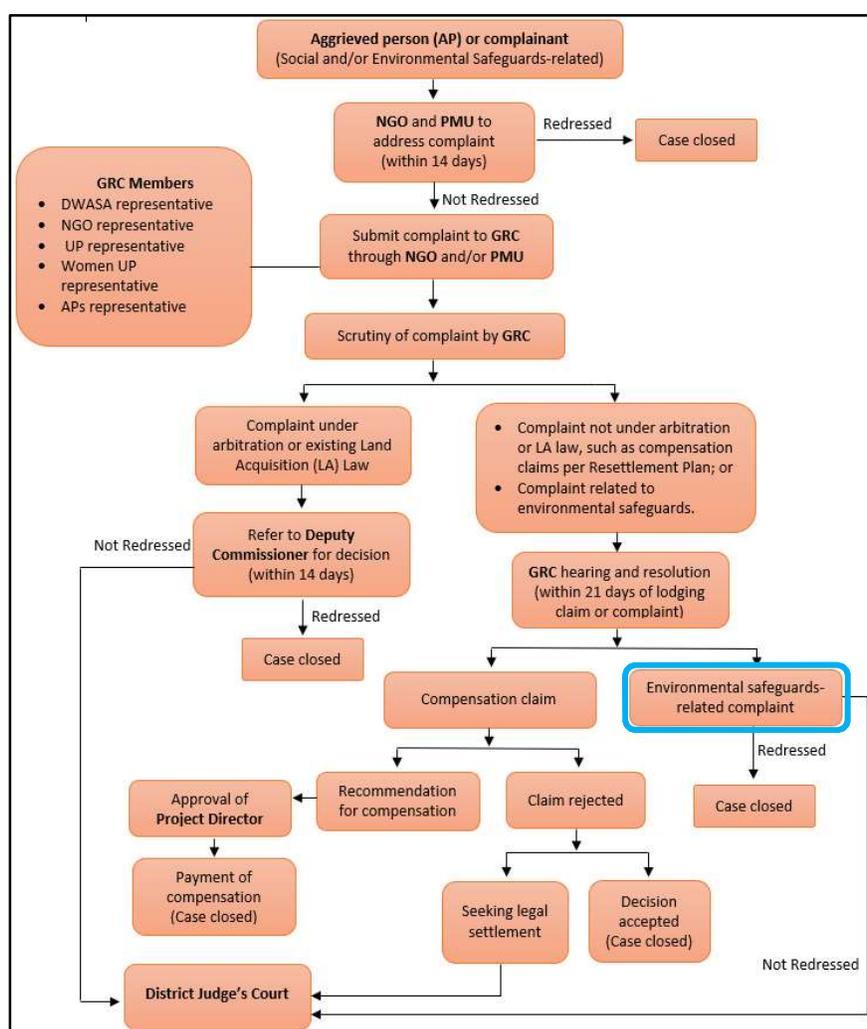


Table 34: GRM Operationalization

Package No.	Subproject level GRM Notified	GRM responsibilities assigned	GRM Operational to receive, register & redress complaints	Date of GRC Formation	Public informed of GRM
Package-1	Yes	Yes	Yes	27-11-2017	Yes
Package-2	Yes	Yes	Yes	27-11-2017	Yes
Package-3.1	Yes	Yes	Yes	27-11-2017	Yes
Package-3.2	Yes	Yes	Yes	27-11-2017	Yes

B. COMPLAINTS RECEIVED DURING REPORTING PERIOD

100. No environmental safeguard related complaints received and reported during this period, from one out of four packages under construction. There were no pending/unresolved complaints at the end of previous reporting period. Summary of complaints received and resolved are presented Table 35.

Table 35: Details of Complaints Resolved

Package No.	No. of complaints received			Type of Common and Major Grievances	Time taken for resolution (days)
	In Reporting period	Previously Pending	Cumulative		
Package-1	Nil	Nil	Nil	N/A	N/A
Package-2	Nil	Nil	Nil	N/A	N/A
Package-3.1	Nil	Nil	Nil	N/A	N/A
Package-3.2	Nil	Nil	Nil	N/A	N/A

C. GRC MEETINGS

101. During this reporting period, two GRC meetings were held with affected persons from resettlement plan Sections 4 where 2 affected persons (who were absent in the meeting before) have been heard. All of these two were advised for payment. GRC meetings conducted as necessary to resolve the complaints, and information of GRC is presented in the following Table.

Table 36: GRC Meetings

S. No	Package No.	No. of meeting in Reporting Period	Cumulative meetings till date
1	Package-1	2 (07/04/2022 & 13/04/2022)	11
2	Package-2	Nil	
3	Package-3.1	Not applicable	
4	Package-3.2	Not applicable	

XI. FINDINGS, KEY ISSUES & REMEDIAL MEASURES

A. FINDINGS

102. This Semi-annual Environmental Monitoring Report (SEMR) for the period of January'22 to June'22 is prepared as per the ADB SPS requirements. This SEMR described progress with the implementation of the subproject-wise EMPs, and compliance status. This is 14th SEMR prepared for this DESWP Project. Project includes four subprojects/contract packages. At the end of this report period (June'22), three packages are awarded, one package is in final stage of bid evaluation process. Of the awarded contracts, one in design phase, two are in construction phases. Construction works of package-1 & 2 are underway. Findings of this SEMR are presented in the following table along with key issues and remedial measures.

Table 37: Findings and Key Issues

Monitoring aspect	Findings & Key issues	Remedial measures
Availability Safeguards personnel (PMU, PIU, Consultants and contractors)	All safeguard personnel were working appropriately. No issues in this aspect.	
Compliance with statutory requirements (clearance / permissions etc.,)	Environmental clearance of DoE is renewed and valid till 10 th December 2022. Road Cutting permit of LGED, permit of BWDB, permit of RAJUK, permit of BIWTA are under process and some are partially approved.	Follow up the update of permits by the PMU in support of DWASA.
Compliance with ADB loan covenants	ADB loan covenants are complied. No issues in this aspect.	
Compliance with preparation, approval, disclosure of draft IEEs	Preparation, approval, disclosure of draft IEEs are complied. No issues in this aspect.	
Compliance with preparation, approval, disclosure of updated/final IEEs	Preparation, approval, disclosure of updated/final IEEs are complied. No issues in this aspect.	
Contractor compliance with preconstruction requirements	Contractors complied all preconstruction requirements. No issues in this aspect.	
EMP implementation, monitoring, reporting	Air pollution levels and Noise level measured in the WTP site are particularly high due to high ambient air pollution levels/noise pollution levels outside the project area. EMP implementation, monitoring, reporting all are available in the construction sites. MDSC HSE team advices/suggests the contractors to take immediate action against the non-compliances (if any) through regular HSE site inspection and Audit program. Key issues are: -Workers facilities at work site particularly adequate potable water	To reduce the impact of air and noise pollution on the workers, the contractor will be required to provide appropriate PPE to protect their health and safety. Contractor will provide adequate potable water facilities i.e. water jar and increase the number of toilets and rest area facilities. Regular address the solid waste management and appropriate housekeeping issues in the toolbox meeting or any other regular training.

Monitoring aspect	Findings & Key issues	Remedial measures
	facilities, toilet facilities and rest areas. -Solid waste management particularly use of designated waste bins, appropriate housekeeping.	
Implementation of COVID19 health and safety measures	Serious implementation of COVID19 health and safety measures observed at the construction sites.	
Training and capacity building activities	Regular training and capacity building activities are conducted by the contractors.	
Public consultation	Public consultations are conducted as and when required.	
GRM establishment, operationalization and complaint resolution	GRM is established and now in operation.	

B. CORRECTIVE ACTION PLAN

103. Following action plan is developed to address the issues of concerns raised in this report.

Table 38: Corrective Action Plan

Proposed Remedial Measure	Responsibility of implementation	Target date	Remarks
Follow up the update of permits To reduce the impact of air and noise pollution on the workers, the contractor will be required to provide appropriate PPE to protect their health and safety.	PMU Contractor	December 2022	
		Immediately	Appropriate PPEs are available in the construction sites.
Undertake environmental monitoring based on the specific monitoring field, parameters and locations per Table 27 for Packages 1 and 2.	Contractor	Within monitoring period January – December 2022	Results will be reported in 15 th SEMR for the period July – December 2022.
Contractor will provide adequate potable water facilities i.e. water jar and increase the number of toilets and rest area facilities.	Contractor	End of December 2022	For package-1: Intake site is fine with everything but WTP and RWP sites toilet facilities need to improve by providing hand wash soap/liquid and regular cleaning.
Regularly address the solid waste management and appropriate housekeeping issues in the toolbox meeting or any other regular training.	Contractor	Regularly	Started the demonstration on the solid waste management and appropriate housekeeping issues.

APPENDIX

APPENDIX 1: REGULATORY CLEARANCES / APPROVALS/PERMITS



Government of the People's Republic of Bangladesh
Department of Environment
 Head Office, Paribesh Bhavan
 E-16 Agragaon, Sher-e-Bangla Nagar, Dhaka-1207
 www.doc.gov.bd

Memo No: 22.02.0000.018.72.124.19-131

Date: 19 September, 2021

Subject: Renewal of Environmental Clearance Certificate for Dhaka Environmentally Sustainable Water Supply Project.

Ref: Your application dated 24/08/2021

With reference to your above application, the Department of Environment hereby renews the Environmental Clearance Certificate of the Dhaka Environmentally Sustainable Water Supply Project subject to following terms and conditions:

- i. The terms and conditions stated in Environmental Clearance issued on 11/12/2018 vide memo no. 22.02.6700.140.72.138.18.1148 shall remain valid for the renewed period.
- ii. This renewal is valid upto 10/12/2022. Application for further renewal along with the renewal fees and VAT on renewal fees in separate Treasury Chalan shall be submitted to the Director, Department of Environment, Dhaka Metropolitan Office, Dhaka with a copy to Head Office at least 30 days before the expiry.


 (Masud Iqbal Md. Shamsam)
 Director (Environmental Clearance)
 Phone: 8181673

Project Director

Dhaka Environmentally Sustainable Water Supply Project
 Dhaka WASA, WASA Bhavan (9th floor)
 98, Kazi Nazrul Islam Avenue
 Kawran Bazar, Dhaka.

Copies Forwarded to:

1. Private Secretary to the Hon'ble Secretary, Ministry of Environment, Forest and Climate Change, Bangladesh Secretariat, Dhaka.
2. Director, Department of Environment, Dhaka Metropolitan Office, Dhaka.
3. Assistant Director, Office of the Director General, Department of Environment, Head Office, Dhaka.

APPENDIX 2: DETAILS OF SITE VISITS CONDUCTED BY MDSC & PMU SAFEGUARD STAFF IN THE REPORTING PERIOD

Sl. No.	Package	Visit date	Expert visited	Sites Visited
1.	Package-1	11/01/2022	HSE Inspector, MDSC	Raw Water Pipeline
2.	Package-1	18/01/2022	HSE Inspector, MDSC	Water Treatment Plant
3.	Package-1	20/01/2022	National Environmental Expert, MDSC HSE Inspector, MDSC	Intake Site
4.	Package-1	23/01/2022	HSE Inspector, MDSC	Raw Water Pipeline
5.	Package-1	26/01/2022	HSE Inspector, MDSC	Raw Water Pipeline
6.	Package-1	30/01/2022	HSE Inspector, MDSC	Water Treatment Plant
7.	Package-1	01/02/2022	HSE Inspector, MDSC	Raw Water Pipeline
8.	Package-1	16/02/2022	HSE Inspector, MDSC	Intake Site
9.	Package-1	19/02/2022	HSE Inspector, MDSC	Intake Site
10.	Package-1	19/02/2022	HSE Inspector, MDSC	Raw Water Pipeline
11.	Package-1	24/02/2022	HSE Inspector, MDSC	Water Treatment Plant
12.	Package-1	26/02/2022	Safeguard Officer (Environment), PMU National Environmental Expert, MDSC HSE Inspector, MDSC	Raw Water Pipeline
13.	Package-1	26/02/2022	HSE Inspector, MDSC	Intake Site
14.	Package-1	02/03/2022	HSE Inspector, MDSC	Intake Site
15.	Package-1	03/03/2022	HSE Inspector, MDSC	Water Treatment Plant
16.	Package-1	05/03/2022	HSE Inspector, MDSC	Raw Water Pipeline
17.	Package-1	07/03/2022	HSE Inspector, MDSC	Water Treatment Plant
18.	Package-1	09/03/2022	HSE Inspector, MDSC	Intake Site
19.	Package-1	13/03/2022	HSE Inspector, MDSC	Raw Water Pipeline
20.	Package-1	14/03/2022	HSE Inspector, MDSC	Water Treatment Plant
21.	Package-1	16/03/2022	HSE Inspector, MDSC	Intake Site
22.	Package-1	19/03/2022	HSE Inspector, MDSC	Raw Water Pipeline
23.	Package-1	21/03/2022	HSE Inspector, MDSC	Water Treatment Plant
24.	Package-1	22/03/2022	National Environmental Expert, MDSC	Water Treatment Plant
25.	Package-1	28/03/2022	International Environmental Expert, MDSC National Environmental Expert, MDSC	Water Treatment Plant, Intake and WTP
26.	Package-2	02/04/2022	International Environmental Expert, MDSC National Environmental Expert, MDSC	Treated Water Pipeline
27.	Package-1	05/04/2022	HSE Inspector, MDSC	Water Treatment Plant

Sl. No.	Package	Visit date	Expert visited	Sites Visited
28.	Package-1	06/04/2022	HSE Inspector, MDSC	Raw Water Pipeline
29.	Package-1	09/04/2022	HSE Inspector, MDSC	Intake Site
30.	Package-1	11/04/2022	HSE Inspector, MDSC	Water Treatment Plant
31.	Package-1	13/04/2022	HSE Inspector, MDSC	Intake Site
32.	Package-1	17/04/2022	HSE Inspector, MDSC	Raw Water Pipeline
33.	Package-1	18/04/2022	HSE Inspector, MDSC	Water Treatment Plant
34.	Package-1	20/04/2022	HSE Inspector, MDSC	Intake Site
35.	Package-1	24/04/2022	HSE Inspector, MDSC	Raw Water Pipeline
36.	Package-1	25/04/2022	HSE Inspector, MDSC	Water Treatment
37.	Package-1	15/05/2022	HSE Inspector, MDSC	Raw Water Pipeline
38.	Package-1	17/05/2022	HSE Inspector, MDSC	Water Treatment Plant
39.	Package-1	18/05/2022	HSE Inspector, MDSC	Intake Site
40.	Package-1	22/05/2022	HSE Inspector, MDSC	Raw Water Pipeline
41.	Package-1	23/05/2022	HSE Inspector, MDSC	Water Treatment Plant
42.	Package-1	25/05/2022	National Environmental Expert, MDSC HSE Inspector, MDSC	WTP/Intake Site/RWP
43.	Package-2	28/05/2022	National Environmental Expert, MDSC HSE Inspector, MDSC	Treated Water Pipeline
44.	Package-1	29/05/2022	HSE Inspector, MDSC	Raw Water Pipeline
45.	Package-1	30/05/2022	HSE Inspector, MDSC	Water Treatment Plant
46.	Package-1	01/06/2022	HSE Inspector, MDSC	Intake Site
47.	Package-1	08/06/2022	HSE Inspector, MDSC	Raw Water Pipeline
48.	Package-1	13/06/2022	HSE Inspector, MDSC	Water Treatment Plant
49.	Package-1	15/06/2022	HSE Inspector, MDSC	Raw Water Pipeline
50.	Package-1	20/06/2022	HSE Inspector, MDSC	Water Treatment Plant
51.	Package-1	22/06/2022	HSE Inspector, MDSC	Raw Water Pipeline
52.	Package-1	22/06/2022	HSE Inspector, MDSC	Intake Site
53.	Package-1	28/06/2022	HSE Inspector, MDSC	Water Treatment Plant
54.	Package-2	28/06/2022	National Environmental Expert, MDSC HSE Inspector, MDSC	Treated Water Pipeline
55.	Package-1	29/06/2022	HSE Inspector, MDSC	Intake Site

APPENDIX 3: CONTRACTOR'S MONTHLY EMP IMPLEMENTATION REPORT & MDSC SITE VISIT REPORT

APPENDIX 4: IMPLEMENTATION OF COVID-19 HEALTH & SAFETY MEASURES

Package-1: Intake/RWP/WTP Construction Sites

COVID-19 AWARENESS CAMPAIGN Enforcing COVID-19 Prevention Protocols



Maintaining COVID-19 Protocols at the security gate

- Body Temperature Screening
- Sanitizing hands before site entry
- Sanitizing vehicles before site entry
- Common Areas disinfection

BODY TEMPERATURE SCREENING		
Project Site	Specific Location	Number of personnel
WTP	Main Security Gate	18588
WTP	Life Camp	515
INTAKE	Main Security Gate	9373
INTAKE	Life Camp	928

COVID-19 AWARENESS

COVID-19 LATERAL FLOW TEST FOR SITE ACCESS				
Month	Company	Personnel	Purpose	Positive Case
26-Mar~25 Apr-2022	GWTSNC	82	Site Access	0
	VISITORS	15	Site Access	0
	MDSC	40	Site Access	0
	SECURITY	1	Site Access	0
	DWASA	6	Site Access	0
	SUCUREX	15	Site Access	0
Total Personnel Tested		159		0

COVID-19 AWARENESS

COVID-19 VACCINATION					
Month	Company	Site	1st Dose	2nd Dose	Booster Dose
26 Mar 21 ~25 Apr-22	GWT SNC	WTP / INTAKE	0	0	4
	Security	WTP	0	0	1
	SBPL	WTP	0	0	0
	SBPL	INTAKE	0	0	1
	SIS	INTAKE	0	0	0
	LnS	INTAKE	0	0	0
	ARIDOD	RWP	0	0	1
	TECL	INTAKE	0	0	0
	MDSC	WTP / INTAKE	0	0	0
	Bhuiyan Traders	INTAKE	0	0	0
Total Personnel Vaccinated			0	0	7

Percentage vaccinated	GWT SNC staff	All site personnel		
		WTP	Intake	RWP
	99.05%	44%	72.03%	60.60%

COVID-19 VACCINATION					
Month	Company	Site	1st Dose	2nd Dose	Booster Dose
26 May 21 ~25Jun-22	GWT SNC	WTP / INTAKE	0	0	19
	Security	WTP	0	0	0
	SBPL	WTP	0	1	10
	SBPL	INTAKE	0	0	0
	SIS	INTAKE	0	0	0
	LnS	INTAKE	0	0	0
	ARIDOD	RWP	0	0	3
	TECL	INTAKE	0	0	0
	MDSC	WTP / INTAKE	0	0	2
	Bhuiyan Traders	INTAKE	0	0	0
Total Personnel Vaccinated			0	1	34

Percentage vaccinated	GWT SNC staff	All site personnel		
		WTP	Intake	RWP
	98.40%	51%	81.00%	68.27%

COVID-19 AWARENESS

LATERAL FLOW TEST FOR SITE ACCESS				
Month	Company	Personnel	Purpose	Positive Case
26-May~25 June-2021	GWTSNC	317	Site Access	0
	SBPL WTP	27	Site Access	1
	SBPL INTAKE	41	Site Access	0
	SECUREX INTAKE	0	Site Access	0
	DWASA	35	Site Access	1
	ARIDOD	1	Site Access	0
	MAZADA	1	Site Access	1
	GSS	0	Site Access	0
	DHAKA FIBER	7	Site Access	0
	MDSC	47	Site Access	4
Total Personnel Tested		476	Site Access	7

LATERAL FLOW TEST						
S/N	Company	Test Date	Location	Positive Case	Personnel Tested	Purpose
1	MDSC	13-Jun-22	INTAKE	1	1	Site Access
2	DWASA	18-Jun-22	WTP	1	1	Site Access
3	MDSC	19-Jun-22	WTP	1	1	Symptomatic
4	MDSC	19-Jun-22	WTP	1	1	Site Access
5	SBPL	20-Jun-22	WTP	1	114	Campaign
6	MDSC	20-Jun-22	INTAKE	1	58	Campaign
7	GWTSNC			1		
8	GWTSNC	25-Jun-22	INTAKE	1	1	Site Access
Total				8	177	

**COVID-19 AWARENESS CAMPAIGN
INTAKE - Enforcing COVID-19 Prevention Protocols**



- Maintaining COVID-19 Protocols at the security gate
- Body Temperature Screening
 - Sanitizing hands before site entry
 - Sanitizing vehicles before site entry
 - Common Areas disinfection

**COVID-19 AWARENESS CAMPAIGN
WTP – COVID-19 PCR Test**



COVID-19 AWARENESS

COVID-19 VACCINATION					
Month	Company	Site	1st Dose	2nd Dose	Booster Dose
26 Apr 21 ~25 May 22	GWT SNC	WTP / INTAKE	1	1	1
	Security	WTP	0	1	0
	SBPL	WTP	0	0	7
	SBPL	INTAKE	0	0	2
	SIS	INTAKE	0	0	0
	LnS	INTAKE	0	0	1
	ARIDOD	RWP	0	1	2
	TECL	INTAKE	0	0	0
	MDSC	WTP / INTAKE	0	0	0
	Bhuiyan Traders	INTAKE	0	0	0
Total Personnel Vaccinated			1	3	13

	GWT SNC staff	All site personnel		
		WTP	Intake	RWP
Percentage vaccinated	99.01%	48%	78.00%	66.09%

Package-2: Treated Water Pipeline



APPENDIX 5: INCIDENT INVESTIGATION REPORT

APPENDIX 6: MONITORING REPORTS (AIR, NOISE, WATER TESTING LAB REPORTS)

(a) AIR QUALITY MONITORING

ENVIRONMENTAL STATUS AIR QUALITY MONITORING - CAMCE

 <p>Gandharbpur Water Treatment SMC SUEZ OTV VEOLIA A Joint Venture of SUEZ INTERNATIONAL & OTV/VEOLIA</p>		<p>DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARBPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)</p>							 <p>M M DWASA B 003-464-CMC-EN-GWT-RP-5001 Date: 20 Jul 2020 Rev 006 (ADD)</p>			
AIR QUALITY MONITORING LOG												
Date	Monitoring Duration	Time	Location	Temp	Humidity	CO ₂	HCHO	TVOC	C ₆ H ₆	SPM	PM _{2.5}	PM ₁₀
				(°C)	(%)	ppm	mg/m ³	mg/m ³	mg/m ³	(ug/m ³)	(ug/m ³)	(ug/m ³)
26/3/2022	60Mins	09:00 Hours	W95 (SW)	30°C	85%	461	0.01	0	0	176	50	126
26/3/2022	60Mins	10:15 Hours	W92	29°C	85%	461	0.01	0	0	205	55	150
26/3/2022	60Mins	11:20 Hours	W01(SE)	29°C	85%	473	0.02	0	0	197	47	150
26/3/2022	60Mins	14:15 Hours	W83(N/E)	28°C	87%	493	0.01	0	0	207	60	147
26/3/2022	60Mins	15:20 Hours	North boundary	28°C	87%	489	0.01	0	0	190	65	125
29/3/2022	60Mins	09:00 Hours	W95 (SW)	26°C	99%	425	0.01	0	0	205	57	148
29/3/2022	60Mins	10:15 Hours	W92	27°C	98%	414	0.01	0	0	165	51	114
29/3/2022	60Mins	11:20 Hours	W01(SE)	27°C	96%	433	0.01	0	0	137	35	102
29/3/2022	60Mins	14:15 Hours	W83(N/E)	27°C	95%	419	0.01	0	0	195	52	143
29/3/2022	60Mins	15:20 Hours	North boundary	26°C	92%	443	0.02	0	0	118	29	89
2/4/2022	60Mins	09:00 Hours	W95 (SW)	30°C	78%	465	0.02	0	0	166	65	101
2/4/2022	60Mins	10:15 Hours	W92	29°C	81%	462	0.03	0	0	133	41	92
2/4/2022	60Mins	11:20 Hours	W01(SE)	30°C	79%	428	0.01	0	0	183	51	132
2/4/2022	60Mins	14:15 Hours	W83(N/E)	30°C	79%	513	0.02	0	0	153	45	108
2/4/2022	60Mins	15:20 Hours	North boundary	30°C	81%	457	0.02	0	0	167	58	109
4/4/2022	60Mins	09:00 Hours	W95 (SW)	30°C	72%	427	0.17	0	0	136	49	87
4/4/2022	60Mins	10:15 Hours	W92	30°C	74%	448	0.19	0	0	163	31	132
4/4/2022	60Mins	11:20 Hours	W01(SE)	31°C	74%	433	0.18	0	0	162	55	107
4/4/2022	60Mins	14:15 Hours	W83(N/E)	31°C	73%	429	0.25	0	0	149	52	97
4/4/2022	60Mins	15:20 Hours	North boundary	31°C	72%	422	0.18	0	0	150	53	97

Graph showing the concentration of suspended particulate matter in the air at CAMCE's work areas on the project site
SP_{2.5}, SPM₁₀.

ENVIRONMENTAL STATUS AIR QUALITY MONITORING - CAMCE

9/4/2022	60Mins	09:00 Hours	W95 (SW)	31°C	72%	458	0.01	0	0	188	47	141
9/4/2022	60Mins	10:15 Hours	W92	31°C	72%	441	0.02	0	0	209	61	148
9/4/2022	60Mins	11:20 Hours	W01(SE)	31°C	72%	461	0.01	0	0	174	54	120
9/4/2022	60Mins	14:15 Hours	W83(N/E)	30°C	72%	460	0.01	0	0	191	47	144
9/4/2022	60Mins	15:20 Hours	North boundary	30°C	72%	511	0.02	0	0	198	56	142
12/4/2022	60Mins	09:00 Hours	W95 (SW)	30°C	99%	420	0.01	0	0	87	39	48
12/4/2022	60Mins	10:15 Hours	W92	31°C	81%	454	0.01	0	0	189	41	148
12/4/2022	60Mins	11:20 Hours	W01(SE)	31°C	80%	454	0.01	0	0	180	41	139
12/4/2022	60Mins	14:15 Hours	W83(N/E)	30°C	82%	463	0.01	0	0	200	65	135
12/4/2022	60Mins	15:20 Hours	North boundary	30°C	81%	489	0.02	0	0	187	63	124
17/4/2022	60Mins	09:00 Hours	W95 (SW)	30°C	76%	463	0.04	0	0	92	36	56
17/4/2022	60Mins	10:15 Hours	W92	30°C	78%	452	0.05	0	0	110	41	69
17/4/2022	60Mins	11:20 Hours	W01(SE)	29°C	78%	460	0.05	0	0	93	37	56
17/4/2022	60Mins	14:15 Hours	W83(N/E)	29°C	80%	461	0.05	0	0	65	27	38
17/4/2022	60Mins	15:20 Hours	North boundary	29°C	79%	476	0.05	0	0	107	40	67
19/4/2022	60Mins	09:00 Hours	W95 (SW)	31°C	73%	452	0.02	0	0	109	41	68
19/4/2022	60Mins	10:15 Hours	W92	31°C	74%	460	0.05	0	0	104	40	64
19/4/2022	60Mins	11:20 Hours	W01(SE)	31°C	74%	439	0.08	0	0	85	36	49
19/4/2022	60Mins	14:15 Hours	W83(N/E)	30°C	78%	461	0.05	0	0	85	34	51
19/4/2022	60Mins	15:20 Hours	North boundary	30°C	78%	481	0.04	0	0	116	43	73
23/4/2022	60Mins	09:00 Hours	W95 (SW)	30°C	89%	461	0.01	0	0	163	56	107
23/4/2022	60Mins	10:15 Hours	W92	30°C	86%	482	0.03	0	0	152	51	101
23/4/2022	60Mins	11:20 Hours	W01(SE)	30°C	85%	486	0.02	0	0	121	42	79
23/4/2022	60Mins	14:15 Hours	W83(N/E)	31°C	81%	493	0.01	0	0	162	53	109
23/4/2022	60Mins	15:20 Hours	North boundary	30°C	84%	562	0.01	0	0	169	59	110
Recorded By:	Md. Anwar Hossain	Signature										
Checked By:	Md. Mostafizur	Signature										

Graph showing the concentration of suspended particulate matter in the air at CAMCE's work areas on the project site
SP_{2.5}, SPM₁₀.

ENVIRONMENTAL STATUS
AIR QUALITY MONITORING - CAMCE



Air Quality readings using portable air quality monitoring device

ENVIRONMENTAL STATUS
AIR QUALITY MONITORING - CAMCE

<p>Gandharbpur Water Treatment SNC A Joint Venture of SUEZ INTERNATIONAL & OTV/VEOLIA</p>		<p>DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)</p>							<p>9-001464-GWT-EN-GWT-RP-5001 Date: 20-Jul-2020 Rev: 006 (A00)</p>			
AIR QUALITY MONITORING LOG												
Date	Monitoring Duration	Time	Location	Temperature (°C)	Humidity (%)	SO ₂ (PPM)	CO (PPM)	NO _x (PPM)	O ₃ (PPM)	SPM ₁₀ (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)
29.05.2022	60 Min.	8:54 AM	W-95 (SW)	32	72.6	0.4	0	0	N/A	285	128	157
29.05.2022	60 Min.	9:56 AM	W-01 (SE)	32.4	55	0.5	0	0	N/A	190	88	102
29.05.2022	60 Min.	10:57 AM	W-83 (Middle East)	34.4	53.6	0.5	0	0	N/A	103	45	58
29.05.2022	60 Min.	12:00 PM	North Boundary (N.0)	32.3	51.1	0.5	0	0	N/A	141	65	75
29.05.2022	60 Min.	2:28 PM	W-92	33.7	60.4	0.4	0	0	N/A	138	61	77
05.06.2022	60 Min.	8:43 AM	W-95 (SW)	32	75.5	0.4	0	0	N/A	105	44	61
05.06.2022	60 Min.	9:48 AM	W-01 (SE)	33	58.4	0.6	0	0	N/A	110	47	63
05.06.2022	60 Min.	10:50 AM	W-83 (Middle East)	31.6	58	0.8	0	0	N/A	98	42	56
05.06.2022	60 Min.	11:51 AM	North Boundary (N.0)	32.3	55.5	0.8	0	0	N/A	84	36	48
05.06.2022	60 Min.	2:34 PM	W-92	36.6	57.5	0.6	0	0	N/A	80	36	44
12.06.2022	60 Min.	8:24 AM	W-95 (SW)	30.9	80.4	0.4	0	0.2	N/A	111	48	63
12.06.2022	60 Min.	9:26 AM	W-01 (SE)	34.5	58.9	0.6	0	0	N/A	92	41	51
12.06.2022	60 Min.	10:30 AM	W-83 (Middle East)	30.3	59.4	0.6	0	0	N/A	84	37	47
12.06.2022	60 Min.	11:42 AM	North Boundary (N.0)	29.6	60.4	0.6	0	0	N/A	79	35	44
12.06.2022	60 Min.	2:14 PM	W-92	34.2	62.8	0.5	0	0.2	N/A	83	37	46
19.06.2022	60 Minutes	8:26 AM	W-95 (SW)	27.6	90.7	0.4	0	0.1	N/A	145	64	81
19.06.2022	60 Minutes	9:28 AM	W-01 (SE)	28.3	73.1	0.4	0	0	N/A	75	33	42
19.06.2022	60 Minutes	10:30 AM	W-83 (Middle East)	29.6	63.3	0.5	0	0	N/A	75	34	41
19.06.2022	60 Minutes	11:33 AM	North Boundary (N.0)	32.3	56	0.6	0	0	N/A	79	34	45
19.06.2022	60 Minutes	2:22 PM	W-92	30.5	70.2	0.5	0	0.3	N/A	130	58	72
Recorded By:				Name	Signature	Date						
				Md. Anwar Hossain		19.06.2022						
Checked By:				Md. Mostafizur		19.06.2022						

ENVIRONMENTAL STATUS
AIR QUALITY MONITORING - CAMCE



Air Quality readings using portable air quality monitoring device

ENVIRONMENTAL STATUS AIR QUALITY MONITORING - RWP

Gandharapur Water Treatment SMC <small>A Joint Venture of SME ATMANIKOS & CITYINDIA</small>		DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)								 B-001464-GWT-DH-GWT-RP-5001 Date: 20-Jun-2020 Rev: 006 (ADD)		
AIR QUALITY MONITORING LOG												
Date	Monitoring Duration	Time	Location	Temperature (°C)	Humidity (%)	SO ₂ (mg/m ³)	CO (mg/m ³)	NO _x (mg/m ³)	O ₃ (mg/m ³)	SPM (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)
28-May-22	20:00 Mins	1:14:00PM	Tolarbagh	30°C	65%	0.2	0	0	0	230	77	153
29-May-22	20:00 Mins	11:43:00 AM	Stockyard	32°C	99%	0.1	0	0	0	120	48	72
30-May-22	20:00 Mins	10:34:00 AM	Rainadi	31°C	99%	0.3	0	0	0	104	48	56
31-May-22	20:00 Mins	11:24:00 AM	Uchitpura 3	32°C	99%	0.2	0	0	0	127	49	78
1-Jun-22	20:00 Mins	10:42:00 AM	Intake	36°C	84%	0.1	0	0	0	24	12	12
2-Jun-22	20:00 Mins	4:15:00 PM	RC-01	32°C	99%	0.1	0	0	0	117	48	69
4-Jun-22	20:00 Mins	11:11:00 AM	Uchitpura 1&2	32°C	99.00%	0.1	0	0	0	113	46	67
5-Jun-22	20:00 Mins	3:44:00 PM	Elomdi-2	35°C	65%	0.1	0	0	0	133	51	82
6-Jun-22	20:00 Mins	10:23:00 AM	Intake	30°C	69%	0.1	0	0	0	133	52	81
7-Jun-22	20:00 Mins	10:27:00 AM	Uchitpura 3	34°C	75%	0.1	0	0	0	67	32	35
8-Jun-22	20:00 Mins	9:44:00 AM	Atadi	33°C	66%	0.1	0	0	0	139	52	87
9-Jun-22	20:00 Mins	2:36:00 PM	Mixingyard-1	34°C	69%	0.1	0	0	0	124	49	75
11-Jun-22	20:00 Mins	3:02:00 PM	Uchitpura 3	29°C	89%	0.1	0	0	0	111	48	63
12-Jun-22	20:00 Mins	12:29:00 PM	RC-01	33°C	73%	0.1	0	0	0	80	36	44
13-Jun-22	20:00 Mins	3:46:00 PM	Intake	26°C	80%	0.1	0	0	0	328	108	190
14-Jun-22	20:00 Mins	10:20:00 AM	Stockyard-02	28°C	72%	0.1	0	0	0	86	39	47
15-Jun-22	20:00 Mins	11:00:00 AM	Rainadi	31°C	74%	0.1	0	0	0	108	47	61
16-Jun-22	20:00 Mins	11:21:00 AM	Elomdi-02	31°C	72%	0.2	0	0	0	97	43	54
18-Jun-22	60 Minutes	12:43:12 PM	Uchitpura-1&2	28°C	83%	0.2	0	0	0	59	29	30
19-Jun-22	60 Minutes	2:35:27 PM	Uchitpura-3	28°C	82%	0.3	0	0	0	51	25	26
20-Jun-22	60 Minutes	2:34:43 PM	Stockyard-2	33°C	69%	0.1	0	0	0	106	48	58
22-Jun-22	60 Minutes	10:56:43 AM	Atadi-Elomdi-1	29°C	80%	0.3	0	0	0	80	36	44
25-Jun-22	60 Minutes	11:20:30 AM	Intake	30°C	78%	0.1	0	0	0	76	33	43
Recorded By:				Name: Rifad Nizam	Signature:	Date: 25-Jun-22						
Checked By:				Mohammad Naair		Date: 25-Jun-22						

ENVIRONMENTAL STATUS AIR QUALITY MONITORING - TCEL

Gandharapur Water Treatment SMC <small>A Joint Venture of SME ATMANIKOS & CITYINDIA</small>		DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)								 B-001464-GWT-DH-GWT-RP-5001 Date: 20-Jun-2020 Rev: 006 (ADD)		
AIR QUALITY MONITORING LOG												
Date	Monitoring Duration	Time	Location	Temperature (°C)	Humidity (%)	SO ₂ (PPM)	CO (PPM)	NO _x (PPM)	O ₃ (PPM)	SPM (ug/m ³)	PM _{2.5} (ug/m ³)	PM ₁₀ (ug/m ³)
26-May-22	60 Minutes	11:32 AM	Intake (Camp-03)	35°C	62%	0.1	0	0	0	184	68	116
27-May-22	60 Minutes	10:10 AM	Rebar Fabrication Yard	30°C	72%	0.1	0	0	0	184	68	116
28-May-22	60 Minutes	2:57 PM	Intake (Camp-03)	28°C	63%	0.1	0	0	0	119	47	72
29-May-22	60 Minutes	3:04 PM	I-15 area	30°C	82%	0.2	0	0	0	99	42	57
30-May-22	60 Minutes	3:43 PM	Batching plant area	31°C	77%	0.2	0	0	0	95	41	54
31-May-22	60 Minutes	3:18 PM	I-20 area	31°C	76%	0.3	0	0	0	124	46	76
1-Jun-22	60 Minutes	3:20 PM	Batching plant area	32°C	67%	0.1	0	0	0	183	67	116
2-Jun-22	60 Minutes	3:34 PM	Jetty area	29°C	74%	0.3	0	0	0	54	26	28
3-Jun-22	60 Minutes	3:13 PM	Intake (Camp-03)	29°C	76%	0.1	0	0	0	58	27	31
4-Jun-22	60 Minutes	10:22 AM	Intake (Camp-03)	30°C	99%	0.1	0	0	0	209	80	129
5-Jun-22	60 Minutes	10:09 AM	I-15 area	31°C	90%	0.1	0	0	0	139	51	86
6-Jun-22	60 Minutes	11:12 AM	Batching plant area	31°C	90%	0.1	0	0	0	137	51	86
7-Jun-22	60 Minutes	11:15 AM	I-20 area	31°C	87%	0.1	0	0	0	111	46	65
8-Jun-22	60 Minutes	10:17 AM	Rebar Fabrication Yard	31°C	82%	0.1	0	0	0	120	48	72
9-Jun-22	60 Minutes	11:42 AM	Jetty area	29°C	87%	0.1	0	0	0	66	31	35
10-Jun-22	60 Minutes	11:16 AM	Intake (Camp-03)	29°C	88%	0.1	0	0	0	102	43	59
11-Jun-22	60 Minutes	4:22 PM	Intake (Camp-03)	28°C	99%	0.1	0	0	0	58	28	30
12-Jun-22	60 Minutes	4:09 PM	Intake security gate	26°C	99%	0.3	0	0	0	59	29	30
13-Jun-22	60 Minutes	3:19 PM	Jetty area	26°C	99%	0.1	0	0	0	62	30	32
14-Jun-22	60 Minutes	2:59 PM	Intake security gate	27.5°C	79%	0.1	0	0	0	47	23	24
15-Jun-22	60 Minutes	3:09 PM	Intake (Camp-03)	27.1°C	79%	0.1	0	0	0	51	25	26
16-Jun-22	60 Minutes	3:14 PM	Jetty area	29°C	87%	0.1	0	0	0	66	31	35
17-Jun-22	60 Minutes	11:16 AM	Intake security gate	27.4°C	78%	0.1	0	0	0	47	23	24
18-Jun-22	60 Minutes	9:18 AM	Intake (Camp-03)	26.3°C	73%	0.1	0	0	0	75	34	41
19-Jun-22	60 Minutes	10:20 AM	Intake security gate	28°C	73%	0.1	0	0	0	77	36	41
20-Jun-22	60 Minutes	11:21 AM	Rebar Fabrication Yard	28.5°C	72%	0.1	0	0	0	71	34	37
21-Jun-22	60 Minutes	10:24 AM	Batching Plant Area (New Yard) (Accessed)	28.9°C	72%	0.2	0	0	0	64	31	33
22-Jun-22	60 Minutes	11:15 AM	Jetty area	29.4°C	72%	0.2	0	0	0	52	25	27
23-Jun-22	60 Minutes	9:34 AM	I-15 Area	30.4°C	73%	0.3	0	0	0	77	35	42
Recorded By:				Name: Yeashin Arifat	Signature:	Date: 23-Jun-22						
Checked By:				Mukouduf Islam		Date: 23-Jun-22						

(b) NOISE LEVEL MONITORING

ENVIRONMENTAL STATUS NOISE MONITORING - RWP



ENVIRONMENTAL STATUS NOISE MONITORING - RWP

Equipment Summary									
Sound level Meter: Make / Model		Sound level Meter: Serial Number		Calibrator: Model Number		Calibrator: Serial Number			
Digital SOUND Level Meter									
Monitoring Summary									
Date	Monitoring Number	Monitoring Duration	Time	Location	LA10	LA90	LAeq	LAMax	LAMin
1-Jun-22	1	05:00 mins	10:13	Stock Yard -2	0.00	0.00	591.5	606	577
	2	05:00 mins	10:38	Stock Yard -2	0.00	0.00	605.5	675	536
	3	05:00 mins	12:32	Elomdi-02	0.00	0.00	654.5	786	523
5-Jun-22	4	05:00 mins	12:51	Elomdi-02	0.00	0.00	661.5	759	564
	5	05:00 mins	15:13	Mixingyard_01	0.00	0.00	568.5	587	550
6-Jun-22	6	05:00 mins	15:38	Mixingyard_01	0.00	0.00	583	589	577
	7	05:00 mins	11:23	Intake	0.00	0.00	672.5	725	620
7-Jun-22	8	05:00 mins	11:45	Intake	0.00	0.00	700	797	603
	9	05:00 mins	11:34	RC-03	0.00	0.00	589	734	444
	10	05:00 mins	11:55	RC-03	0.00	0.00	702	768	636
9-Jun-22	11	05:00 mins	13:11	RC-04	0.00	0.00	737.5	745	730
	12	05:00 mins	13:35	RC-04	0.00	0.00	577.5	520	635
Recorded By:	Name: Rifad Nizam	Designation: HSE Officer		Signature: 		Date: 10-Jun-22			
Checked By:	Mohammad Nasir	HSE Manager				Date: 10-Jun-22			

**ENVIRONMENTAL STATUS
NOISE MONITORING - WTP CAMCE**



**ENVIRONMENTAL STATUS
NOISE MONITORING - CAMCE**

Gandharbpur Water Treatment SNC SUB2 OTV VEOUA A Joint Venture of SUEZ INTERNATIONAL & OTV-VEOLIA		DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARBPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)				M M DWASA MOTT MACDONALD DWASA 0-001-054-CHC-ENR-GWT-SP-0003 Date: 20-11-2020 Rev: 006 (ADD)			
NOISE MONITORING RECORD									
Conditions Summary									
Date	Wind speed (MPH)	Wind Direction	Temperature	Humidity	Cloud Coverage				
30/03/2022	14 km/h	N/A	26°C - 33°C	66%	Partly Cloudy				
6/4/2022	16 km/hr	N/A	26°C - 36°C	63%	Haze				
13/04/2022	16 km/h	N/A	28°C - 36°C	49%	Partly Clear				
20/04/2022	11 km/h	N/A	25°C - 28°C	78%	Isolated Thunderstorms				
Equipment Summary									
Sound level Meter: Make / Model		Sound level Meter: Serial Number		Calibrator: Model Number		Calibrator: Serial Number			
Digital SOUND Level Meter									
Monitoring Summary									
Date	Personnel Number	Monitoring Duration	Time	Location	LA10	LA90	LAeq	LAmax	LAMin
30.03.2022	1	60 sec.	8:45 AM	Contractor Facility Camp	N/A	N/A	57	60	54
	2	60 sec.	8:51 AM	Main Gate	N/A	N/A	75	77	72
	3	60 sec.	9:06 AM	W-50	N/A	N/A	71	73	68
30.03.2022	4	60 sec.	9:12 AM	W10, Zone D5	N/A	N/A	78	81	75
	5	60 sec.	9:35 AM	East Middle Fence	N/A	N/A	68	70	67
30.03.2022	6	60 sec.	9:41 AM	North East Fence	N/A	N/A	56	58	54
	7	60 sec.	9:47 AM	North Gate	N/A	N/A	53	56	51
30.03.2022	8	60 sec.	9:52 AM	CAMCE construction team camp	N/A	N/A	49	51	47
	9	60 sec.	9:59 AM	Batching Plant area	N/A	N/A	68	71	66
30.03.2022	10	60 sec.	10:18 AM	CAMCE Office complex	N/A	N/A	55	58	53
6/4/2022	1	60 sec.	8:48 AM	Contractor Facility Camp	N/A	N/A	57	59	55
	2	60 sec.	8:53 AM	Main Gate	N/A	N/A	60	62	57
6/4/2022	3	60 sec.	8:58 AM	W10, Zone C1 Roof	N/A	N/A	61	64	58
	4	60 sec.	9:08 AM	East Middle Fence	N/A	N/A	57	60	55
	5	60 sec.	9:04 AM	Reinforcement Shop	N/A	N/A	65	68	62
6/4/2022	6	60 sec.	9:14 AM	North East Fence	N/A	N/A	54	57	53

**ENVIRONMENTAL STATUS
NOISE MONITORING - INTAKE**



**ENVIRONMENTAL STATUS
NOISE MONITORING – INTAKE TCEL**

Gandharbpur Water Treatment SNC SUEZ OTV VEOLIA A Joint Venture of SUEZ INTERNATIONAL & OTV-VEOLIA		DESIGN AND BUILD OF INTAKE, RAW WATER PIPELINE, AND 500 MLD WATER TREATMENT PLANT AT GANDHARPUR UNDER DHAKA ENVIRONMENTALLY SUSTAINABLE WATER SUPPLY PROJECT (DESWSP)				M M DWASA MONT MACDONALD © 0014 G4-GWT-EN-GWTAP-0003 Date: 20/03/2022 Rev: 00.0 (ADD)			
NOISE MONITORING RECORD									
Conditions Summary									
Date	Wind speed (MPH)	Wind Direction	Temperature	Humidity	Cloud Coverage				
21-May-22	14 km/h	SSE	35° C	72%	49%				
22-May-22	14 km/h	SSE	36° C	66%	73%				
23-May-22	11 km/h	SSE	32° C	67%	64%				
24-May-22	14 km/h	SE	37° C	56%	48%				
25-May-22	10 km/h	S	36° C	64%	48%				
Equipment Summary									
Sound level Meter: Make / Model		Sound level Meter: Serial Number		Calibrator: Model Number		Calibrator: Serial Number			
VICTOR 824		096088561		Victor 824		09608856			
Monitoring Summary									
Date	Monitoring Number	Monitoring Duration	Time	Location	LA10	LA90	LAeq	LA Max	LAMin
21-May-22	1	5 Min	11:31 AM	INTAKE (camp-03)	N/A	N/A	54.7	64.9	44.4
	2	5 Min	12:06 PM	INTAKE (camp-03)	N/A	N/A	54.1	64.0	44.1
22-May-22	3	5 Min	10:34 AM	Rebar fabrication yard	N/A	N/A	59.4	67.1	51.6
	4	5 Min	11:07 AM	Rebar fabrication yard	N/A	N/A	57.4	65.4	49.4
23-May-22	5	5 Min	11:34 AM	Batching plant area	N/A	N/A	62.8	67.4	58.1
	6	5 Min	12:10 PM	Batching plant area	N/A	N/A	63.8	68.1	59.4
24-May-22	7	5 Min	12:32 PM	I-20 area	N/A	N/A	59.5	63.1	55.8
	8	5 Min	11:54 AM	I-20 area	N/A	N/A	61.7	66.2	57.2
25-May-22	9	5 Min	12:04 PM	I-15 area	N/A	N/A	64.3	69.4	59.2
	10	5 Min	12:31 PM	I-15 area	N/A	N/A	66.7	71.7	61.7
Recorded By:		Designation		Signature		Date			
Gari Yeashin Arafa		TCEL - Supervisor				25 May 22			
Checked By:		Designation		Signature		Date			
Muksedal Islam Sabuj		TCEL HSE In-Charge				25 May 22			

(c) SURFACE WATER QUALITY MONITORING

Form No. QSF-22

Revision No. 12

Revision Date: 04 November, 2022

জীবনের জন্য বিজ্ঞান



"শেখ হাসিনার দর্শন, সব মানুষের উন্নয়ন"



বাংলাদেশ বিজ্ঞান ও শিল্প গবেষণা পরিষদ

BANGLADESH COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Institute of National Analytical Research and Service (INARS)**ANALYSIS REPORT**

ASC Ref No. : IN-114 of Analytical Service Cell, BCSIR, 20/02/2022

Lab/Sample ID : A-192

Client's Details : **GANDHARBPUR WATER TREATMENT SNC Branch**House-10C (5th Floor), Road-90, Gulshan-2, Dhaka-1212.Number of Sample : 02 (Two), **Down Stream**Sample Description : Meghna River water test, Ref No. GWT/GWTSNC/RIVER
WATER/2022-02, Date: 20th Feb, 2022.

Test Commencement Date : 22/02/2022

Test Completion Date : 05/04/2022

Particulars of supplied Sample	Parameters	Concentration	Environment Conservation Rules Standard limit** (ECR 1997) Inland Surface Water	Test Method (APHA)
Sample Location: Meghna River, Project Site: Raw Water Pipe Line, Sample-02, Down Stream (IN-114, Lab ID-192)	pH at 25.2°C	7.85	6.0-9.0	4500-H ⁺ .B
	BOD (Biological Oxygen Demand)	0.83 mg/L	6.0 of Less mg/L	5210.B
	DO (Dissolved Oxygen)	7.20 mg/L	6.0 or more mg/L	4500-O-G
	TSS (Total suspended solids)	23.0 mg/L	150 mg/L	2540.D
	TDS (Total dissolved solids)	80.5 mg/L	2100 mg/L	2540.C
	Temperature	24.7°C	40.0°C	25.2°C
	Hardness as CaCO ₃	46.6 mg/L	200-500 mg/L	2540.C
	Phosphorus (P)	<0.5 mg/L	--	4500-P.C
	Arsenic (As)	0.051 mg/L	0.2 mg/L	3114.C
	Iron (Fe)	0.30 mg/L	2.0 mg/L	3111.B
	Cobalt (Co)	<0.1 mg/L	--	3113.B
	Copper (Cu)	<0.1 mg/L	0.5 mg/L	3113.B
	Lead (Pb)	<0.01 mg/L	0.1 mg/L	3111.B
Mercury (Hg)	<0.001 mg/L	0.01 mg/L	3112.B	

Page 1 of 2

Note:

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Analytical Service Cell
Dr, Quadrat-1-Khuda Road, Dhanmondi, Dhaka-1205, Bangladesh
Telephone: 9671108, Fax: 88-02-9671108 E-mail: asc@bcsir.gov.bd Website: www.bcsir.gov.bd

Form No. QSF-22

Revision No. 12

Revision Date: 04 November, 2022

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BANGLADESH COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Particulars of supplied Sample	Parameters	Concentration	Environment Conservation Rules Standard limit** (ECR 1997) Inland Surface Water	Test Method (APHA)
Sample Location: Meghna River, Project Site: Raw Water Pipe Line, Sample-01, UP Stream (IN-114, Lab ID-191)	Manganese (Mn)	<0.05 mg/L	5.0 mg/L	3111.B
	Chromium (Cr)	0.02 mg/L	0.5 mg/L	3111.B
	Cadmium (Cd)	<0.001 mg/L	0.50 mg/L	3111.B
	Nickel (Ni)	<0.02 mg/L	10 mg/L	3113.B
	Zinc (Zn)	<0.05 mg/L	5.0 mg/L	3111.B
	Barium (Ba)	<0.05 mg/L	--	3113.B
	Total Nitrogen (Kjeldahl)	<5.0 mg/L	100 mg/L	KJELDHAL
	E.coli	Absent	Absent	ISO 7251:2005
	Fecal Coliform (MPN/100 ml)	<1.8*	5000 or Less	9221B-C
	Total Phenol	0.94 mg/L	1.0 mg/L	5530.D

*As per MPN (most probable number) chart (APHA-22nd edition), MPN <1.8 indicates absence of test organism in the supplied sample.

[Signature]
05/04/2022

Analyst

A. H. M. Shofiqul Islam Molla Jamal
Senior Scientific Officer
Institute of National Analytical
Research & Service (INARS)
BCSIR, Dhaka-1205.

[Signature]
05.04.2022

Supervisor

Muhammad Abdullah Al-Mansur
Principal Scientific Officer
Institute of National Analytical
Research & Service (INARS)
BCSIR, Dhaka-1205.

[Signature]
05.04.2022

Director

Shamim Ahmed
Director (In-Charge)
Institute of National Analytical
Research & Service (INARS)
BCSIR, Dhaka-1205

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BANGLADESH COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Institute of National Analytical Research and Service (INARS)

ANALYSIS REPORT

ASC Ref No. : IN-114 of Analytical Service Cell, BCSIR, 20/02/2022
 Lab/Sample ID : A-192
 Client's Details : **GANDHARBPUR WATER TREATMENT SNC Branch**
 House-10C (5th Floor), Road-90, Gulshan-2, Dhaka-1212.
 Number of Sample : 02 (Two), **Down Stream**
 Sample Description : Meghna River water test, Ref No. GWT/GWTSNC/RIVER
 WATER/2022-02, Date: 20th Feb, 2022.
 Test Commencement Date : 22/02/2022
 Test Completion Date : 05/04/2022

Particulars of supplied Sample	Parameters	Concentration	Environment Conservation Rules Standard limit** (ECR 1997) Inland Surface Water	Test Method (APHA)
Sample Location: Meghna River, Project Site: Raw Water Pipe Line, Sample-02, Down Stream (IN-114, Lab ID-192)	pH at 25.2°C	7.85	6.0-9.0	4500-H ⁺ .B
	BOD (Biological Oxygen Demand)	0.83 mg/L	6.0 of Less mg/L	5210.B
	DO (Dissolved Oxygen)	7.20 mg/L	6.0 or more mg/L	4500-O-G
	TSS (Total suspended solids)	23.0 mg/L	150 mg/L	2540.D
	TDS (Total dissolved solids)	80.5 mg/L	2100 mg/L	2540.C
	Temperature	24.7°C	40.0°C	25.2°C
	Hardness as CaCO ₃	46.6 mg/L	200-500 mg/L	2540.C
	Phosphorus (P)	<0.5 mg/L	--	4500-P.C
	Arsenic (As)	0.051 mg/L	0.2 mg/L	3114.C
	Iron (Fe)	0.30 mg/L	2.0 mg/L	3111.B
	Cobalt (Co)	<0.1 mg/L	--	3113.B
	Copper (Cu)	<0.1 mg/L	0.5 mg/L	3113.B
Lead (Pb)	<0.01 mg/L	0.1 mg/L	3111.B	
Mercury (Hg)	<0.001 mg/L	0.01 mg/L	3112.B	

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BANGLADESH COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Particulars of supplied Sample	Parameters	Concentration	Environment Conservation Rules Standard limit** (ECR 1997) Inland Surface Water	Test Method (APHA)
Sample Location: Meghna River, Project Site: Raw Water Pipe Line, Sample-02, Down Stream (IN-114, Lab ID-192)	Manganese (Mn)	<0.05 mg/L	5.0 mg/L	3111.B
	Chromium (Cr)	0.03 mg/L	0.5 mg/L	3111.B
	Cadmium (Cd)	<0.001 mg/L	0.50 mg/L	3111.B
	Nickel (Ni)	<0.02 mg/L	10 mg/L	3113.B
	Zinc (Zn)	<0.05 mg/L	5.0 mg/L	3111.B
	Barium (Ba)	<0.05 mg/L	--	3113.B
	Total Nitrogen (Kjeldahl)	<5.0 mg/L	100 mg/L	KJELDHAL
	E.coli	Absent	Absent	ISO 7251:2005
	Fecal Coliform (MPN/100 ml)	<1.8*	5000 or Less	9221B-C
Total Phenol	0.95 mg/L	1.0 mg/L	5530.D	

*As per MPN (most probable number) chart (APHA-22nd edition), MPN <1.8 indicates absence of test organism in the supplied sample.

[Signature]
05/04/2022

Analyst

A. H. M. Shofiqul Islam Molla Jamal
Senior Scientific Officer
Institute of National Analytical
Research & Service (INARS)
BCSIR, Dhaka-1205.

[Signature]
05.04.2022

Supervisor

Mubammad Abdullah Al-Mansur
Principal Scientific Officer
Institute of National Analytical
Research & Service (INARS)
BCSIR, Dhaka-1205.

[Signature]
05.04.2022

Director

A. H. M. Shofiqul Islam Molla Jamal
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APPENDIX 7: DETAILS OF TRAINING AND CAPACITY BUILDING PROGRAMS

Package-1: Intake/RWP/WTP Construction Sites

RISK ASSESSMENT & PERMITS TO WORK (PTW) STATUS

N/S		Training	Session	Persons	Date	
GWT-WTP	1	HSE Induction	11	47	29-May-22 01-Jun-22 04-Jun-22 08-Jun-22	14-Jun-22 15-Jun-22 18-Jun-22 19-Jun-22 25-Jun-22
	2	Manual Handling	1	9	18-Jun-22	
	3	Hot Work Safety	1	8	14-Jun-22	
	4	Basic Electrical Safety	3	4	01-Jun-22 04-Jun-22 15-Jun-22	
	5	GWT Life Saving Rules	10	28	29-May-22 01-Jun-22 04-Jun-22 08-Jun-22	14-Jun-22 15-Jun-22 18-Jun-22 19-Jun-22 25-Jun-22
CAMCE	1	HSE Induction	7	127	30-May-22 1-Jun-22 4-Jun-22 8-Jun-22	11-Jun-22 18-Jun-22 25-Jun-22
	2	Working at Height	6	126	30-May-22 1-Jun-22 4-Jun-22	8-Jun-22 11-Jun-22 18-Jun-22
	3	Personal Protective Equipment	1	7	30-May-22	
	4	Hand & Finger Safety	3	48	30-May-22	
	6	Hazard Recognition and Control	2	34	1-Jun-22 18-Jun-22	
	8	GWT Life Saving Rules	7	127	30-May-22 1-Jun-22 4-Jun-22	8-Jun-22 11-Jun-22 18-Jun-22 25-Jun-22

GWT INTAKE SAFETY TRAINING

N/S		Training	Session	Persons	Date	
GWT-INTAKE	1	Induction	14	214	26-May-22 27-May-22 28-May-22 30-May-22 1-Jun-22 3-Jun-22 5-Jun-22	6-Jun-22 7-Jun-22 9-Jun-22 11-Jun-22 14-Jun-22 19-Jun-22 20-Jun-22
	2	Environmental Awareness	10	141	26-May-22 27-May-22 28-May-22 30-May-22 1-Jun-22	7-Jun-22 9-Jun-22 11-Jun-22 14-Jun-22 20-Jun-22
	3	Work at Height Training	10	141	26-May-22 27-May-22 28-May-22 26-May-22 27-May-22 28-May-22	30-May-22 1-Jun-22 7-Jun-22 9-Jun-22 11-Jun-22 14-Jun-22 20-Jun-22
	4	GWT Live Saving Rules	14	214	26-May-22 27-May-22 28-May-22 30-May-22 1-Jun-22	3-Jun-22 5-Jun-22 6-Jun-22 7-Jun-22 9-Jun-22 11-Jun-22
	5	Hand & Finger Safety Training	3	63	3-Jun-22 6-Jun-22 20-Jun-22	
	6	PPE Awareness Training	3	55	3-Jun-22 6-Jun-22 20-Jun-22	
	7	Hazard Recognition & Control	1	25	5-Jun-22	
	8	Hazard Communication	2	29	19-Jun-22 20-Jun-22	
	9	Confined Space Entry Training	1	33	3-Jun-22	

GWT INTAKE SAFETY TRAINING

	N/S	Training	Session	Persons	Date
GWT-RWP	1	Induction	4	12	4-June-2022 14-June-2022 15-June-2022 20-June-2022
	2	GWT Live Savings Rules	1	8	20-Jun-22
	3	Environmental Awareness	2	8	14-Jun-2022 15-June-2022
	4	Compressed Gas cylinder Awareness	1	6	3-Jun-22
	5	Heat Stress/ Environmental Awareness	1	8	15-Jun-22
	6	Slip,Trip and fall Awareness	1	8	20-Jun-22
	7	Improvement Of Safety Culture	1	8	14-Jun-22
	8	PTW System	1	8	14-Jun-22
	9	Hot Works procedures	2	3	09-June-2022 15-June-2022
	10	Working around heavy equipment	1	8	20-Jun-22

GWT WTP SAFETY TRAINING

	N/S	Training	Session	Persons	Date
GWT-WTP	1	HSE Induction	2	5	9-Apr-22 20-Apr-22
	2	GWT Life Saving Ruls	2	5	9-Apr-22 20-Apr-22
CAMCE	1	HSE Induction	6	31	11-Apr-22 13-Apr-22 16-Apr-22 18-Apr-22 20-Apr-22 23-Apr-22
	2	Working at Height	4	25	11-Apr-22 16-Apr-22 20-Apr-22 23-Apr-22
	3	Working Around Heavy Vehicle Training	1	9	11-Apr-22
	4	Gas Cutting & Welding	1	3	9-Apr-22
	5	Confined Space Entry	2	52	9-Apr-22 16-Apr-22
	6	Hazard <u>Recognition</u> and Control	1	24	24-Apr-22
	7	GWT Life Saving <u>Ruls</u>	6	31	11-Apr-22 13-Apr-22 16-Apr-22 18-Apr-22 20-Apr-22 23-Apr-22

GWT INTAKE SAFETY TRAINING

N/S	Training	Session	Persons	Date	
GWT-INTAKE	1	Induction	11	102	28-Mar-22
	2	Environmental Awareness	8	67	28-Mar-22
	3	Work at Height Training	7	73	28-Mar-22
	4	GWT Live Saving Rules	11	102	28-Mar-22
	5	Hot Work Training	1	17	12-Apr-22
	6	Workplace Ergonomics	1	20	30-Mar-22
	7	Gas Welding & Cutting Training	1	20	30-Mar-22
	8	Confined Space Entry Training	2	35	10-Apr-22 12-Apr-22
	9	Working Around Heavy Equipment	1	20	12-Apr-22
	10	Flagman Training	1	18	30-Mar-22
	11	Heat Stress Training	1	18	10-Apr-22
	12	Excavation Hazard & Control	1	20	2-Apr-22
GWT-RWP	1	Induction	5	22	30-Mar-22 01-Apr-22 10-Apr-22 15-Apr-22 17-Apr-22
	2	GWT Live Savings Rules	4	17	30-Mar-22 10-Apr-22 17-Apr-22
	3	Environmental Awareness	4	17	30-Mar-22 10-Apr-22 17-Apr-22
	4	Training Rigger & Signalman	1	4	6-Apr-22

GWT WTP SAFETY TRAINING

N/S	Training	Session	Persons	Date	
GWT-WTP	1	HSE Induction	9	19	8-May-22 9-May-22 11-May-22 16-May-22 18-May-22 21-May-22 23-May-22
	2	GWT Life Saving Rules	9	19	8-May-22 9-May-22 11-May-22 16-May-22 18-May-22 21-May-22 23-May-22
CAMCE	1	HSE Induction	11	274	28-Apr-22 9-May-22 10-May-22 11-May-22 14-May-22 16-May-22 18-May-22 19-May-22 23-May-22 25-May-22
	2	Working at Height	7	181	28-Apr-22 11-May-22 16-May-22 18-May-22 23-May-22 25-May-22
	3	Manual Handling	4	103	9-May-22 10-May-22 14-May-22 25-May-22
	4	Emergency Response and Evacuation	3	92	9-May-22 10-May-22 14-May-22
	5	Scaffolding Erector and Dismantling Training	1	21	21-May-22 22-May-22
	6	Rigging & signalman Training	1	15	23-May-22 24-May-22
	7	GWT Life Saving Rules	11	274	28-Apr-22 9-May-22 10-May-22 11-May-22 14-May-22 16-May-22 18-May-22 19-May-22 23-May-22 25-May-22

GWT INTAKE SAFETY TRAINING

	N/S	Training	Session	Persons	Date
GWT-INTAKE	1	Induction	8	97	10-May-22 11-May-22 14-May-22 17-May-22 18-May-22 19-May-22 22-May-22 23-May-22
	2	Environmental Awareness	3	42	17-May-22 18-May-22 23-May-22
	3	Work at Height Training	6	79	11-May-22 14-May-22 17-May-22 18-May-22 19-May-22 23-May-22
	4	GWT Live Saving Rules	8	97	10-May-22 11-May-22 14-May-22 17-May-22 18-May-22 19-May-22 22-May-22 23-May-22
	5	Hot Work Training	1	34	10-May-22
	6	Dump Truck Dangers	3	49	11-May-22 14-May-22 17-May-22
	7	Manual Handling Training	3	62	10-May-22 14-May-22 17-May-22
	8	Emergency Evacuation Training	3	34	10-May-22 14-May-22 17-May-22
	9	Working Around Heavy Equipment (Blind Spots)	1	12	22-May-22
	10	Flagman Training	1	15	14-May-22
	11	Scaffolding Safety Training	1	10	18-May-22
	12	Confined Space Entry Training	2	46	10-May-22 22-May-22

GWT INTAKE SAFETY TRAINING

	N/S	Training	Session	Persons	Date
GWT-RWP	1	Induction	4	12	9-May-22 10-May-22 21-May-22
	2	GWT Live Savings Rules	3	12	9-May-22 10-May-22 21-May-22
	3	Environmental Awareness	2	8	9-May-22 21-May-22
	4	Basic Workshop Hygiene	1	4	17-May-22
	5	Electrical Safety	1	4	17-May-22
	6	Excavation Hazards and Controls	1	3	9-May-22
	7	Fall Protection and Prevention system	2	7	10-May-22 19-May-22
	8	Fire prevention and protection	1	4	17-May-22
	9	Hot Works procedures	1	3	19-May-22
	10	Plant and Equipment Awareness training	1	3	19-May-22
	11	Safely Pump Operation	1	4	10-May-22
	12	Working around heavy equipment	1	4	17-May-22

Package-2: Treated Water Pipeline

 中工国际工程股份有限公司 CHINA CAMC ENGINEERING CO., LTD.						
CAMC INTERNAL TRAINING RECORD						
SL.NO	DATE	AGENCY	TRAINING TITALE	TOTAL PARTICIPATION	TRAINING PHOTO	REMARKS
1	08.05.2022	CAMCE	HSE Induction Training	4		
2	10.05.2022	CAMCE	Lifting and Crane Safety	6		
3	10.05.22	CAMCE	Lader Safety	16		
4	15.05.2022	CAMCE	HSE Induction Training	2		
5	18.05.2022	MDSC	HSE Induction Training	1		
6	21.05.2022	WASA, MDSC	HSE Induction Training	10		
7	23.05.2022	CAMCE	First Aid Training (CPR)	3		
8	01.06.2022	MDSC	HSE Induction Training	1		June_22
9	03.06.2022	CAMCE	HSE Induction Training	14		June_22
10	05.06.2022	CAMCE	Risk Assessment and Risk Metrix for Management	6		June_22
11	07.06.2022	CAMCE	Fire fighting and use of fire extinguisher.	22		June_22
12	07.06.2022	CAMCE	Mock Drill of Fire Fight.	27		June_22
13	08.06.2022	MDSC	HSE Induction Training	1		June_22
14	12.06.2022	CAMCE	HSE Induction Training	8		June_22
15	12.06.2022	CAMCE	Manual Material Handling	18		June_22
16	21.05.2022	CAMC & MDSC	HSE Project Management & Supervisory training has been conducted today	4		June_22
17	23.06.2022	CAMC Office Assistant, Security, Cleaner, Driver, Cook	Covid-19 Prevention, Our Responsibility, and nasseassry Prequation, and what We have to do.	11		June_22
18	24.06.2022	All Worker	Covid-19 Prevention, Our Responsibility, and nasseassry Prequation, and what We have to do.	15		June_22
19	26.06.2022	CAMCE	HSE Induction Training for New worker.	6		June_22
20	27.06.2022	MDSC	HSE Induction Training	2		June_22
21	28.06.2022	MDSC	HSE Induction Training	1		June_22
22	29.06.2022	CAMC	HSE Induction Training	1		June_22

APPENDIX 8: DETAILS OF CONSULTATIONS CONDUCTED

One public consultation meeting conducted in this report period.

Package and Date	Place	No of Participants	Nature of participants	Points Discussed	Issue Raised/ Feedback / Remarks
Package 1 (26th February 2022)	Atadi RWP construction Site	14	Farmer, Retired Govt. officer, Housewives and Businessman	-HSE issues related to the construction activities of RWP	All the participants were happy with the existing HSE protocols of contractor.
Package 2	No meeting held	N/A	N/A	N/A	N/A
Package-3.1	N/A	N/A	N/A	N/A	N/A
Package-3.2	N/A	N/A	N/A	N/A	N/A

APPENDIX 9: COPIES OF NOTIFICATIONS / ORDERS FOR ESTABLISHING GRM AND GRCS

Notification is under process and will be annexed in the next SEMR

**APPENDIX 10: PUBLIC COMPLAINTS RECEIVED DURING REPORTING PERIOD AND
PENDING IN PREVIOUS REPORTS**

S. No.	Date of complaint	Package No.	Type of Complaint	Grievance details	Status	Number of days for resolution
1	No complaint received	Package-1	No complaint received	No complaint received	N/A	N/A
2	No complaint received	Package-2	No complaint received	No complaint received	N/A	N/A

**APPENDIX 11: PMU APPROVED SITE SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN
OF PACKAGE-1**

APPENDIX 12: ENVIRONMENT HEALTH AND SAFETY (EHS) INSPECTION CHECKLIST OF MDSC