Environmental Monitoring Report

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Semestral Report (July-December 2024)
March 2025

Bangladesh: Skills for Industry Competitiveness and Innovation Program

Prepared by Skills Development Coordination and Monitoring Unit (SDCMU), Skills for Industry Competitiveness and Innovation Program (SICIP) under Finance Division, Ministry of Finance, Government of Bangladesh for the Asian Development Bank (ADB).

Semi-annual Environmental Monitoring Report
(July to December 2024)

Project No. 55148-001
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ADB Loan Number 4334-BAN (COL): Skills for Industry Competitiveness and Innovation Program (SICIP) Program (SICIP)

Prepared by:

Skills Development Coordination and Monitoring Unit (SDCMU), Skills for Industry Competitiveness and Innovation Program (SICIP)under Finance Division, Ministry of Finance.

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LIST OF ACRONYMS

BMET	Bureau of Manpower, Employment and Training
CBLM	Competency-Based Learning Material
CS	Competency Standard
DSC	Design Supervision Consultant
EARF	Environmental Assessment and Review Framework
EMP	Environmental Management Plan
IEE	Initial Environmental Examination
IVA	Independent Verification Agency
KOICA	Korea International Cooperation Agency
MoTJ	Ministry of Textile and Jute
MoU	Memorandum of Understanding
NHRDF	National Human Resource Development Fund
NSDC	National Skills Development Council
NSDP	National Skills Development Policy
PKSF	Palli Karma-Sahayak Foundation
RBL	Result Based Lending
RF	Resettlement Framework
SECPF	Small Ethnic Communities Planning Framework
SECPP	Small Ethnic Communities Peoples Plan
SEIP	Skills for Employment Investment Program
SPS	Safeguard Policy Statement
STTL	Smart Textile Technology Living Lab
SWAp	Sector Wide Approach
TMS	Training Management System
TTC	Technical Training Center
TVET	Technical and Vocational Education and Training

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EXECUTIVE SUMMARY

Finance Division, Ministry of Finance of the Government of Bangladesh is implementing the program titled “Skills for Industry Competitiveness and Innovation Program (SICIP)” with the financial assistance of the Asian Development Bank (ADB) to develop skilled workforce through advanced technical and competency-based training programs across the country. The SICIP will establish a complete quality assurance mechanism to facilitate collaborations between training institutes and industries which will ensure in developing human resources for the priority industry sectors.

More specifically, the outcome of the program will be an increased technology-oriented skilled workforce for priority and emerging industries across skill levels. The outcome will be measured by the following: (i) skilled workers across skill levels-from basic to advanced technical skill-produced for at least 10 priority and emerging industries, with 65% job placement for new job seekers and (ii) women and people from socially disadvantaged groups with employable and/or life skills increased through specially targeted programs. The program is expected to benefit about 220,000 new and existing workers over a 6-year implementation period.

Under SICIP program, various civil works such as setting up new training centers or renovating existing ones at different locations in Bangladesh will be implemented. For this project, the national and international consultants had been engaged to support the preparation of preliminary & detail engineering design works, that include equipment layouts for the proposed buildings; these design works will form technical specifications for preparation of bidding documents. The proposed buildings include two smart textile technology labs (STTLs) under the Ministry of Textiles and Jute (MoTJ), classroom and lab buildings at selected universities, and other renovation works for polytechnics or TVET institutes. In this regard, the national consultants have been engaged to prepare detail engineering design and drawings including parts of feasibility reports for some of the proposed infrastructures.

This semi-annual report presents the status of project implementation, details of compliance with environmental regulations of the Government of Bangladesh and Safeguards Policies of ADB, details of compliance with environmental loan covenants and the status of compliance with various aspects of EMP as stated in the IEE reports.

Contractors for the civil works of STTL and Kumudini Nursing dormitory have been engaged in August 2024 and the physical works have been started. Site mobilization work including site office setup and site survey work has been completed during this reporting period. The SEMPs and CEMPs have been prepared for the both sites following the IEEs and site conditions. SEMPs and CEMPs have been shown in annex-6 and annex-7 respectively.

The IEEs for STTL(Chattogram) and NATI are also prepared and approved by SDCMU. An Environmental specialist will be deployed soon for effectively monitoring the environmental parameters for the civil works under SICIP. The IEE for Kumudini nursing dormitory was prepared under SEIP project and published in ADB’s website in Feb 2024.

It is noted that the intermittent type design consultants have been engaged for performing the detail engineering drawings and bill of quantities for East west university and BUTEX building. Preparation of preliminary drawings for those civil works including IBA is ongoing and the detailed engineering design and drawings will be completed by 2025.

Baseline survey was conducted for the newly awarded packages STTL and KWT Dormitory sites. Air quality, noise status and water quality parameters have been tested and data were presented in the relevant section in this report. The base line data shows the test results of air, water and noise levels are within the permissible limits of Bangladesh standards as well as international standards.

Regarding OHS, all the site engineers, staffs and labors were found with appropriate PPEs and no fetal accidents were occurred during this reporting period. 02 tool box training on health safety were held before starting the construction works for the both sites. First Aid box, fire extinguishers and others safety equipment were found available during the site visits and no child labors were engaged in the construction works. GRC committee were formed for the both sites and displayed their names with contact information. So far, no complaints have been recorded at either the site level or the SDCMU level.

Furthermore, several coordination meetings were held during this reporting period with other organizations - MoTJ, EWU, BUTEX, IBA and Kumudini for designing and implementing the designated civil works.

1 INTRODUCTION

1.1 Background

1. The Asian Development Bank (ADB) is financing the results-based lending (RBL) program to support the Government of Bangladesh's Skills Development Framework for Economic Competitiveness 2023. The program aims to (i) increase the technology-oriented skilled workforce across emerging and priority sectors, (ii) promote inclusive skilling and upskilling opportunities for women and socially disadvantaged groups, (iii) incentivize industry−university partnerships to nurture innovation capacity and improve industry competitiveness, and (iv) foster skills for climate-resilient manufacturing processes and green technologies.

2. Finance Division, Ministry of Finance of the Government of Bangladesh is implementing the program titled "Skills for Industry Competitiveness and Innovation Program (SICIP)" with the financial assistance of the Asian Development Bank (ADB) to develop skilled workforce through advanced technical and competency-based training programs across the country. The SICIP will establish a complete quality assurance mechanism to facilitate collaborations between training institutes and industries which will ensure in developing human resources for the priority industry sectors.

3. **Specifically, the objectives are**:

i)The objectives of scheme 1 is to (i) develop the capacity for advanced technical skills training for emerging and priority industries and (ii) strengthen managerial capabilities, research and development (R&D) driven innovation, and green skills capacity in the industries. These objectives are expected to increase technology-oriented skilled workforce and boost the country's industry competitiveness and innovation capacity.

ii) The objectives of scheme 2 is to (i) deliver industry-relevant basic and mid-level skills training for priority and emerging industries and (ii) promote inclusive skilling and upskilling opportunities for women and socially disadvantaged groups through targeted training programs. These objectives are expected to enhance the job-ready skills and productivity of the country's workforce, contributing to economic diversification and competitiveness of industries.

iii)SICIP Scheme-3's activity coverage includes enhancing institutional capacity for skills monitoring and management by coordinating all training and other activities under the SICIP program. Objectives are:

- Establishment of an Industry Advisory Board in order to prepare s guideline for development of advanced technical skills courses
- Arrange for wide scale skills-gap analysis to facilitate program effectiveness
- Build and establish a IT based Trainee Management System to monitor training performance and put quality assurance in place
- Arrange for necessary analytic studies (e.g. tracer studies, skills trend analysis)
- Effective management and governance of overall skills development eco-systems.
- Strengthening skills institutions like NSDA, NHRDF
- Arrange for financial audits, internal audits and performance audits.
- Arrange for independent verification of attainment of performance indicators

1.2 Impact and Outcome

4. The impact will be increased income and productivity of the working population aged 15 and over, aligned with NSDP. The outcome will be increased employment in priority sectors and skills for males and females.

5. The outcome for this project is- Technology-oriented skilled workforce increased for priority and emerging industries across skill levels

1.3 Outputs

6. The outputs of this project are:

(i) advanced technical skills and managerial capabilities for emerging and priority industries,
(ii) industry−university collaborations for R&D projects with applications of advanced or green technologies,
(iii) socially inclusive skilling and upskilling for women and people from disadvantaged groups, and
(iv) enhanced skills monitoring and coordination.

1.4 Scope of the civil works under this project

7. SICIP involves in various civil works, such as setting up new training centers or renovating existing ones at different locations in Bangladesh. For this new project, the pool of national and international consultants had been engaged to support the preparation of preliminary & detail engineering design works, that include equipment layouts for the proposed buildings; these design works form with technical specifications for preparation of bidding documents. The proposed buildings include two smart textile technology labs (STTLs) under the Ministry of Textiles and Jute (MoTJ), classroom and lab buildings at EWU, BUTEX, IBA campus, and other renovation works for polytechnics, TTCs or TVET institutes. The locations of the proposed site are shown in the figure.

Location Map

1.5 Environmental Safeguards Category

8. The SICIP program will support the construction of STTLs and other construction or upgrading of other academic buildings. Based on initial screening of components proposed, the project was assigned to Category B as per ADB's Safeguard Policy Statement, 2009 and accordingly, IEEs were deemed the appropriate mode of assessment for subprojects. The potential adverse impacts of these civil works are expected insignificant, site-specific, short-term, and mitigation measures are readily available. Considering several civil works, an environmental assessment and review framework (EARF) has been developed to facilitate safeguards planning and implementation and to streamline safeguards compliance. The EARF guides (i) subproject screening and environmental assessment for due diligence on eligible activities, (ii) initial environmental examination (IEE) including environmental management plan (EMP) for category B subprojects, and (iii) stakeholder consultation and information disclosure. Following the country system, the civil works under SICIP is included in the 'Orange' list in Schedule 1 of the

Environment Conservation Rules 2023. In this regard, This IEE report will be reviewed by DoE, and the anticipated categorization will be confirmed at that time. The EMPs are being be incorporated in the bidding and contract documents, implemented by contractors and monitored by SDCMU.

1.6 Description of civil works

9. The list of civil works under SICIP project is described as below:

Table 1-1: Civil works under SICIP

SL	Description of Works	Indicative area (Sqm)	Estimated value (USD)	Remarks
1	Construction and Renovation of Narsingdi Automotive Training Institute (NATI)	4,500 sqm	2.2 million	Scheme-1
2	Construction of STTL in textile college in Chattogram	12,000 sqm	7.80 million	Scheme-1
3	Construction of STTL in new textile college in Gazipur	9,000 sqm	11.0 million	Scheme-1
4	New EDC building at East West University(EWU)	1,700 sqm	2.0 million	Scheme-1
5	Renovation of EDC building at IBA	7,300 sqm	4.0 million	Scheme-1
6	New EDC building at BUTEX	TBD	5.0 million	Scheme-1
7	Construction of student dormitory at Kumudini	14,000 sqm	6.80 million	Scheme-2
8	Kumudini Academic building	12,000 sqm	5.0 million	Scheme-2
9	Construction and Renovation of Sylhet Training Center	4,500 sqm	1.80 million	Scheme-2

1.7 Scope of the report & Reporting period

10. The scope of this monitoring report is specific for the civil works under SICIP of KWT, NATI, STTL, EDCs Buildings and TTCs under BMET. The reporting period is July to December 2024.

11. The Semi-Annual Environmental Monitoring Report (EMR) presents the status of sub project implementation, details of compliance with environmental regulations of the Government of Bangladesh and safeguards policies of ADB, details of compliance with environmental loan covenants, details of complaints received and their redressal and the status of compliance with various aspects of EMP as stated in the IEE reports. In this report the performance indicators of environmental works under the proposed civil works of SICIP have been summarized and analyzed to measure the monitoring parameters. This semi-annual environmental monitoring report consists of three main parts: an introduction section, Environmental monitoring, Environmental management and conclusion.

1.8 Package and sub-project wise progress status

12. SICIP consists of the four outputs and the progress according to the outputs are presented below:

Output-1: Capacity for advanced technical skills training developed for emerging and priority sectors.

13. This output will cultivate higher-level technical skills for existing priority and newly emerging sectors, such as electronics, automotive, and pharmaceutical, through partnerships between industries and education and/or training institutes (DLI 3). The skill requirements will be identified by leading industries, particularly for high-demand technology-related skills. Industries will be involved in developing curricula and instructors as well. The Finance Division in the MOF is setting up an industry advisory board for the program, consisting of leading industries. Some polytechnics in industrial areas will be converted into specialized polytechnics to offer customized skills courses for emerging industries (e.g., automobiles, electronics). This output will also enhance the institutional capacity to produce skilled workers adept at emerging technologies, including green technologies (DLI 4). It will create an automotive skills training center at a polytechnic focusing on electric vehicles, establish smart textile technology living labs (STTLs) in two textile engineering colleges and set up high-demand technology-based courses in garments universities and in a light engineering institute. Many of these technical courses will have international partnerships for transfer of knowledge, training of instructors, and capacity development

Progress: Detail engineering design and BOQ for STTL and NATI were completed and this is continuing for EWU, BUTEX & IBA. Contracts were awarded to the contractor for STTL and Kumudini dormitory buildings. The mobilization works are ongoing and the site offices & site readiness works have been completed so far. In this reporting period, 5 Industry academic partnership MOUs (including international partnerships) have been signed for advanced technical training for emerging and priority industries (e.g., automotive, light engineering).

Output-2: Managerial capabilities and green innovation capacity strengthened.

14. Building on the SEIP's introduction of executive development centers (EDC) that impart customized mid-level managerial training through university–industry partnerships, the government will further institutionalize the EDCs in partnering universities (e.g., Bangladesh University of Textiles, BRAC University, Dhaka University, and East West University).16 EDC courses will be redesigned to align with industry's technology trends and global environmental standards, including green technologies and business practices (DLI 5). This output will also promote applied R&D for industry solutions and incubation opportunities (DLI 6) by providing competitive grants. This initiative intends to foster collaborative innovations in industrial production processes and value-added product or service development. Applied R&D projects supporting the growth of small and medium-sized enterprises and climate-resilient products or services will be prioritized. The government will make efforts to bring overseas scientists and engineers of Bangladeshi origin to contribute to the transfer of knowledge and skills, which will connect local industries and academies to the global network. This will become a basis of developing a government policy or program

Progress: Business plans have been prepared and signed MoU with four EDCs. The training in the EDCs have been started and so far, 675 trainees have been enrolled for trainings.

Output-3: Access to socially inclusive skilling and upskilling expanded.

15. This output will continue to support basic and mid-level skills training of new entrants or existing workers with industry partnerships, following the SEIP's sector-focused training models, covering at least nine priority sectors (DLI 7). These will be implemented in close coordination with the National Skills Development Authority (NSDA) and National Human Resource Development Fund (NHRDF).It will also create specially targeted skills programs for socially disadvantaged groups (e.g., people with disabilities, transgender people, and people in small ethnic communities); women garment sector workers who are at high risk of job loss because of automation; and those who may be negatively affected by the transition to a low-carbon economy. For women, upskilling and multi-skilling for future garment work or alternative livelihoods, community-based support for empowerment, and green entrepreneurship skills will be provided in partnership with the H&M Foundation and the Asia Foundation. The government will also scale up skills courses with international certification for potential migrant workers, which will enable them to gain better employment opportunities overseas and increase remittance flows (DLI 8).

Progress: Business plans have been prepared and signed MoU for 9 industry associations or other partners with updated training course plans, covering 9 priority sector training.

Output-4: Institutional capacity for skills monitoring and management enhanced

16. This output will support the establishment of an industry advisory board for output 1 activities, which will guide the development of advanced technical skills courses by ensuring the coverage of emerging sectors and new skills requirements. The output will continue to enhance monitoring mechanisms, such as the online trainee management system (TMS) created under the SEIP to monitor training performance and track its outcomes. Analytic studies, such as a tracer study and industry skills trends analysis, will be undertaken to assess the effectiveness of new skills programs and to institutionalize effective training partnership models. The output will ensure effective management and governance of skills development systems overall, by undertaking financial audits, internal audits, and performance audits of the RBL program.

Progress: The tracking progress of training related data through TMS is ongoing and sex disaggregated data and other attributes are incorporated in the TMS. Also noted that an annual internal audit plan for the RBL program developed by SICIP and approved.

1.9 Document preparation for IEE/EARF

17. The IEE for Kumudining Nursing Hostel and Technical Training Centers in Sylhet, STTL and NATI have been prepared and disclosed SICIP website. The EARF was finalized and disclosed on the ADB website in April 2023". As stated in the IEE, the project has been categorized as "B" considering environmental impact aspects as per ADB's Safeguards Policy Statement (SPS - 2009).

Table 1-2: Safeguard Documentation & Disclosure Status as of December 2024

Sl.	Name of the Package	IEE	SEMP	Disclosed on ADB Website	Disclosed on SICIP Website
1	Construction and Renovation of Narsingdi Automotive Training Institute (NATI)	Done	Done	×	×
2	Construction of STTL in textile college in Chattogram	Done	Done	×	×
3	Construction of STTL in new textile college in Gazipur	Under process	Under process	×	×
4	New EDC building at East West University(EWU)	Under process	Under process	×	×
5	Renovation of EDC building at IBA	Under process	Under process	×	×
6	New EDC building at BUTEX	Under process	Under process	×	×
7	Construction of student dormitory at Kumudini	Done	Done	√	√
8	Kumudini nursing academic building	Under process	Under process	×	×
9	Construction and Renovation of Sylhet Training Center	Done	Under process	√	√

1.10 Status on relevant GOB permits

18. All of the civil works under SICIP will be constructed under the premises of the respective institution and the site clearance are not mandatory for all sites. However, the status is presented below.

Table 1-4: Status of GOB permits

SL	Permits	STTL Site	KWT Site	NATI Site	TTC in Sylhet
1.	NOC from DoE	Not Required	Not Required	Not Required	Not Required
2	NOC from Fire Service & Civil Defense Authority	Not Required	Not Required	Not Required	Not Required
3.	NOC from Local Authority	Not Required	Not Required	Not Required	Not Required

1.11 Summary Qualitative and quantitative monitoring data

19. The civil works under SICIP are being implemented by SDCMU and an Engineering team is engaged for managing the contracts. So far contracts have been awarded for Kumudini dormitory and STTL in Chattogram sites and actual physical works have been just started. Site mobilization works, site office preparation and site cleaning works completed in this reporting period. The cost associated with EMPs had been included in their Bid documents. It is also noted that the intermittent type design consultants have been engaged for performing the detail drawings and bill of quantities for those civil works and so far, the BOQ & design for NATI and Sylhet TTC have been completed. According to ADB Safeguard Policy Statement, 2009, EMPs have also been shared to avoid adverse impacts of projects on the environment and affected people where possible.

1.12 Progress of civil works

20. The detail progress is listed below:

Table 1-5: Progress of Civil works under SICIP

SL	Description of Works	Physical progress	Financial Progress	Comments
1	Construction and Renovation of Narsingdi Automotive Training Institute (NATI)	The detailed design, drawings, and BOQ have been completed, and this package is now at the procurement stage	-	Procurement stage
2	Construction of STTL in textile college in Chattogram	Contract was awarded to Sheltech Engineering Ltd. on 1st August 2024. Site mobilization work, including site office preparation, leveling, and dressing, is almost completed.	-	Site Mobilization begins.
3	Construction of STTL in new textile college in Gazipur	SDCMU visited the site and found that the land is a low-lying area, which is part of the proposed textile college under MoTJ. Currently the DPP is being reviewed by department of textiles and the resubmission of the revised DPP to MoTJ is in process. After the approval of the DPP and completion of other formalities, SICIP will begin the detailed design work.	-	Planning stage
4	New EDC building at East West University(EWU)	SDCMU visited and finalized the construction site. This work is currently at the design stage. The digital survey and soil test have been completed, preliminary design work is in progress.	-	Design stage
5	Renovation of EDC building at IBA	SDCMU visited and finalized the construction site. The work is currently at the preparatory stage. The physical survey and soil test have been completed, and preliminary design work is in progress.	-	Design stage
6	New EDC building at BUTEX	SDCMU visited and finalized the construction site. This work is currently at the design stage. The digital survey and soil test have been completed, and preliminary design work is in progress.	-	Design stage

SL	Description of Works	Physical progress	Financial Progress	Comments
7	Construction of student dormitory at Kumudini	Contract was awarded to Sheltech Engineering Ltd. on 1st August 2024. Site mobilization work, including site office preparation, leveling, and dressing, is almost completed.	-	Site Mobilization begins.
8	Kumudini nursing academic building	KWT has completed the preliminary drawings with BOQ and submitted to SICIP. SICIP is currently reviewing those BOQ and cost estimate.	-	Review stage
9	Construction and Renovation of Sylhet Training Center	The detailed design, drawings, and BOQ have been completed, and the package is now at the procurement stage	-	Procurement stage

1.13 Preparation of monitoring checklist

21. The monitoring check list for EHS status, pollution status, grievance status, labour shed status, worksite traffic and accidents status etc. will be developed based on the following Monitoring parameters as described in the IEE.

Table 1-6: Site Specific Environmental Monitoring Parameters to be monitored during Construction phase

Item	Parameters	Location
Ambient Air Quality	PM $_{10}$, PM $_{2.5}$, SPM, SO_X NO_X	Around the project site
Groundwater	pH, TDS, Ammonia, Nitrate, Phosphate, As, Fe, Mn and Coliforms	At the project site
Surface water quality	pH, TDS, Ammonia, Nitrate, Phosphate, As, Fe, Mn, BOD5, COD, DO, SS, total coliform, Total P, Total N, turbidity.	Around the project site
Noise Level	Noise at different locations and to nearest receptors	Around the project site and nearest receptors
Health	Health status of the workers, visual observation and record check	At site

1.14 Training and Capacity Building Activities

22. In this reporting period, training /workshops on Environmental management and Site occupational Health & Safety for civil works have been planned and will be conducted in the upcoming period. Regular site safety /tools box meetings were held in the both sites and workers are always found with safety equipment(PPE).

1.15 Grievance Redress Mechanism (GRM)

23. Grievance Redress Mechanism (GRM) is designed to resolve affected people's (APs) concerns, complaints, and grievances about the subproject's social and environmental performance. **Till now, no complain has been received from any person regarding the site and its activities.** Two Grievance Redress committee (GRC) have been formed at site level and SDCMU level and the details are given below:

Table 1-7: GRC Members at SDCMU level

Sl	Designation	Email Address	Position	Contact no.
1.	Deputy Executive Program Director (DEPD-2), SICIP	manjur@sicip.gov.bd	Convenor	+880255138753-5
2.	Gender & SD Specialist,SICIP	gender.sp@ sicip.gov.bd	Member	+880255138753-5
3.	Asistant Executive Program Director(AEPD-7),SICIP	sohel@sicip.gov.bd	Member	+880255138753-5
4.	Engineering Specialist-1, SICIP	badruzzaman@sicip.gov.bd	Member secretary	+880255138753-5

Table 1-8: GRC Members at Site level

Sl	Designation	Email Address	Position	Contact no.
1.	Assistant Executive Program Director(AEPD-7),SICIP	sohel@sicip.gov.bd	Convenor	+880255138753-5
2.	Site Engineer-1/2/3/4	shakil@sicip.gov.bd	Member	+880255138753-5
3.	Quality Assurance Officer(Civil)	Mahfuzul.haque@sicip.gov.bd	Member	+880255138753-5
4.	Engineering Specialist-2, SICIP	kabir@sicip.gov.bd	Member secretary	+880255138753-5

Table 1-9: GRM Register Form

Sub project	Complaint Number	Date	Complaint through (phone/letter/site)	Name of Complainer	Complaint Details	Action Taken by Contractor/PMU/CSC	Date- case resolved (days required)	Remarks- further action, if any
	Subproject/work-package Name:							
STTL in textile college in Chattogram(102)	No complaints	-	-	-	-	-	-	-
Kumudini dormitory(201)	No complaints	-	-	-	-	-	-	-

1.16 Environmental Quality Test

24. Environmental quality tests will be performed in the construction sites in order to verify the current environmental condition of the project area. It helps making decisions as per the environmental impact and its effect on surroundings as well as workers. Air quality, Noise measurement and drinking water quality test will be conducted for the construction sites in order to ensure proper environmental compliance.

Air Quality: In order to verify the current quality of air, the air quality monitoring was performed in the subproject location. The aim was to collect the air quality data during construction period and then to compare the data with national standards set for Bangladesh to see if it maintains the standard and then take mitigation measures if needed. The test results show that concentration of all the air quality parameters for the subproject location is within the national standard set by DoE. The Results of the air quality monitored at the subproject locations is presented in the following table:

Table 1-10: Test Result of Ambient Air Quality Monitoring

Parameter	National Standard	STTL(CTG)	KWT Dormitory	Remarks
PM2.5	65	23.96	25.25	Satisfactory(good)
PM10	150	36.23	44.31	Satisfactory(good)
SOx	80	9.81	14.73	Satisfactory(Very good)
NOx	80	15.22	16.85	Satisfactory(Very good)
PM2.5	65	23.96	25.25	Satisfactory(good)

Water quality: In order to verify the current quality of water, the water quality monitoring was performed in the subproject location. The aim was to collect the water quality data during construction period and then to compare the data with national standards set for Bangladesh to see if it maintains the standard and then take mitigation measures if needed. Results of the water quality monitored at the subproject locations are satisfactory and those are shown in the following table:

Table 1-11a: Test Result of Water Quality Monitoring(Ground water)

Parameter	National Standard	STTL(CTG)	KWT Dormitory	Remarks
Ammonia	0.5mg/l	0.14 mg/l	0.14 mg/l	meets the standard (Safe)
Arsenic	0.05mg/l	0.006 mg/l	0.006 mg/l	meets the standard (Safe)
Iron	0.3-1 mg/l	0.35 mg/l	0.07 mg/l	meets the standard (Safe)
Manganese	0.1 mg/l	0.003 mg/l	0.1 mg/l	meets the standard (Safe)
Nitrogen	10.0 mg/l	1.3 mg/l	1.1 mg/l	meets the standard (Safe)
PH	6.5-8.5	7.3	7.7	meets the standard (Safe)
TDS	1000 mg/l	172 mg/l	220 mg/l	meets the standard (Safe)

Table 1-11b: Test Result of Water Quality Monitoring(Surface water)

Parameter	National Standard	STTL(CTG)	KWT Dormitory	Remarks
Ammonia	0.5mg/l	0.24 mg/l	0.24 mg/l	Satisfactory
Arsenic	0.05mg/l	0.005 mg/l	0.018 mg/l	Satisfactory
COD	100.0 mg/l	48 mg/l	4.0 mg/l	Satisfactory
Dissolved Oxygen	4.0 mg/l	4.90 mg/l	6.10 mg/l	Satisfactory
Iron	0.3-1 mg/l	0.85 mg/l	0.05 mg/l	Satisfactory
Manganese	0.1 mg/l	0.26 mg/l	0.03 mg/l	Satisfactory
Nitrogen	10.0 mg/l	1.7 mg/l	1.3 mg/l	Satisfactory
PH	6.5-8.5	7.2	7.8	Satisfactory
TDS	1000 mg/l	200 mg/l	230 mg/l	Satisfactory
TSS	10 mg/l	5.0 mg/l	5.0 mg/l	Satisfactory

Noise level: Noise level for the subproject sites has been monitored during the day and Night time. The result of the noise level monitored along with details of the sampling location has been shown in the following table. Noise tests were conducted during the period indicated in the table below. The results demonstrate that all measured noise levels comply with the applicable national standards.

Table 1-12: Test Result of Noise quality level

Parameter	National Standard	STTL(CTG)	KWT Dormitory	Remarks
Day	75dB	60.80	70	meets the standard(safe)
Night	70dB	51.60	57.50	meets the standard(safe)

Corrective actions: Instruments were lubricated properly, old instruments were replaced for noise reduction.

1.17 Implementation arrangements

25. The Finance Division in the MOF will be the executing and implementing agency. The SDCMU—established under SEIP—will continue to serve as the program management unit to facilitate, coordinate, and monitor all project activities. The SDCMU is headed by the Executive Program Director (EPD). The National Program Director (NPD), Secretary of the Finance Division will continue to provide policy advice, review funding, and release funds for the RBL program. All the staff of the SDCMU are recruited competitively with required expertise and experience. The SDCMU is responsible for facilitating, coordinating, and monitoring the implementation of the RBL program.

26. An inter-ministerial project steering committee (PSC), chaired by secretary of the Finance Division, includes selected senior officials from key ministries, institutions, and NSDA, with the EPD of the RBL program as the member-secretary. The PSC will provide overall policy advice and oversight, approve annual operation plans, review achievements against targets, and ensure compliance with fiduciary oversight arrangements.

27. The key implementing partner ministries include the Technical and Madrasah Education Division in the Ministry of Education; Bureau of Manpower, Employment and Training in the Ministry of Expatriates' Welfare and Overseas Employment; Ministry of Industries; and Ministry of Textiles and Jute. The Skills Development Implementation Committee (SDIC) headed by the EPD with representatives from all the public and private partner agencies will provide a common forum to discuss implementation issues and to make joint efforts to resolve problems emanating from implementation. If problems cannot be resolved at this level, these will be escalated to the PSC level for resolution.

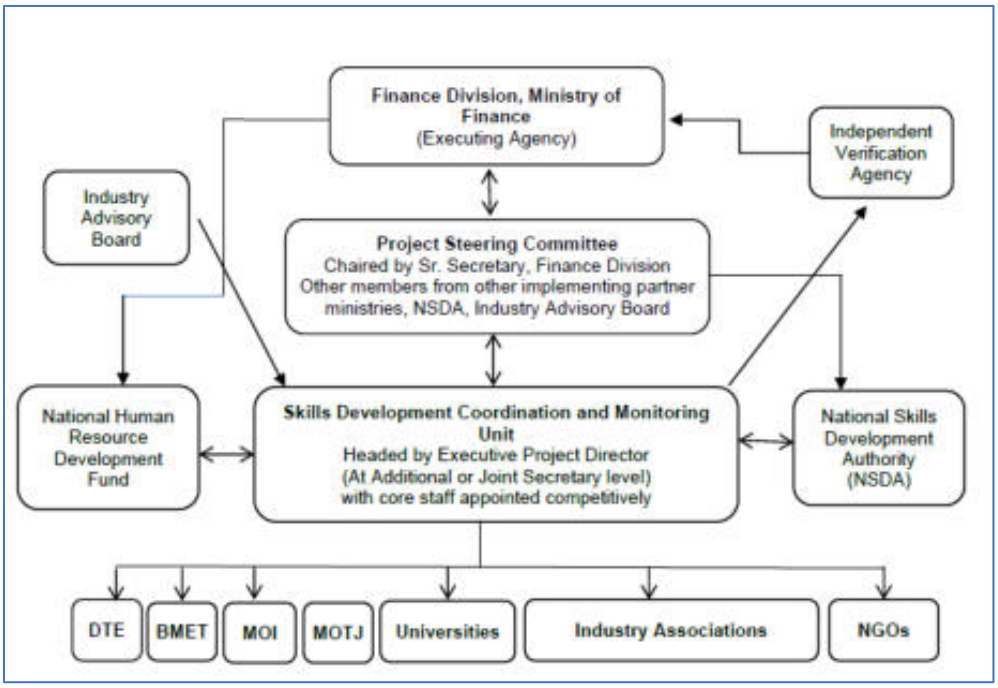
28. The Project Implementation Unit (PIU), headed by a National Program Director (NPD), is established to coordinate policy issues and monitor implementing activities of the project.

29. Project management and coordination functions for the project are provided by the Skills Development Coordination and Monitoring Unit (SDCMU). SDCMU is also responsible for providing secretarial support to the PSC and ensuring overall coordination for implementation of the project. The SDCMU is headed by an Executive Program Director (EPD), supported by 4 Deputy Executive Program Directors and 10 Assistant Executive Program Directors.

30. In SDCMU, Deputy Executive Program Director (PM-2) is the focal person for monitoring and reporting the safeguard related components. With the assistance of Environmental Expert, Construction firms will implement the EMPs. The detail information is listing below:

Sl	Designation	Email Address	Position	Contact no.
1.	**Md Manjur Alam Prodhan** Joint Secretary Deputy Executive Program Director (DEPD-2), SICIP	manjur@sicip.gov.bd	Convenor	+880255138753-5 or +8801332810882

31. The project operational organogram of SICIP is presented below.



2 ENVIRONMENTAL MONITORING

2.1 IEE, EARF & SEMP compliances

32. The IEEs and EARF for Kumudini, NATI, STTL and Sylhet TTC have been prepared and published in the websites. The site-specific environmental management plan (SEMP) considering the IEEs for the construction sites also have been prepared (Annex-6) and will ensure the applicable compliances. The contractors also prepared CEMP plan for each sites describing risk level and mitigations measures to mitigate the possible impacts(Annex-7).

33. Frequent site visit and monitoring was conducted by the consultant for the construction sites.

Table 22-1: Itinerary of monitoring visits during July to Dec 2024

Package	Location of construction site	Date of inspection	Inspection conducted by
WD-102	STTL, Chattogram	29/10/2024	Engineering specialist(1,2), AEP(PM-7), DEPD (PM-2)
WD-201	KWT,Tangail	19/12/2024	Engineering specialist(1,2), AEP(PM-7), DEPD (PM-2)-

2.2 Status Monitoring parameters/Plan

34. In this reporting period, no significant issues were noticed for reporting. As the civil works are just started, so there is no issue of tree cutting or any other significant construction work which can degrade the existing environment of proposed construction sites and surrounding areas.

Table 2-2: Status of Environmental Monitoring Plan

a) Monitoring Plan for STTL Chattogram

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
A. PRE-CONSTRUCTION PHASE					
(i) IMPLEMENTATION READINESS					
1. Environmental baseline	- Collect and analyze samples for key environmental parameters to establish a pre-project environmental baseline for development site	ESFP SDCMU ESFP CTEC	- Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2); compare to the Air Pollution control rules 2022 (minimum 8 hr sampling period) - Adjacent surface waters (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity); compare to the Environment Conservation Rules, 2023 - Groundwater in wells on site or nearby (pH, TDS, EC, DO, BOD_5, COD, Chloride, SS, As, Fe, Total-N, Total-P, Total coliform, turbidity, temperature); compare to the Environment Conservation Rules, 2023 - Ambient noise (dBa daytime, dBa night); compare to the Noise Pollution Control Rules 2006	One sample prior to start of site clearing Sampling locations: to be set by the environmental specialist employed by CSC and TMED SOU	-Complied -Baseline report has been prepared, summarizing the sample testing results. None of the samples exceeded the applicable standard limits

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
2. IEE and EMP update	- Review IEE and EMP to ensure any post-approval changes are properly accounted for and addressed, by addition of mitigation measures if necessary	ESFP SDCMU	- IEE and EMP confirmed still fully applicable - New measures added to EMP if needed to cover any changes in alignment, design or local conditions	Once before start of procurement	Will be complied
3. Verification of environmental clearances	- Confirm Site Clearance Certificate (SCC) and Environmental Clearance Certificate (ECC) have been granted, and that any conditions imposed by DOE on approval have been reflected in EMP and EMoP, as well as CEMP as applicable	ESFP SDCMU	- SCC and ECC granted. - New measures added to EMP, EMoP and CEMP if needed to meet any condition of approval specified by DOE	Once before start of procurement	Will be complied
4. CEMP verification	- Review CEMP to ensure all primary Contractor responsibilities are fully reflected, including monitoring and reporting	CSC	- Any necessary changes requested and made by Contractor. - CEMP confirmed adequate by reviewers	Once before start of construction	-Complied -CEMP has been prepared by the contractor mentioning his responsivities
5.Specialized plans verification	- Confirm that the following specialized plans have been prepared by the Contractor: - site-specific Construction Camp Management Plan(s) - site-specific Waste Management Plans (embedded within CEMP) - site-specific Emergency Response Plans (embedded within CEMP) - Compensatory Tree Planting Plan - Construction Traffic Management Plan - Asbestos-Containing Materials Removal and Disposal Plan - Soil Erosion Prevention Plan - Site Reinstatement Plan - Occupational Health and Safety Plan (including COVID-19 measures stipulated by ADB and Government of Bangladesh Guidance for Social	CSC	- All required specialized plans prepared to adequate standard and approved by relevant authority (as required in some cases)	Once before start of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	and Institutional Containment and Prevention) - Laboratory Waste Management Plan				
6. Grievance Redress Mechanisms	- Confirm that a central GRM and workers' GRM have been established and publicized	ESFP SDCMU	- Central GRM established and publicized - Workers' GRM established and explained to workers before the start of construction	Once before start of construction	-Complied -GRM committee established and circulated
7. Acoustic environment	- Convene a workshop with participation of people living and operating businesses along college Road, local ward Council representatives, RHD/LGED, police and other government agencies to discuss feasibility of limiting vehicle horn use in the STTL zone and formulate action as appropriate	ESFP SDCMU	- Workshop convened and action plan formulated if consensus for action found	Once before end of design phase, quarterly thereafter until action confirmed	Will be complied
8. Induced development and cumulative impacts	- Arrange multi-stakeholder workshop at Muhuri project Road with participation of local, upazila and district governments, all relevant government agencies, and concerned business interests (from gravel, trading, agricultural and tourism sectors, at a minimum) to initiate a broad-based public dialogue regarding the livelihoods of the local people and the people living near the site.		- Multi-stakeholder workshop with suitable broad participation convened by MoF through SDCMU	Once before end of design phase, quarterly thereafter until action confirmed	Will be complied
9.EMP training	- Arrange central and construction site EMP training for contractor, construction workers and implementing authority	ESFP SDCMU	- Central EMP training with representative from Executive agency, implementing authority and contractor - EP training at site with construction workers and supervisors	Central EMP workshop Once before construction starts, monthly site EMP briefing for construction workers	Will be complied
(ii) DESIGN					
10. Climate change mitigation	- Integrate GHG-limiting measures into facility designs, including: - substitute other materials for	SOU-SDCMU,	- All feasible GHG-reduction design measures incorporated in facility designs - Soft landscaping plan (covering all site areas not occupied by structures, roadways or	Once before approval of detailed designs	Complied (RWHS, Solar Panels, Green

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	concrete where feasible - use low-carbon concrete as much as possible - maximize use of building materials available locally - integrate photovoltaic generation into the electrical plan - specify only high-efficiency electrical and mechanical equipment - specify most fuel-efficient backup generator available - maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation - incorporate hollow wall structures where feasible - Use overhangs above large windows to prevent excessive solar penetration - Prioritize shade in the landscaping plan, with plentiful wide-crowned shade trees on all parts of site - Maximize interior natural light by use of favorable building orientation and courtyards - Specify water-saving toilets, faucets and showerheads - Design dedicated plumbing system for drinking and cooking water - Aim to meet all water heating needs with solar heaters - Specify high-intensity, full-time lighting only where strictly necessary - Specify solar-powered lighting for outdoor applications - Base landscape plan around drought-tolerant perennial native species - Design site layout and inspection process to minimize the length of time vehicles have their engines running	ESFP-SDCMU, ESFP-CTEC	walkways, and including ample shade trees and dense ground cover) included in detailed site design, with plantings specified in Bill of Quantities		roofs, Natural ventilation system and Green landscape with natural ponds are included)

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	during the border-crossing process - Incorporate green roofs wherever roof area is not needed for solar panels and solar water heaters - Maximize carbon sequestration potential, micro-climatic cooling and runoff retention by specifying a landscaping plan covering all site areas not occupied by structures, roadways or walkways, including ample shade trees (especially near buildings) and dense ground cover in open areas				
11. Climate change adaptation	- Design facilities so that critical components (including laboratory, backup generator and fuel tanks) are well above maximum flood level foreseen under climate change projections specified in Climate Risk and Adaptation Assessment (CRA) report and detailed hydrological study - Incorporate temperature-moderating features in TTTC facility designs, including: - green roofs where feasible - maximize use of wide-crowned shade trees in site landscaping plans, including around buildings and parking area medians - maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- All critical facility components above maximum expected flood level - All feasible temperature-moderating features incorporated in facility designs	Once before approval of detailed designs	Complied
12. Flora and fauna	- Avoid removal of trees to the greatest extent possible - Incorporate existing trees as site features whenever possible, and include them in site designs - When trees must be removed, compensatory trees	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Existing trees preserved in site designs to the greatest extent feasible - Compensatory trees included in design drawings and Bill of Quantities, in accordance with Compensatory Tree Planting Plan	Once before approval of detailed designs	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	should be planned elsewhere on site and marked in the design drawings, and included in the Bill of Quantities, in accordance with approved Compensatory Tree Planting Plan				
12. Groundwater resources	- Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: - rain capture on all roofs and use of stored water for non-potable uses in and around facilities - high-efficiency faucets and toilets throughout the facilities - plant species with low water needs in site landscaping plans - stormwater infiltration swales for all runoff from paved and impervious surfaces (objective: zero site runoff)	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- All feasible and applicable water conservation measures incorporated in detailed designs for STTL facilities	Once before approval of detailed designs	Complied
13. Public health	- Design STTL building internal layout to maintain adequate space between individual users and prevent formation of long lines in indoor spaces - Design STTL building ventilation system to maximize turnover of indoor air	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- STTL building design enables social distancing - STTL building ventilation system designed to maximize turnover of indoor air	Once before approval of detailed designs	Complied
14. Water quality	- Include designated storage with secondary containment for noxious substances (fuels, lubricants, paints, etc.) used in STTL operations in detailed design - Slightly raise surface of site minerals storage area above level of rest of site to prevent runoff from other site areas from washing through stockpiles - Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Storage spaces with secondary containment for noxious substances included in detailed designs for STTL - Surface of STTL site's minerals storage area slightly raised above rest of site in detailed design - Sediment traps and porous drainage channels included in detailed design of site minerals storage area	Once before approval of detailed designs	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	discharge of sediments				
15. Air quality	- Include water supply to minerals storage area, with hose spigots in several locations around the perimeter to enable use of mobile misting apparatus	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Detailed design includes water supply to minerals storage area, with multiple hose spigots spaced around perimeter	Once before approval of detailed designs	Complied
16. Occupational health and safety	- Design canopies over areas used by heavy laboratory machineries designed with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Canopies over areas used by heavy laboratory machineries designed with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	Once before approval of detailed designs	Complied
17. Occupational health and safety	- Design interior layout of the STTL building to maximize space between users and prevent the formation of long lines in indoor spaces. - Design STTL building ventilation system for maximum feasible turnover of indoor air	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Internal layout of the STTL building is designed to maximize space between users and prevent the formation of long lines in indoor spaces - STTL building ventilation system is designed for maximum feasible turnover of indoor air		Complied
18. Occupational health and safety	- Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice	At beginning of detailed design work	Complied
19. Waste management	- Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste - Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated - Include waste storage and sorting areas in facility designs - Incorporate easy access for waste and recyclables collection vehicles - Designate outdoor space for thermophilic	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Facility designs include spaces and features for waste management, including collection, sorting, composting, storage and out-shipment - Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice laboratory - Laboratory design provides for at-source segregation of hazardous liquid and solid wastes	Once before approval of detailed designs	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	composting of organic waste from kitchens and canteens - Design laboratory for appropriate segregation of hazardous and non-hazardous waste streams - Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices				
(ii) PROCUREMENT					
20. Selection of Contractor	- Prioritize selection of Contractor with strong compliance track record, as verified by references from previous CSCs - Select only Contractors registered with MOLE	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Selected Contractor has verified track record of good performance on safeguards compliance	Once during procurement	Complied
21. Selection of Contractor	- Require prospective Contractors to provide information on the age, condition and fuel-efficiency of their machinery and vehicle fleets in their bids, and consider this in the selection process - Include provision in contract giving the employer the right to require removal of equipment and vehicles it deems to be unacceptably polluting from work sites at any time during construction, even if these are the property of sub-Contractors	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Detailed machinery and fleet information required in bids - Emissions potential of fleets considered in Contractor selection - Provision included in contract giving the employer the right to require removal of equipment and vehicles it deems to be unacceptably polluting from work sites at any time during construction, even if these are the property of sub-Contractors	Once during procurement	Complied
22. Labor	- Hire exclusively or mostly local workers	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Workers from Chattagram and around Chattagram given first priority in hiring for construction jobs	Once prior to start of construction	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
23. Materials sourcing	- Obtain valid Certificate of BSTI from suppliers of bulk materials	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Certificate of BSTI obtained and filed for each purchase of bulk materials	Prior to approval of each purchase order	Complied
24. Materials sourcing	- Prioritize bulk materials suppliers using less distant sources	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Materials sourced from within reasonable distance	Prior to approval of each purchase order	Complied
25. Materials Sourcing	- Select suppliers with strong green credentials (verified by review of certifications received)	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- International suppliers of materials have favorable environmental certifications	Prior to approval of each purchase order	Complied
B. CONSTRUCTION PHASE					
(i) BIOPHYSICAL ENVIRONMENT					
26. Surface water	- Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Keep all stockpiles of erodible materials covered with tarpaulins whenever they are not in active use - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles - Install and regularly maintain sediment traps in site runoff channels - Promptly reinstate disturbed ground surfaces and establish vegetative cover in locations where construction activity has been completed - Deploy silt curtains and sediment traps	EHSO CSC Contractor	- Prescribed soil protection measures effectively implemented at all work sites in accordance with approved Soil Erosion Prevention Plan - Sediment traps installed in appropriate places, and maintained properly - Lack of evidence of elevated turbidity in water draining to adjacent water bodies - Vegetative cover promptly established when construction activity complete on each part of work sites - Silt curtains properly deployed where appropriate - Adjacent surface water quality (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity) meets standard in the Environment Conservation Rules, 2023	Monthly for duration of construction Quarterly surface water quality monitoring by EHSO at locations dictated by work activity	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	when earthworks are carried out near ponds and other standing water				
27. Surface water, groundwater and soils	- Keep all motorized equipment in good repair - Maintain a regiment of systematic daily checks to detect leaks, following up with prompt repair as needed - Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips - Store fuels and other noxious fluids within roofed, rain-exclusive containment structures with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains - Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing	EHSO CSC Contractor	- Fuels, lubricants and other noxious fluids stored in appropriate structure - Lack of evidence of leaks from construction equipment - Lack of oil patches on soil surface - Lack of oily sheen on site runoff water	Monthly for duration of construction	Will be complied
28. Surface water	- Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with Construction Camp Management Plan	EHSO CSC Contractor	- At least one working toilet per 10 resident workers installed - Absence of visual evidence of enrichment	Once at beginning of construction, and monthly for duration of construction	Will be complied
29. Air quality	- Implement a regimen of misting all dust-generating surfaces throughout the work day during dry weather - Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion - Equip all haul trucks with tightly-fitting tarpaulins and enforce their use	EHSO CSC Contractor	- Levels of airborne dust are below nuisance level in roadside communities - No significant dust accumulation observed on roadside crops and structures - No complaints from public registered - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Air Pollution Control Rules 2022.	Weekly for duration of construction (observation) (Quantitative measurement quarterly by EHSO at locations dictated by work activity	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
30. Air quality	- Maintain all motorized equipment used in construction to a high standard - Use only fuel-efficient equipment	EHSO CSC Contractor	- Absence of black smoke in construction equipment exhaust - No complaints from public - Air quality at perimeter of work sites meets standards indicated in the Air Pollution Control Rules 2022.	Weekly for duration of construction (Quantitative measurement quarterly by EHSO)	Will be complied
31. Soil	- Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils - Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Implement approved Site Reinstatement Plan, including (inter alia): - Reserve topsoil and store separately for later use - Promptly prepare soil surfaces for plantings once construction work has been completed in each part of site - Establish vegetative cover in accordance with landscaping plan in detailed site design, Bill of Quantities and Compensatory Tree Planting Plan - Implement a watering and tending regimen to help ensure success of plantings - Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to	EHSO CSC Contractor	- Prescribed soil protection measures effectively implemented at all work sites, in accordance with Soil erosion Prevention Plan - Lack of evidence of soil erosion - Vegetative cover promptly established when construction activity complete on each part of work sites	Weekly for duration of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	achieve full coverage				
32. Flora and fauna	- Clearly mark trees that are to be preserved prior to clearing - Establish a fenced buffer around trees that are to be preserved to protect them from damage by equipment, excavation and materials stockpiles	EHSO CSC Contractor	- Trees clearly marked prior to site clearing - Fenced buffers established, maintained and observed around preserved trees for duration of works	Once before site clearing, and monthly for duration of construction	Will be complied
33. Flora and fauna	- Establish a 10-m buffer with temporary fencing along any permanent or seasonal watercourses found on site, and enforce a prohibition on any construction-related activity within the buffer for the duration of the works - Deploy silt curtains and temporary sediment traps where runoff from active work areas is directed to creeks	EHSO CSC Contractor	- 10-m buffer established with temporary fencing along any permanent or seasonal watercourses on site - Prohibition on construction-related activities within the buffer enforced - Silt curtains and sediment traps deployed as appropriate to limit silt delivery to on-site watercourses	Weekly for duration of construction	Will be complied
34. Flora and fauna	- Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	EHSO CSC Contractor	- Compensatory trees planted and tended in conformance with the approved Compensatory Tree Planting Plan - Planted trees healthy and seem assured of long-term survival	Twice during final 3 months of construction phase	Will be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT					
35. Acoustic environment	- Conduct work only during daylight hours - Impose and enforce low speed limits on haul trucks through the roads nearby the site - Maintain all motorized equipment and haul trucks to a high standard, and inspect exhaust systems regularly	EHSO CSC Contractor	- Noise and vibration are below nuisance level for local residents and roadside small businesses - No construction work or hauling is conducted between dusk and dawn - No complaints from the public registered - Noise levels at roadside around the site meets standard indicated in the Noise Pollution (control) Rules 2006 (during heavy haul periods)	Weekly for duration of construction (observation) (Quantitative measurement by EHSO only during heavy haul periods)	Will be complied
36. Public safety	- Ensure that the construction sites are adequately fenced and security is provided to prevent members of the public from entering the sites	EHSO CSC Contractor	- Adequate fencing and security maintained at construction site. - Construction zone is configured to maintain safe access for STTL/CTEC staff. - Construction Traffic Management Plan prepared and observed to be implemented as appropriate.	Weekly for duration of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	- Establish safe, marked routes for staff and facility users to continue to use the STTL facilities without having to cross active construction zones - Impose and enforce low speed limits on haul trucks through roads near the site area - Prepare Construction Traffic Management Plan, and implement as appropriate during hauling periods (Contractor)		- Haul trucks not observed or reported to speed through the nearby roads of the site		
37. Public safety	- Give preference to local laborers to avoid the need for, or limit the size of, a construction camp - Conduct proactive outreach with leaders of nearby communities to educate women and girls about the risks posed by an all-male camp in the neighborhood - Give resident workers regular training on appropriate behavior in and around the camp - Adopt a zero-tolerance policy around aggression or violence against local women and girls - When women must enter the camp for employment or selling produce, limit their entry to times when resident workers are out at the work site - Prohibit prostitution on the site, and monitor activity in this regard and work with community leaders to address the problem as needed	EHSO CSC Contractor	- Lack of reports of worker-involved abuse or harassment - Lack of complaints from public about violence or prostitution at camp - Female access to camp for employment allowed only when workers are out at work sites - Construction Camp Management Plan implemented as approved	Monthly for duration of construction	Will be complied
38. Public safety	- Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of crops	EHSO CSC Contractor	- Construction Camp Management Plan implemented as approved - Lack of complaints from public about behavior of resident workers	Monthly for duration of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
39. Public health	- Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields - Educate resident workers about sexually transmitted diseases and responsible sexual behavior - Work with local community leaders to prohibit prostitution in and around construction camps	EHSO CSC Contractor	- Construction Camp Management Plan implemented as approved - At least one working toilet per 10 resident workers installed, with septic treatment - Absence of visual evidence of raw sewage discharge - Lack of reports of prostitution around camp - Lack of concerns expressed by local community leaders about workers' off-site behavior	Once at start of construction (toilets) Monthly for duration of construction (other items)	Will be complied
40. Worker health and safety	- Implement approved Occupational Health and Safety Plan - Provide regular safety training for all workers - Provide task-appropriate PPE to all workers and enforce its use - Closely monitor works at all times to ensure strong worker compliance with safety practices	EHSO CSC Contractor	- Low incidence of workplace injuries - Workers observed using appropriate PPE - All aspects of Occupational Health and Safety Plan implemented as approved	Weekly for duration of construction	Will be complied
41. Worker health	- Implement approved Occupational Health and Safety Plan - Institute temperature checks (at least daily) for all workers and supervisory personnel on site - Provide each worker with an appropriate face mask daily or as needed and require mask use at all times. - Position hand washing and sanitizing stations at canteens and other eating areas, kitchens, and near toilets	EHSO CSC Contractor	- Temperature check regimen implemented consistently. - Workers supplied facemasks. - Workers consistently use facemasks. - Hand washing and sanitizing stations provided in appropriate locations and kept stocked at all times. - All aspects of Occupational Health and Safety Plan implemented as approved	Weekly for duration of construction	Will be complied
42. Worker health and safety	- Implement approved Construction Camp Management Plan - Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions - Institute a regular cleaning and disinfection regimen for camp kitchens,	EHSO CSC Contractor	- Safety audit results included in monthly progress reports and quarterly monitoring reports - Lack of outbreaks of infectious illnesses (e.g., influenza, pneumonia, tuberculosis) and ailments associated with unsanitary conditions (e.g., dysentery, lice, scabies) - Living conditions meet standards specified in Construction Camp Management Plan - Drinking water quality (pH, TDS, EC, DO, BOD_5, COD, Chloride, SS, As, Fe, Total-N, Total-P, Total coliform, turbidity, temperature) meets standards indicated in the	Monthly for duration of construction (observation) Quantitative measurement quarterly by Contractor at source well	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	latrines, wash-up areas, eating areas and sleeping sheds - Provide adequate sleeping space with good cross-ventilation to avoid overcrowding and consequent spread of communicable illnesses and infestations (at least 4m^2 per worker) - Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting - Ensure that each sleeping space has at least two working exits that remain functional at all times - Provide unlimited drinking water that meets the standards indicated in the Environment Conservation Rules, 2023 - Provide indoor eating space separate from sleeping areas; - Provide kitchens with off-floor food storage, raised working surfaces of a material that can be easily sanitized, and a ready supply of clean water; - Provide toilet facilities with at least one functional toilet (protected from the elements and affording full visual privacy to the user) per ten resident workers, with a ready water source for washing; - Provide roofed and partitioned wash-up areas with floors and proper drainage		Environment Conservation Rules, 2023		
43. Livelihoods	- Hire mostly or exclusively local workers on construction sites	EHSO CSC Contractor	- Workers from Chattagram or nearby area given priority in hiring for construction jobs	In advance of any new crews or subcontractors being brought on site	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
44. Physical cultural resources	- Establish a chance find procedure and provide training to all workers regarding its triggering conditions, and to site engineers on its implementation	CSC	- Chance finds procedure included in CEMP and training provided to workers and site engineers	Once before start of construction	Will be complied
(iii) WASTE MANAGEMENT					
45. Demolition waste	- If there is any reason to suspect presence of asbestos-containing materials (ACM), implement approved ACM Removal and Disposal Plan - Ensure salvage of recyclable and reusable items - Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management Plan embedded within the CEMP	EHSO CSC Contractor	- Any ACM assessed and removed and disposed of in accordance with approved ACM Removal and Disposal Plan - Recyclable materials salvaged - Rubble appropriately used as fill on site, or disposed of in accordance with Waste Management Plan embedded in CEMP	Before and during site clearing	Will be complied
46. Construction waste	- Implement all provisions in the Waste Management Plan embedded in CEMP, including: - Provide waste receptacles on the work sites and collect their contents daily or weekly as needed - Recycle all recyclables through local providers of this service - Compost organic wastes generated by construction camp kitchens - Dispose of non-recyclable and non-organic wastes as directed in the Waste Management Plan embedded within the CEMP, as based on locally available and approved disposal options	EHSO CSC Contractor	- All classes of waste managed in accordance with Waste Management Plan embedded in CEMP	Monthly for duration of construction	Will be complied
47. Waste oils	- Recycle waste oils through a reputable business providing this service, as identified in the Waste Management Plan	EHSO CSC Contractor	- No evidence of waste oil dumping or burning - Documentation of transfers to identified service provider available	Monthly for duration of construction	Will be complied
C. OPERATION PHASE					

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
(i) BIOPHYSICAL ENVIRONMENT					
48. Water quality	- Store fluids only within dedicated indoor storage spaces with secondary containment capacity equaling or exceeding 115% of the volume of the largest container stored - Routinely inspect storage spaces and tanks for leakage, and take immediate corrective action as needed	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Proper storage observed - Absence of evidence of spills and leaks	Quarterly Once prior to start of operations (Spill Prevention and Response Plan)	Will be complied
49. Water quality	- Remove sludge at least once per year from all septic tanks installed, and work into the soil around on-site tree plantations for fertilization	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Sludge removed from all septic tanks at least annually, and appropriately used to fertilize on-site tree plantations	Annually	Will be complied
50. Water quality	- Prepare and implement Spill Prevention and Response Plan for the site. - Provide personnel training necessary for effective implementation of the plan prior to start of operations and annually thereafter	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Spill Prevention and Response Plan prepared for the site prior to the start of operations - Personnel training necessary for effective implementation of the Spill Prevention and Response Plan delivered before start of operations and repeated annually during operation phase	Once before start of operations, annually thereafter	Will be complied
51. Water quality	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Regularly check and clean out sediment traps in minerals storage are	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Sediment traps in minerals storage area well maintained and functional - Runoff from minerals storage area is of sufficient quality not to cause violation of surface water standard (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity) in receiving water body; compare to the Environment Conservation Rules, 2023	Quarterly	Will be complied
52. Air quality	- Ensure adequate staffing at peak times to help ensure that incoming trucks	SOU-SDCMU,	- Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO2) meets standards indicated in the Air Pollution Control Rules 2022	Quarterly	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	are processed efficiently and lines do not form - Enforce a strict no-idling policy	ESFP-SDCMU, ESFP-CTEC			
53. Air quality	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Ensure that appropriate basic misting equipment is purchased or purpose-built and kept in good working condition - Train personnel assigned to the minerals storage area in proper procedure for misting during materials handling - Strictly require misting as standard procedure during handling of dusty materials - Strictly prohibit stone crushing activity on the site, including the minerals storage area	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Air Pollution Control Rules 2022	Quarterly	Will be complied
54. Air quality	- Strictly require all trucks entering the site to be equipped with tightly fitting tarpaulins - Sweep and spray roadways within the site as needed to limit dust	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- All trucks entering site observed to be appropriately covered - Roadways within the site swept and sprayed as needed to suppress dust - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Air Pollution Control Rules 2022	Quarterly	Will be complied
55. Soils	- Protect soils exposed by maintenance works with mulches and other protective coverings during works, and promptly re-establish vegetative cover	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Lack of evidence of gully erosion	Quarterly	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	when works have been completed - Regularly inspect site vegetation for loss of coverage and evidence of emerging gully erosion				
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT					
56. Public safety	- Regularly monitor facility operations for emerging public safety issues, and devise appropriate corrective action, as needed - Proactively coordinate with RHD/LGED to ensure that safety features including sidewalks, pullout and turn lanes, road markings, signage and other safety features are planned for and implemented in future approach road upgrades	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Safety features implemented - Accident risk low	Quarterly	Will be complied
57. Public safety	- Pursue collaboration with RHD/LGED and local community leaders regarding durable solutions to safety risks from on-road and road-adjacent commerce, such as provision of alternative spaces outside the RoW for commercial and community activity	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Low incidence of encroachment - Smooth traffic flow through settled areas - Low incidence of vehicle-pedestrian collisions	Quarterly	Will be complied
58. Worker health and safety	- Enforce a strict policy against engine idling	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Low incidence of staff complaints about emissions exposure	Quarterly	Will be complied
59. Worker health and safety	- Integrate pandemic response measures in operations and maintenance manuals and operating protocols for the TTTC site, to ensure prompt implementation when emerging threats are identified	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Pandemic response measures integrated in operations and maintenance manuals	Once prior to start of operations	Will be complied
60. Worker health and safety	- Incorporate Emergency Response Plan in laboratory operating protocols, and provide regular training for technicians and	SOU-SDCMU, ESFP-SDCMU,	- Emergency Response Plan included in laboratory operating protocols - Regular training provided on activation of Emergency Response Plan	Once prior to start of operations (protocols)	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	support staff on its activation	ESFP-CTEC		Annually (training)	
61. Livelihoods	- Give priority to local people and firms in selecting Contractors for maintenance works and selected permanent positions in operations and maintenance	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Local people well represented in TTTC workforce	Annually	Will be complied
(iii) WASTE MANAGEMENT					
62. Laboratory waste	- Integrate detailed Laboratory Waste Management Plan (developed by laboratory design specialist engaged during detailed design) into laboratory operations and maintenance manual - Develop detailed protocols for waste classification, documentation, segregation, temporary storage and safe transport of hazardous wastes, and integrate these protocols into operations and maintenance manuals (laboratory design specialist to be engaged by Contractor during detailed design) - Provide training to laboratory technicians and maintenance staff on correct implementation of waste management protocols, before the laboratory becomes operational and on an annual basis thereafter - Specify parameters, measurement, and reporting for annual waste audit in laboratory waste management protocols - Conduct an annual waste management audit and implement corrective action as needed to address problematic trends	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Detailed hazardous waste handling protocols specified in laboratory operations and maintenance manuals - Specifications for annual waste management audit integrated into laboratory waste management protocols - Annual waste management audit performed and reported - Discharges of liquid waste from laboratory meet standards indicated in Schedule 10 (Inland Surface Water) of the Environment Conservation Rules, 2023 (only if full-service lab)	Once prior to start of operations (protocols including waste management plans) Annually (waste audit) Quarterly (discharge)	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
63. Solid waste	- Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	SOU-SDCMU, ESFP-SDCMU, ESFP-CTEC	- Recyclable solid waste is consistently segregated and picked up by a reputable recycling business - Non-recyclable solid waste is consistently taken to a legal landfill for disposal - Lack of evidence of waste dumping or burning on site	Quarterly	Will be complied

b) Environmental Monitoring Plan for NATI

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
A. PRE-CONSTRUCTION PHASE					
(i) IMPLEMENTATION READINESS					
1. Environmental baseline	- Collect and analyze samples for key environmental parameters to establish a pre-project environmental baseline for development site	ESFP SDCMU ESFP NPI	- Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2); compare to the Environment Conservation Rules, 2023 (minimum 8 hr sampling period) - Adjacent surface waters (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity); compare to the Environment Conservation Rules, 2023 - Groundwater in wells on site or nearby (pH, TDS, EC, DO, BOD_5, COD, Chloride, SS, As, Fe, Total-N, Total-P, Total coliform, turbidity, temperature); compare to the Environment Conservation Rules, 2023 - Ambient noise (dBa daytime, dBa night); compare to the Environment Conservation Rules, 2023	One sample prior to start of site clearing Sampling locations: to be set by the environmental specialist employed by CSC and TMED SOU	Will be complied
2. IEE and EMP update	- Review IEE and EMP to ensure any post-approval changes are properly accounted for and addressed, by addition of mitigation measures if necessary	ESFP SDCMU	- IEE and EMP confirmed still fully applicable - New measures added to EMP if needed to cover any changes in alignment, design or local conditions	Once before start of procurement	Will be complied
3. Verification of environmental clearances	- Confirm Site Clearance Certificate (SCC) and Environmental Clearance Certificate (ECC) have been granted, and that any conditions imposed by DOE on approval have been reflected in EMP and EMoP, as well as CEMP as applicable	ESFP SDCMU	- SCC and ECC granted. - New measures added to EMP, EMoP and CEMP if needed to meet any condition of approval specified by DOE	Once before start of procurement	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
4. CEMP verification	- Review CEMP to ensure all primary Contractor responsibilities are fully reflected, including monitoring and reporting	CSC	- Any necessary changes requested and made by Contractor. - CEMP confirmed adequate by reviewers	Once before start of construction	Will be complied
5.Specialized plans verification	- Confirm that the following specialized plans have been prepared by the Contractor: - site-specific Construction Camp Management Plan(s) - site-specific Waste Management Plans (embedded within CEMP) - site-specific Emergency Response Plans (embedded within CEMP) - Compensatory Tree Planting Plan - Construction Traffic Management Plan - Asbestos-Containing Materials Removal and Disposal Plan - Soil Erosion Prevention Plan - Site Reinstatement Plan - Occupational Health and Safety Plan (including COVID-19 measures stipulated by ADB and Government of Bangladesh Guidance for Social and Institutional Containment and Prevention) - Laboratory Waste Management Plan	CSC	- All required specialized plans prepared to adequate standard and approved by relevant authority (as required in some cases)	Once before start of construction	Will be complied
6. Grievance Redress Mechanisms	- Confirm that a central GRM and workers' GRM have been established and publicized	ESFP SDCMU	- Central GRM established and publicized - Workers' GRM established and explained to workers before the start of construction	Once before start of construction	Is being complied
7. Acoustic environment	- Convene a workshop with participation of people living and operating businesses along polytechnic Road, local ward Council representatives, RHD/LGED, police and other government agencies to discuss feasibility of limiting vehicle horn use in the NATI zone and formulate action as appropriate	ESFP SDCMU	- Workshop convened and action plan formulated if consensus for action found	Once before end of design phase, quarterly thereafter until action confirmed	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
8. Induced development and cumulative impacts	- Arrange multi-stakeholder workshop at Police Plaza Road with participation of local, upazila and district governments, all relevant government agencies, and concerned business interests (from gravel, trading, agricultural and tourism sectors, at a minimum) to initiate a broad-based public dialogue regarding the livelihoods of the local people and the people living near the site.	ESFP SDCMU	- Multi-stakeholder workshop with suitable broad participation convened by MoF through SDCMU	Once before end of design phase, quarterly thereafter until action confirmed	Will be complied
(ii) DESIGN					
9. Climate change mitigation	- Integrate GHG-limiting measures into facility designs, including: - substitute other materials for concrete where feasible - use low-carbon concrete as much as possible - maximize use of building materials available locally - integrate photovoltaic generation into the electrical plan - specify only high-efficiency electrical and mechanical equipment - specify most fuel-efficient backup generator available - maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation - incorporate hollow wall structures where feasible - Use overhangs above large windows to prevent excessive solar penetration - Prioritize shade in the landscaping plan, with plentiful wide-crowned shade trees on all parts of site - Maximize interior natural light by use of favorable building orientation and courtyards - Specify water-saving toilets, faucets and showerheads - Design dedicated plumbing system for drinking and cooking water	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- All feasible GHG-reduction design measures incorporated in facility designs - Soft landscaping plan (covering all site areas not occupied by structures, roadways or walkways, and including ample shade trees and dense ground cover) included in detailed site design, with plantings specified in Bill of Quantities	Once before approval of detailed designs	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	- Aim to meet all water heating needs with solar heaters - Specify high-intensity, full-time lighting only where strictly necessary - Specify solar-powered lighting for outdoor applications - Base landscape plan around drought-tolerant perennial native species - Design site layout and inspection process to minimize the length of time vehicles have their engines running during the border-crossing process - Incorporate green roofs wherever roof area is not needed for solar panels and solar water heaters - Maximize carbon sequestration potential, micro-climatic cooling and runoff retention by specifying a landscaping plan covering all site areas not occupied by structures, roadways or walkways, including ample shade trees (especially near buildings) and dense ground cover in open areas				
10. Climate change adaptation	- Design facilities so that critical components (including laboratory, backup generator and fuel tanks) are well above maximum flood level foreseen under climate change projections specified in Climate Risk and Adaptation Assessment (CRA) report and detailed hydrological study - Incorporate temperature-moderating features in NPI facility designs, including: - green roofs where feasible - maximize use of wide-crowned shade trees in site landscaping plans, including around buildings and parking area medians - maximize cross-ventilation by use of	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- All critical facility components above maximum expected flood level - All feasible temperature-moderating features incorporated in facility designs	Once before approval of detailed designs	Complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	courtyards, openable windows and favorable building orientation				
11. Flora and fauna	- Avoid removal of trees to the greatest extent possible - Incorporate existing trees as site features whenever possible, and include them in site designs - When trees must be removed, compensatory trees should be planned elsewhere on site and marked in the design drawings, and included in the Bill of Quantities, in accordance with approved Compensatory Tree Planting Plan	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Existing trees preserved in site designs to the greatest extent feasible - Compensatory trees included in design drawings and Bill of Quantities, in accordance with Compensatory Tree Planting Plan	Once before approval of detailed designs	Will be complied
12. Groundwater resources	- Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: - rain capture on all roofs and use of stored water for non-potable uses in and around facilities - high-efficiency faucets and toilets throughout the facilities - plant species with low water needs in site landscaping plans - stormwater infiltration swales for all runoff from paved and impervious surfaces (objective: zero site runoff)	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- All feasible and applicable water conservation measures incorporated in detailed designs for NATI facilities	Once before approval of detailed designs	Will be complied
13. Public health	- Design NATI building internal layout to maintain adequate space between individual users and prevent formation of long lines in indoor spaces - Design NATI building ventilation system to maximize turnover of indoor air	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- NATI building design enables social distancing - NATI building ventilation system designed to maximize turnover of indoor air	Once before approval of detailed designs	Will be complied
14. Water quality	- Include designated storage with secondary containment for noxious substances (fuels, lubricants, paints, etc.) used in NATI operations in detailed design - Slightly raise surface of site minerals storage area above	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Storage spaces with secondary containment for noxious substances included in detailed designs for NATI - Surface of NATI site's minerals storage area slightly raised above rest of site in detailed design - Sediment traps and porous drainage channels included in detailed design of site minerals storage area	Once before approval of detailed designs	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	level of rest of site to prevent runoff from other site areas from washing through stockpiles - Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit discharge of sediments				
15. Air quality	- Include water supply to minerals storage area, with hose spigots in several locations around the perimeter to enable use of mobile misting apparatus	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Detailed design includes water supply to minerals storage area, with multiple hose spigots spaced around perimeter	Once before approval of detailed designs	Will be complied
16. Occupational health and safety	- Design canopies over areas used by heavy laboratory machineries designed with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Canopies over areas used by heavy laboratory machineries designed with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	Once before approval of detailed designs	Will be complied
17. Occupational health and safety	- Design interior layout of the NATI building to maximize space between users and prevent the formation of long lines in indoor spaces. - Design NATI building ventilation system for maximum feasible turnover of indoor air	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Internal layout of the NATI building is designed to maximize space between users and prevent the formation of long lines in indoor spaces - NATI building ventilation system is designed for maximum feasible turnover of indoor air		
18. Occupational health and safety	- Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice	At beginning of detailed design work	Will be complied
19. Waste management	- Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste - Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Facility designs include spaces and features for waste management, including collection, sorting, composting, storage and out-shipment - Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice laboratory - Laboratory design provides for at-source segregation of hazardous liquid and solid wastes	Once before approval of detailed designs	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	- Include waste storage and sorting areas in facility designs - Incorporate easy access for waste and recyclables collection vehicles - Designate outdoor space for thermophilic composting of organic waste from kitchens and canteens - Design laboratory for appropriate segregation of hazardous and non-hazardous waste streams - Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices				
(ii) PROCUREMENT					
20. Selection of Contractor	- Prioritize selection of Contractor with strong compliance track record, as verified by references from previous CSCs - Select only Contractors registered with MOLE	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Selected Contractor has verified track record of good performance on safeguards compliance	Once during procurement	Will be complied
21. Selection of Contractor	- Require prospective Contractors to provide information on the age, condition and fuel-efficiency of their machinery and vehicle fleets in their bids, and consider this in the selection process - Include provision in contract giving the employer the right to require removal of equipment and vehicles it deems to be unacceptably polluting from work sites at any time during construction, even if these are the property of sub-Contractors	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Detailed machinery and fleet information required in bids - Emissions potential of fleets considered in Contractor selection - Provision included in contract giving the employer the right to require removal of equipment and vehicles it deems to be unacceptably polluting from work sites at any time during construction, even if these are the property of sub-Contractors	Once during procurement	Will be complied
22. Labor	- Hire exclusively or mostly local workers	SOU-SDCMU, ESFP-SDCMU,	- Workers from Chattagram and around Chattagram given first priority in hiring for construction jobs	Once prior to start of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
		ESFP-NPI			
23. Materials sourcing	- Obtain valid Certificate of BSTI from suppliers of bulk materials	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Certificate of BSTI obtained and filed for each purchase of bulk materials	Prior to approval of each purchase order	Will be complied
24. Materials sourcing	- Prioritize bulk materials suppliers using less distant sources	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Materials sourced from within reasonable distance	Prior to approval of each purchase order	Will be complied
25. Materials Sourcing	- Select suppliers with strong green credentials (verified by review of certifications received)	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- International suppliers of materials have favorable environmental certifications	Prior to approval of each purchase order	Will be complied
B. CONSTRUCTION PHASE					
(i) BIOPHYSICAL ENVIRONMENT					
26. Surface water	- Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Keep all stockpiles of erodible materials covered with tarpaulins whenever they are not in active use - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles - Install and regularly maintain sediment traps in site runoff channels - Promptly reinstate disturbed ground surfaces and establish vegetative cover in locations where	EHSO CSC Contractor	- Prescribed soil protection measures effectively implemented at all work sites in accordance with approved Soil Erosion Prevention Plan - Sediment traps installed in appropriate places, and maintained properly - Lack of evidence of elevated turbidity in water draining to adjacent water bodies - Vegetative cover promptly established when construction activity complete on each part of work sites - Silt curtains properly deployed where appropriate - Adjacent surface water quality (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity) meets standard in the Environment Conservation Rules, 2023	Monthly for duration of construction Quarterly surface water quality monitoring by EHSO at locations dictated by work activity	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	construction activity has been completed - Deploy silt curtains and sediment traps when earthworks are carried out near ponds and other standing water				
27. Surface water, groundwater and soils	- Keep all motorized equipment in good repair - Maintain a regiment of systematic daily checks to detect leaks, following up with prompt repair as needed - Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips - Store fuels and other noxious fluids within roofed, rain-exclusive containment structures with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains - Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing	EHSO CSC Contractor	- Fuels, lubricants and other noxious fluids stored in appropriate structure - Lack of evidence of leaks from construction equipment - Lack of oil patches on soil surface - Lack of oily sheen on site runoff water	Monthly for duration of construction	Will be complied
28. Surface water	- Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with Construction Camp Management Plan	EHSO CSC Contractor	- At least one working toilet per 10 resident workers installed - Absence of visual evidence of enrichment	Once at beginning of construction, and monthly for duration of construction	Will be complied
29. Air quality	- Implement a regimen of misting all dust-generating surfaces throughout the work day during dry weather - Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion - Equip all haul trucks with tightly-fitting tarpaulins and enforce their use	EHSO CSC Contractor	- Levels of airborne dust are below nuisance level in roadside communities - No significant dust accumulation observed on roadside crops and structures - No complaints from public registered - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Environment Conservation Rules, 2023	Weekly for duration of construction (observation) (Quantitative measurement quarterly by EHSO at locations dictated by work activity	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
30. Air quality	- Maintain all motorized equipment used in construction to a high standard - Use only fuel-efficient equipment	EHSO CSC Contractor	- Absence of black smoke in construction equipment exhaust - No complaints from public - Air quality at perimeter of work sites meets standards indicated in the Environment Conservation Rules, 2023	Weekly for duration of construction (Quantitative measurement quarterly by EHSO)	Will be complied
31. Soil	- Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils - Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Implement approved Site Reinstatement Plan, including (inter alia): - Reserve topsoil and store separately for later use - Promptly prepare soil surfaces for plantings once construction work has been completed in each part of site - Establish vegetative cover in accordance with landscaping plan in detailed site design, Bill of Quantities and Compensatory Tree Planting Plan - Implement a watering and tending regimen to help ensure success of plantings - Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to achieve full coverage	EHSO CSC Contractor	- Prescribed soil protection measures effectively implemented at all work sites, in accordance with Soil erosion Prevention Plan - Lack of evidence of soil erosion - Vegetative cover promptly established when construction activity complete on each part of work sites	Weekly for duration of construction	Will be complied
32. Flora and fauna	- Clearly mark trees that are to be preserved prior to clearing	EHSO	- Trees clearly marked prior to site clearing	Once before site clearing, and monthly	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	- Establish a fenced buffer around trees that are to be preserved to protect them from damage by equipment, excavation and materials stockpiles	CSC Contractor	- Fenced buffers established, maintained and observed around preserved trees for duration of works	for duration of construction	
33. Flora and fauna	- Establish a 10-m buffer with temporary fencing along any permanent or seasonal watercourses found on site, and enforce a prohibition on any construction-related activity within the buffer for the duration of the works - Deploy silt curtains and temporary sediment traps where runoff from active work areas is directed to creeks	EHSO CSC Contractor	- 10-m buffer established with temporary fencing along any permanent or seasonal watercourses on site - Prohibition on construction-related activities within the buffer enforced - Silt curtains and sediment traps deployed as appropriate to limit silt delivery to on-site watercourses	Weekly for duration of construction	Will be complied
34. Flora and fauna	- Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	EHSO CSC Contractor	- Compensatory trees planted and tended in conformance with the approved Compensatory Tree Planting Plan - Planted trees healthy and seem assured of long-term survival	Twice during final 3 months of construction phase	Will be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT					
35. Acoustic environment	- Conduct work only during daylight hours - Impose and enforce low speed limits on haul trucks through the roads nearby the site - Maintain all motorized equipment and haul trucks to a high standard, and inspect exhaust systems regularly	EHSO CSC Contractor	- Noise and vibration are below nuisance level for local residents and roadside small businesses - No construction work or hauling is conducted between dusk and dawn - No complaints from the public registered - Noise levels at roadside around the site meets standard indicated in the Environment Conservation Rules, 2023 (during heavy haul periods)	Weekly for duration of construction (observation) (Quantitative measurement by EHSO only during heavy haul periods)	Will be complied
36. Public safety	- Ensure that the construction sites are adequately fenced and security is provided to prevent members of the public from entering the sites - Establish safe, marked routes for staff and facility users to continue to use the NATI facilities without having to cross active construction zones	EHSO CSC Contractor	- Adequate fencing and security maintained at construction site. - Construction zone is configured to maintain safe access for NATI/NPI staff. - Construction Traffic Management Plan prepared and observed to be implemented as appropriate. - Haul trucks not observed or reported to speed through the nearby roads of the site	Weekly for duration of construction	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	- Impose and enforce low speed limits on haul trucks through roads near the site area - Prepare Construction Traffic Management Plan, and implement as appropriate during hauling periods (Contractor)				
37. Public safety	- Give preference to local laborers to avoid the need for, or limit the size of, a construction camp - Conduct proactive outreach with leaders of nearby communities to educate women and girls about the risks posed by an all-male camp in the neighborhood - Give resident workers regular training on appropriate behavior in and around the camp - Adopt a zero-tolerance policy around aggression or violence against local women and girls - When women must enter the camp for employment or selling produce, limit their entry to times when resident workers are out at the work site - Prohibit prostitution on the site, and monitor activity in this regard and work with community leaders to address the problem as needed	EHSO CSC Contractor	- Lack of reports of worker-involved abuse or harassment - Lack of complaints from public about violence or prostitution at camp - Female access to camp for employment allowed only when workers are out at work sites - Construction Camp Management Plan implemented as approved	Monthly for duration of construction	Will be complied
38. Public safety	- Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of crops	EHSO CSC Contractor	- Construction Camp Management Plan implemented as approved - Lack of complaints from public about behavior of resident workers	Monthly for duration of construction	Will be complied
39. Public health	- Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields - Educate resident workers about sexually transmitted diseases and responsible sexual behavior - Work with local community leaders to	EHSO CSC Contractor	- Construction Camp Management Plan implemented as approved - At least one working toilet per 10 resident workers installed, with septic treatment - Absence of visual evidence of raw sewage discharge - Lack of reports of prostitution around camp - Lack of concerns expressed by local community leaders about workers' off-site behavior	Once at start of construction (toilets) Monthly for duration of construction (other items)	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	prohibit prostitution in and around construction camps				
40. Worker health and safety	- Implement approved Occupational Health and Safety Plan - Provide regular safety training for all workers - Provide task-appropriate PPE to all workers and enforce its use - Closely monitor works at all times to ensure strong worker compliance with safety practices	EHSO CSC Contractor	- Low incidence of workplace injuries - Workers observed using appropriate PPE - All aspects of Occupational Health and Safety Plan implemented as approved	Weekly for duration of construction	Will be complied
41. Worker health	- Implement approved Occupational Health and Safety Plan - Institute temperature checks (at least daily) for all workers and supervisory personnel on site - Provide each worker with an appropriate face mask daily or as needed and require mask use at all times. - Position hand washing and sanitizing stations at canteens and other eating areas, kitchens, and near toilets	EHSO CSC Contractor	- Temperature check regimen implemented consistently. - Workers supplied facemasks. - Workers consistently use facemasks. - Hand washing and sanitizing stations provided in appropriate locations and kept stocked at all times. - All aspects of Occupational Health and Safety Plan implemented as approved	Weekly for duration of construction	Will be complied
42. Worker health and safety	- Implement approved Construction Camp Management Plan - Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions - Institute a regular cleaning and disinfection regimen for camp kitchens, latrines, wash-up areas, eating areas and sleeping sheds - Provide adequate sleeping space with good cross-ventilation to avoid overcrowding and consequent spread of communicable illnesses and infestations (at least 4m^2 per worker) - Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting - Ensure that each sleeping space has at least two working exits	EHSO CSC Contractor	- Safety audit results included in monthly progress reports and quarterly monitoring reports - Lack of outbreaks of infectious illnesses (e.g., influenza, pneumonia, tuberculosis) and ailments associated with unsanitary conditions (e.g., dysentery, lice, scabies) - Living conditions meet standards specified in Construction Camp Management Plan - Drinking water quality (pH, TDS, EC, DO, BOD_5, COD, Chloride, SS, As, Fe, Total-N, Total-P, Total coliform, turbidity, temperature) meets standards indicated in the Environment Conservation Rules, 2023	Monthly for duration of construction (observation) Quantitative measurement quarterly by Contractor at source well	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	that remain functional at all times - Provide unlimited drinking water that meets the standards indicated in the Environment Conservation Rules, 2023 - Provide indoor eating space separate from sleeping areas; - Provide kitchens with off-floor food storage, raised working surfaces of a material that can be easily sanitized, and a ready supply of clean water; - Provide toilet facilities with at least one functional toilet (protected from the elements and affording full visual privacy to the user) per ten resident workers, with a ready water source for washing; - Provide roofed and partitioned wash-up areas with floors and proper drainage				
43. Livelihoods	- Hire mostly or exclusively local workers on construction sites	EHSO CSC Contractor	- Workers from Chattogram or nearby area given priority in hiring for construction jobs	In advance of any new crews or subcontractors being brought on site	Will be complied
44. Physical cultural resources	- Establish a chance find procedure and provide training to all workers regarding its triggering conditions, and to site engineers on its implementation	CSC	- Chance finds procedure included in CEMP and training provided to workers and site engineers	Once before start of construction	Will be complied
(iii) WASTE MANAGEMENT					
45. Demolition waste	- If there is any reason to suspect presence of asbestos-containing materials (ACM), implement approved ACM Removal and Disposal Plan - Ensure salvage of recyclable and reusable items - Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management	EHSO CSC Contractor	- Any ACM assessed and removed and disposed of in accordance with approved ACM Removal and Disposal Plan - Recyclable materials salvaged - Rubble appropriately used as fill on site, or disposed of in accordance with Waste Management Plan embedded in CEMP	Before and during site clearing	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	Plan embedded within the CEMP				
46. Construction waste	- Implement all provisions in the Waste Management Plan embedded in CEMP, including: - Provide waste receptacles on the work sites and collect their contents daily or weekly as needed - Recycle all recyclables through local providers of this service - Compost organic wastes generated by construction camp kitchens - Dispose of non-recyclable and non-organic wastes as directed in the Waste Management Plan embedded within the CEMP, as based on locally available and approved disposal options	EHSO CSC Contractor	- All classes of waste managed in accordance with Waste Management Plan embedded in CEMP	Monthly for duration of construction	Will be complied
47. Waste oils	- Recycle waste oils through a reputable business providing this service, as identified in the Waste Management Plan	EHSO CSC Contractor	- No evidence of waste oil dumping or burning - Documentation of transfers to identified service provider available	Monthly for duration of construction	Will be complied
C. OPERATION PHASE					
(i) BIOPHYSICAL ENVIRONMENT					
48. Water quality	- Store fluids only within dedicated indoor storage spaces with secondary containment capacity equaling or exceeding 115% of the volume of the largest container stored - Routinely inspect storage spaces and tanks for leakage, and take immediate corrective action as needed	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Proper storage observed - Absence of evidence of spills and leaks	Quarterly Once prior to start of operations (Spill Prevention and Response Plan)	Will be complied
49. Water quality	- Remove sludge at least once per year from all septic tanks installed, and work into the soil around on-site tree plantations for fertilization	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Sludge removed from all septic tanks at least annually, and appropriately used to fertilize on-site tree plantations	Annually	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
50. Water quality	- Prepare and implement Spill Prevention and Response Plan for the site. - Provide personnel training necessary for effective implementation of the plan prior to start of operations and annually thereafter	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Spill Prevention and Response Plan prepared for the site prior to the start of operations - Personnel training necessary for effective implementation of the Spill Prevention and Response Plan delivered before start of operations and repeated annually during operation phase	Once before start of operations, annually thereafter	Will be complied
51. Water quality	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Regularly check and clean out sediment traps in minerals storage are	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Sediment traps in minerals storage area well maintained and functional - Runoff from minerals storage area is of sufficient quality not to cause violation of surface water standard (pH, BOD_5, COD, DO, SS, total coliform, Total P, Total N, turbidity) in receiving water body; compare to the Environment Conservation Rules, 2023	Quarterly	Will be complied
52. Air quality	- Ensure adequate staffing at peak times to help ensure that incoming trucks are processed efficiently and lines do not form - Enforce a strict no-idling policy	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO2) meets standards indicated in the Environment Conservation Rules, 2023	Quarterly	Will be complied
53. Air quality	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Ensure that appropriate basic	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Environment Conservation Rules, 2023	Quarterly	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	misting equipment is purchased or purpose-built and kept in good working condition - Train personnel assigned to the minerals storage area in proper procedure for misting during materials handling - Strictly require misting as standard procedure during handling of dusty materials - Strictly prohibit stone crushing activity on the site, including the minerals storage area				
54. Air quality	- Strictly require all trucks entering the site to be equipped with tightly fitting tarpaulins - Sweep and spray roadways within the site as needed to limit dust	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- All trucks entering site observed to be appropriately covered - Roadways within the site swept and sprayed as needed to suppress dust - Ambient air quality ($PM_{2.5}$, PM_{10}, SO_2, CO, NO_2) meets standards indicated in the Environment Conservation Rules, 2023	Quarterly	Will be complied
55. Soils	- Protect soils exposed by maintenance works with mulches and other protective coverings during works, and promptly re-establish vegetative cover when works have been completed - Regularly inspect site vegetation for loss of coverage and evidence of emerging gully erosion	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Lack of evidence of gully erosion	Quarterly	Will be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT					
56. Public safety	- Regularly monitor facility operations for emerging public safety issues, and devise appropriate corrective action, as needed - Proactively coordinate with RHD/LGED to ensure that safety features including sidewalks, pullout and turn lanes, road markings, signage and other safety features are planned for and implemented in future approach road upgrades	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Safety features implemented - Accident risk low	Quarterly	Will be complied
57. Public safety	- Pursue collaboration with RHD/LGED and local community leaders regarding durable solutions to safety risks from on-road and road-adjacent commerce, such as provision of	SOU-SDCMU, ESFP-SDCMU,	- Low incidence of encroachment - Smooth traffic flow through settled areas - Low incidence of vehicle-pedestrian collisions	Quarterly	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	alternative spaces outside the RoW for commercial and community activity	ESFP-NPI			
58. Worker health and safety	- Enforce a strict policy against engine idling	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Low incidence of staff complaints about emissions exposure	Quarterly	Will be complied
59. Worker health and safety	- Integrate pandemic response measures in operations and maintenance manuals and operating protocols for the NPI site, to ensure prompt implementation when emerging threats are identified	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Pandemic response measures integrated in operations and maintenance manuals	Once prior to start of operations	Will be complied
60. Worker health and safety	- Incorporate Emergency Response Plan in laboratory operating protocols, and provide regular training for technicians and support staff on its activation	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Emergency Response Plan included in laboratory operating protocols - Regular training provided on activation of Emergency Response Plan	Once prior to start of operations (protocols) Annually (training)	Will be complied
61. Livelihoods	- Give priority to local people and firms in selecting Contractors for maintenance works and selected permanent positions in operations and maintenance	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Local people well represented in construction workforce	Annually	Will be complied
(iii) WASTE MANAGEMENT					
62. Laboratory waste	- Integrate detailed Laboratory Waste Management Plan (developed by laboratory design specialist engaged during detailed design) into laboratory operations and maintenance manual - Develop detailed protocols for waste classification, documentation, segregation, temporary storage and safe transport of hazardous wastes, and integrate these protocols into operations and	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Detailed hazardous waste handling protocols specified in laboratory operations and maintenance manuals - Specifications for annual waste management audit integrated into laboratory waste management protocols - Annual waste management audit performed and reported - Discharges of liquid waste from laboratory meet standards indicated in Schedule 10 (Inland Surface Water) of the Environment Conservation Rules, 2023 (only if full-service lab)	Once prior to start of operations (protocols including waste management plans) Annually (waste audit)	Will be complied

Parameter type	Prescribed measures	Monitoring entity	Monitoring parameters	When to monitor	Status
	maintenance manuals (laboratory design specialist to be engaged by Contractor during detailed design) - Provide training to laboratory technicians and maintenance staff on correct implementation of waste management protocols, before the laboratory becomes operational and on an annual basis thereafter - Specify parameters, measurement, and reporting for annual waste audit in laboratory waste management protocols - Conduct an annual waste management audit and implement corrective action as needed to address problematic trends			Quarterly (discharge)	
63. Solid waste	- Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	SOU-SDCMU, ESFP-SDCMU, ESFP-NPI	- Recyclable solid waste is consistently segregated and picked up by a reputable recycling business - Non-recyclable solid waste is consistently taken to a legal landfill for disposal - Lack of evidence of waste dumping or burning on site	Quarterly	Will be complied

c) Monitoring Plan for Dormitory at KWT:

Environmental Aspect	Monitoring Parameter	Means of Monitoring	Frequency	Location	Responsible Agency		Status
					Implement	Supervising	
Pre-Construction Stage							
Connection of gas pipe line, water supply and electricity	Monitoring all prescribed mitigation measures in Mitigation Table	Visual inspection to ensure the shifting of the gas line	During site clearance operations	Proposed building site	KWT/Contractor	SDCMU/SICIP	Complied (Visited 02 times)
Filling the nearest depressed Portion for building construction	Monitoring all prescribed mitigation measures in Mitigation Table	Visual inspection	Once before starting of construction activity	Proposed building site in KWT	KWT/Contractor	SDCMU/SICIP	Complied
Removal of vegetation	Monitoring all prescribed mitigation measures in Mitigation Table	Visual inspection	Once before starting of construction activity	Proposed building site in KWT	KWT/Contractor	SDCMU/SICIP	Complied

Environmental Aspect	Monitoring Parameter	Means of Monitoring	Frequency	Location	Responsible Agency		Status
					Implement	Supervising	
Removal of Utilities	Monitoring all prescribed mitigation measures in Mitigation Table	Visual inspection	Once before starting of construction activity	Proposed building site in KWT	KWT/Contractor	SDCMU/SICIP	Complied
EMP Implementation Training	Monitoring all prescribed mitigation measures in Mitigation Table	Visual inspection	Once before starting of construction activity	Proposed building site in KWT	KWT/Contractor	SDCMU/SICIP	Will be complied
Construction Stage							
Groundwater Quality	pH, Total Hardness, Chloride, Turbidity, Total Dissolved Solids, TC, FC	Laboratory analysis against the baseline established ▪ ▪	During construction (Semi-annually)	Inside the boundary of the dormitory	KWT/Contractor	SDCMU/SICIP	-Being complied -Sample tested and found satisfactory
Surface water Quality	pH, Total Hardness, Chloride, Turbidity, Total Dissolved Solids, BOD, COD	Laboratory analysis against the baseline established	During construction (Semi-annually)	Closest to the boundary of the dormitory	KWT/Contractor	SDCMU/SICIP	-Being complied --Sample tested and found satisfactory
Air Quality	PM_{10}, $PM_{2.5}$, CO, SO_2, NOx, O_3, Temperature, Wind Speed, Humidity	Laboratory analysis against the baseline established	During construction (Semi-annually)	At the construction site	KWT/Contractor	SDCMU/SICIP	-Sample tested and found satisfactory
Noise and Vibration Level	Measurement of noise dB(A)	- Laboratory analysis against the baseline established - Visual inspection to ensure good standard equipment are in use, - Visual inspection to ensure ear plugs are in use by the construction workers - Inspection of vehicle and equipment maintenance records	During day time and whenever any complains are received about disturbance due to construction noise Noise measurements and routine checks on maintenance records once in 6 months (Semi-annually)	Near residential area, mosque institutional area and site.	KWT/Contractor	SDCMU/SICIP	-Being complied --Sample tested and found satisfactory
Soil Quality Analysis	– Organic Matter, oil & Grease, pH, zinc, Iron, Manganese, Potassium etc	Laboratory analysis against the baseline established	During construction (Semi-annually)	At the construction site	KWT/Contractor	SDCMU/SICIP	Will be complied

Environmental Aspect	Monitoring Parameter	Means of Monitoring	Frequency	Location	Responsible Agency		Status
					Implement	Supervising	
Occupational health and Safety	– Check of personal protective equipment (PPE) for workers at the sites – Check if Health, First-Aid facility, and staff trained in First Aid are available at the sites – Check health risk of construction workers to COVID-19. – Check if medical checkup of workers is on going	Visual inspection	Daily	Construction Site	KWT/Contractor	SDCMU/SICIP	-Being complied (HS plan prepared and monitoring)
Community Health and Safety	– Control movement of project traffics especially at densely populated areas such as school, bazars etc. to avoid any accident.	Visual inspection	Regular	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	-Being complied -(HS plan prepared and monitoring)
Other specified mitigation measures as per the EMP	– Check if all requirements are adhered to	Visual inspection	Weekly	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	Will be complied
Drainage Congestion	– Maintain checklist	Visual inspection	Throughout the construction period	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	Will be complied
Plantation	– Ensure that tree plantation plan is followed properly during planting seedlings	Visual inspection	Throughout the construction period	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	Will be complied
COVID-19 E&S	– Visual inspection & consultation with KWT staff, and local people – Record of accidents	Visual inspection	Throughout the construction period	Construction Site, the surroundings including access roads and contractor-	KWT/Contractor	SDCMU/SICIP	Will be complied

Environmental Aspect	Monitoring Parameter	Means of Monitoring	Frequency	Location	Responsible Agency		Status
					Implement	Supervising	
	– Obtain record of training – Provision of regular temperature check, using disinfectants and provision of time-to-time hand wash are required to limit the COVID-19 pandemic.			managed off sites			
Traffic Congestion	– Traffic volume, composition, and speed	Visual inspection	Throughout the construction period	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	Will be complied
Waste Management	– Waste and effluents to be collected and disposed safely to the designated sites	Visual inspection	Throughout the construction period	Construction Site, the surroundings including access roads and contractor-managed off sites	KWT/Contractor	SDCMU/SICIP	Will be complied
Operation Stage							
Groundwater Quality	pH, Total Hardness, Chloride, Total Dissolved Solids (TDS)	Laboratory analysis	Semi annually	Specialized Nurses' Dormitory building water supply system	KWT/Contractor	SDCMU/SICIP	Will be complied
Surface water Quality	pH, Total Hardness, Chloride, Turbidity, Total Dissolved Solids, BOD, COD	Laboratory analysis against the baseline established	Semi-annually	Closest to the boundary of the dormitory	KWT/Contractor	SDCMU/SICIP	Will be complied
Noise Level	Measurement of noise dB(A)	Laboratory analysis	Semi annually	Four corners of the site boundary, at 200 m and 300 m from the following locations: (i) residential, (ii) institutional (school, mosque), (iii) silent (hospital) area	KWT/Contractor	SDCMU/SICIP	Will be complied
Air Quality	PM_{10}, $PM_{2.5}$, CO, SO_2, NO_x, O_3, Temperature,	Laboratory analysis	Semi annually	Inside the project boundary	KWT/Contractor	SDCMU/SICIP	Will be complied

Environmental Aspect	Monitoring Parameter	Means of Monitoring	Frequency	Location	Responsible Agency		Status
					Implement	Supervising	
	Wind Speed, Humidity						

d) Monitoring plan for Sylhet TTC

No	Environmental Issues /Parameters	Monitoring Method			Status
		Method	Location	Duration / Frequency	
1. Pre-Construction Phase					
1.1	Tree plantation	Visual inspection	In the site	During the pre-construction period	Will be complied
2. Construction Phase					
2.1	Work condition (including work safety)	Record of accidents	Contractor's office	Continuous Record	Will be complied
2.2	Accidents	Record of accidents	Contractor's office	Continuous Record	Will be complied
2.3	Disturbance to Community traffic and installation of proper road signage	Records of road signage implemented, visual inspection	Along the approach road	Continuous record	Will be complied
2.4	Infectious Diseases such as COVID-19, HIV/AIDS	Labor health record	Related institutions	Continuous Record	Will be complied
2.5	Disturbance to Existing Social Infrastructure and Services	Record of numbers construction vehicles	Project site	Continuous Record	Will be complied
2.6	Topography and Landscape Changes	Inspection	In the work site	Construction stage/ Weekly inspection	Will be complied
2.7	Air Quality	Monitoring is suggested in Both construction sites. (BACI site contains a very sensitive	construction site	Bi-annual monitoring	Will be complied

No	Environmental Issues /Parameters	Monitoring Method			Status
		Method	Location	Duration / Frequency	
		location-E- passport office)			
2.8	Noise Quality	Regular Monitoring	Construction site	Daily monitoring	Will be complied
2.9	Drinking water quality	Inspection	Labor camp & engineers' room	Bi-annual monitoring	Will be complied
3.0	Wastes and drainage congestion	Record of kinds and quantity of waste, and the disposal method	In the work site and Worker's camp	Daily	Will be complied
3. Operation Phase					
3.1	Accidents	Record of accidents and fire	Along the road and buildings.	Continuous Record	Will be complied
3.2	Wastes and drainage congestion	Record of kinds and quantity of waste, and the disposal method	In the work site and Worker's camp	Daily	Will be complied

3 ENVIRONMENTAL MANAGEMENT

3.1 Compliance with Environmental Mitigation and Management Plan (EMP)

35. The EMP Plan have been developed for 4 sites only such as STTL, NATI, Kumudining and Sylhet TTC. The project will ensure all the compliance related to EMP and mitigation measures as described in the IEE.

Table 3-1: Status of Environmental Management Plan

a) EMP for STTL

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
A. PRE-CONSTRUCTION PHASE						
(i) IMPLEMENTATION READINESS						
1. IEE and EMP update	Impacts not accounted for due to post-approval modifications in alignment, design or local conditions	- Review IEE and EMP to ensure any post-approval changes are properly accounted for and addressed, by addition of mitigation measures if necessary - EMP copied in the bid document and part of legal contract of the contractor	SDC MU	SDC MU/ PIU	- IEE and EMP confirmed still fully applicable - New measures added to EMP if needed to cover any changes in alignment, design or local conditions	-Being Complied - SEMP plan has been prepared and following at site
2. Confirmation of NOCs from local agencies and authorities	Project works will not be granted clearances by DOE if NOCs are not obtained from relevant national and local authorities	- Confirm NOC has been obtained from CTEC itself - Declare site clearance from CTEC itself so that no conflict occurs in future, and DOE has legal documents that the site is owned by CTEC	SDC MU	SDC MU/ PIU	- NOCs granted by local municipal authorities - Self-declaration of ownership of land by the CTEC	Being complied
3. Verification of environmental clearances	Project works will not be in compliance with national environmental laws if clearances are not obtained prior to site clearing	- Confirm Site Clearance Certificate (SCC) and Environmental Clearance Certificate (ECC) have been granted, and that any conditions imposed by DOE on approval have been reflected in EMP and EMoP, as well as CEMP as applicable	SDC MU	SDC MU/ PIU	- SCC and ECC granted - New measures added to EMP, EMoP and CEMP if needed to meet any condition of approval specified by DOE	Being complied
4. CEMP verification	Mitigation will be inadequate if the CEMP is not fully specified	- Review CEMP to ensure all primary Contractor responsibilities are fully reflected, including monitoring and reporting	SDC MU/ CSC	SDC MU/ PIU	- Any necessary changes requested, and made by Contractor - CEMP confirmed adequate by reviewers	-Complied - CEMP plan has been prepared and following at site
5. Specialized plans verification	Mitigation will be inadequate if specialized plans have not been formulated to manage key impacts	Confirm that the following specialized plans have been prepared by the Contractor: - site-specific Construction Camp Management Plan(s) - site-specific Waste Management Plans (embedded within CEMP) - site-specific Emergency Response Plans (embedded within CEMP) - Compensatory Tree Planting Plan - Construction Traffic Management Plan - Soil Erosion Prevention Plan - Site Reinstatement Plan - Occupational Health and Safety Plan (including COVID-19 measures stipulated by ADB and Government of Bangladesh Guidance for Social and Institutional Containment and Prevention) - Waste Management Plan	SDC MU/ CSC	SDC MU/ PIU	- All required specialized plans prepared to adequate standard and approved by relevant authority (as required in some cases)	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
6. Grievance Redress Mechanisms	Members of the public and workers require a fair and transparent means of getting resolution to complaints about some aspect of the project's implementation	- Confirm that a central GRM and workers' GRM have been established and publicized	SDC MU/ CSC	SDC MU/ PIU	- Central GRM established and publicized - Workers' GRM established and explained to workers before the start of construction	-Being complied -GRC committee formed and register maintained at site
7. EMP training	Contractors, Construction workers and implementing authority needs EMP training to implement the EMP properly	- Confirm that central EMP training and site specific EMP training are held as defined in **Error! Reference source not found.**	SDC MU/ CSC Env. Specialist	SDC MU	- Central and site EMP training is conducted	On process
(ii) DESIGN						
8. Climate change mitigation	Generation of GHG from construction and operations contributes to global climate change problem	- Integrate GHG-limiting measures into facility designs, including: - substitute other materials for concrete where feasible - use low-carbon concrete as much as possible - maximize use of building materials available locally - integrate photovoltaic generation into the electrical plan - specify only high-efficiency electrical and mechanical equipment - Specify most fuel-efficient backup generator available - Maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation - Prioritize shade in the landscaping plan, with plentiful wide-crowned shade trees on all parts of site - Incorporate hollow wall structures where feasible - Use overhangs above large windows to prevent excessive sun penetration - Maximize interior natural light by use favorable building orientation and courtyards - Specify water-saving toilets, faucets and showerheads - Design dedicated plumbing system for drinking and cooking water - Aim to meet all water heating needs with solar heaters - Specify high-intensity, full-time lighting only where strictly necessary - Specify solar-powered lighting in outdoor applications - Base landscape plan around drought-tolerant perennial native species - Design site layout and inspection process to minimize the length of time vehicles have their engines running - Incorporate green roofs wherever roof area is not needed for solar panels and solar water heaters - Maximize carbon sequestration potential, micro-climatic cooling and runoff retention by specifying a landscaping plan covering all site areas not occupied by structures,	CSC Con	MoF, SDC MU-ESFP	- All feasible GHG-reduction design measures incorporated in facility detailed designs - Soft landscaping plan (covering all site areas not occupied by structures, roadways or walkways, and including ample shade trees and dense ground cover) included in detailed site design, with plantings specified in Bill of Quantities	Complied. Climate change features- solar panel, Rain water system and energy efficient fittings are included in the design.

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		roadways or walkways, including ample shade trees (especially near buildings) and dense ground cover in open areas				
9. Climate change adaptation	Infrastructure use limitations, damage, and environmental hazards due to changing conditions	- Integrate lightning arrester in building design - Design facilities so that critical components (including laboratory, backup generator and fuel tanks) are well above maximum flood level foreseen under climate change projections specified in Climate Risk and Adaptation Assessment (CRA) report and detailed hydrological study - Incorporate temperature-moderating features in STTL facility designs, including: - green roofs where feasible - maximize use of wide-crowned shade trees in site landscaping plans, including around buildings and parking area medians - maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation	CSC Con	MoF, SDC MU-ESFP	- All critical facility components above maximum expected flood level - All feasible temperature-moderating features incorporated in facility designs	Complied. Climate change features- solar panel, Rain water system and energy efficient fittings are included in the design.
10. Flora and fauna	Unnecessary loss of trees during site development	- Incorporate existing trees into site designs to the greatest extent possible, including them in design drawings so they are protected during clearing and construction - When trees must be removed, specify planting of compensatory trees elsewhere on site, including these in drawings and in the Bill of Quantities, in accordance with the approved Compensatory Tree Planting Plan	CSC Con	MoF, SDC MU-ESFP	- Existing trees incorporated in designs to extent possible - Compensatory trees specified in design drawings and Bill of Quantities, in accordance with the approved Compensatory Tree Planting Plan	Complied
11. Groundwater resources	Lack of effective water conservation contributes to local groundwater issues	- Contracted contractor shall conduct first monitoring of groundwater, surface water, air, soil and noise quality to establish benchmark for the construction project. - Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: (i) rain capture on all roofs and use of stored water for non-potable uses in and around facilities (ii) high-efficiency faucets and toilets throughout the facilities (iii) plant species with low water needs in site landscaping plans (iv) stormwater infiltration swales for all runoff from paved and impervious surfaces (objective: zero site runoff)	CSC Con	MoF, SDC MU-ESFP	- All feasible and applicable water conservation measures incorporated in detailed designs for STTL facilities	Complied
12. Surface water quality	Siltation, sedimentation and contamination of water bodies receiving runoff from the STTL	- Contracted contractor shall conduct first monitoring of groundwater, surface water, air, soil and noise quality to establish benchmark for the construction project.	CSC Con	MoF, SDC MU-	- Surface of minerals storage area designed to be slightly higher than rest of site	Complied (EMP cost included with the contract)

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		- Slightly raise surface of minerals storage area above level of rest of site to prevent runoff from other site areas from washing through stockpiles - Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit discharge of sediments		ESFP	- Adequately sized sediment traps and porous drainage channels included in detailed design for minerals storage area	
13. Air quality	Elevated dust in minerals storage area	- Contracted contractor shall conduct first monitoring of groundwater, surface water, air, soil and noise quality to establish benchmark for the construction project. - Include water supply to minerals storage area, with hose spigots in several locations around the perimeter to enable use of mobile misting apparatus	CSC Con	MoF, SDC MU-ESFP	- Detailed design includes water supply to minerals storage area, with multiple hose spigots spaced around perimeter	Complied (EMP cost included with the contract)
14. Public health and safety	Elevated risk of viral infection in STTL area	- Design internal layout of the STTL building to maximize space between users and prevent the formation of long lines in indoor spaces - Design STTL building ventilation system for maximum feasible turnover of indoor air	CSC Con	MoF, SDC MU-ESFP	- STTL building designed to maximize space between users and prevent formation of long indoor lines - STTL building ventilation system designed for maximum feasible turnover of indoor air	Complied (EMP cost included with the contract)
15. Occupational health and safety	Chronic exposure of facility staff to elevated engine emissions	- Design canopies over areas used by vehicles with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	CSC Con	MoF, SDC MU-ESFP	- Canopy designs enable efficient exhaust removal - site check booths designed with remote air intake and positive pressure ventilation	Complied (EMP cost included with the contract)
16. Occupational health and safety	Elevated staff exposure to viral threats	- Design interior layout of the STTL building to maximize space between users and prevent the formation of long lines in indoor spaces - Design STTL building ventilation system for maximum feasible turnover of indoor air	CSC Con	MoF, SDC MU-ESFP	- STTL building intern al layout designed to maximize space between users and prevent formation of long indoor lines - STTL building ventilation system designed for maximum feasible turnover of indoor air	Complied (EMP cost included with the contract)
17. Occupational health and safety	Exposure to hazardous releases in laboratory	- Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices	CSC Con	MoF, SDC MU-ESFP	- Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice	Complied (EMP cost included with the contract)
18. Waste management	Pollution from inadequately managed wastes	- Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste - Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated - Include waste storage and sorting areas in facility designs - Incorporate easy access for waste and recyclables collection vehicles	CSC Con	MoF, SDC MU-ESFP	- Facility designs include spaces and features for waste management, including collection, sorting, composting, storage and out-shipment - Laboratory design provides for at-source segregation of hazardous liquid and solid wastes	Complied (EMP cost included with the contract)

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		- Designate outdoor space for thermophilic composting of organic waste from kitchens and canteens - Design laboratory for appropriate segregation of hazardous and non-hazardous waste streams				
(iii) PROCUREMENT						
19. Selection of CSC and Contractor	Contractors with low commitment to safeguards compliance limit success of EMP implementation	- Prioritize selection of Contractor with strong compliance track record, as verified by references from previous CSCs - Select only Contractors registered with MOLE	SDC MU	MoF	- Selected CSC and Contractor has verified track record of good performance on safeguards compliance	Complied
20. Labor	Use of non-local labor reduces positive impact of project on local livelihoods and triggers social conflict	- Hire exclusively or mostly local workers	Con	MoF, SDC MU-ESFP, PIU	- Workers from outside Chatttagram represent less than 10% of total workforce	Complied
21. Materials sourcing	Gravel and sand obtained from environmentally damaging riverbed mining, hill cutting or farmland strip-mining	- Obtain valid Certificate of BSTI from suppliers of bulk materials	Con	MoF, SDC MU-ESFP, PIU	- Certificate of BSTI obtained and filed for each purchase of bulk materials	Complied
22. Materials sourcing	Undue GHG emissions from transport of materials sourced far from point of use	- Prioritize bulk materials suppliers using less distant sources	Con	MoF, SDC MU-ESFP, PIU	- Materials sourced from within reasonable distance	Complied
23. Materials Sourcing	Knock-on environmental effects of sourcing from unsustainable suppliers	- Select suppliers with strong green credentials (verified by review of certifications received)	Con	MoF, SDC MU-ESFP, PIU	- International suppliers of materials have favorable environmental certifications	Complied
B. CONSTRUCTION PHASE						
(i) BIOPHYSICAL ENVIRONMENT						
24. Surface water	Siltation and sedimentation of watercourses from soil erosion and entrainment of fine materials, blockage of the surface drains near the STTL site	Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Keep all stockpiles of erodible materials covered with tarpaulins whenever they are not in active use - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles - Install and regularly maintain sediment traps in site runoff channels - Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Deploy silt curtains and sediment traps when earthworks are carried out near watercourses	Con	MoF, SDC MU-ESFP, PIU, CSC	- Prescribed soil protection measures effectively implemented at all work sites - Sediment traps installed in appropriate places, and maintained properly - Lack of evidence of elevated turbidity in water draining to adjacent water bodies - Vegetative cover promptly established when construction activity complete on each part of work sites - Silt curtains and sediment traps properly deployed where appropriate	Will be complied
25. Surface water, groundwater and	Contamination from leaks and spills of noxious fluids used in construction process	- Keep all motorized equipment in good repair - Maintain a regiment of systematic daily checks to detect leaks,	Con	MoF, SDC MU-	- Fuels, lubricants and other noxious fluids stored in appropriate structure	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
soils		following up with prompt repair as needed - Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips - Store fuels and other noxious fluids within roofed, rain-exclusive containment structures with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains - Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing		ESFP, PIU, CSC	- Lack of evidence of leaks from construction equipment - Lack of oil patches on soil surface - Lack of oily sheen on site runoff water	
26. Surface water	Excessive enrichment of surface waters from raw sewage discharged by construction camps lacking adequate septic systems	- Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with Construction Camp Management Plan	Con	MoF, SDC MU-ESFP, PIU, CSC	- At least one working toilet per 10 resident workers installed - Absence of visual evidence of enrichment	Will be complied
27. Air quality	Dust from construction works create nuisance and health hazard for residents near work sites and roads	- Implement a regimen of misting all dust-generating surfaces throughout the workday during dry weather - Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion - Equip all haul trucks with tightly fitting tarpaulins and enforce their use	Con	MoF, SDC MU-ESFP, PIU, CSC	- Levels of airborne dust are below nuisance level in roadside communities - No significant dust accumulation observed on roadside crops and structures - No complaints from public registered - Ambient air quality at perimeter of work sites and on main road near the STTL site meet the standard indicated in the Air Pollution Control Rules 2022	Will be complied
28. Air quality	Emissions from equipment and vehicles used in construction degrades local air quality	- Maintain all motorized equipment used in construction to a high standard - Use only fuel-efficient equipment	Con	MoF, SDC MU-ESFP, PIU, CSC	- Absence of black smoke in construction equipment exhaust - No complaints from public - Ambient air quality at perimeter of work sites and on the Muhuri Project road near STTL site meet the standard indicated in the Air Pollution Control Rules 2022 - Emissions from motorized machinery used in construction should meet the standard indicated in the Air Pollution Control Rules 2022.	Will be complied
29. Soil	Loss of topsoil to erosion	- Implement approved Soil Erosion Prevention Plan, including (inter alia): o Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber	Con	MoF, SDC MU-ESFP,	- Prescribed soil protection measures effectively implemented at all work sites - Lack of evidence of soil erosion	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		mats and other temporary coverings ○ Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils ○ Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Implement approved Site Reinstatement Plan, including (inter alia): ○ Reserve topsoil and store separately for later use ○ Promptly prepare soil surfaces for plantings once construction work has been completed in each part of site ○ Establish vegetative cover in accordance with landscaping plan in detailed site design, Bill of Quantities and Compensatory Tree Planting Plan ○ Implement a watering and tending regimen to help ensure success of plantings ○ Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to achieve full coverage		PIU, CSC	- Vegetative cover promptly established when construction activity complete on each part of work sites	
30. Flora and fauna	Damage to trees	- Clearly mark trees that are to be preserved prior to clearing - Establish a fenced buffer around trees that are to be preserved to protect them from damage by equipment, excavation and materials stockpiles	Con	MoF, SDC MU-ESFP, PIU, CSC	- Trees clearly marked prior to site clearing - Fenced buffers established, maintained and observed around preserved trees for duration of works	Will be complied
31. Flora and fauna	Aquatic habitat in on-site watercourses degraded	- There is natural water course near the site. The deep ditch adjacent to the site drains toward the main drainage system which is actually a canal. - Establish a 10-m buffer with temporary fencing along any permanent or seasonal watercourses found on site, and enforce a prohibition on any construction-related activity within the buffer for the duration of the works - Deploy silt curtains and temporary sediment traps where runoff from active work areas is directed to creeks	Con	MoF, SDC MU-ESFP, PIU, CSC	- 10-m buffer established with temporary fencing along any permanent or seasonal watercourses on site - Prohibition on construction-related activities within the buffer enforced - Silt curtains and sediment traps deployed as appropriate to limit silt delivery to on-site watercourses	Will be complied
32. Flora and fauna	Loss of trees	- Initiate a tree plantation plan. It is possible that within the CTEC campus, more than one hundred trees can be planted. In this case native species should be chosen. - Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	Con	MoF, SDC MU-ESFP, PIU, CSC	Compensatory Tree Planting Plan implemented as approved	Will be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT						

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
33. Acoustic environment	Noise and vibration from earthworks, pile-driving and materials hauling degrade quality of life for local residents	- Conduct work only during daylight hours - Impose and enforce low speed limits on haul trucks through the Muhuri Project road - Maintain all motorized equipment and haul trucks to a high standard, and inspect exhaust systems regularly	Con	MoF, SDC MU-ESFP, PIU, CSC	- Noise and vibration are below nuisance level for residents and tourism businesses along Muhuri Project road - No construction work or hauling is conducted between dusk and dawn - No complaints from the public registered - Ambient noise levels outside the work sites meet the standard indicated in the Environment Conservation Rules, 2023 - Noise emissions from individual pieces of machinery and vehicles meet standard indicated in the Noise Pollution (control) Rules 2006	Will be complied
34. Public safety	Elevated risks to pedestrians on approach road and in the site	- Ensure that the construction sites are adequately fenced and security is provided to prevent members of the public from entering the sites - Establish safe, marked routes for staff and facility users to continue to use the CTEC facilities without having to cross active construction zones - Implement approved Construction Traffic Management Plan during hauling periods, including (inter alia): - Impose and enforce low speed limits on haul trucks through Muhuri Project road	Con	MoF, SDC MU-ESFP, PIU, CSC	- Adequate fencing and security maintained at construction sites - Construction zone is configured to maintain safe access for STTL staff during construction works - Construction Traffic Management Plan prepared and observed to be implemented as appropriate - Haul trucks not observed or reported to speed through STTL site or elsewhere along Muhuri project Road near the work site	Will be complied
35. Public safety	Construction camps are locus of violence against women and girls	- Give preference to local laborers to avoid the need for, or limit the size of, a construction camp - Implement approved Construction Camp Management Plan, including (inter alia): - Conduct proactive outreach with leaders of nearby communities to educate women and girls about the risks posed by an all-male camp in the neighborhood. - Give resident workers regular training on appropriate behavior in and around the camp - Adopt a zero-tolerance policy around aggression or violence against local women and girls - When women must enter the camp for employment or selling produce, limit their entry to times when resident workers are out at the work site - Prohibit prostitution on the site, and monitor activity in this regard and	Con	MoF, SDC MU-ESFP, PIU, CSC	- Lack of reports of worker-involved abuse or harassment - Lack of complaints from public about violence or prostitution at camp - Female access to camp for employment allowed only when workers are out at work sites	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		work with community leaders to address the problem as needed				
36. Public safety	Construction camps serve as source of social conflict, possibly leading to violence	- Implement approved Construction Camp Management Plan, including (inter alia): - Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of crops/foods	Con	MoF, SDC MU-ESFP, PIU, CSC	- Lack of complaints from public about behavior of resident workers	Will be complied
37. Public health	Construction camps act as vectors for spread of pathogens and disease	- Implement approved Construction Camp Management Plan, including (inter alia): - Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields - Educate resident workers about sexually transmitted diseases and responsible sexual behavior - Work with local community leaders to prohibit prostitution in and around construction camps	Con	MoF, SDC MU-ESFP, PIU, CSC	- At least one working toilet per 10 resident workers installed, with septic treatment - Absence of visual evidence of raw sewage discharge - Lack of reports of prostitution around camp - Lack of concerns expressed by local community leaders about workers' off-site behavior	Will be complied
38. Worker health and safety	Risks to worker health and safety from improper work site practices	- Implement approved Occupational Health and Safety Plan, including (inter alia): - Provide regular safety training for all workers - Provide task-appropriate PPE to all workers and enforce its use - Closely monitor works at all times to ensure strong worker compliance with safety practices	Con	MoF, SDC MU-ESFP, PIU, CSC	- Low incidence of workplace injuries - Workers observed using appropriate PPE	Will be complied
39. Worker health	Risks to workers from viral illness	- Implement approved Occupational Health and Safety Plan, including (inter alia): - Institute temperature checks (at least daily) for all workers and supervisory personnel on site - Provide each worker with appropriate face mask daily or as needed, and require mask use at all times - Position hand washing and sanitizing stations at canteens and other eating areas, kitchens, and near toilets	Con	MoF, SDC MU-ESFP, PIU, CSC	- Temperature check regimen implemented consistently - Workers supplied with facemasks - Workers consistently use facemasks - Hand washing and sanitizing stations provided in appropriate locations and kept stocked at all times	Will be complied
40. Worker health and safety	Risks to worker health and safety from poor conditions in construction camps	- Implement approved Occupational Health and Safety Plan, including (inter alia): - Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions - Institute a regular cleaning and disinfection regimen for camp kitchens, latrines, wash-up areas, eating areas and sleeping sheds - Provide adequate sleeping space for the number of workers to avoid overcrowding and consequent spread of communicable illnesses and infestations	Con	MoF, SDC MU-ESFP, PIU, CSC	- Safety audit results included in monthly progress reports and quarterly monitoring reports - Lack of outbreaks of infectious illnesses (e.g., influenza, pneumonia, tuberculosis) and ailments associated with unsanitary conditions (e.g., dysentery, lice, scabies) - Living conditions meet standards specified in Construction Camp Management Plan	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		- Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting - Test drinking water supplied to workers on a quarterly basis to ensure safety - Ensure adequate ventilation and light in all camp structures			- Drinking water test results meet standards indicated in the Environment Conservation Rules, 2023	
41. Livelihoods	Damage to property and livelihoods	- Fence perimeter of each work site prior to the start of construction and ensure maintenance of fencing for the duration of works - Prohibit all construction-related activity outside the site fences - Promptly remedy any property damage caused in consultation with the affected landowner(s), even if not formal grievance files	Con	MoF, SDC MU-ESFP, PIU, CSC	- Perimeter of each work site properly fenced prior to the start of construction, and fence maintained for duration of works	Will be complied
42. Livelihoods	Employment for local people	- Hire mostly or exclusively local workers on construction sites	Con	MoF, SDC MU-ESFP, PIU, CSC	- Workers from outside Chattagram represent less than 10% of total workforce on site	Will be complied
43. Physical cultural resources	Damage to cultural heritage due to inappropriate treatment of unearthed artifacts	- Train all workers and site managers in the use of the chance find procedure specified in the CEMP	Con	MoF, SDC MU-ESFP, PIU, CSC	- Workers are aware of the chance find procedure	Will be complied
(iii) WASTE MANAGEMENT						
44. Demolition waste	Impacts from improper removal, processing and disposal of demolished structures	- If there is any reason to suspect presence of asbestos-containing materials (ACM), implement approved ACM Removal and Disposal Plan - Ensure salvage of recyclable and reusable items - Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management Plan embedded within the CEMP	Con	MoF, SDC MU-ESFP, PIU, CSC	- Any ACM assessed and removed and disposed of according to approved ACM Removal and Disposal Plan - Recyclable materials salvaged. - Rubble appropriately used as fill on site, or disposed of in accordance with Waste Management Plan embedded in CEMP	Will be complied
45. Construction waste	Pollution from improper management of solid waste generated at work sites and construction camp	- Implement all provisions in the Waste Management Plan embedded in CEMP, including (inter alia): - Provide waste receptacles on the work sites and collect their contents daily or weekly as needed - Recycle all recyclables through local providers of this service - Compost organic wastes generated by construction camp kitchens - Dispose of non-recyclable and non-organic wastes based on locally available and approved disposal options	Con	MoF, SDC MU-ESFP, PIU, CSC	- All classes of waste managed in accordance with Waste Management Plan	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
46. Waste oils	Water pollution from waste oils and other fluids generated in maintenance yards	- Recycle waste oils through a reputable business providing this service, as identified in the Waste Management Plan embedded in the CEMP	Con	MoF, SDCMU-ESFP, PIU, CSC	- No evidence of waste oil dumping or burning - Documentation of transfers to identified service provider available	Will be complied
C. OPERATION PHASE						
(i) BIOPHYSICAL ENVIRONMENT						
47. Water quality	Contamination by noxious fluids used in facility operations and maintenance	- Store fluids only within dedicated indoor storage spaces with secondary containment capacity equaling or exceeding 115% of the volume of the largest container stored - Routinely inspect storage spaces and tanks for leakage, and take immediate corrective action as needed	SOU at CTEC	SDCMU at MoF	- Proper storage observed. - Absence of evidence of spills and leaks	Will be complied
48. Water quality	Reduced effectiveness of wastewater treatment	- Remove sludge at least once per year from all septic tanks installed, and worked into the soil around on-site tree plantations for fertilization	SOU at CTEC	SDCMU at MoF	- Sludge removed from all septic tanks at least annually, and appropriately used to fertilize on-site tree plantations	Will be complied
49. Water quality	Spills of hazardous and noxious cargos in the site	- Prepare a Spill Prevention and Response Plan for the site prior to the start of operations. - Provide personnel training necessary for effective implementation of the plan before the start of operations and annually during operations	SOU at CTEC	SDCMU at MoF	- Spill Prevention and Response Plan prepared for the site prior to the start of operations. - Personnel training necessary for effective implementation of the Spill Prevention and Response Plan delivered before start of operations and repeated annually during operation phase	Will be complied
50. Water quality	Siltation, sedimentation and contamination of local water bodies by runoff from minerals storage area in the site	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed. - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use	SOU at CTEC	SDCMU at MoF	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Runoff from minerals storage area is of sufficient quality not to cause violation of surface water standard, as indicated in the Environment Conservation Rules, 2023	Will be complied
51. Air quality	Emissions from vehicles using the site	- Ensure adequate staffing at peak times to help ensure that incoming trucks are processed efficiently and lines do not form - Enforce a strict no-idling policy	SOU at CTEC	SDCMU at MoF	- Ambient air quality on site meets standards indicated in the Air Pollution Control Rules 2022	Will be complied
52. Air quality	Dust from handling of materials in minerals storage area	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed. - Strictly require the use of tarpaulins on all piles of mineral materials at all	SOU at CTEC	SDCMU at MoF	- Ambient air quality on site meets standards indicated in the Air Pollution Control Rules 2022	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
		times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Ensure that appropriate basic misting equipment is purchased or purpose-built and kept in good working condition. - Train personnel assigned to the minerals storage area in proper procedure for misting during materials handling - Strictly require misting as standard procedure during handling of dusty materials - Strictly prohibit stone crushing activity on the site, including the minerals storage area				
53. Air quality	Dust from uncovered or improperly covered trucks hauling dusty materials such as stone, sand and coal	- Strictly require all trucks entering site to be equipped with tightly fitting tarpaulins. - Sweep and spray roadways within site as needed to limit dust	SOU at CTEC	SDC MU at MoF	- All trucks entering site observed to be appropriately covered. - Roadways within STTL site swept and sprayed as needed to suppress dust. - Ambient air quality on site meets standards indicated in the Air Pollution Control Rules 2022	Will be complied
54. Soils	Erosion of soils during maintenance works involving excavation and/or deteriorated ground cover	- Protect soils exposed by maintenance works with mulches and other protective coverings during works, and promptly re-establish vegetative cover when works have been completed. - Regularly inspect site vegetation for loss of coverage and evidence of emerging gully erosion	SOU at CTEC	SDC MU at MoF	- Lack of evidence of gully erosion	Will be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT						
55. Acoustic environment	Excessive noise due to increasing traffic	- Convene a workshop with participation of people living and operating businesses along college road, local council representatives, WASA, police and other government agencies to discuss feasibility of limiting vehicle horn use in the CTEC zone and formulate action as appropriate	SOU at CTEC	SDC MU at MoF	- Workshop convened and action plan formulated if consensus for action found	Will be complied
56. Acoustic environment	Excessive noise due to stone processing activity within the site	- Strictly prohibit stone crushing activity within the site, including in the minerals storage area	SOU at CTEC	SDC MU at MoF	- No stone crushers or crushing activity observed anywhere within the site	Will be complied
57. Public safety	Elevated accident risk due to increased truck traffic and inadequate road safety provisions	- Regularly monitor facility operations for emerging public safety issues, and devise appropriate corrective action, as needed. - Proactively coordinate with RHD to ensure that safety features including sidewalks, pullout and turn lanes, road markings, signage and other safety features are planned for and implemented in future approach road upgrades	SOU at CTEC	SDC MU at MoF	- Safety features implemented. - Accident risk low	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
58. Public safety	Elevated accident risk due to community and commercial encroachment on approach road Right of Way (RoW) and road surface	- Pursue collaboration with RHD/LGED and local community leaders regarding durable solutions to safety risks from on-road and road-adjacent commerce, such as provision of alternative spaces outside the RoW for commercial and community activity	SOU at CTEC	SDC MU at MoF	- Low incidence of encroachment - Smooth traffic flow through settled areas - Low incidence of vehicle-pedestrian collisions	Will be complied
59. Worker health and safety	Chronic exposure to vehicle emissions	- Enforce a strict policy against engine idling by trucks within STTL area	SOU at CTEC	SDC MU at MoF	- Low incidence of staff complaints about emissions exposure - Ambient air quality on STTL station site meets standards indicated in the Air Pollution control rules 2022	Will be complied
60. Worker health and safety	Elevated risk of contracting dangerous viral illnesses	- Integrate pandemic response measures in operations and maintenance manuals and operating protocols for the STTL station, to ensure prompt implementation when emerging threats are identified	SOU at CTEC	SDC MU at MoF	- Pandemic response measures integrated in operations and maintenance manuals	Will be complied
61. Worker health and safety	Exposure of laboratory technicians and support staff to accidental hazardous releases	- Incorporate Emergency Response Plan in laboratory operating protocols, and provide regular training for technicians and support staff on its activation	SOU at CTEC	SDC MU at MoF	- Emergency Response Plan included in laboratory operating protocols. - Regular training provided on activation of Emergency Response Plan	Will be complied
62. Livelihoods	Opportunities for employment in facility operations and maintenance	- Give priority to local people and firms in selecting Contractors for maintenance works and selected permanent positions in operations and maintenance	SOU at CTEC	SDC MU at MoF	- Local people well represented in local STTL workforce	Will be complied
(iii) WASTE MANAGEMENT						
63. Laboratory waste	Environmental contamination and public health risks from improperly managed hazardous wastes	- Integrate detailed laboratory waste management plan (developed by laboratory design specialist engaged during detailed design) into laboratory operations and maintenance manuals. - Provide training to laboratory technicians and maintenance staff on correct implementation of waste management protocols, before the laboratory becomes operational and on an annual basis thereafter. - Specify parameters, measurement, and reporting for annual waste audit in laboratory waste management protocols. - Conduct an annual waste management audit and implement corrective action as needed to address problematic trends	SOU at CTEC	SDC MU at MoF	- Discharges of liquid waste from laboratory meet standards indicated in the Environment Conservation Rules, 2023(only if applicable)	Will be complied
64. Solid waste	Pollution from improper management of solid waste from CTEC facility operations	- Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	SOU at CTEC	SDC MU at MoF	- Recyclable solid waste is consistently segregated and picked up by a reputable recycling business. - Non-recyclable solid waste is consistently taken to a legal landfill for disposal.	Will be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Status
					- Lack of evidence of waste dumping or burning on site	

b) EMP for NATI

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
B. PRE-CONSTRUCTION PHASE						
(ii) IMPLEMENTATION READINESS						
65. IEE and EMP update	Impacts not accounted for due to post-approval modifications in alignment, design or local conditions	- Review IEE and EMP to ensure any post-approval changes are properly accounted for and addressed, by addition of mitigation measures if necessary - EMP copied in the bid document and part of legal contract of the contractor	SDCMU	SDCMU/PIU	- IEE and EMP confirmed still fully applicable - New measures added to EMP if needed to cover any changes in alignment, design or local conditions	Complied. IEE and EMP prepared
66. Confirmation of NOCs from local agencies and authorities	Project works will not be granted clearances by DOE if NOCs are not obtained from relevant national and local authorities	- Confirm NOC has been obtained from NPI itself - Declare site clearance from NPI itself so that no conflict occurs in future, and DOE has legal documents that the site is owned by NPI	SDCMU	SDCMU/PIU	- NOCs granted by local municipal authorities - Self-declaration of ownership of land by the NPI	Being complied.
67. Verification of environmental clearances	Project works will not be in compliance with national environmental laws if clearances are not obtained prior to site clearing	- Confirm Site Clearance Certificate (SCC) and Environmental Clearance Certificate (ECC) have been granted, and that any conditions imposed by DOE on approval have been reflected in EMP and EMoP, as well as CEMP as applicable	SDCMU	SDCMU/PIU	- SCC and ECC granted - New measures added to EMP, EMoP and CEMP if needed to meet any condition of approval specified by DOE	Being complied.
68. CEMP verification	Mitigation will be inadequate if the CEMP is not fully specified	- Review CEMP to ensure all primary Contractor responsibilities are fully reflected, including monitoring and reporting	SDCMU/CSC	SDCMU/PIU	- Any necessary changes requested, and made by Contractor - CEMP confirmed adequate by reviewers	To be complied (not timed)
69. Specialized plans verification	Mitigation will be inadequate if specialized plans have not been formulated to manage key impacts	Confirm that the following specialized plans have been prepared by the Contractor: - site-specific Construction Camp Management Plan(s) - site-specific Waste Management Plans (embedded within CEMP) - site-specific Emergency Response Plans (embedded within CEMP) - Compensatory Tree Planting Plan - Construction Traffic Management Plan - Soil Erosion Prevention Plan - Site Reinstatement Plan - Occupational Health and Safety Plan (including COVID-19 measures stipulated by ADB and Government of Bangladesh Guidance for Social and Institutional Containment and Prevention) - Waste Management Plan	SDCMU/CSC	SDCMU/PIU	- All required specialized plans prepared to adequate standard and approved by relevant authority (as required in some cases)	To be complied (not timed)

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
70. Grievance Redress Mechanisms	Members of the public and workers require a fair and transparent means of getting resolution to complaints about some aspect of the project's implementation	- Confirm that a central GRM and workers' GRM have been established and publicized	SDCMU /CSC	SDCMU/PIU	- Central GRM established and publicized - Workers' GRM established and explained to workers before the start of construction	To be complied
(ii) DESIGN						
71. Climate change mitigation	Generation of GHG from construction and operations contributes to global climate change problem	- Integrate GHG-limiting measures into facility designs, including: - substitute other materials for concrete where feasible - use low-carbon concrete as much as possible - maximize use of building materials available locally - integrate photovoltaic generation into the electrical plan - specify only high-efficiency electrical and mechanical equipment - Specify most fuel-efficient backup generator available - Maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation - Prioritize shade in the landscaping plan, with plentiful wide-crowned shade trees on all parts of site - Incorporate hollow wall structures where feasible - Use overhangs above large windows to prevent excessive sun penetration - Maximize interior natural light by use favorable building orientation and courtyards - Specify water-saving toilets, faucets and showerheads - Design dedicated plumbing system for drinking and cooking water - Aim to meet all water heating needs with solar heaters - Specify high-intensity, full-time lighting only where strictly necessary - Specify solar-powered lighting in outdoor applications - Base landscape plan around drought-tolerant perennial native species - Design site layout and inspection process to minimize the length of time vehicles have their engines running - Incorporate green roofs wherever roof area is not needed for solar panels and solar water heaters - Maximize carbon sequestration potential, micro-climatic cooling and runoff retention by specifying a landscaping plan covering all site areas not occupied by structures, roadways or walkways, including ample shade trees (especially near buildings) and dense ground cover in open areas	CSC Con	MoF, SDCMU-ESFP	- All feasible GHG-reduction design measures incorporated in facility detailed designs - Soft landscaping plan (covering all site areas not occupied by structures, roadways or walkways, and including ample shade trees and dense ground cover) included in detailed site design, with plantings specified in Bill of Quantities	Complied. Climate change features- solar panel, Rain water system and energy efficient fittings are included in the design.
72. Climate change adaptation	Infrastructure use limitations, damage, and environmental hazards due to changing conditions	- Integrate lightning arrester in building design - Design facilities so that critical components (including laboratory, backup generator and fuel tanks) are	CSC Con	MoF, SDCMU-ESFP	- All critical facility components above maximum expected flood level	Complied. Climate change features- solar panel, Rain water system and

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
		well above maximum flood level foreseen under climate change projections specified in Climate Risk and Adaptation Assessment (CRA) report and detailed hydrological study - Incorporate temperature-moderating features in NATI facility designs, including: - green roofs where feasible - maximize use of wide-crowned shade trees in site landscaping plans, including around buildings and parking area medians - maximize cross-ventilation by use of courtyards, openable windows and favorable building orientation			- All feasible temperature-moderating features incorporated in facility designs	energy efficient fittings are included in the design.
73. Flora and fauna	Unnecessary loss of trees during site development	- Incorporate existing trees into site designs to the greatest extent possible, including them in design drawings so they are protected during clearing and construction - When trees must be removed, specify planting of compensatory trees elsewhere on site, including these in drawings and in the Bill of Quantities, in accordance with the approved Compensatory Tree Planting Plan	CSC Con	MoF, SDCM U-ESFP	- Existing trees incorporated in designs to extent possible - Compensatory trees specified in design drawings and Bill of Quantities, in accordance with the approved Compensatory Tree Planting Plan	Complied
74. Groundwater resources	Lack of effective water conservation contributes to local groundwater issues	- Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: (v) rain capture on all roofs and use of stored water for non-potable uses in and around facilities (vi) high-efficiency faucets and toilets throughout the facilities (vii) plant species with low water needs in site landscaping plans (viii) stormwater infiltration swales for all runoff from paved and impervious surfaces (objective: zero site runoff)	CSC Con	MoF, SDCM U-ESFP	- All feasible and applicable water conservation measures incorporated in detailed designs for NATI facilities	Complied
75. Surface water quality	Siltation, sedimentation and contamination of water bodies receiving runoff from the NATI	- Slightly raise surface of minerals storage area above level of rest of site to prevent runoff from other site areas from washing through stockpiles - Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit discharge of sediments	CSC Con	MoF, SDCM U-ESFP	- Surface of minerals storage area designed to be slightly higher than rest of site - Adequately sized sediment traps and porous drainage channels included in detailed design for minerals storage area	Complied
76. Air quality	Elevated dust in minerals storage area	- Include water supply to minerals storage area, with hose spigots in several locations around the perimeter to enable use of mobile misting apparatus	CSC Con	MoF, SDCM U-ESFP	- Detailed design includes water supply to minerals storage area, with multiple hose spigots spaced around perimeter	Complied
77. Public health and safety	Elevated risk of viral infection in NATI area	- Design internal layout of the NATI building to maximize space between users and prevent the formation of long lines in indoor spaces - Design NATI building ventilation system for maximum feasible turnover of indoor air	CSC Con	MoF, SDCM U-ESFP	- NATI building designed to maximize space between users and prevent formation of long indoor lines - NATI building ventilation system designed for maximum feasible turnover of indoor air	Complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
78. Occupational health and safety	Chronic exposure of facility staff to elevated engine emissions	- Design canopies over areas used by vehicles with extra headroom and good cross ventilation or fans to evacuate emissions efficiently	CSC Con	MoF, SDCMU-ESFP	- Canopy designs enable efficient exhaust removal - site check booths designed with remote air intake and positive pressure ventilation	Complied
79. Occupational health and safety	Elevated staff exposure to viral threats	- Design interior layout of the NATI building to maximize space between users and prevent the formation of long lines in indoor spaces - Design NATI building ventilation system for maximum feasible turnover of indoor air	CSC Con	MoF, SDCMU-ESFP	- NATI building interna l layout designed to maximize space between users and prevent formation of long indoor lines - NATI building ventilation system designed for maximum feasible turnover of indoor air	Complied
80. Occupational health and safety	Exposure to hazardous releases in laboratory	- Engage qualified laboratory specialist to contribute to design of laboratory and associated structures, as well as preparation of operation protocols including waste management plans, to adhere to international laboratory design standards and best practices	CSC Con	MoF, SDCMU-ESFP	- Suitable laboratory design specialist engaged to ensure design and operations of laboratory adhere to international laboratory design and operation standards and best practice	Complied
81. Waste management	Pollution from inadequately managed wastes	- Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste - Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated - Include waste storage and sorting areas in facility designs - Incorporate easy access for waste and recyclables collection vehicles - Designate outdoor space for thermophilic composting of organic waste from kitchens and canteens - Design laboratory for appropriate segregation of hazardous and non-hazardous waste streams	CSC Con	MoF, SDCMU-ESFP	- Facility designs include spaces and features for waste management, including collection, sorting, composting, storage and out-shipment - Laboratory design provides for at-source segregation of hazardous liquid and solid wastes	Complied
(iii) PROCUREMENT						
82. Selection of CSC and Contractor	Contractors with low commitment to safeguards compliance limit success of EMP implementation	- Prioritize selection of Contractor with strong compliance track record, as verified by references from previous CSCs - Select only Contractors registered with MOLE	SDCMU	MoF	- Selected CSC and Contractor has verified track record of good performance on safeguards compliance	To be complied
83. Labor	Use of non-local labor reduces positive impact of project on local livelihoods and triggers social conflict	- Hire exclusively or mostly local workers	Con	MoF, SDCMU-ESFP, PIU	- Workers from outside Chatttagram represent less than 10% of total workforce	To be complied
84. Materials sourcing	Gravel and sand obtained from environmentally damaging riverbed mining, hill cutting or farmland strip-mining	- Obtain valid Certificate of BSTI from suppliers of bulk materials	Con	MoF, SDCMU-ESFP, PIU	- Certificate of BSTI obtained and filed for each purchase of bulk materials	To be complied
85. Materials sourcing	Undue GHG emissions from transport of materials sourced far from point of use	- Prioritize bulk materials suppliers using less distant sources	Con	MoF, SDCMU-ESFP, PIU	- Materials sourced from within reasonable distance	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
86. Materials Sourcing	Knock-on environmental effects of sourcing from unsustainable suppliers	- Select suppliers with strong green credentials (verified by review of certifications received)	Con	MoF, SDCMU-ESFP, PIU	- International suppliers of materials have favorable environmental certifications	To be complied
B. CONSTRUCTION PHASE						
(i) BIOPHYSICAL ENVIRONMENT						
87. Surface water	Siltation and sedimentation of watercourses from soil erosion and entrainment of fine materials, blockage of the surface drains near the NATI site	Implement approved Soil Erosion Prevention Plan, including (inter alia): - Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings - Keep all stockpiles of erodible materials covered with tarpaulins whenever they are not in active use - Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles - Install and regularly maintain sediment traps in site runoff channels - Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Deploy silt curtains and sediment traps when earthworks are carried out near watercourses	Con	MoF, SDCMU-ESFP, PIU, CSC	- Prescribed soil protection measures effectively implemented at all work sites - Sediment traps installed in appropriate places, and maintained properly - Lack of evidence of elevated turbidity in water draining to adjacent water bodies - Vegetative cover promptly established when construction activity complete on each part of work sites - Silt curtains and sediment traps properly deployed where appropriate	To be complied
88. Surface water, groundwater and soils	Contamination from leaks and spills of noxious fluids used in construction process	- Keep all motorized equipment in good repair - Maintain a regiment of systematic daily checks to detect leaks, following up with prompt repair as needed - Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips - Store fuels and other noxious fluids within roofed, rain-exclusive containment structures with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains - Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing	Con	MoF, SDCMU-ESFP, PIU, CSC	- Fuels, lubricants and other noxious fluids stored in appropriate structure - Lack of evidence of leaks from construction equipment - Lack of oil patches on soil surface - Lack of oily sheen on site runoff water	To be complied
89. Surface water	Excessive enrichment of surface waters from raw sewage discharged by construction camps lacking adequate septic systems	- Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with Construction Camp Management Plan	Con	MoF, SDCMU-ESFP, PIU, CSC	- At least one working toilet per 10 resident workers installed - Absence of visual evidence of enrichment	To be complied
90. Air quality	Dust from construction works create nuisance and health hazard for residents near work sites and roads	- Implement a regimen of misting all dust-generating surfaces throughout the workday during dry weather - Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion - Equip all haul trucks with tightly fitting tarpaulins and enforce their use	Con	MoF, SDCMU-ESFP, PIU, CSC	- Levels of airborne dust are below nuisance level in roadside communities - No significant dust accumulation observed on roadside crops and structures - No complaints from public registered - Ambient air quality at perimeter of work sites and on main road near the NATI site meet the standard indicated in	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
					the Air Pollution (control) Rules 2022.	
91. Air quality	Emissions from equipment and vehicles used in construction degrades local air quality	- Maintain all motorized equipment used in construction to a high standard - Use only fuel-efficient equipment	Con	MoF, SDCMU-ESFP, PIU, CSC	- Absence of black smoke in construction equipment exhaust - No complaints from public - Ambient air quality at perimeter of work sites and on the Police Plaza Road near NATI site meet the standard indicated in the Air Pollution (control) Rules 2022. - Emissions from motorized machinery used in construction should meet the standard indicated in the Air Pollution (control) Rules 2022.	To be complied
92. Soil	Loss of topsoil to erosion	- Implement approved Soil Erosion Prevention Plan, including (inter alia): o Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings o Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils o Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed - Implement approved Site Reinstatement Plan, including (inter alia): o Reserve topsoil and store separately for later use o Promptly prepare soil surfaces for plantings once construction work has been completed in each part of site o Establish vegetative cover in accordance with landscaping plan in detailed site design, Bill of Quantities and Compensatory Tree Planting Plan o Implement a watering and tending regimen to help ensure success of plantings o Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to achieve full coverage	Con	MoF, SDCMU-ESFP, PIU, CSC	- Prescribed soil protection measures effectively implemented at all work sites - Lack of evidence of soil erosion - Vegetative cover promptly established when construction activity complete on each part of work sites	To be complied
93. Flora and fauna	Damage to trees	- Clearly mark trees that are to be preserved prior to clearing - Establish a fenced buffer around trees that are to be preserved to protect them from damage by equipment, excavation and materials stockpiles	Con	MoF, SDCMU-ESFP, PIU, CSC	- Trees clearly marked prior to site clearing - Fenced buffers established, maintained and observed around preserved trees for duration of works	To be complied
94. Flora and fauna	Aquatic habitat in on-site watercourses degraded	- There is natural water course near the site. The deep ditch adjacent to the site drains toward the main drainage system which is actually a canal.	Con	MoF, SDCMU-ESFP,	- 10-m buffer established with temporary fencing along any permanent or	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
		- Establish a 10-m buffer with temporary fencing along any permanent or seasonal watercourses found on site, and enforce a prohibition on any construction-related activity within the buffer for the duration of the works - Deploy silt curtains and temporary sediment traps where runoff from active work areas is directed to creeks		PIU, CSC	seasonal watercourses on site - Prohibition on construction-related activities within the buffer enforced - Silt curtains and sediment traps deployed as appropriate to limit silt delivery to on-site watercourses	
95. Flora and fauna	Loss of trees	- Initiate a tree plantation plan. It is possible that within the NPI campus, more than one hundred trees can be planted. In this case native species should be chosen. - Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	Con	MoF, SDCMU-ESFP, PIU, CSC	Compensatory Tree Planting Plan implemented as approved	To be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT						
96. Acoustic environment	Noise and vibration from earthworks, pile-driving and materials hauling degrade quality of life for local residents	- Conduct work only during daylight hours - Impose and enforce low speed limits on haul trucks through the Police Plaza Road - Maintain all motorized equipment and haul trucks to a high standard, and inspect exhaust systems regularly	Con	MoF, SDCMU-ESFP, PIU, CSC	- Noise and vibration are below nuisance level for residents and tourism businesses along Police Plaza Road - No construction work or hauling is conducted between dusk and dawn - No complaints from the public registered - Ambient noise levels outside the work sites meet the standard indicated in the Noise Pollution (control) Rules 2006. - Noise emissions from individual pieces of machinery and vehicles meet the standard indicated in the Noise Pollution (control) Rules 2006.	To be complied
97. Public safety	Elevated risks to pedestrians on approach road and in the site	- Ensure that the construction sites are adequately fenced and security is provided to prevent members of the public from entering the sites - Establish safe, marked routes for staff and facility users to continue to use the NPI facilities without having to cross active construction zones - Implement approved Construction Traffic Management Plan during hauling periods, including (inter alia): - Impose and enforce low speed limits on haul trucks through Police Plaza Road	Con	MoF, SDCMU-ESFP, PIU, CSC	- Adequate fencing and security maintained at construction sites - Construction zone is configured to maintain safe access for NATI staff during construction works - Construction Traffic Management Plan prepared and observed to be implemented as appropriate - Haul trucks not observed or reported to speed through NATI site or elsewhere along Police Plaza Road near the work site	To be complied
98. Public safety	Construction camps are locus of violence against women and girls	- Give preference to local laborers to avoid the need for, or limit the size of, a construction camp	Con	MoF, SDCMU-	- Lack of reports of worker-involved abuse or harassment	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
		- Implement approved Construction Camp Management Plan, including (inter alia): - Conduct proactive outreach with leaders of nearby communities to educate women and girls about the risks posed by an all-male camp in the neighborhood. - Give resident workers regular training on appropriate behavior in and around the camp - Adopt a zero-tolerance policy around aggression or violence against local women and girls - When women must enter the camp for employment or selling produce, limit their entry to times when resident workers are out at the work site - Prohibit prostitution on the site, and monitor activity in this regard and work with community leaders to address the problem as needed		ESFP, PIU, CSC	- Lack of complaints from public about violence or prostitution at camp - Female access to camp for employment allowed only when workers are out at work sites	
99. Public safety	Construction camps serve as source of social conflict, possibly leading to violence	- Implement approved Construction Camp Management Plan, including (inter alia): - Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of crops/foods	Con	MoF, SDCMU-ESFP, PIU, CSC	- Lack of complaints from public about behavior of resident workers	To be complied
100. Public health	Construction camps act as vectors for spread of pathogens and disease	- Implement approved Construction Camp Management Plan, including (inter alia): - Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields - Educate resident workers about sexually transmitted diseases and responsible sexual behavior - Work with local community leaders to prohibit prostitution in and around construction camps	Con	MoF, SDCMU-ESFP, PIU, CSC	- At least one working toilet per 10 resident workers installed, with septic treatment - Absence of visual evidence of raw sewage discharge - Lack of reports of prostitution around camp - Lack of concerns expressed by local community leaders about workers' off-site behavior	To be complied
101. Worker health and safety	Risks to worker health and safety from improper work site practices	- Implement approved Occupational Health and Safety Plan, including (inter alia): - Provide regular safety training for all workers - Provide task-appropriate PPE to all workers and enforce its use - Closely monitor works at all times to ensure strong worker compliance with safety practices	Con	MoF, SDCMU-ESFP, PIU, CSC	- Low incidence of workplace injuries - Workers observed using appropriate PPE	To be complied
102. Worker health	Risks to workers from viral illness	- Implement approved Occupational Health and Safety Plan, including (inter alia): - Institute temperature checks (at least daily) for all workers and supervisory personnel on site - Provide each worker with appropriate face mask daily or as needed, and require mask use at all times - Position hand washing and sanitizing stations at canteens and other eating areas, kitchens, and near toilets	Con	MoF, SDCMU-ESFP, PIU, CSC	- Temperature check regimen implemented consistently - Workers supplied with facemasks - Workers consistently use facemasks - Hand washing and sanitizing stations provided in appropriate locations and kept stocked at all times	To be complied
103. Worker health and safety	Risks to worker health and safety from poor conditions in construction	- Implement approved Occupational Health and Safety Plan, including (inter alia):	Con	MoF, SDCMU-	- Safety audit results included in monthly progress reports and	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
	camps	- Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions - Institute a regular cleaning and disinfection regimen for camp kitchens, latrines, wash-up areas, eating areas and sleeping sheds - Provide adequate sleeping space for the number of workers to avoid overcrowding and consequent spread of communicable illnesses and infestations - Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting - Test drinking water supplied to workers on a quarterly basis to ensure safety - Ensure adequate ventilation and light in all camp structures		ESFP, PIU, CSC	quarterly monitoring reports - Lack of outbreaks of infectious illnesses (e.g., influenza, pneumonia, tuberculosis) and ailments associated with unsanitary conditions (e.g., dysentery, lice, scabies) - Living conditions meet standards specified in Construction Camp Management Plan - Drinking water test results meet standards indicated in the Environment Conservation Rules, 2023	
104. Livelihoods	Damage to property and livelihoods	- Fence perimeter of each work site prior to the start of construction and ensure maintenance of fencing for the duration of works - Prohibit all construction-related activity outside the site fences - Promptly remedy any property damage caused in consultation with the affected landowner(s), even if not formal grievance files	Con	MoF, SDCMU-ESFP, PIU, CSC	- Perimeter of each work site properly fenced prior to the start of construction, and fence maintained for duration of works	To be complied
105. Livelihoods	Employment for local people	- Hire mostly or exclusively local workers on construction sites	Con	MoF, SDCMU-ESFP, PIU, CSC	- Workers from outside Chattagram represent less than 10% of total workforce on site	To be complied
106. Physical cultural resources	Damage to cultural heritage due to inappropriate treatment of unearthed artifacts	- Train all workers and site managers in the use of the chance find procedure specified in the CEMP	Con	MoF, SDCMU-ESFP, PIU, CSC	- Workers are aware of the chance find procedure	To be complied
(iii) WASTE MANAGEMENT						
107. Demolition waste	Impacts from improper removal, processing and disposal of demolished structures	- If there is any reason to suspect presence of asbestos-containing materials (ACM), implement approved ACM Removal and Disposal Plan - Ensure salvage of recyclable and reusable items - Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management Plan embedded within the CEMP	Con	MoF, SDCMU-ESFP, PIU, CSC	- Any ACM assessed and removed and disposed of according to approved ACM Removal and Disposal Plan - Recyclable materials salvaged. - Rubble appropriately used as fill on site, or disposed of in accordance with Waste Management Plan embedded in CEMP	To be complied
108. Construction waste	Pollution from improper management of solid waste generated at work sites and construction	- Implement all provisions in the Waste Management Plan embedded in CEMP, including (inter alia):	Con	MoF, SDCMU-ESFP,	- All classes of waste managed in accordance with Waste Management Plan	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
	camp	- Provide waste receptacles on the work sites and collect their contents daily or weekly as needed - Recycle all recyclables through local providers of this service - Compost organic wastes generated by construction camp kitchens - Dispose of non-recyclable and non-organic wastes based on locally available and approved disposal options		PIU, CSC		
109. Waste oils	Water pollution from waste oils and other fluids generated in maintenance yards	- Recycle waste oils through a reputable business providing this service, as identified in the Waste Management Plan embedded in the CEMP	Con	MoF, SDCMU-ESFP, PIU, CSC	- No evidence of waste oil dumping or burning - Documentation of transfers to identified service provider available	To be complied
C. OPERATION PHASE						
(i) BIOPHYSICAL ENVIRONMENT						
110. Water quality	Contamination by noxious fluids used in facility operations and maintenance	- Store fluids only within dedicated indoor storage spaces with secondary containment capacity equaling or exceeding 115% of the volume of the largest container stored - Routinely inspect storage spaces and tanks for leakage, and take immediate corrective action as needed	SOU at NPI	SDCMU at MoF	- Proper storage observed. - Absence of evidence of spills and leaks	To be complied
111. Water quality	Reduced effectiveness of wastewater treatment	- Remove sludge at least once per year from all septic tanks installed, and worked into the soil around on-site tree plantations for fertilization	SOU at NPI	SDCMU at MoF	- Sludge removed from all septic tanks at least annually, and appropriately used to fertilize on-site tree plantations	To be complied
112. Water quality	Spills of hazardous and noxious cargos in the site	- Prepare a Spill Prevention and Response Plan for the site prior to the start of operations. - Provide personnel training necessary for effective implementation of the plan before the start of operations and annually during operations	SOU at NPI	SDCMU at MoF	- Spill Prevention and Response Plan prepared for the site prior to the start of operations. - Personnel training necessary for effective implementation of the Spill Prevention and Response Plan delivered before start of operations and repeated annually during operation phase	To be complied
113. Water quality	Siltation, sedimentation and contamination of local water bodies by runoff from minerals storage area in the site	- Purchase sufficient tarpaulins based on expected stockpiling activity, and make budgetary provision for regular replacement as needed. - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use	SOU at NPI	SDCMU at MoF	- Thorough, competent use of tarpaulins on all materials stockpiles in minerals storage area observed to be standard procedure - Runoff from minerals storage area is of sufficient quality not to cause violation of surface water standard, as indicated in the Environment Conservation Rules, 2023	To be complied
114. Air quality	Emissions from vehicles using the site	- Ensure adequate staffing at peak times to help ensure that incoming trucks are processed efficiently, and lines do not form - Enforce a strict no-idling policy	SOU at NPI	SDCMU at MoF	- Ambient air quality on site meets standards indicated in the Air Pollution (control) Rules 2022.	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
115. Air quality	Dust from handling of materials in minerals storage area	- Purchase sufficient tarpaulins based on expected stockpiling activity and make budgetary provision for regular replacement as needed. - Strictly require the use of tarpaulins on all piles of mineral materials at all times, except during active handling of materials - Train personnel assigned to the minerals storage area in competent tarpaulin use - Regularly monitor tarpaulin condition and use - Ensure that appropriate basic misting equipment is purchased or purpose-built and kept in good working condition. - Train personnel assigned to the minerals storage area in proper procedure for misting during materials handling - Strictly require misting as standard procedure during handling of dusty materials - Strictly prohibit stone crushing activity on the site, including the minerals storage area	SOU at NPI	SDCMU at MoF	- Ambient air quality on site meets standards indicated in the Air Pollution (control) Rules 2022.	To be complied
116. Air quality	Dust from uncovered or improperly covered trucks hauling dusty materials such as stone, sand and coal	- Strictly require all trucks entering site to be equipped with tightly fitting tarpaulins. - Sweep and spray roadways within site as needed to limit dust	SOU at NPI	SDCMU at MoF	- All trucks entering site observed to be appropriately covered. - Roadways within NATI site swept and sprayed as needed to suppress dust. - Ambient air quality on site meets standards indicated in the Air Pollution (control) Rules 2022	To be complied
117. Soils	Erosion of soils during maintenance works involving excavation and/or deteriorated ground cover	- Protect soils exposed by maintenance works with mulches and other protective coverings during works, and promptly re-establish vegetative cover when works have been completed. - Regularly inspect site vegetation for loss of coverage and evidence of emerging gully erosion	SOU at NPI	SDCMU at MoF	- Lack of evidence of gully erosion	To be complied
(ii) SOCIOECONOMIC AND CULTURAL ENVIRONMENT						
118. Acoustic environment	Excessive noise due to increasing traffic	- Convene a workshop with participation of people living and operating businesses along polytechnic road, local council representatives, WASA, police and other government agencies to discuss feasibility of limiting vehicle horn use in the NPI zone and formulate action as appropriate	SOU at NPI	SDCMU at MoF	- Workshop convened and action plan formulated if consensus for action found	To be complied
119. Acoustic environment	Excessive noise due to stone processing activity within the site	- Strictly prohibit stone crushing activity within the site, including in the minerals storage area	SOU at NPI	SDCMU at MoF	- No stone crushers or crushing activity observed anywhere within the site	To be complied
120. Public safety	Elevated accident risk due to increased truck traffic and inadequate road safety provisions	- Regularly monitor facility operations for emerging public safety issues, and devise appropriate corrective action, as needed. - Proactively coordinate with RHD to ensure that safety features including sidewalks, pullout and turn lanes, road markings, signage and other safety features are planned for and	SOU at NPI	SDCMU at MoF	- Safety features implemented. - Accident risk low	To be complied

Parameter	Potential impacts and/or issues	Mitigation/enhancement measures	Implementing entities	Supervision responsibility	Performance indicators	Compliance Status
		implemented in future approach road upgrades				
121. Public safety	Elevated accident risk due to community and commercial encroachment on approach road Right of Way (RoW) and road surface	- Pursue collaboration with RHD/LGED and local community leaders regarding durable solutions to safety risks from on-road and road-adjacent commerce, such as provision of alternative spaces outside the RoW for commercial and community activity	SOU at NPI	SDCMU at MoF	- Low incidence of encroachment - Smooth traffic flow through settled areas - Low incidence of vehicle-pedestrian collisions	To be complied
122. Worker health and safety	Chronic exposure to vehicle emissions	- Enforce a strict policy against engine idling by trucks within NATI area	SOU at NPI	SDCMU at MoF	- Low incidence of staff complaints about emissions exposure - Ambient air quality on NATI station site meets standards indicated in the Air Pollution (control) Rules 2022	To be complied
123. Worker health and safety	Elevated risk of contracting dangerous viral illnesses	- Integrate pandemic response measures in operations and maintenance manuals and operating protocols for the NATI station, to ensure prompt implementation when emerging threats are identified	SOU at NPI	SDCMU at MoF	- Pandemic response measures integrated in operations and maintenance manuals	To be complied
124. Worker health and safety	Exposure of laboratory technicians and support staff to accidental hazardous releases	- Incorporate Emergency Response Plan in laboratory operating protocols, and provide regular training for technicians and support staff on its activation	SOU at NPI	SDCMU at MoF	- Emergency Response Plan included in laboratory operating protocols. - Regular training provided on activation of Emergency Response Plan	To be complied
125. Livelihoods	Opportunities for employment in facility operations and maintenance	- Give priority to local people and firms in selecting Contractors for maintenance works and selected permanent positions in operations and maintenance	SOU at NPI	SDCMU at MoF	- Local people well represented in local NATI workforce	To be complied
(iii) WASTE MANAGEMENT						
126. Laboratory waste	Environmental contamination and public health risks from improperly managed hazardous wastes	- Integrate detailed laboratory waste management plan (developed by laboratory design specialist engaged during detailed design) into laboratory operations and maintenance manuals. - Provide training to laboratory technicians and maintenance staff on correct implementation of waste management protocols, before the laboratory becomes operational and on an annual basis thereafter. - Specify parameters, measurement, and reporting for annual waste audit in laboratory waste management protocols. - Conduct an annual waste management audit and implement corrective action as needed to address problematic trends	SOU at NPI	SDCMU at MoF	- Discharges of liquid waste from laboratory meet standards indicated in the Environment Conservation Rules, 2023 (only if applicable)	To be complied
127. Solid waste	Pollution from improper management of solid waste from NPI facility operations	- Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	SOU at NPI	SDCMU at MoF	- Recyclable solid waste is consistently segregated and picked up by a reputable recycling business. - Non-recyclable solid waste is consistently taken to a legal landfill for disposal. - Lack of evidence of waste dumping or burning on site	To be complied

b) EMP plan for Dormitory building at KWT:

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
Pre-Construction Stage					
Site survey and design of the new building	- Failure of the building to withstand climate change and natural hazards - Potential safety and health risks to students and building users due to poor building design	• All project facilities are to be designed in accordance with the planning and design norms (BNBC) 2006 & relevant provisions in the BNBC 2020. • Earthquake hazard should be considered in the structural design of the dormitory building.	KWT/Contractor	SDCMU/SICIP	-Complied. - BNBC Code was followed in the design
	- Green Building Concept	• The building should be developed considering the fact that it should run on low energy demand, • Rainwater harvesting system and use of recycled water system should be developed. • The Materials for building construction should come from environmentally friendly materials. • Sewage waste line should be connected with existing sewage treatment plant to reduce pollution.	KWT/Contractor	SDCMU/SICIP	Complied. -Energy efficient light, RWHS, Solar system, Septic treatment system included in the design.
	- Invasion of privacy of students and staff of KWT	• Consider in the building design the location of data centers (or student-heavy activities) in the lower floors • Have the firewall in the building and locate the windows accordingly	KWT/Contractor	SDCMU/SICIP	Complied.
Lack of environmental specifications	- Lack of proper environmental specifications in the tender documents will cause improper monitoring of environment issues during construction phase.	• Prepare relevant environmental sections in the tender documents for bidders. • Prepare a bid evaluations section for environment, according to DoE bid evaluation format. ▪	KWT/Contractor	SDCMU/SICIP	Complied. EMPs included in the BOQ
Removal of vegetation	- Loss of standing crops (if any), grass and bushes at project sites.	• Provide adequate compensation to the owners on time before beginning vegetation clearing.	KWT/Contractor	SDCMU/SICIP	Will be complied.
Removal of Utilities	- Disruption of services (short term).	• Drawing from the consultant's visit, there was no utility or services found at the selected location. However, some lamp posts were observed along the boundary wall but those will not be impacted due to the construction. • There is no vegetation within the proposed site. No impact is expected on flora and fauna.	KWT/Contractor	SDCMU/SICIP	Will be complied.
EMP Implementation Training	- Irreversible impact to the environment, contactor	• Training will be required to undergo EMP implementation including waste management, Standard operating procedures (SOP) for	KWT/Contractor	SDCMU/SICIP	On Process

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
	representative/workers, KWT/SICIP officials	construction works; health and safety (H&S), core labor laws, applicable environmental laws, etc.			
Construction Stage					
Complete construction management work plan	- Avoid impacts of Contractor unplanned activities - Smooth work implementation	• Spoils disposal and construction waste management plan • Noise and dust control plan • Drainage and stormwater management plan • Materials management plan • Emergency or disaster preparedness plan • Measures on COVID-19 preparedness • Provide list of contact details during emergency to workers or post on billboards at the construction site	KWT/Contractor	SDCMU/SICIP	-Being complied -SEMP plan has been prepared and following at site
Orientation of workers and staff	- Awareness to environmental requirements and their responsibility - Understanding the responsibility of Contractor in implementing the EMP, compliance to ADB requirements and the government	• Conduct briefing on EMP, records management, compliance, and reporting • Identify areas to be monitored and the required mitigation measures • Explain the Safe Work Procedure during COVID-19 Pandemic (Appendix F) • Introduction of green building concept with low energy • Low water footprint • Environment friendly material use • Rainwater harvesting • Cool roof • Climate and environment friendly building orientation	KWT/Contractor	SDCMU/SICIP	-Being complied
Prepare for emergency and potential incidence of COVID-19 infection	- Create awareness of workers on emergency and COVID-19 risk of exposure and/or transmission	• Designate Disaster Coordinator to guide during an emergency • Conduct mock drills regularly • Provide information like emergency hotline, evacuation routes, etc. • Provide training or orientation on proper response during emergency and COVID-19 incidence	KWT/Contractor	SDCMU/SICIP	-Being complied
Hiring of project staff and workers	- Dispute over transparency in hiring	• Contractor will be required to give priority to local labor • Contractors will be required to provide negative results to COVID-19 and will ensure recruited staff and workers have been tested negative to COVID-19 as well • Contractors to keep a record of their contact details such as mobile telephone number, alternate telephone, email (if any) and address	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
Site preparation and construction works	- Disturbance and inconvenience to KWT students and staff and some residents due to traffic from construction vehicles, increased noise and dust levels, and disposal of waste - Emissions from heavy equipment machinery and construction vehicles	• CMP will be strictly implemented • Use of proper safety clothes/personal protective equipment • Provide temporary enclosures (at least 2 meters high or high enough to protect students and staff of KWT) to contain dust and minimize noise	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Potential chance find during site excavation	• Chance find procedures will be followed (Appendix L)	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Potential occupational health and safety risks to workers	• Provide workers with hard hat, safety shoes, and belts • Set up first aid at construction site • Comply with relevant safety measures required by law and best engineering practices • Provide signs on COVID-19 safety measures to ensure workers are aware and understand the consequences of noncompliance • Workers to observe social/physical distancing at all times • Require workers and staff the mandatory use of non-medical masks and gloves if social distancing is not possible • Daily temperature checks before workers enter work sites • Any worker that shows cough and cold symptoms will not be allowed entry to work sites, and will be advised to stay home and quarantine • Install handwashing and sanitation stations at designated places • Implement H&SP and monitor compliance	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Heavy equipment and construction vehicles may increase vehicular emissions ▪ - Transport of materials to construction site may increase dust level ▪ - Earthmoving works and opened land areas increase dust levels ▪ - Increase in noise level and vibration from excavation and heavy equipment and construction ▪ vehicles	• Construction vehicles will be maintained to minimize vehicular emissions • Provision of temporary enclosures • Provide space on-site for construction materials to reduce trips of material delivery • Contractor will be required to maintain construction vehicles, equipment, and machineries regularly to reduce emissions, avoid smoke belching, and reduce noise • Spray water in opened land areas or in sources of dust • Transport of dust generating materials will be covered Observance of low speed by vehicles to reduce noise	KWT/Contractor	SDCMU/SICIP	-Being complied .

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Noise-generating works will be done between 6 a.m. and 11 p.m. only. • No blowing of horns will be allowed • Comply with traffic management plan			
Clean up of construction sites after completion of construction works	- Improper disposal of construction debris	• Restore or reinstate all the areas potentially damaged during construction works • Workers will be provided with proper safety gear and equipment • Dispose remaining waste and debris at designated sites	KWT/Contractor	SDCMU/SICIP	-Being complied
Air Pollution	- Construction vehicular traffic: Air quality can be affected by vehicle exhaust emissions and combustion of fuels. - Construction machinery: Air quality can be adversely affected by emissions from machinery and combustion of fuels. - Construction activities: Dust generation from construction sites, material stockpiles and access roads.	• Impose speed limits (maximum 20 km/hr) on all vehicle movement at the worksite and through access roads to reduce dust emissions. • Control the movement of construction traffic in the access road. • Water spray to the construction materials (especially sand & boulder/brick chips) prior to loading and transport. • Focus special attention on containing the emissions from generators • Machinery causing excess pollution (e.g., visible smoke) should be banned from construction sites or fixed immediately prior to further usage. • Provide filtering systems, dust collectors or humidification or other techniques (as applicable) to the concrete mixing plant to control the particle emissions at all its stages, including unloading, collection, aggregate handling, cement dumping, circulation of trucks and machinery inside the installations. • Water spray to the material stockpiles, access roads and bare soils as and when required to minimize the potential environmental nuisance due to dust. Increase the watering frequency during periods of high risk (e.g., high winds and dry periods). Stored materials such as boulders and sand should be covered and confined to avoid them being wind-drifted. • Erect dust barriers along the boundary of the land to reduce dust movement to the surrounding areas. • Minimize the extent and period of exposure of the bare surfaces.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Reschedule earthwork activities when practical, if necessary, to avoid during periods of high wind and if visible dust is blowing off-site. • Restore disturbed areas as soon as possible by vegetation/grass-turfing. • Establish adequate locations for storage, mixing and loading of construction materials, in a way that dust dispersion is prevented because of such operations. • The SEMP approved by EPD will include measures to minimize dust levels and emissions from construction vehicles, equipment and machineries. • Work safety procedures will be implemented by the contractors and monitored by SDCMU/SICIP for compliance.			
Noise and Vibration Management	- Construction vehicular traffic: Noise quality will be deteriorated due to increased vehicular traffic. - Construction machinery: Noise and vibration will have an impact on adjacent surrounding residents. - Construction activity: Noise will have an impact on adjacent residents.	• Maintain all vehicles in order to keep them in good working order in accordance with manufacturers maintenance procedures. • Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc. (20 km/hr during night time). • Organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site. • Appropriately site all noise generating activities to avoid noise pollution to local residents. • Maintain all equipment in order to keep it in good working conditions in accordance with manufacturers' maintenance procedures. Equipment suppliers and contractors shall present proof of maintenance register of their equipment. • Install acoustic enclosures around generators to reduce noise levels. • Fit high efficiency mufflers to appropriate construction equipment. • Avoid the unnecessary use of alarms, horns and sirens. • Notify adjacent landowners prior any typical noise events outside of daylight hours. • Educate the operators of construction equipment on potential noise problems and the techniques to minimize noise emissions.	KWT/Contractor	SDCMU/SICIP	-Being complied .

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Employ best available work practices on-site to minimize occupational noise levels. • Install temporary noise control barriers where appropriate. • Notify affected people if high noisy activities will be undertaken, e.g., pile driving. • Plan activities on site and deliveries to and from site to minimize impact. • Monitor and analyze noise and vibration results and adjust construction practices as required. • Appropriately site all noise generating activities to avoid noise pollution to workers, KWT, SICIP officials etc. • Install temporary noise barriers by screen, tin, wood around generators to reduce noise levels. • Employ best available work practices on-site to minimize occupational noise levels. Use ear plugs in noisy areas of the construction activities. • Maintain all equipment in order to keep it in good working order in accordance with manufactures maintenance procedures.			
Sewage Pollution/ Sanitation Hazard	- Lack of proper sanitation facilities will increase pressure on health hazards of workers.	• Provide hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. Provide separate latrines and bathing places for males and females with total isolation by wall or by location. The minimum number of toilet facilities required is one toilet for every ten persons. • Ensure the sanitary facilities are kept clean and without any odor. • Educate the workers of using the facilities.	KWT/Contractor	SDCMU/SICIP	-Being complied
Drainage Congestion	- Construction of the proposed building will significantly impact upon the existing drainage pattern through impedance to natural flow conditions.	• Temporary drainage congestion (TDC) in the foundation trench due to rainwater to be removed by pumping. Avoid monsoon period for foundation works. • TDC in construction yard & camp of the proposed building area to be removed by temporary earth or RCC drains. • All vehicle exit points from the construction site shall have a wash down or shakedown area where mud and earth can be removed from a vehicle before it enters the public road system. All wash down areas are to drain to a sediment basin.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
Solid Waste Pollution	- Solid waste pollution will increase pressure on health hazards of workers.	• Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site, so as to cause less offsite environmental impacts. The disposal site should be approved by KWT prior to usage and should be rehabilitated after usage to ensure the land is not exposed to soil erosion, wind and water stagnation. • Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach. • Segregate and reuse or recycle all the wastes, wherever practical. • Prohibit burning of solid waste. • Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process. • Provide refuse containers at worker camps. • Request suppliers to minimize packaging where practical. • Place a high emphasis on good housekeeping practices. • Maintain all construction sites in a cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal by municipality. • Ensure proper collection and disposal of wastes within the construction camps from where municipal will take by their truck and dispose at their dumping area. • Insist on waste separation and store by source; organic wastes, inorganic wastes and recyclables in separate containers. • Clear wastes on daily basis to waste collectors. Establish waste collection, transportation and disposal at the dumping site in adequate sizes of concrete chambers/boxes. • Dispose organic wastes in a designated safe place and should be kept covered so that flies, mosquitoes, dogs, cats, rats, etc. are not attracted. Encourage composting of organic waste that can be used for tree planting purposes.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Locate the garbage pit/waste disposal site away from the residence so that peoples are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place by fencing and tree plantation to prevent children from entering and playing. • Do not establish site specific landfill sites. All solid waste will be collected and removed from the work camp and disposed in approved waste disposal sites. • Contractors will be required to have a waste management plan covering hazardous waste approved by the PD prior to construction works. The waste management plan will be part of the SEMP.			
Landscape	- Construction activities especially earthworks, stock piling of construction materials, parking of vehicles etc. will change the local landscape temporarily.	• Ensure the topography of the construction yard is conducive to enhance natural draining of rainwater at all times. • Parking of construction vehicles and stockpiling of construction materials should be done in systematic way to avoid any drainage blockages, to enhance the aesthetics of the site. • Duration of stockpiling should be minimized as much as possible.	KWT/Contractor	SDCMU/SICIP	-Being complied
Access Road/ Traffic Congestion	- Construction vehicular traffic: Increased use of narrow access road by construction vehicles will affect the movement of normal road traffics and the safety of the road-users.	• Prepare and submit a traffic management plan to the SICIP for approval at least 30 days before commencing work on any project component involving traffic diversion and management. • Include measures in the traffic management plan to ensure uninterrupted traffic movement during construction: detailed drawings of traffic arrangements showing all detours, access roads, necessary barricades, warning signs / lights, road signs, etc. • Install and maintain a display board at each important road intersection on the roads to be used during construction, which shall clearly show the information in Bangla. • Operate construction vehicles to non-peak periods (night) to minimize traffic disruptions. • Enforce on-site and access road speed limits.	KWT/Contractor	SDCMU/SICIP	-Being complied
Liquid/ hazardous waste	- Improper storage and handling of fuels, lubricants, chemicals and hazardous liquid	• Train the relevant construction personnel in handling of fuels and spill control procedures. • Store dangerous goods in enclosed areas with a	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
	on-site, and potential spills from these liquid materials may harm the environment and health of construction workers.	covering of a sealed plastic sheet away from watercourses. • Refueling shall occur only within enclosed areas. • Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, to handle construction materials. • Make sure all containers, drums, and tanks that are used for storage are in good condition and are labeled with expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur. • Put containers and drums in temporary storages in clearly marked areas, where they will not be run over by vehicles or heavy machinery. The project area shall be established in higher ground, if possible, preferably with a slope or drain to a safe collection area in the event of a spill. • Put containers and drums in permanent storage areas on an impermeable floor. • Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution. • Ensure basic firefighting equipment is in place outside these storage areas in case of a fire.			
Construction Camp Management	- Siting and location of construction camps: Campsites for construction workers are the important locations that have significant impacts such as health and safety hazards on local resources and infrastructure of nearby communities.	• Locate the construction camp inside the proposed construction area. • Consider the location of construction camp away from communities in order to avoid social conflicts in using the natural resources such as water or to avoid other possible adverse impacts such as unsuitable interactions with the surrounding communities. • Submit to the SICIP for approval a detailed layout plan for the development of the construction camp showing the relative locations of all temporary buildings and facilities that are to be constructed together with the location of site roads, fuel storage areas (for use in power supply generators), solid waste management and dumping locations, and drainage facilities, prior to the development of the construction camps.	KWT/Contractor	SDCMU/SICIP	-Being complied .

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Local authorities responsible for health, religious and security shall be duly informed on the set up of camp facilities so as to maintain effective surveillance over public health, social and security matters. • Create awareness among the camp users on health and safety requirements to be maintained and code of conduct.			
	- Construction Camp Facilities: Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living conditions and health hazards.	• Adequate housing for all workers should be provided avoiding overcrowding. • Provide safe and reliable water supply. • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. Provide separate latrines and bathing places for males and females with total isolation by wall or by location. The minimum number of toilet facilities required is one toilet for every ten persons. • Treatment facilities for sewerage of toilet and domestic waste. • Storm water drainage facilities.	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Disposal of waste: Management of wastes is crucial to minimize impacts on the environment.	• Ensure proper collection and disposal of solid wastes within the construction camp • Insist on waste separation and store by source; organic wastes, inorganic wastes and recyclables in separate containers. • Store inorganic wastes in a safe place and clear organic wastes on daily basis to waste collector or compost the waste. • Dispose organic wastes in a designated safe place on daily basis. At the organic wastes should be always covered with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, etc. are not attracted. • Locate the garbage pit/waste disposal site min 500 m away from the resident area so that people are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. • Do not establish site specific landfill sites. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
	- Health and Hygiene: There will be a potential for diseases to be transmitted including malaria, exacerbated by inadequate health and safety practices. There will be an increased risk of work crews spreading sexually transmitted infections and HIV/AIDS.	• Provide adequate health care facilities within the construction site. • Provide first aid facility round the clock. Maintain stock of medicines in the facility and appoint fulltime designated first aider or nurse. • Provide ambulance facility for the labors to be transported to nearest hospitals during emergency. • Conduct an initial health screening of the laborers coming from outside areas. • Train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work. • Provide HIV awareness program, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis. • Establish a code of conduct for the contractor staff. • Provide adequate drainage facilities throughout the camps to ensure that disease vectors such as stagnant water bodies and puddles do not form. • Carry out regular mosquito repellant spraying during monsoon periods.	KWT/Contractor	SDCMU/SICIP	-Being complied -HS plan developed.
	- Safety: In adequate safety facilities to the construction camps may create security problems and fire hazards.	• Provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry into the camp area. • Maintain register to keep a track on a head count of persons present in the camp at any given time. • Encourage use of flameproof material for the construction of labor housing / site office. Also, ensure that these houses/rooms are of sound construction and capable of withstanding wind storms/cyclones. • Provide appropriate type of firefighting equipment suitable for the construction camps. • Display emergency contact numbers clearly and prominently at strategic places in camps. • Communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractors.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
Worker's Health and Safety	- Construction work may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of (i) biophysical health risk factors, (e.g., noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc.), (ii) risk factors resulting from human behavior (e.g., STD, HIV etc.) and (iii) road accidents from construction traffic.	• Implement suitable safety standards for all workers and site visitors which shall not be less than those laid down on the international standards (e.g., International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national standards of the Government of Bangladesh (e.g., `The Bangladesh Labor Code, 2006'). • Provide the workers a safe and healthy work environment, taking into account inherent risks of this particular construction activity and specific classes of hazards in the work areas, • Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty ones and replacing them with the damaged ones. • Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job. • Appoint an environment, health and safety manager to look after the health and safety of the workers • Inform the local authorities responsible for health, religious and security before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Child and pregnant labors.	• Not hire children of less than 14 years of age and pregnant women or women who delivered a child within 8 preceding weeks, in accordance with the Bangladesh Labor Code, 2006	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Accidents: Lack of first aid facilities and health care facilities in the immediate vicinity will aggravate the health conditions of the victims.	• Provide health care facilities and first aid facilities are readily available. Appropriately equipped first-aid stations shall be easily accessible throughout the place of work • Document and report occupational accidents,	KWT/Contractor	SICIP/ADB	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		diseases, and incidents and actions taken. • Prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards in a manner consistent with good international industry practice. • Identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures. • Provide awareness to the construction drivers to strictly follow the driving rules. • Provide adequate lighting in the construction area and along the roads.			
	- Construction Camps: lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	• Adequate ventilation in all facilities. • Safe and reliable water supply. Water supply from deep tube wells that meets the national standards. • Hygienic sanitary facilities and sewerage system. The toilets and domestic waste water will be collected through a common sewerage. • Treatment facilities for sewerage of toilet and domestic waste before releasing into common systems. • Storm water drainage facilities. • Recreational and social facilities. • Safe storage facilities for petroleum and other chemicals. • Solid waste collection and disposal system. • Arrangement for trainings. • Paved internal roads. • Security fence at least 2 m high. • Sick bay and first aid facilities.	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Water and sanitation facilities at the construction sites: lack of Water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	• The contractor shall provide portable toilets at the construction sites, if about 25 people are working the whole day for a month. • Contractor shall provide bottled drinking water facilities to the construction workers at all the construction sites.	KWT/Contractor	SDCMU/SICIP	-Being complied
	- Other management: potential risks on health and hygiene of construction workers and general public.	• Liquid Waste Mitigation Measures. • Air Pollution Mitigation Measures. • Noise Mitigation Measures. • Road/Road Traffic Management.	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
	- Trainings: lack of awareness and basic knowledge in health care among the construction workforce, make them susceptible to potential diseases.	• Train all construction workers in basic sanitation and health care issues (e.g., how to avoid malaria and transmission of sexually transmitted infections (STI) and HIV/AIDS.	KWT/Contractor	SDCMU/SICIP	-Being complied
Community Health and Safety	- Construction works will impede the access of visitors and officials in limited cases. The impacts are minor negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. Poor safety signage and lack of barriers at work site and trenches will create hazard to the visitors and officials.	• Provide safety signage at construction sites visible to public • Provide safety barriers near any trenches, and cover trenches with planks during non-work hours. • Contractor's activities and movement of staff will be restricted to designated construction areas. • Consult with local authority on the designated areas for stockpiling of, soils, gravel, and other construction materials. • If the contractor chooses to locate the work camp/storage area on private land, he must get prior permission from the environment specialist. • Recycling and the provision of separate waste receptacles for different types of waste shall be encouraged. • A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules: (i) no alcohol/drugs on site; (ii) prevent excessive noise; (iii) construction staff are to make use of the facilities provided for them, as opposed to ad hoc alternatives (e.g. fires for cooking, the use of surrounding bushes as a toilet facility); (iv) no fires permitted on site except if needed for the construction works; (v) trespassing on private/commercial properties adjoining the site is forbidden; (vi) other than pre-approved security staff, no workers shall be permitted to live on the construction site; and (vii) no worker may be forced to do work that is potentially dangerous or that he/she is not trained to do. • Interested and affected parties need to be made aware of the existence of the complaints book and the methods of communication available to them. The contractor must address queries and complaints by: (i) documenting details of such communications; (ii) submitting these for inclusion in complaints register; (iii) bringing	KWT/Contractor	SDCMU/SICIP	-Being complied

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		issues to the Environmental Safeguard Specialist's attention immediately; and (iv) taking remedial action as per specialist's instruction. • The contractor shall immediately take the necessary remedial action on any complaint/grievance received by him and forward the details of the grievance along with the action taken to the national/regional environmental specialist within 48 hours of receipt of such complaint/grievance.			
Plantation	- Lack of proper care (e.g., watering, securing with fence) by the respective authority will also hinder the process of proper growth of the planted trees.	• Maintenance is the key to the establishment of the plantation and therefore regular monitoring of plantation will be carried out by the executing agency. • The compact plantation shall be effective live screens against night glare, dust, noise, and pollutant emissions. These vegetated strips shall develop into a complete ecosystem. Flowering and fruiting shrubs can be planted along the road to beautify the landscape. Planting should however be done keeping in view the principles of landscape designing.	KWT/Contractor	SDCMU/SICIP	Will be complied.
Operational Stage					
Drainage congestion	- Local drainage system may get clogged due to improper management of Solid waste, and other materials.	• Maintain drains regularly as and when required. • Solid wastes should not be dumped into the drain. • Blocked drains should be cleaned properly and debris disposed at approved sites on a regular basis.	KWT	SDCMU/SICIP	Will be complied.
Solid Waste Generation and Disposal	- Water, air and land pollution cause diseases - Public health, eyesore, odor - Disease vector proliferation, sanitary problems	• Setting up of separate waste collectors at different points. • Regular cleaning and replacing of waste collectors. • Waste disposal at a safe place. • Encourage waste sorting by the facility users.	KWT	SDCMU/SICIP	Will be complied.
Sewage waste	- Prohibition of water uses for intended purposes - Water borne diseases	• Maintenance of Septic tanks, soak wells, pipes, etc. as and when required. • Connects the existing sewerage network for sewerage treatment from existing STP inside KWT premises • Regular monitoring of water quality.	KWT	SDCMU/SICIP	Will be complied.
Traffic Safety	- Increased local congestion around the project area - Long-term increase in traffic volume	• Extensive barricades of the construction zone will be provided so that pedestrians do not come into direct contact with the machines, tools, material and other accessories;	KWT	SDCMU/SICIP	Will be complied.

Issue	Potential Environmental Impacts	Proposed Mitigation measures	Responsible Institutes		Compliance
			Implement	Supervise	Status
		• Provision of barricading will be done so that these do not create traffic safety problems. Supplementary aids / tools such as signboards, reflectors and night lighting will be used to avoid possible accidents.			
Socioeconomic Impact	- Deterioration of community health and safety - Loss of aesthetic view	• The community health and safety will be improved • Improved drainage and sanitation facilities	KWT	SDCMU/SICIP	Will be complied.
Emergency Response and Disaster Preparedness	- Loss of business - Loss of life - Environmental deterioration	• Mock drill and training session • Arrangement of fire prevention system maintaing standard operating procedure (SoP)	KWT	SDCMU/SICIP	Will be complied.

e) Environmental Management and Monitoring Matrix for Sylhet TTC

Activity	Environmental Impact	Mitigation/Benefit Enhancement Measures	Responsibility	Monitoring Agency	Compliance Status
Construction Phase					
Construction work/use of equipment/ materials	Impact on air quality	Regular watering should be done.	Contractor	TTC authority, CSC, EO and contractor, Env. Expert (EE)-SICIP will monitor mitigation measures	Will be complied.
	Noise/vibration hazard	All soil, sand, and aggregate piles should be covered (whether on the site or on trucks).	Contractor		Will be complied.
	Waste management	The sand and other such dispersible material must be removed after completion of work.	Contractor		Will be complied.
Influx of workers	Impact on health and safety	The workers should wear PPE (Personal Protective Equipment), safety goggles, and other necessaries.	Contractor		Will be complied.
	Sanitation hazard and impact on drinking water	Set up warning signs, signals and provide helmets for workers in accordance with relevant accident prevention and work safety procedure.	Contractor		Will be complied.
		Restrict access to the construction site.			Will be complied.
		Supply good quality drinking water to the workers by installing tube well. Provide well-planned sanitary facilities. Provide regular health inspection among workers. Promote health education campaign among workers.			Will be complied.
	Impact on employment and family finance	Employ local people wherever possible. Ensure child labor is not employed.	Contractor		Will be complied.
Increased vehicle and pedestrian traffic	Traffic congestion, impact on safety	Avoid carrying of materials in peak hours of road traffic. Provide adequate parking for vehicles. Raise awareness among all users to follow traffic rules.	Contractor		Will be complied.
Climate extremities due to geographic location	Impact on design consideration	Raise the plinth level of building to prevent from flood.Use appropriate materials in design.	Contractor		Will be complied.

Activity	Environmental Impact	Mitigation/Benefit Enhancement Measures	Responsibility	Monitoring Agency	Compliance Status
Increased demand of electricity and water	Impact on water and electricity supply	Install solar PV panels for electricity generation. Introduce "Rain water Harvesting" system. Energy efficient lights can be used. Electric fan, light and other appliances should be checked periodically and if problem is found, it should be fixed immediately.	Principal/ TTC management	SICIP	Will be complied.
Generation of more consumables	Impact due to Solid Waste	Collect all solid wastes properly, recycle where possible and dispose in proper place.			
	Impact due to liquid discharge	Dispose all domestic waste water through existing septic tank or sewer.			
Increased vehicle and pedestrian traffic	Additional need for parking, impact on safety	Provide adequate parking for vehicles. Raise awareness among all users to follow traffic rules.			
Need for proper sanitation and drinking water	Impact on sanitation and drinking water	Supply good quality drinking water to the staffs. Check the quality of drinking water. Provide well-planned sanitary facilities. Separate washrooms for boys' and girls' should be available maintaining proper privacy.			
Socioeconomic impact	Impact on skilled training	Training programs should be reported and continuously monitored	Principal/ TTC management	SICIP	Will be complied.
	Impact on employment & family finance	Employ local people wherever possible. Avoid child labor employment.			
Landscaping	Enhancing visual aesthetics and environmental quality	Plant trees around the project site.			
	Enhancing visual aesthetics and environmental quality	Plant trees around the project site.			
Emergency management	Fire hazard or any medical emergency	First aid facilities should be available. Firefighting equipment must be present. Fire safety management training and mock drill should be practiced periodically			

3.2 Compliance with ADB SPS 2009 policies

36. The compliances including IEE, CEMP and OHS plans of the civil works under SICIP program are being listed and updated in the following table.

Table 3-2: The compliance status of SICIP with respect to ADB SPS 2009

ADB Safeguard Policy Statement	Contract Package Status			
	NATI	STTL	Syl TTC	KWT
(i) Environmental Assessment (Category B: Requires IEE) done and disclosed	Complied	Complied	Complied	Complied
	IEE done for all packages			
(ii) Environmental Management Plan drafted	Complied	Complied	Complied	Complied
	EMP plan drafted for all the above packages.			
(iii) Information disclosed	Complied	Complied	Complied	Complied
	EMR will be disclosed in SICIP website			
(iv) Consultation and participation have been done and public opinion has been used in project design phase.	Complied	Complied	Complied	Complied
	Consultations were done during IEE development.			
(v) Establishment of GRC and notes of grievances	Will be Complied	Complied	Will be Complied	Complied
	GRCs established for each package.			
(vi) Monitoring and reporting: client will document regular monitoring results, in case of adverse significant affects external NGO will be involved as third party monitoring	Will be Complied	Complied	Will be Complied	Complied
	Semi-annual environmental monitoring report is being submitted for July to December 2024.			
(vii) Unanticipated environmental impacts	Will be Complied	Complied	Will be Complied	Complied
	Unanticipated environmental impacts not found yet			
(viii) **Biodiversity Conservation and Sustainable Natural Resource Management:** The borrower/client will assess the significance of project impacts and risks on biodiversity and natural resources as an integral part of the environmental assessment process	Will be Complied	Complied	Will be Complied	Complied
	The assessment was done during the development of IEE. The project does not impact any critical habitat.			
(ix) **Pollution presentation:** During the design, construction, and operation of the project the borrower/client will apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines.	Will be Complied	Complied	Will be Complied	Complied
	Contractors yet to develop their own site-specific CEMPs			
(x) **Health and safety:** The	Will be Complied	Complied	Will be Complied	Complied

ADB Safeguard Policy Statement	Contract Package Status			
	NATI	STTL	Syl TTC	KWT
borrower/client will provide workers with a safe and healthy working environment, taking into account risks inherent to the particular sector and specific classes of hazards in the borrower's/client's work areas, including physical, chemical, biological, and radiological hazards.	Contractors has developed OHS plan in the respective site.			
(xi) **Physical and cultural resources:** The borrower/client is responsible for siting and designing the project to avoid significant damage to physical cultural resources	Will be Complied	Complied	Will be Complied	Complied
	The project design considered the important cultural and physical resources in the project sites			

3.3 Compliance with loan covenants

37. The compliance with loan covenants with status are presented in the following table.

Table 3-3: The compliance status with respect to loan covenants

Sched-ule	Para No.	Description	Compliance Status	Time frame for CAP, if any
4	1	Implementation Arrangements The Borrower shall ensure, or cause the Program Executing Agency to ensure, that the Program is implemented in accordance with the detailed arrangements set forth in the PID. Any subsequent change to the PID shall become effective only after approval of such change by the Borrower and ADB. In the event of any discrepancy between the PID and this Loan Agreement, the provisions of this Loan Agreement shall prevail.	Being ensured and will continue to be ensured	Project period
4	2	Implementation Arrangements The Borrower shall ensure that the aggregate amount of Eligible Expenditures under the Program is equal to or exceeds the Loan proceeds withdrawn by the Borrower for the Program. Such Eligible Expenditures are part of the expenditures incurred under SDF, but they exclude any expenditures for (a) procurement of works, goods and services from countries which are not members of ADB; (b) procurement of works, goods and services from persons or entities debarred or suspended by ADB; (c) procurement involving High-Value Contracts; (d) any activities which are classified as category A for environmental impact under the SPS; (e) any activities assessed as likely to have significant adverse impacts that are sensitive, diverse, or unprecedented on environment and/or affected people; and (f) any activities which are prohibited investment activities provided in Appendix 5 of the SPS.	Will be ensured	Project period
4	3	DLI Compliance and Program Dialogue The Borrower shall ensure that all DLIs achieved under the Program continue	Will be complied	Project period

Sched-ule	Para No.	Description	Compliance Status	Time frame for CAP, if any
		to be complied with for the duration of SDF.		
4	4	DLI Compliance and Program Dialogue The Borrower shall keep ADB informed of discussions with other multilateral or bilateral aid agencies that may have implications for the implementation of SDF and the Program and shall provide ADB with an opportunity to comment on any resulting proposals. The Borrower shall give due consideration to ADB's views before finalizing and implementing any such proposal.	ADB will be kept informed whenever required	Project period
4	5	DLI Compliance and Program Dialogue Within 9 months of the Effective Date, the Borrower shall appoint an independent verification agency with qualifications, experience, and expertise acceptable to ADB to provide independent verification of the achievement of the DLIs.	Appointment of IVA is in process and will be completed soon.	Project period
4	6	Technical Requirements The Borrower shall ensure that all Program Actions in the area of technical requirements are implemented in a timely and efficient manner.	Will be ensured	Project period
4	7	Financial Management The Borrower shall ensure that all Program Actions in the area of financial management are implemented in a timely and efficient manner.	Will be ensured	Project period
4	8	Procurement The Borrower shall ensure that each contract under the Program is awarded on the basis of the Program's procurement system, having due regard for principles of competition, economy and efficiency, transparency, and fairness and equal opportunity.	Being ensured and will continue to be ensured	Project period
4	9	Procurement The Borrower shall ensure that all Program Actions in the area of procurement are implemented in a timely and efficient manner.	Being ensured and will continue to be ensured	Project period
4	10	Environmental and Social Safeguards The Borrower shall ensure that all Program Actions in the area of environmental and social safeguards are implemented in a timely and efficient manner.	Being ensured and will continue to be ensured	Project period
4	11	Environmental and Social Safeguards (a) The Borrower shall ensure, or cause the Program Executing Agency to ensure that no construction or rehabilitation works under the Program involve significant adverse environmental impacts that may be classified as category A under the SPS. Prior to commencing any construction or rehabilitation works under the Program, the Borrower shall conduct, or cause the Program Executing Agency to conduct, a screening to ensure that any works that may be classified as category A for environment	Being ensured and will continue to be ensured	Project period

Sched-ule	Para No.	Description	Compliance Status	Time frame for CAP, if any
		impacts within the meaning of SPS are excluded from the Program.		
4	11	Environmental and Social Safeguards (b) The Borrower shall ensure, or cause the Program Executing Agency to ensure, that the preparation, design, construction, implementation, operation and decommissioning of all activities under the Program comply with: (i) all applicable laws, regulations and guidelines of the Borrower relating to environment, health and safety; (ii) the Environmental Safeguards; and (iii) all measures and requirements, including monitoring requirements set forth in the Program Action Plan.	Being ensured and will continue to be ensured	Project period
4	12	Environmental and Social Safeguards The Borrower shall ensure, or cause the Program Executing Agency to ensure, that the Program does not involve any resettlement risks or impacts within the meaning of the SPS. If due to unforeseen circumstances, the Program involves any such impacts, the Borrower shall ensure that the Program complies with (a) all applicable laws and regulations of the Borrower relating to resettlement; (b) Involuntary Resettlement Safeguards; and (c) all measures and requirements, including monitoring requirements set forth in the Program Action Plan.	Will be ensured	Project period
4	13	Environmental and Social Safeguards The Borrower shall ensure, or cause the Program Executing Agency to ensure, that the preparation, design, construction, implementation, operation and decommissioning of all activities under the Program comply with: (a) all applicable laws and regulations of the Borrower relating to tribes, minor races, ethnic sects and communities; (b) Indigenous Peoples Safeguards; and (c) all measures and requirements, including monitoring requirements set forth in the Program Action Plan.	Will be ensured	Project period
4	14	Gender and Social Equality The Borrower shall ensure that all Program Actions in the area of gender and social equality are implemented in a timely and efficient manner.	Will be ensured	Project period
4	15	Governance and Anticorruption The Borrower shall ensure, or cause the Program Executing Agency to ensure that the Program complies with the Anticorruption Guidelines and that all appropriate and timely measures are taken to prevent, detect and respond to allegations of fraud, corruption or any other prohibited activities relating to the Program in accordance with the Anticorruption Guidelines.	Being ensured and will continue to be ensured	Project period
4	16	Governance and Anticorruption The Borrower shall, or cause the Program Executing Agency to (a) promptly inform ADB of any allegations of fraud, corruption or any other prohibited activities relating to the Program; and (b) cooperate fully with any investigation by ADB on such allegations and extend all necessary assistance, including providing access to	Will be ensured	Project period

Sched-ule	Para No.	Description	Compliance Status	Time frame for CAP, if any
		all relevant records, for satisfactory completion of such investigation.		
4	17	Governance and Anticorruption Within 90 days of the Effective Date, the Borrower shall, or cause the Program Executing Agency to, update its public website to (a) provide information on bidding procedures, bidders, contract awards and physical progress of the Program; (b) post the audited annual financial statements for the Program, as such financial statements become available; and (c) disseminate other relevant information on Program implementation.	Being complied	Project period
Article IV		4.02 (a) The Borrower shall (i) maintain separate accounts and records for the Program; (ii) prepare annual financial statements for the Program in accordance with financial reporting standards acceptable to ADB; (iii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with auditing standards acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report, which includes the auditors' opinion(s) on the financial statements and the use of the Loan proceeds, and a management letter (which sets out the deficiencies in the internal control of the Program that were identified in the course of the audit, if any); and (v) furnish to ADB, no later than 9 months after the end of each related Fiscal Year, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.	Being complied and will continue to be complied	Project period
Article IV		4.02 (b) ADB shall disclose the annual audited financial statements for the Program and the opinion of the auditors on the financial statements within 14 days of the date of ADB's confirmation of their acceptability by posting them on ADB's website.	Agreed	Project period
Article IV		4.02 (c) The Borrower shall enable ADB, upon ADB's request, to discuss the financial statements for the Program and the Borrower's financial affairs where they relate to the Program with the auditors appointed pursuant to subsection (a)(iii) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted only in the presence of an authorized officer of the Borrower, unless the Borrower shall otherwise agree.	Agreed	Project period

4 STRATEGY FOR COVID-19 PANDEMIC AND H&S GUIDELINE

38. In the COVID-19 pandemic, the DSC expert has completed all design, drawings, technical specifications and BoQ through using different virtual meetings, site visit, analysis after allowing International Flight following safety guidelines as suggested by GoB and ADB. Safeties' included hand hygiene, respiratory hygiene & physical distancing. Individual transports were used during the site visits and virtual media were used for communications.

Table 4-1: The compliance status of SICIP with respect to COVID-19

SL	COVID-19 Response questions	NATI	STTL-CTG	Kum Dorm	Sylhet TTC
1	**Site re-opening and entry protocol**				
	Locate the closest medical establishment equipped with COVID -19 response facilities.	Will be complied	Will be complied	Will be complied	Will be complied
	Engage a full time EHS professional at site	Will be complied	Will be complied	Will be complied	Will be complied
	Purchase thermometer gun, soap, hand sanitizer, disinfectants and PPEs (mask, hand gloves, hard shoes etc.) and keep it at worksite office.	Will be complied	Will be complied	Will be complied	Will be complied
	Establish site entrance protocol. Redesign the site safety notices/signboards/protocol according to the ADB guidelines	Will be complied	Will be complied	Will be complied	Will be complied
	Arrange washbasin, soap and clean water at the entrance of every worksite/campsite. Also keep either a disinfectant tub for shoes or keep disinfectant spray that must be sprayed under the boots/hard shoes of the persons entering worksite.	Will be complied	Will be complied	Will be complied	Will be complied
	Provide every personnel working in the site with mask, hand gloves and hard shoes for their personal use.	Will be complied	Will be complied	Will be complied	Will be complied
	Everyone entering the worksite must wear a mask, gloves and hard shoes	Will be complied	Will be complied	Will be complied	Will be complied
2	**Daily worksite protocol**				
	A designated EHS and medical person should stay all time during work. The EHS/Medical person should also monitor campsite. He/she will be in charge of ensuring physical distances (minimum 1m) among workers, disinfecting surfaces that are commonly used and investigate workers/site personnel health and safety.	Will be complied	Will be complied	Will be complied	Will be complied
	At the start and end of the day disinfect the total worksite.	Will be complied	Will be complied	Will be complied	Will be complied
	Encourage site personnel/camp dwellers to not touch their eyes, mouth or nose if not washed thoroughly with soap recently. Also discourage hand shaking or hugs.	Will be complied	Will be complied	Will be complied	Will be complied
	Arrange a mandatory site brief on COVID awareness in the morning. The session must be conducted by the EHS/medical professional.	Will be complied	Will be complied	Will be complied	Will be complied
	While worksites are commonly well ventilated (if not make sure the work sites are well ventilated), ensure that the camp sites including the rooms designated for the camp dwellers are well ventilated and spacious.	Will be complied	Will be complied	Will be complied	Will be complied

SL	COVID-19 Response questions	NATI	STTL-CTG	Kum Dorm	Sylhet TTC
	Before sharing common tools/machines at worksite, ensure to disinfect.	Will be complied	Will be complied	Will be complied	Will be complied
	Discourage site personnel to gather and gossip at any time, rather encourage physical distance while chatting/discussing.	Will be complied	Will be complied	Will be complied	Will be complied
	Restrict worksite personnel to go outside unnecessarily. Also restrict campsite personnel to go outside without any valid cause.	Will be complied	Will be complied	Will be complied	Will be complied
	If any person related at worksite/campsite fall victim to COVID-19 or being kept isolated for pre-caution, consider paid leave with no exception allowed.	Will be complied	Will be complied	Will be complied	Will be complied
3	**Every day training**				
	Train workers on how to properly put on, use/wear, and take off protective clothing and equipment. The on-site EHS/Medical person should be in-charge of these trainings. These trainings must maintain the WHO's social distancing protocol. Make these trainings mandatory at worksites. Provide 10-15 minutes of a workday for such 'training and encouragement' activities.	Will be complied	Will be complied	Will be complied	Will be complied

5 CONCLUSION AND RECOMMENDATION

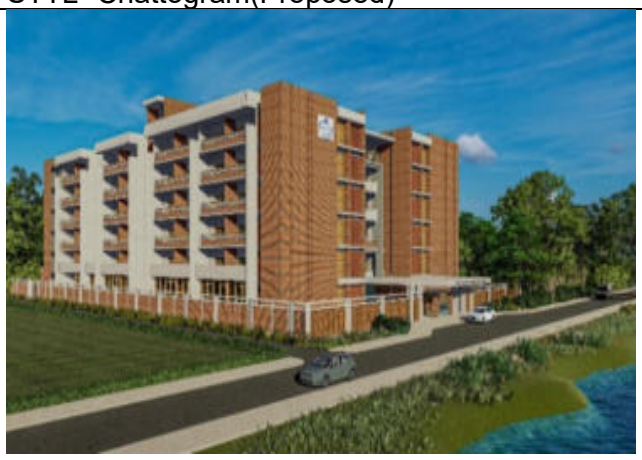
39. The civil works under SICIP are being implemented in the premises of the respective institutions and have the very minor environmental impacts which are insignificant. According to the ADB's SPS 2009 the civil works fall in to the Category B and Category "Orange" under DoE where have at least some negative impacts requiring mitigation measures. SDCMU will take steps to ensure the migration measures and environmental compliances during the construction works. The EMPs along with environmental costs are being incorporated in the bidding and contract documents and those are implementing by the contractors. Following the country system, an environmental clearance certificate for the eligible subprojects will be obtained from the Department of Environment with necessary documentation. Although there is no threat of hampering resettlement of small ethnic community people, or agricultural land due to project, SDCMU will also ensure all applicable laws and regulations, relating to environment, health and safety, involuntary resettlement and small ethnic communities' safeguards as stated in the SPS 2009. A separate GRM system is being established both in SDCMU level and site level to ensure the grievances occurred in the construction site. COVID-19 safety practice orientations were provided to construction labors, contractor and his staffs along with occupational health safety orientation following ADB and GoB guidelines. Respective Contractor will maintain health safety plans on prevention of COVID-19 for construction workers in line with ADB COVID-19 interim guidelines. In addition, SDCMU also will take care of the issues relating to the IEE and EMP, RF and any other corrective or preventative actions set forth in Environmental Monitoring Report during implementation of civil works. Till now no significant health hazard or negative impacts observed in the construction sites.

40. A corrective action plan has been developed and listing below

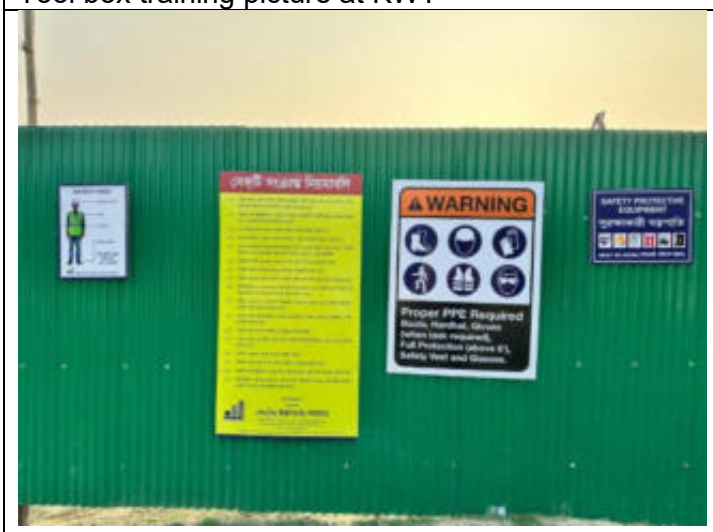
Table 5-1: Corrective action plan for Jan-Jun 2025

Sl.	Environmental Issues	Recommended Corrective Measures	Responsibility	Timeline
01	Excessive noise during the piling work for STTL (Chattogram) site	-Regular maintenance and follow up. -Working time 8.0 am to 5.0pm	Site Engineer & HSO	Within 02 months

Annex-1: Site Pictures

	
Site Picture-NATI	Narsingdi Auto Technogy Institute(Proposed)
	
Site Picture-STTL Chattogram	STTL- Chattogram(Proposed)
	
Site Picture- KWT	Kumudini Nursing Hostel (Proposed)

	
Site Pic-Sylhet TTC	Sylhet TTC(Proposed)
	
Site visit picture-KWT	Site visit picture-CTG
	
Site picture-Gazipur	Site visit picture-NATI

	
Site Visit Picture	Site Visit Picture
	
Tool box training picture at KWT	Tool box training picture at STTL
	
Safety fencing and symbols	PPEs followed by the workers

Annex-2: GRM Register Format

Name of Site	Complaint Number	Date	Complaint through (phone/letter/site)	Name of Complainer	Complaint Details	Action Taken by Contractor/PMU/CSC	Date- case resolved (days required)	Remarks- further action, if any
	Subproject/work-package Name:							
STTL in textile college in Chattogram (WD102)	No complaints	-	-	-	-	-	-	-
Kumudini dormitory in Tangail (WD201)	No complaints	-	-	-	-	-	-	-

Annex-3: Sample of Environmental monitoring checklist Format

Name of site:
Location:

Inspection Items	Implemented?		NC	REMARKS
	FC	PC		
1. Air Pollution Control				
1.1. Are the construction sites watered to minimize dust generated?				
1.2. Are stockpiles of dusty materials (size with more than 20 bags cement) covered or watered?				
1.3. Cement debagging process undertaken in sheltered areas				
1.4. Are all vehicles carrying dusty loads covered/watered over prior to leaving the site?				
1.5. Are demolition work areas watered? (e.g. trimming activities by using breaker)				
1.6. Are dusty roads paved and/or sprayed with water?				
1.7. Are dust controlled during percussive drilling or rock breaking?				
1.8. Are plant and equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)				
1.9. Is dark smoke controlled from plant?				
1.10. Are there enclosures around the main dust-generating activities? (e.g. grout mixing)				
1.11. Hoarding (not <2.4m) provided along boundaries and properly maintained (any damage / opening observed, please indicate the location).				
1.12. Are speed control measures applied? (e.g. speed limit sign)				
1.13. Others (please specify)				
2. Water Pollution Control				
2.1. Are water discharge licenses valid?				
2.2. Are conditions of the license compiled with? (check the monitoring records and observe physically)				

Inspection Items	Implemented?		NC	REMARKS
	FC	PC		
2.3. Are wastewater treatment system being used and properly maintained on site? (e.g. desilting tank)				
2.4. Are there any wastewater discharged to the stormdrains? Is the wastewater being treated?				
2.5. Are measures provided to properly direct effluent to silt removal facilities? (e.g. provide earth bunds / U-channels)				
2.6. Are u-channels and manholes free of silt and sediment?				
2.7. Are sedimentation traps and tanks free of silt and sediment?				
2.8. Are all manholes on-site covered and sealed?				
2.9. Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, public road and footpath?				
2.10. Are vehicles and plants cleaned before leaving the site?				
2.11. Are wheel washing facilities well maintained to prevent overflow, flooding sediment?				
2.12. Is sand and silt settled out in wheel washing bay and removed?				
2.13. Is the public road/area around the site entrance and site hoarding kept clean and free of muddy water?				
2.14. Is domestic water directed to septic tanks or chemical toilets?				
2.15. Others (please specify)				
3. Noise Control				
3.1. Is the CNP (Construction Noise Permit) valid for work during restricted hours?				
3.2. Are copies of the valid Construction Noise Permits posted at site entrance/exit?				
3.3. Do air compressors and generators operate with doors closed?				
3.4. Is idle plant/equipment turned off or throttled down?				
3.5. Do air compressors and hand-held breakers have valid noise emission labels (NEL)?				

Inspection Items	Implemented?		NC	REMARKS
	FC	PC		
3.6. Any noise mitigation measures adopted (e.g. use noise barrier / enclosure)?				
3.7. Are silenced equipments utilized?				
3.8. Others (please specify)				
4. Waste Management				
4.1. Is the site kept clean and tidy? (e.g. litter free, good housekeeping)				
4.2. Are separate chutes used for inert and non-inert wastes?				
4.3. Are separated labelled containers / areas provided for facilitating recycling and waste segregation?				
4.4. Are construction wastes / recyclable wastes and general refuse removed off site regularly?				
4.5. Are construction wastes collected and disposed of properly by licensed collectors?				
4.6. Are chemical wastes, if any, collected and disposed of properly by licensed collectors?				
4.7. Does chemical waste producer license covers all major chemical wastes produced on site?				
4.8. Are chemical wastes properly stored and labelled?				
4.9. Are oil drums and plants/equipments provided with drip trays?				
4.10. Are drip trays free of oil and water?				
4.11. Is there any oil spillage? Clean-up the contaminated soil immediately?				
4.12. Is litter, foam or other objectionable matters in nearby water drain/sewer cleaned?				
4.13. Are asbestos wastes handled by registered professionals?				
4.14. Others (please specify)				
5. Storage of Chemicals and Dangerous Goods				

Inspection Items	Implemented?		NC	REMARKS
	FC	PC		
5.1. Are chemicals stored and labelled properly?				
5.2. Does storage of DG comply with license conditions (include types and quantities if DG store is available, check the DG store license)?				
5.3. Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)				
5.4. Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?				
5.5. Others (please specify)				
6. Protection of Flora, Fauna and Historical Heritage				
6.1. Are disturbance to terrestrial flora minimized (e.g. plants to be preserved)?				
6.2. Are disturbance to terrestrial fauna minimized (if rare species identified)?				
6.3. Any historical heritage exists on site? If yes, ensure appropriate measures taken to preserve it				
6.4. Others (please specify)				
7. Resource Conservation				
7.1. Is water recycled wherever possible for dust suppression?				
7.2. Is water pipe leakage and wastage prevented?				
7.3. Are diesel-powered plants and equipments shut off while not in use to reduce excessive use?				
7.4. Are energy conservation practices adopted?				
7.5. Are metal or other alternatives used to minimize the use of timber?				
7.6. Are materials stored in good condition to prevent deterioration and wastage (e.g. covered, separated)?				
7.7. Are pesticides used under the requirement of Agriculture, Fishers and Conservation Department?				
7.8. Others (please specify)				
8. Emergency Preparedness and Response				

Inspection Items	Implemented?		NC	REMARKS
	FC	PC		
8.1. Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?				
8.2. Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded?				
8.3. Others (please specify)				

Name of contractor:

Sign:

Name of consultant:

Sign:

Annex-4: Task specific safety checklists

Sl.	Aspects to be answered/covered	Yes/No	Remarks
1.	**Excavation work**		
	a) Soil and conditions are inspected everyday		
	b) Safe exits (ladders) for excavations greater than 4ft depth		
	c) Shoring, shielding, and inclination assessed greater than 5ft depth		
2.	**piling and rigging works**		
	a) Labors are with PPE		
	b) Head person is with Safety belt		
	c) Keep safe distance during rigging		
	d) Rigger with safety goggles		
3.	**work at height**		
	a) Proper climbing procedures		
	b) Three-point contact rule followed		
	c)Wearing Safety belt		
	d) Safety net around the building		
4.	**scaffolding**		
	a) Fall protection used if over 10 feet tall		
	b) Set up on level, stable footing		
	c) Platform is appropriate width for type of scaffold		
5.	**heavy equipment operation**		
	a) Workers are trained on the use of power tools.		
	b) Workers have appropriate PPE and keep clothing away		
	c) Workers are trained prior to using nail guns		
	d) Tile and concrete are cut with wet methods		
6.	**Safety equipment record sheet**		
	a) Sufficient helmets (hard Hats) with appropriate color are presented at the site.		
	b) Safety masks are presented. **c)** Safety glasses/ goggles are presented (for protecting eyes particularly from corrosive chemicals, wind blast and radiation.)		

Sl.	Aspects to be answered/covered	Yes/No	Remarks
	d) Safety belt of preventing from falling down are presented.		
	e) First AID box is equipped.		
	f) Register book available		
7.	**hot works**		
	a) Is heat a major problem at this site?		
	b) Have workers been trained on preventing andrecognizing heat-related illness?		
	c) Are workers provided with enough water and appropriate rest breaks?		
8	**Electrical safety**		
	a) Work on electrical circuits or energized equipment is begun only after all power sources have been identified, de-energized and locked out or tagged out.		
	b) Overhead and underground electrical power lines are located, identified, and avoided.		
	c) Ladders, scaffolds, equipment or materials more than 10 feet from any electrical power lines		
	d) At least 25 foot horizontal clearance from overhead power line alignment are secured. Measures have been taken to avoid any electrification.		
9	**Chemical safety**		
	Workers work with safety gloves		
	Workers with goggles		
	Workers with safety helmets		

HSO Name- Signature:

SITE ENGR : Name- Signature:

Annex-5: GRM committee member under SICIP

পাতা নং- ৪

ফাইল নং- ১১১

বিষয়ঃ SICIP-এর Construction কার্যক্রমের জন্য দু'টি Grievance Redress Mechanism (GRM) কমিটি গঠনের অনুমোদন।

০২। অর্থ বিভাগ অর্থ মন্ত্রণালয় কর্তৃক বাস্তবায়নাধীন SICIP-এর Scheme-1 এবং Scheme-2 এর আওতায় নিম্নলিখিত Construction কার্যক্রমের বিষয় উল্লেখ রয়েছে (প:পৃ: ১-৪)।

Sl.	Description of Works	Scheme
1	Renovation of Narsingdi Polytechnic Institute for the creation of Automotive technology training center (NATI)	Scheme-1
2	Construction of STTL in textile college in Chattogram	Scheme-1
3	Construction of STTL in new textile college in Gazipur	Scheme-1
4	New EDC building at East West University (EWU)	Scheme-1
5	Renovation of EDC building at IBA	Scheme-1
6	New EDC building at BUTEX	Scheme-1
7	Kumudini nursing dormitory building	Scheme-2
8	Kumudini nursing academic building	Scheme-2
9	Extension of new training facilities in DG-TTC and other TTCs	Scheme-2

১০। উক্ত Construction কাজের সাথে সংশ্লিষ্ট ক্ষতিগ্রস্ত ব্যক্তিদের অভিযোগ এবং উদ্বেগগুলি নির্দিষ্ট সময়সীমার মধ্যে একটি ন্যায্য, স্বচ্ছ এবং সহজে পদ্ধতিতে সুরাহা করা বা সমাধান করার জন্য Grievance Redress Mechanism (GRM) কমিটি গঠন করা প্রয়োজন। সে প্রেক্ষিতে, নিম্নোক্তভাবে SDCMU-এর জন্য একটি Committee এবং বিল্ড লেভেল এর জন্য একটি Sub-Committee গঠন করা যেতে পারে। উল্লেখ্য, পূর্বের SEIP প্রকল্পেও এধরনের কমিটি গঠন করা হয়েছিলো (প:পৃ: ১৭-১৮)।

Committee for SDCMU, SICIP (GRM)

Designation	Position in Committee
1. Deputy Executive Program Director (Program Management 2), SICIP	Convenor
2. Gender and Social Development Specialist, SICIP	Member
3. Assistant Executive Program Director-7, SICIP	Member
4. Engineering Specialist-1, SICIP	Member Secretary /Focal Person

ToR for Committee for SDCMU, SICIP (GRM)

The committee will receive, acknowledge, assess, investigate, resolute, monitor and report the grievances, complaints and concerns of the affected persons. The TOR of the committee is as follows:

a. Monitor the field level activities of GRM.
b. Address the issues to be received from/initiated by the field.
c. Stress the importance of GRM and its implementation process to address grievance, and dissatisfaction raised by Affected Person (APs)/complainants.
d. Communicate with the sub-committee formed for construction sites and to make them aware of the importance of GRM and its implementation procedures.
e. Receive complaints from the Focal Person and finalize a date of meeting to discuss the complaints.
f. Screen, assess and evaluate the complaints in the committee meeting to be held every month.
g. Finalize resolution approach and implement the resolution approach to settle the complaint.

Annex-6: SEMP plans for STTL and KWT Dormitory

a) SEMP plan for STTL site (Chattogram)

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
1. Design for flora and cultural sites	May affect flora and cultural sites	Project design and alignment to consider retaining trees and avoiding impacts on cultural / religious sites	During detailed Project work	Included in detailed design cost	SEL	ADB/SICIP
2. Contractor Environmental Management Plans (CEMP) groundwater and soils	Contamination from leaks and spills of noxious fluids used in construction process	• a. The Contractor to engage a full time Environmental, Health and Safety Officer who will oversee proper implementation of construction-related aspects of the project environmental management plan (EMP) and CEMP. • b. Prior to commencement of site works, the Contractor to submit a CEMP based on all the mitigation and monitoring measures specified in the project EMP. The CEMP will include details of staff, resources, implementation schedules, as well as monitoring and reporting procedures. The CEMP will also include the following management plans for approval: • Soil Erosion Management Plan	During Project work	Included in construction contract	SEL	ADB/SICIP
3. Surface water quality	Siltation, sedimentation and contamination of water bodies receiving runoff from the STTL	• Slightly raise surface of minerals storage area above level of rest of site to prevent runoff from other site areas from washing through stockpiles • Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit discharge of sediments	Before construction	Included in construction contract	SEL	ADB/SICIP
4. Ground water resources	Lack of effective water conservation contributes to local	Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: • rain capture on all roofs and use of stored water for non-potable uses in and around facilities • high-efficiency faucets and toilets throughout the facilities • plant species with low water needs in site landscaping plans	Before construction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
5. Air Quality	Elevated dust in minerals storage area	• Include water supply to minerals storage area, with hose spigots in several locations around the perimeter to enable use of mobile misting apparatus	Before construction	Included in construction contract	SEL	ADB/SICIP
6. Public health and safety	Elevated risk of viral infection in STTL area	• Design internal layout of the STTL building to maximize space between users and prevent the formation of long lines in indoor spaces • Design STTL building ventilation system for maximum feasible turnover of indoor air	Before construction	Included in construction contract	SEL	ADB/SICIP
7. Occupational health and safety	Elevated staff exposure to viral threats	• Design interior layout of the STTL building to maximize space between users and prevent the formation of long lines in indoor spaces • Design STTL building ventilation system for maximum feasible turnover of indoor air	Before construction	Included in construction contract	SEL	ADB/SICIP
8. Waste management	Pollution from inadequately managed wastes	• Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste • Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated • Include waste storage and sorting areas in facility designs • Incorporate easy access for waste and recyclables collection vehicles • Designate outdoor space for thermophilic composting of organic waste from kitchens and canteens • Design laboratory for appropriate segregation of hazardous and non-hazardous waste streams	Before construction	Included in construction contract	SEL	ADB/SICIP
9. Materials sourcing	Gravel and sand obtained from environmentally damaging riverbed mining, hill cutting or farmland strip-mining	• Obtain valid Certificate from suppliers of bulk materials	Before construction	Included in construction contract	SEL	ADB/SICIP
10. . Labor	Use of non-local labor reduces positive impact of project on local	• Hire exclusively or mostly local workers	Before construction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
	livelihoods and triggers social conflict					
Construction Phase						
1. Surface water	Siltation and sedimentation of watercourses from soil erosion and entrainment of fine materials, blockage of the surface drains near the STTL site	Implement approved Soil Erosion Prevention Plan: • Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings • Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles • Install and regularly maintain sediment traps in site runoff channels • Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed • Deploy silt curtains and sediment traps when earthworks are carried out near watercourses	During Project work	Included in construction contract	SEL	ADB/SICIP
	Excessive enrichment of surface waters from raw sewage discharged by construction camps lacking adequate septic systems	• Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with • Construction Camp Management Plan	During Project work	Included in construction contract	SEL	ADB/SICIP
2. Surface water, groundwater and soils	Contamination from leaks and spills of noxious fluids used in construction process	• Keep all motorized equipment in good repair • Maintain a regiment of systematic daily checks to detect leaks, following up with prompt repair as needed • Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips • Store fuels and other noxious fluids within roofed, rain-exclusive containment structures	During Project work	Included in construction contract	SEL	ADB/SICIP

Construction Phase						
		with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains • Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing				
3. Air Quality	Dust from construction works create nuisance and health hazard for residents near work sites	• Implement a regiment of misting all dust-generating surfaces throughout the workday during dry weather • Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion • Equip all haul trucks with tightly fitting tarpaulins and enforce their use	During Project work	Included in construction contract	SEL	ADB/SICIP
	Emissions from equipment and vehicles used in construction degrades local air quality	• Maintain all motorized equipment used in construction to a high standard • Use only fuel-efficient equipment	During Project work	Included in construction contract	SEL	ADB/SICIP
4. Noise	Nuisance noise from construction activities, heavy machines, generators and construction vehicle movement.	• A pollution prevention plan will be prepared in accordance with national standards • The equipment and vehicles used during the construction process will comply with the national Guidelines on noise. • The construction activities near the settlements will not be carried out during night time. • Regular noise monitoring will be carried • out near the sensitive receptors	During Project work	Included in construction contract	SEL	ADB/SICIP
5. Soil erosion	Loss of topsoil to erosion	Implement approved Soil Erosion Prevention Plan, including (inter alia): • Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings • Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils • Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed	During Project work	Included in construction contract	SEL	ADB/SICIP

Construction Phase						
		• Reserve topsoil and store separately for later use • Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to achieve full coverage				
6. Demolition waste	Impacts from improper removal, processing and disposal of demolished structures	• Ensure salvage of recyclable and reusable items • Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management Plan embedded within the CEMP	During Project work	Included in construction contract	SEL	ADB/SICIP
7. Construction waste	Pollution from improper management of solid waste generated at work sites and construction camp	• Implement all provisions in the Waste Management Plan embedded in CEMP, including (inter alia): • Provide waste receptacles on the work sites and collect their contents daily or weekly as needed • Recycle all recyclables through local providers of this service • Compost organic wastes generated by construction camp kitchens • Dispose of non-recyclable and non-organic wastes • based on locally available and approved disposal options	During Project work	Included in construction contract	SEL	ADB/SICIP
8. Worker health and safety	Risks to worker health and safety from improper work site practices	• Implement approved Occupational Health and Safety Plan, including (inter alia): • Provide regular safety training for all workers • Provide task-appropriate PPE to all workers and enforce its use • Closely monitor works at all times to ensure strong worker compliance with safety practices	During Project work	Included in construction contract	SEL	ADB/SICIP
	Risks to worker health and safety from poor conditions in construction camps	• Implement approved Occupational Health and Safety Plan, including (inter alia): • Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions • Institute a regular cleaning and disinfection regimen for camp kitchens, latrines, wash-up areas, eating areas and sleeping sheds • Provide adequate sleeping space for the number of workers to avoid overcrowding and consequent	During Project work	Included in construction contract	SEL	ADB/SICIP

Construction Phase						
		spread of communicable illnesses and infestations • Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting • Test drinking water supplied to workers on a quarterly basis to ensure safety • Ensure adequate ventilation and light in all camp • structures				
9. Community Health and Safety	Construction camps serve as source of social conflict, possibly leading to violence	• Implement approved Construction Camp Management Plan, including (inter alia): • Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of • crops/foods	During Project work	Included in construction contract	SEL	ADB/SICIP
	Construction camps act as vectors for spread of pathogens and disease	• Implement approved Construction Camp Management Plan, including (inter alia): • Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields • Educate resident workers about sexually transmitted diseases and responsible sexual behavior • Work with local community leaders to prohibit prostitution in and around construction camps	During Project work	Included in construction contract	SEL	ADB/SICIP
10. Flora and fauna	Loss of trees	• Initiate a tree plantation plan. It is possible that within the CTEC campus, more than one hundred trees can be planted. In this case native species should be chosen. • Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	During Project work	Included in construction contract	SEL	ADB/SICIP
11. Livelihoods	Damage to property and livelihoods	• Fence perimeter of each work site prior to the start of construction and ensure maintenance of fencing for the duration of works • Prohibit all construction-related activity outside the site fences				

Construction Phase						
	Employment for local people	• Hire mostly or exclusively local workers on construction sites				
Operation Phase						
1. Worker health and safety	Exposure of laboratory technicians and support staff to accidental hazardous releases	• Incorporate Emergency Response Plan in laboratory operating protocols, and provide regular training for technicians and support staff on its activation	During operation	Included in maintenance costs	SEL	ADB/SICIP
2. Laboratory waste	Environmental contamination and public health risks from improperly managed hazardous wastes	• Provide training to laboratory technicians and maintenance staff on correct implementation of waste management protocols, before the laboratory becomes operational and on an annual basis thereafter. • Conduct an annual waste management audit and implement corrective action as needed to address problematic trends	During operation	Included in maintenance costs	SEL	ADB/SICIP
3. Solid waste	Pollution from improper	• Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	During operation	Included in maintenance costs	SEL	ADB/SICIP

b) SEMP plan for KWT Dormitory

Parameter	Environmental Aspect/Issue	Mitigation Measure	Timefr ame	Funding source	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
11. Site survey and design of the new building	-Failure of the building to withstand climate change and natural hazards -Potential safety and health risks to students and building users due to poor building design	• All project facilities are to be designed in accordance with the planning and design norms (BNBC) 2006 & relevant provisions in the BNBC 2020. • Earthquake hazard should be considered in the structural design of the dormitory building.	Durin g detaile d Projec t work	Included in detailed design cost	SEL	ADB/SICIP
12. Design for flora and cultural sites	May affect flora and cultural sites	Project design and alignment to consider retaining trees and avoiding impacts on cultural / religious sites	Durin g detaile d Projec t work	Included in detailed design cost	SEL	ADB/SICIP
13. Contractor Environmental Management Plans (CEMP)groundwater and soils	Contamination from leaks and spills of noxious fluids used in construction process	• a. The Contractor to engage a full time Environmental, Health and Safety Officer who will oversee proper implementation of construction-related aspects of the project environmental management plan (EMP) and CEMP. • b. Prior to commencement of site works, the Contractor to submit a CEMP based on all the mitigation and monitoring measures specified in the project EMP. The CEMP will include details of staff, resources, implementation schedules, as well as monitoring and reporting procedures. The CEMP will also include the following management plans for approval:	Durin g Projec t work	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Timefr ame	Funding source	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
		• Soil Erosion Management Plan				
14. Surface water quality	Siltation, sedimentation and contamination of water bodies receiving runoff from the project site	• Slightly raise surface of minerals storage area above level of rest of site to prevent runoff from other site areas from washing through stockpiles • Include sediment traps and porous drainage channels in final drainage design for minerals storage area, to limit discharge of sediments	Before constr uction	Included in construction contract	SEL	ADB/SICIP
15. Groundwater resources	Lack of effective water conservation contributes to local	Maximize opportunities to limit water consumption and increase groundwater recharge, including adoption of: • rain capture on all roofs and use of stored water for non-potable uses in and around facilities • high-efficiency faucets and toilets throughout the facilities • plant species with low water needs in site landscaping plans	Before constr uction	Included in construction contract	SEL	ADB/SICIP
16. Air Quality	Air quality can be affected by vehicle exhaust emissions and combustion of fuels; Dust generation from construction sites, material stockpiles and access roads.	• Impose speed limits (maximum 20 km/hr) on all vehicle movement at the worksite and through access roads to reduce dust emissions. • Control the movement of construction traffic in the access road.	Before constr uction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Timefr ame	Funding source	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
17. Noise and Vibration Management	Construction vehicular traffic: Noise quality will be deteriorated due to increased vehicular traffic. Construction machinery: Noise and vibration will have an impact on adjacent surrounding residents. Construction activity: Noise will have an impact on adjacent residents	• Maintain all vehicles in order to keep them in good working order in accordance with manufacturers maintenance procedures. • Make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc. (20 km/hr during night time). • Organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site. • Appropriately site all noise generating activities to avoid noise pollution to local residents.	Before constr uction	Included in construction contract	SEL	ADB/SICIP
18. Public health and safety	Elevated risk of viral infection in project area	• Design internal layout of the dormitory building to maximize space between users and prevent the formation of long lines in indoor spaces • Design dormitory building ventilation system for maximum feasible turnover of indoor air	Before constr uction	Included in construction contract	SEL	ADB/SICIP
19. Occupational health and safety	Elevated staff exposure to viral threats	• Design interior layout of the building to maximize space between users and prevent the formation of long lines in indoor spaces • Design dormitory building ventilation system for maximum feasible turnover of indoor air	Before constr uction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Timefr ame	Funding source	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
20. Waste management	Pollution from inadequately managed wastes; Solid waste pollution will increase pressure on health hazards of workers.	• Anticipate waste streams and incorporate design features to collect, sort and safely dispose of each class of waste • Specify segregated collection bins in strategic indoor and outdoor locations where wastes are generated • Include waste storage and sorting areas in facility designs • Incorporate easy access for waste and recyclables collection vehicles • Designate outdoor space for thermophilic composting of organic waste from kitchens and canteens • Minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach. • Ensure proper collection and disposal of wastes within the construction camps from where municipal will take by their truck and dispose at their dumping area.	Before constr uction	Included in construction contract	SEL	ADB/SICIP
21. Drainage Congestion	Construction of the proposed building will significantly impact upon the existing drainage pattern through impedance to natural flow conditions.	• Temporary drainage congestion (TDC) in the foundation trench due to rainwater to be removed by pumping. Avoid monsoon period for foundation works. • TDC in construction yard & camp of the proposed building area to be removed by temporary earth or RCC drains. • All vehicle exit points from the construction site shall have a wash down or shakedown	Before constr uction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Timefr ame	Funding source	Implemented by:	Supervised/ Approved by:
Pre-Construction Phase						
		area where mud and earth can be removed from a vehicle • before it enters the public road system. All wash down areas are to drain to a sediment basin.				
22. . Labor	Use of non-local labor reduces positive impact of project on local livelihoods and triggers social conflict	• - Hire exclusively or mostly local workers	Before constr uction	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemente d by:	Supervised/ Approved by:
Construction Phase						
1. Surface water	Siltation and sedimentation of watercourses from soil erosion and entrainment of fine materials, blockage of the surface drains near the project site	Implement approved Soil Erosion Prevention Plan: • Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings • Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils and materials stockpiles • Install and regularly maintain sediment traps in site runoff channels • Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed • Deploy silt curtains and sediment traps when earthworks are carried out near watercourses	Durin g Projec t work	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Construction Phase						
	Excessive enrichment of surface waters from raw sewage discharged by construction camps lacking adequate septic systems	• Install an adequate number of toilets to accommodate all workers, and septic systems of sufficient capacity for the expected effluent volume, in accordance with • Construction Camp Management Plan	During Project work	Included in construction contract	SEL	ADB/SICIP
2. Surface water, groundwater and soils	Contamination from leaks and spills of noxious fluids used in construction process	• Keep all motorized equipment in good repair • Maintain a regiment of systematic daily checks to detect leaks, following up with prompt repair as needed • Strictly require use of drip mats and pans during refueling and servicing to catch spills and drips • Store fuels and other noxious fluids within roofed, rain- exclusive containment structures with capacity at least 115% of the volume of the largest container stored, constructed only in locations with zero probability of flooding during heavy rains • Provide training in spill prevention and spill response to all workers involved in refueling or equipment servicing	During Project work	Included in construction contract	SEL	ADB/SICIP
3. Air Quality	Dust from construction works create nuisance and health hazard for residents near work sites	• Implement a regimen of misting all dust-generating surfaces throughout the workday during dry weather • Tightly cover stockpiles of fine materials with tarpaulins whenever they are not in active use to prevent wind erosion • Equip all haul trucks with tightly fitting tarpaulins and enforce their use	During Project work	Included in construction contract	SEL	ADB/SICIP
	Emissions from equipment and vehicles used in construction	• Maintain all motorized equipment used in construction to a high standard • Use only fuel-efficient equipment	During Project work	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Construction Phase						
	degrades local air quality					
4. Noise	Nuisance noise from construction activities, heavy machines, generators and construction vehicle movement.	• A pollution prevention plan will be prepared in accordance with national standards • The equipment and vehicles used during the construction process will comply with the national Guidelines on noise. • The construction activities near the settlements will not be carried out during night time. • Regular noise monitoring will be carried • out near the sensitive receptors	During Project work	Included in construction contract	SEL	ADB/SICIP
5. Soil erosion	Loss of topsoil to erosion	Implement approved Soil Erosion Prevention Plan, including (inter alia): • Protect disturbed soil from rain by keeping exposed areas covered with mulches, fiber mats and other temporary coverings • Arrange work site drainage to prevent concentration of surface runoff in the vicinity of exposed soils • Promptly establish vegetative cover on soil surfaces in locations where construction activity has been completed • Reserve topsoil and store separately for later use • Monitor progress of vegetation establishment until end of defects period, and implement infill planting as necessary to achieve full coverage	During Project work	Included in construction contract	SEL	ADB/SICIP
6. Demolition waste	Impacts from improper removal, processing and disposal of demolished structures	• Ensure salvage of recyclable and reusable items • Use rubble in site development or dispose of in a site identified and approved in accordance with the Waste Management Plan embedded within the CEMP	During Project work	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Construction Phase						
7. Construction waste	Pollution from improper management of solid waste generated at work sites and construction camp	• Implement all provisions in the Waste Management Plan embedded in CEMP, including (inter alia): • Provide waste receptacles on the work sites and collect their contents daily or weekly as needed • Recycle all recyclables through local providers of this service • Compost organic wastes generated by construction camp kitchens • Dispose of non-recyclable and non-organic wastes • based on locally available and approved disposal options	During Project work	Included in construction contract	SEL	ADB/SICIP
8. Worker health and safety	Risks to worker health and safety from improper work site practices	• Implement approved Occupational Health and Safety Plan, including (inter alia): • Provide regular safety training for all workers • Provide task-appropriate PPE to all workers and enforce its use • Closely monitor works at all times to ensure strong worker compliance with safety practices	During Project work	Included in construction contract	SEL	ADB/SICIP
	Risks to worker health and safety from poor conditions in construction camps	• Implement approved Occupational Health and Safety Plan, including (inter alia): • Conduct monthly safety audit of camp to identify fire risks, electrocution hazards and other unsafe conditions, and assess adequacy of fire extinguishers and first aid provisions • Institute a regular cleaning and disinfection regimen for camp kitchens, latrines, wash-up areas, eating areas and sleeping sheds • Provide adequate sleeping space for the number of workers to avoid overcrowding and consequent spread of communicable illnesses and infestations • Provide each worker with a raised sleeping platform with mattress or mat, bedding and mosquito netting • Test drinking water supplied to workers on a quarterly basis to ensure safety • Ensure adequate ventilation and light in all camp • structures	During Project work	Included in construction contract	SEL	ADB/SICIP

Parameter	Environmental Aspect/Issue	Mitigation Measure	Time frame	Estimated Cost /funding source ($)	Implemented by:	Supervised/ Approved by:
Construction Phase						
9. Community Health and Safety	Construction camps serve as source of social conflict, possibly leading to violence	• Implement approved Construction Camp Management Plan, including (inter alia): • Provide regular training and enforcement to minimize bad worker behavior off site, including public drunkenness, sexual harassment, and theft of • crops/foods	During Project work	Included in construction contract	SEL	ADB/SICIP
	Construction camps act as vectors for spread of pathogens and disease	• Implement approved Construction Camp Management Plan, including (inter alia): • Install and maintain adequate toilet and septic systems to prevent discharge of raw sewage from camps to local water bodies or fields • Educate resident workers about sexually transmitted diseases and responsible sexual behavior • Work with local community leaders to prohibit prostitution in and around construction camps	During Project work	Included in construction contract	SEL	ADB/SICIP
10. Flora and fauna	Loss of trees	• Initiate a tree plantation plan. It is possible that within the project site, more than one hundred trees can be planted. In this case native species should be chosen. • Implement approved Compensatory Tree Planting Plan as soon as schedule of works permits	During Project work	Included in construction contract	SEL	ADB/SICIP
11. Livelihoods	Damage to property and livelihoods	• Fence perimeter of each work site prior to the start of construction and ensure maintenance of fencing for the duration of works • Prohibit all construction-related activity outside the site fences	During Project work	Included in construction contract	SEL	ADB/SICIP
	Employment for local people	• Hire mostly or exclusively local workers on construction sites	During Project work	Included in construction contract	SEL	ADB/SICIP

Operation Phase						
1. Drainage congestion	Local drainage system may get clogged due to improper management of Solid waste, and other materials.	• Maintain drains regularly as and when required. • Solid wastes should not be dumped into the drain. • Blocked drains should be cleaned properly and debris disposed at approved sites on a regular basis.	During operation	Included in maintenance costs	SEL	ADB/SICIP
2. Sewage waste	Prohibition of water uses for intended purposes; Water borne diseases	• Maintenance of Septic tanks, soak wells, pipes, etc. as and when required. • Connects the existing sewerage network for sewerage treatment from existing STP inside KWT premises • Regular monitoring of water quality.	During operation	Included in maintenance costs	SEL	ADB/SICIP
3. Solid waste	Pollution from improper	• Ensure that appropriate waste management procedures for all components of the solid waste stream are specified in each facility's operations and maintenance manual	During operation	Included in maintenance costs	SEL	ADB/SICIP
4. Socioeconomic Impact	Deterioration of community health and safety; Loss of aesthetic view	• The community health and safety will be improved • Improved drainage and sanitation facilities	During operation	Included in maintenance costs	SEL	ADB/SICIP
5. Emergency Response and Disaster Preparedness	Loss of business; Loss of life; Environmental deterioration	• Mock drill and training session • Arrangement of fire prevention system maintain standard operating procedure (SoP)	During operation	Included in maintenance costs	SEL	ADB/SICIP

Annex-7: CEMP plans for STTL and KWT Dormitory

a) CEMP for STTL

Format for Construction Environmental Management Plan(CEMP)

Package no: WD-102 & e- Tender ID. 995922

Name of work: "Construction of Smart Textile Technology Living Lab (STTL) at Chittagong Textile Engineering College (CTEC)"

Location of site: Joraganj, Mirsharai, Chittagong

SL	Name of activities	Risk	Combined Risk score/level	Control measure	Responsible
1.	Air Quality and Dust	• Air pollution and dust generation due to construction activities, especially during the construction vehicle movement. • Suspended particulate matter from excavation works including vehicular emissions, may affect workers and community.	Moderate Adverse	• Spray water on dry and loose surfaces of the construction sites regularly to minimize dust. • Construction materials (sand, gravel, and rocks) and spoil materials will be transported in trucks covered with tarpaulins. • All vehicles (e.g., trucks, equipment, and other vehicles that support construction works) will be well maintained and not emit dark or smoky emissions in excess of the limits	Sheltech Engineering Ltd.
2.	Noise Level	• Mobilization of heavy equipment and machinery, use of construction vehicles, transport of materials, pile driving and construction activities may increase ambient noise level.	Moderate Adverse	• It is recommended that no construction will be allowed during night time (9 PM to 6 AM). • Avoid using of construction equipment producing excessive noise at any time. • Regulate use of horns and avoid use of hydraulic horns in project vehicles. • Follow the government rules and regulations for noise	Sheltech Engineering Ltd.
3.	Quality of surface and groundwater	• Potential for siltation due to construction works near pond or river. • The ground water resources will impact due to uncontrolled extraction of water for construction purpose.	Moderate Adverse	• Ensure timely monitoring, especially if construction works are carried out during the monsoon period. • Provision for pumping of congested water, if needed. No discharge to the surface water.	Sheltech Engineering Ltd.
4.	Construction Waste	• Generation of construction wastes from the construction materials.	Moderate Adverse	• Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time. • Use of construction materials containing recycled content when possible and in accordance with accepted standards. • Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated, licensed, engineered and sanitary landfill will be provided	Sheltech Engineering Ltd.
5.	Community Health and Safety	• Community H&S nearby the project site could be affected.	Minor Adverse	• Safety barriers and warning signs surrounding the construction site. • Generators will be placed in closed rooms.	Sheltech Engineering Ltd.
6.	Occupational Health and Safety	• Health and safety risks of construction workers	Moderate Adverse	• Appointment of Health & Safety (H&S) Manager with appropriate qualifications and experience. • contractor to prepare H&S plan based on risk assessment following national and EHS guideline requirements. • Only permit trained and certified workers to work with any electrical equipment. • Prior to starting work, a tool box meeting will be arranged by the Safety Engineer for the workers. • First Aid Box and personal protective equipment, PPE (such as safety helmets, safety shoes, eye protection glasses, ear plugs/muffs, waist belts, masks, hand gloves, body protective aprons and insulating boots) must be provided to the workers and ensure their use by the workers. • Safety signs, health signs, prohibition signs, warning signs, mandatory signs, emergency escape signs, first-aid signs, signboards, verbal communication and hand signals must be fitted at the designated sites of the project area. • Provision of protective clothing for laborers handling hazardous materials, e.g. helmet, adequate footwear, protective goggles, gloves etc.	Sheltech Engineering Ltd.

- **Determination of Significant Impact Evaluation: Rating Status Probability×Frequency (5×5)=25**

Values	Risk Level	Action
1-8	Minor	No Attention Needed
9-16	Moderate	Attention Needed
17-25	Major	Correction Required

b) CEMP for KWT Dormitory

Format for Construction Environmental Management Plan(CEMP)

Package no: WD-201 & e- Tender ID. 995921

Name of work: "Establishment of a Modern Well-Equipped Nursing & Caregiving Student Dormitory"

Location of site: Kumudini, Mirzapur, Tangail

SL	Name of activities	Risk	Combined Risk score/level	Control measure	Responsible
1.	Noise Level	• Mobilization of heavy equipment and machinery, use of construction vehicles, transport of materials, pile driving and construction activities may increase ambient noise level.	Moderate Adverse	• It is recommended that no construction will be allowed during night time (9 PM to 6 AM). • Avoid using of construction equipment producing excessive noise at any time. • Regulate use of horns and avoid use of hydraulic horns in project vehicles. • Follow the government rules and regulations for noise	Sheltech Engineering Ltd.
2.	Air Quality and Dust	• Air pollution and dust generation due to construction activities, especially during the construction vehicle movement. • Suspended particulate matter from excavation works including vehicular emissions, may affect workers and community.	Moderate Adverse	• Spray water on dry and loose surfaces of the construction sites regularly to minimize dust. • Construction materials (sand, gravel, and rocks) and spoil materials will be transported in trucks covered with tarpaulins. • All vehicles (e.g., trucks, equipment, and other vehicles that support construction works) will be well maintained and not emit dark or smoky emissions in excess of the limits	Sheltech Engineering Ltd.
3.	Quality of surface and groundwater	• Potential for siltation due to construction works near pond or river. • The ground water resources will impact due to uncontrolled extraction of water for construction purpose.	Moderate Adverse	• Ensure timely monitoring, especially if construction works are carried out during the monsoon period. • Provision for pumping of congested water, if needed. No discharge to the surface water.	Sheltech Engineering Ltd.
4.	Solid Waste Pollution	• Solid waste pollution will increase pressure on health hazards of workers.	Minor Adverse	• Ensure segregation of solid waste at source (organic, recyclable, non-recyclable). • Prevent dumping of solid waste in drainage or sewage systems to avoid blockages. • Provide clearly marked bins and waste storage areas away from sanitation lines. • Engage a licensed waste disposal service for regular collection.	Sheltech Engineering Ltd.
5.	Construction Waste	• Generation of construction wastes from the construction materials.	Moderate Adverse	• Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time. • Use of construction materials containing recycled content when possible and in accordance with accepted standards. • Adequate collection and storage of waste on site and safe transportation to the disposal sites and disposal methods at designated, licensed, engineered and sanitary landfill will be provided	Sheltech Engineering Ltd.
6.	Sewage Pollution/ Sanitation Hazard	• Lack of proper sanitation facilities will increase pressure on health hazards of workers.	Moderate Adverse	• Install a proper on-site sewage management system (e.g., septic tank with soak pit or sewage treatment plant). • Ensure regular desludging and maintenance of sanitation facilities. • Provide temporary sanitary facilities for construction workers. • Prohibit direct discharge of sewage into drains or water bodies.	Sheltech Engineering Ltd
7.	Drainage Congestion	• Construction of the proposed building will significantly impact upon the existing drainage pattern through impedance to natural flow conditions.	Minor Adverse	• Ensure proper slope and layout of drainage systems to avoid blockage or overflow. • - Construct covered and lined drains to prevent leakage and infiltration. • - Avoid disposal of solid waste and construction debris in drainage channels. • - Regularly clean and maintain all drains and sewer lines.	Sheltech Engineering Ltd.

8.	Community Health and Safety	• Community H&S nearby the project site could be affected.	Minor Adverse	• Safety barriers and warning signs surrounding the construction site. • Generators will be placed in closed rooms.	Sheltech Engineering Ltd.
9.	Traffic Safety	• Increased local congestion around the project area • Long-term increase in traffic volume	Minor Adverse	• Extensive barricades of the construction zone will be provided so that pedestrians do not come into direct contact with the machines, tools, material and other accessories; • Provision of barricading will be done so that these do not create traffic safety problems. Supplementary aids / tools such as signboards, reflectors and night lighting will be used to avoid possible accidents.	Sheltech Engineering Ltd
10.	Occupational Health and Safety	• Health and safety risks of construction workers	Moderate Adverse	• Appointment of Health & Safety (H&S) Manager with appropriate qualifications and experience. • contractor to prepare H&S plan based on risk assessment following national and EHS guideline requirements. • Only permit trained and certified workers to work with any electrical equipment. • Prior to starting work, a tool box meeting will be arranged by the Safety Engineer for the workers. • First Aid Box and personal protective equipment, PPE (such as safety helmets, safety shoes, eye protection glasses, ear plugs/muffs, waist belts, masks, hand gloves, body protective aprons and insulating boots) must be provided to the workers and ensure their use by the workers. • Safety signs, health signs, prohibition signs, warning signs, mandatory signs, emergency escape signs, first-aid signs, signboards, verbal communication and hand signals must be fitted at the designated sites of the project area.	Sheltech Engineering Ltd.

				• Provision of protective clothing for laborers handling hazardous materials, e.g. helmet, adequate footwear, protective goggles, gloves etc.	

- **Determination of Significant Impact Evaluation: Rating Status Probability× Frequency (5×5) =25**

Values	Risk Level	Action
1-8	Minor	No Attention Needed
9-16	Moderate	Attention Needed
17-25	Major	Correction Required

Annex-8: Test reports for STTL and KWT Dormitory

a) Air Quality test reports

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

Ref: ECIL/2025/50-05/AAQM

Test Results of Ambient Air Quality Analysis

Name of Project	**: Smart Textile Technology Living Lab (STTL) at Chittagong Textile Engineering College (CTEC)**
Description of Sample	: Ambient Air Quality (AAQ)
Sample Collector	: EnviroCare Technical Team
Monitoring Date	: 23.04.2025
Date of Analysis	: 29.04.2025
Reporting Date	: 03.05.2025

SN	Monitoring Locations	Concentration of different parameters in ambient air			
		$PM_{2.5}$	PM_{10}	SO_x	NO_x
1	**AAQM-1, STTL, Mirsharai, Chittagong** ***22.86106683N, 91.52380709E***	25.25	44.31	14.73	16.85
Unit		µg/m³	µg/m³	µg/m³	µg/m³
Monitoring Principle		***Light scattering technique***		***High precision Electrochemical sensor***	
Bangladesh Standard		**65**	**150**	**80**	**80**
International Standard (IFC EHS Guidelines' 30 Apr 2007)		**25**	**50**	**20**	**200**

***Standard**: Air pollution Control Rules (**APCR**) On 26th July 2022; Vide S.R.O. NO. 255-Law/ 2022
***Note**: This ambient air monitoring report was usually accomplished by- portable **OCEANUS AQM-09** Machine; NYS=Not Yet set

Analyzed & Prepared By	Reviewed By	Approved By
Md. Mehrab Hossain Manik B.Sc. in Environmental Science (KU) Consultant (Environment), & DTL (Consulting Dept.)	Md. Shamim Biswas B.Sc. in Environmental Science (KU) Consultant (Environment), Lab-in-charge & TL (Consulting Dept.)	Shorov Roy B.Sc. in ESRM (MBSTU) MS in Environmental Science (BAU) Managing Director (MD)

Address: House #9 (3rd Flr), Road # 6, Sector # 12, Uttara, Dhaka-1230, Bangladesh. Cell: 01925687029,
Phone: +88 0255087283, Web: www.envirocarebd.com, Email: info@envirocarebd.com

1

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

Ref: ECIL/2025/69-05/AAQM

Test Results of Ambient Air Quality Analysis

Name of Project	**: Establishment of a Modern Well-Equipped Nursing & Caregiving Student Dormitory Under Kumudini Welfare Trust of Bengal (BD) Ltd.**
Description of Sample	: Ambient Air Quality (AAQ)
Sample Collector	: EnviroCare Technical Team
Monitoring Date	: 26.04.2025
Date of Analysis	: 30 .04.2025
Reporting Date	: 03.05.2025

SN	Monitoring Locations	Concentration of different parameters in ambient air			
		$PM_{2.5}$	PM_{10}	SO_x	NO_x
1	AAQM-1, Kumudini, Tangail *24.09994443N, 90.09119218E*	23.96	36.23	9.81	15.22
Unit		µg/m³	µg/m³	µg/m³	µg/m³
Monitoring Principle		***Light scattering technique***		***High precision Electrochemical sensor***	
Bangladesh Standard		**65**	**150**	**80**	**80**
International Standard (IFC EHS Guidelines' 30 Apr 2007)		**25**	**50**	**20**	**200**

***Standard**: Air pollution Control Rules (**APCR**) On 26th July 2022; Vide S.R.O. NO. 255-Law/ 2022
***Note**: This ambient air monitoring report was usually accomplished by- portable **OCEANUS AQM-09** Machine; NYS=Not Yet set

Dhaka

Analyzed & Prepared By	***Reviewed By***	***Approved By***
Md. Mehrab Hossain Manik B.Sc. in Environmental Science (KU) Consultant (Environment), & DTL (Consulting Dept.)	Md. Shamim Biswas B.Sc. in Environmental Science (KU) Consultant (Environment), Lab-in-charge & TL (Consulting Dept.)	Shorov Roy B.Sc. in ESRM (MBSTU) MS in Environmental Science (BAU) Managing Director (MD)

Address: House #9 (3rd Flr), Road # 6, Sector # 12, Uttara, Dhaka-1230, Bangladesh. Cell: 01925687029,
Phone: +88 0255087283, Web: www.envirocarebd.com, Email: info@envirocarebd.com

b) Noise Quality test reports

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

Ref: ECIL/2025/S6-05/ANLM

Test Results of Noise Level Analysis

Name of Project	**: Smart Textile Technology Living Lab (STTL) at Chittagong Textile Engineering College (CTEC)**
Description of Sample	: Ambient Noise Level (ANL)
Sample Collector	: EnviroCare Technical Team
Monitoring Date	: 23.04.2025
Date of Analysis	: 29.04.2025
Reporting Date	: 03.05.2025

Location	Analyzed Value (Decibel)						Category
	Day			Night			
	L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	
ANLM-01-STTL, Inside Project Site, Mirshorai, Chittagong ***22.86105228N, 91.52382725E***	57.97	70	38.2	48.74	60.8	31.1	**Mixed**
ANLM-02-STTL, Outside Project Site, Mirshorai, Chittagong ***22.86132222 N, 91.52394444 E***	52.63	64.7	32.9	45.50	57.5	31.2	**Mixed**

Bangladesh Standard, Noise Pollution Control Rules 2006	**Day Time**	**Night Time**
Industrial area	75	70
Commercial	70	60
Mixed area	**60**	**50**
Residential area	55	45
Silent Area	50	40
World Bank / IFC Standard		
Industrial area	70	70
Residential; Intuitional; Educational	55	45

Analyzed & Prepared By
Md. Mehrab Hossain Manik
B.Sc. in Environmental Science (KU)
Consultant (Environment), DTL (Consulting Dept.)

Reviewed By
Md. Shamim Biswas
B.Sc. in Environmental Science (KU)
Consultant (Environment), Lab in-charge TL (Consulting Dept.)

Approved By
Shorov Roy
B.Sc. in ESRM (MBSTU)
MS in Environmental Science (BAU)
Managing Director (MD)

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Phone: +88 0255087283, Web: www.envirocarebd.com, Email: info@envirocarebd.com

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

Ref: ECIL/2025/59-05/ANLM

Test Results of Noise Level Analysis

Name of Project	**: Establishment of a Modern Well-Equipped Nursing & Caregiving Student Dormitory Under Kumudini Welfare Trust of Bengal (BD) Ltd.**
Description of Sample	: Ambient Noise Level (ANL)
Sample Collector	: EnviroCare Technical Team
Monitoring Date	: 26.04.2025
Date of Analysis	: 30.04.2025
Reporting Date	: 03.05.2025

Location	Analyzed Value (Decibel)						Category
	Day			Night			
	L_{eq}	L_{max}	L_{min}	L_{eq}	L_{max}	L_{min}	
ANLM-01- North Side of Project Site, Kumudini, Tangail ***24.09930000N, 90.09131667E***	48.81	60.8	31.2	39.68	51.6	30.7	**Silent**
ANLM-02- South Side of Project Site, Kumudini, Tangail ***24.09994341N, 90.09119537E***	47.26	59.3	32.5	38.66	50.5	30.2	**Silent**

Bangladesh Standard, Noise Pollution Control Rules 2006	**Day Time**	**Night Time**
Industrial area	75	70
Commercial	70	60
Mixed area	**60**	**50**
Residential area	55	45
Silent Area	50	40
World Bank / IFC Standard		
Industrial area	70	70
Residential; Intuitional; Educational	55	45

Analyzed & Prepared By
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B.Sc. in Environmental Science (KU)
Consultant (Environment), DTL (Consulting Dept.)

Reviewed By
Md. Shamim Biswas
B.Sc. in Environmental Science (KU)
Consultant (Environment), Lab in-charge TL (Consulting Dept.)

Approved By
Shorov Roy
B.Sc. in ESRM (MBSTU)
MS in Environmental Science (BAU)
Managing Director (MD)

Address: House #9 (3rd Flr), Road # 6, Sector # 12, Uttara, Dhaka-1230, Bangladesh. Cell: 01925687029,
Phone: +88 0255087283, Web: www.envirocarebd.com, Email: info@envirocarebd.com

c) Water Quality test reports

Government of the People's Republic of Bangladesh
Office of the Chief Chemist
Department of Public Health Engineering
Central Lab, 38-39, Mohakhali C/A, Dhaka-1212
Phone: 88-02-9881927, Fax: 88-02-9882003 , Email: wqmsc_central_lab@yahoo.com

Lab Memo: 1089/ CC, DPHE, CL, Dhaka — Date: 17-05-2025

Physical /Chemical/ Bacteriological Analysis of Water Sample

Sample ID: CEN2025050092	Sample Receiving date: 24-04-2025
Ref. Memo No: ECIL/2025/Nill & Dated: 24-04-2025	Sample Source: Ground Water
Sent by:Dipon Biswas ,Accounts & Admin Officer , Envirocare International Ltd., Dhaka.	Dist:Chittagong, Upa:Mirsharai
Care Taker: Envirocare International Ltd.(Sample : GW-1)	Union:, Vill.:
Sample Collection date: 23-04-2025	Date of Testing: 24/04/2025-17/05/2025

LABORATORY TEST RESULTS:

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Ammonia	0.5	0.14	mg/L	UVS	0.10
2	Arsenic (As)	0.05	0.006	mg/L	AAS	0.001
3	Iron (Fe)	0.3-1	0.35	mg/L	AAS	0.05
4	Manganese (Mn)	0.1	0.03	mg/L	AAS	0.03
5	Nitrogen (Nitrate)	10.0	1.3	mg/L	UVS	0.10
6	pH	6.5-8.5	7.3	-	pH Meter	-
7	Total Dissolved Solid (TDS)	1000	172	mg/L	Multimeter	-

Comments: Sample was collected & supplied by client.
N.B: AAS - Atomic Absorption Spectrophotometer, UVS - UV-Visible Spectrophotometer, MFM-Membrane Filtration Method, CRM-Closed Reflex Methods, LOQ - Limit of Quantitation.

Test Performed by:	Signature	Countersigned/Approved by:	Signature
1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer	17.05.2025	1.) Name: Mita Sarker Designation: Senior Chemist	
2.) Name: Taslima Akhter Designation: Sample Analyzer	17.05.2025	2.) Name: Md. Biplab Hossain Designation: Chief Chemist	17/05/2025 Md. Biplab Hossain Chief Chemist Department of Public Health Engineering Central Laboratory Mohakhali, Dhaka

Government of the People's Republic of Bangladesh
Office of the Chief Chemist
Department of Public Health Engineering
Central Lab, 38-39, Mohakhali C/A, Dhaka-1212
Phone: 88-02-9881927, Fax: 88-02-9882003, Email: wqmsc_central_lab@yahoo.com

Lab Memo: 1089/ CC, DPHE, CL, Dhaka

Date: 17-05-2025

Physical /Chemical/ Bacteriological Analysis of Water Sample

Sample ID: CEN2025050091	Sample Receiving date: 24-04-2025
Ref. Memo No: ECIL/2025/Nill & Dated: 24-04-2025	Sample Source: Surface Water
Sent by:Dipon Biswas ,Accounts & Admin Officer , Envirocare International Ltd., Dhaka.	Dist:Chittagong, Upa:Mirsharai
Care Taker: Envirocare International Ltd.(Sample : SW-1)	Union:, Vill.:
Sample Collection date: 23-04-2025	Date of Testing: 24/04/2025-17/05/2025

LABORATORY TEST RESULTS:

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Ammonia	0.5	0.24	mg/L	UVS	0.10
2	Arsenic (As)	0.05	0.005	mg/L	AAS	0.001
3	Chemical Oxygen Demand (COD)	4.0	48	mg/L	CRM	4.0
4	Dissolved Oxygen (DO)	6.0	4.90	mg/L	Multimeter	-
5	Iron (Fe)	0.3-1	0.85	mg/L	AAS	0.05
6	Manganese (Mn)	0.1	0.26	mg/L	AAS	0.03
7	Nitrogen (Nitrate)	10.0	1.7	mg/L	UVS	0.10
8	pH	6.5-8.5	7.2	-	pH Meter	-
9	Total Dissolved Solid (TDS)	1000	200	mg/L	Multimeter	-
10	Total Suspended Solid (TSS)	10	5	mg/L	Gravimetric Method	-
11	Turbidity	10	28.6	NTU	Turbidity Meter	-

Comments: Sample was collected & supplied by client.
N.B: AAS - Atomic Absorption Spectrophotometer, UVS - UV-Visible Spectrophotometer, MFM-Membrane Filtration Method, CRM-Closed Reflex Methods, LOQ - Limit of Quantitation.

Test Performed by:	Signature	Countersigned/Approved by:	Signature
1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer	Alam 17.05.2025	1.) Name: Mita Sarker Designation: Senior Chemist	17/05/2025
2.) Name: Taslima Akhter Designation: Sample Analyzer	17.05.2025	2.) Name: Md. Biplab Hossain Designation: Chief Chemist	Md. Biplab Hossain Chief Chemist Department of Public Health Engineering Central Laboratory Mohakhali, Dhaka

Government of the People's Republic of Bangladesh
Office of the Chief Chemist
Department of Public Health Engineering
Central Lab, 38-39, Mohakhali C/A, Dhaka-1212
Phone: 88-02-9881927, Fax: 88-02-9882003 , Email: wqmsc_central_lab@yahoo.com

Lab Memo: 1090/ CC, DPHE, CL, Dhaka

Date: 17-05-2025

Physical /Chemical/ Bacteriological Analysis of Water Sample

Sample ID: CEN2025050094	Sample Receiving date: 29-04-2025
Ref. Memo No: ECIL/2025/Nill & Dated: 28-04-2025	Sample Source: Ground Water
Sent by:Dipon Biswas ,Accounts & Admin Officer , Envirocare International Ltd., Dhaka.	Dist:Tangail, Upa:
Care Taker: Envirocare International Ltd.(Sample : GW-1)	Union:, Vill.:Kumudini
Sample Collection date: 27-04-2025	Date of Testing: 29/04/2025-17/05/2025

LABORATORY TEST RESULTS:

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Ammonia	0.5	0.14	mg/L	UVS	0.10
2	Arsenic (As)	0.05	0.006	mg/L	AAS	0.001
3	Iron (Fe)	0.3-1	0.07	mg/L	AAS	0.05
4	Manganese (Mn)	0.1	0.17	mg/L	AAS	0.03
5	Nitrogen (Nitrate)	10.0	1.1	mg/L	UVS	0.10
6	pH	6.5-8.5	7.7	-	pH Meter	-
7	Total Dissolved Solid (TDS)	1000	220	mg/L	Multimeter	-

Comments: Sample was collected & supplied by client.
N.B: AAS - Atomic Absorption Spectrophotometer, UVS - UV-Visible Spectrophotometer, MFM-Membrane Filtration Method, CRM-Closed Reflex Methods, LOQ - Limit of Quantitation.

Test Performed by: Signature

1.) Name: Md. Saiful Alam Khosru
Designation: Sample Analyzer
17.05.2025

2.) Name: Taslima Akhter
Designation: Sample Analyzer
17.05.2025

Countersigned/Approved by: Signature

1.) Name: Mita Sarker
Designation: Senior Chemist
17/05/2025

2.) Name: Md. Biplab Hossain
Designation: Chief Chemist
Md. Biplab Hossain
Chief Chemist
Department of Public Health Engineering
Central Laboratory Mohakhali, Dhaka

Government of the People's Republic of Bangladesh
Office of the Chief Chemist
Department of Public Health Engineering
Central Lab, 38-39, Mohakhali C/A, Dhaka-1212
Phone: 88-02-9881927, Fax: 88-02-9882003 , Email: wqmsc_central_lab@yahoo.com

Lab Memo: 1090/ CC, DPHE, CL, Dhaka

Date: 17-05-2025

Physical /Chemical/ Bacteriological Analysis of Water Sample

Sample ID: CEN2025050093	Sample Receiving date: 29-04-2025
Ref. Memo No: ECIL/2025/Nill & Dated: 28-04-2025	Sample Source: Surface Water
Sent by:Dipon Biswas ,Accounts & Admin Officer , Envirocare International Ltd., Dhaka.	Dist:Tangail, Upa:
Care Taker: Envirocare International Ltd.(Sample : SW-1)	Union:, Vill.:Kumudini
Sample Collection date: 27-04-2025	Date of Testing: 29/04/2025-17/05/2025

LABORATORY TEST RESULTS:

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Ammonia	0.5	0.24	mg/L	UVS	0.10
2	Arsenic (As)	0.05	0.018	mg/L	AAS	0.001
3	Chemical Oxygen Demand (COD)	4.0	4	mg/L	CRM	4.0
4	Dissolved Oxygen (DO)	6.0	6.10	mg/L	Multimeter	-
5	Iron (Fe)	0.3-1	0.05	mg/L	AAS	0.05
6	Manganese (Mn)	0.1	0.03	mg/L	AAS	0.03
7	Nitrogen (Nitrate)	10.0	1.3	mg/L	UVS	0.10
8	pH	6.5-8.5	7.8	-	pH Meter	-
9	Total Dissolved Solid (TDS)	1000	230	mg/L	Multimeter	-
10	Total Suspended Solid (TSS)	10	5	mg/L	Gravimetric Method	-
11	Turbidity	10	42	NTU	Turbidity Meter	-

Comments: Sample was collected & supplied by client.
N.B: AAS - Atomic Absorption Spectrophotometer, UVS - UV-Visible Spectrophotometer, MFM-Membrane Filtration Method, CRM-Closed Reflex Methods, LOQ - Limit of Quantitation.

Test Performed by:	Signature	Countersigned/Approved by:	Signature
1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer	Afam 17.05.2025	1.) Name: Mita Sarker Designation: Senior Chemist	17/05/2025
2.) Name: Taslima Akhter Designation: Sample Analyzer	17.05.2025	2.) Name: Md. Biplab Hossain Designation: Chief Chemist	Md. Biplab Hossain Chief Chemist Department of Public Health Engineering Central Laboratory Mohakhali, Dhaka