

Environmental Monitoring Report

Project No. 42466-017
Semi-annual Report (July-December 2021)
January 2022

Bangladesh: Skills for Employment Investment Program - Tranche 3

Prepared by Skills for Employment Investment Program (SEIP) under Finance Division, Ministry of Finance, Government of Bangladesh for the Asian Development Bank.

This semi-annual environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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Project No. 42466-017
December 2021

ADB Loan Number 3839-BAN (COL): Skills for Employment Investment Program (SEIP) Tranche 3

Prepared by Skills Development Coordination and Monitoring Unit (SDCMU), Skills for
Employment Investment Program (SEIP) under Finance Division, Ministry of Finance and
The Asian Development Bank

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Abbreviation

BACI	: Bangladesh Association of Construction Industry
BITAC	: Bangladesh Industrial Technical Assistance Center
BMET	: Bureau of Manpower, Employment and Training
CBLM	: Competency-Based Learning Material
CS	: Competency Standard
EARF	: Environmental Assessment and Review Framework
EMP	: Environmental Management Plan
IEE	: Initial Environmental Examination
KOICA	: Korea International Cooperation Agency
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
RF	: Resettlement Framework
SWAP	: Sector Wide Approach
SEIP	: Skills for Employment Investment Program
SECPF	: Small Ethnic Communities Planning Framework
SECPP	: Small Ethnic Communities Peoples Plan
SPS	: Safeguard Policy Statement
TMS	: Training Management System
TTC	: Technical Training Center
TVET	: Technical and Vocational Education and Training

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Executive Summary

Skills for Employment investment program (SEIP) under Trench 3, supports the construction of two training facilities to the Bangladesh Industrial Technical Assistance Centre (BITAC) at Tejgaon, Dhaka and Bangladesh Association of Construction Industry (BACI) at Uttara, Dhaka. In June 2019, the initial environmental examination (IEE) report and environmental management plan (EMP) were completed and disclosed at ADB website

The project under Tranche-3, has been categorized as “B” considering the possible environmental point of view under the ADB’s SPS and expected to have limited and minimum adverse environmental impact. According to ECR-1997 of Bangladesh, the construction of BITAC and BACI is listed in schedule-1 and categorized as Orange B. In line with the IEE, there is no threat of hampering resettlement of small ethnic community people, or agricultural land due to project.

The semi-annual report includes the state of project implementation, as well as data on compliance with government and ADB environmental legislation and policies, environmental loan covenants, and the status of different components of EMPs. The environmental performance indicators for the projected civil works under tranche 3 have been summarized and provided in this report.

In this reporting period (July to December 2021), construction at both sites have been continued and following respective EMP and Occupational Health Safety Guidelines. Orientation on Pandemic COVID-19 has been provided to the Construction workers, site engineers and staffs of both BITAC and BACI sites.

The contractors produced a detailed COVID-19 pandemic strategy, as well as a health and safety plan for each location. In the building phase, SDCMU is ensuring that the COVID-19 plans are being followed by the contractors.

SEIP, BITAC, and Korea University of Technology and Education (KOREATECH) have inked an agreement to establish BITAC as a contemporary training facility. The preparatory works for developing course content, TOT and HR (managers) training is under process.

In this reporting period, several site samples have been collected by DSCCL Company and tested in DPHE lab & DSCCL labs. The parameters were air, water and noise at different places of both BITAC and BACI sites. All the results of test samples were found satisfactory level and the values lie within the range of standards of Department of Environment (DoE), Bangladesh.

1 Introduction

1. The Skills for Employment Investment Program (SEIP) will assist the Government of Bangladesh in implementing the National Skills Development Policy's skills development reforms (NSDP). It would encourage the private sector to deliver market-responsive skill development while also strengthening public training institutions to guarantee that skill development is responsive to identified industry skill demands and growing labor market trends. Large-scale private sector participation and public-private partnerships are crucial in closing the skills gap and allowing Bangladesh to transition from its present "low-skill, low-wage equilibrium" to a higher-skill, higher-wage equilibrium. The investment program will assist the government to scale up skilling of new entrants and upskilling of existing workers to increase their productivity and income levels, which in turn will contribute to accelerating economic growth in priority sectors. The investment initiative complements the government's current efforts to boost the skills development ecosystem by creating a uniform financing mechanism and improving overall coordination of the fragmented system.

2 Impact and Outcome

2. Increased income and productivity for working people aged 15 and above, in line with the NSDP, will be the result. As a result, there will be more jobs and skills for both men and women in critical areas.

3. The outcome for Tranche 1 will be to increased inclusive access to skills training in priority sectors, Tranche 2 will be increased inclusive access to basic, mid-level, and managerial skills training in priority sectors and Tranche 3 will be increased inclusive access to basic, mid-level, and advanced skills training in priority sectors.

3 Outputs

4. The SEIP will be delivered over three overlapping interrelated tranches and will include four outputs:

- (i) Market responsive inclusive skills training delivered;
- (ii) Quality assurance system strengthened
- (iii) Institutions strengthened; and
- (iv) Monitoring and management for skills development strengthened.

4 Scope of the Project

5. Tranche 3 is supporting the renovation and transformation of Bangladesh Industrial Technical Assistant Center (BITAC) in Tejgaon, Dhaka, which was originally established under the Ministry of Industries for the development of light engineering industry through training programs and consultancy services for small and medium businesses. BITAC training facilities will be renovated to offer higher-end job-ready training courses in precision engineering, mechatronics, and electrical technology. The renovated BITAC will also focus on R&D and innovation for the enhancement of industry performance and prototype product development, in close collaboration with industries. The new BITAC building would set up an Industry Cooperation Center to support the upskilling of industry personnel and to foster close collaborations with the industry. In addition, Tranche 3 is also supporting the construction of training facilities for Bangladesh Association of Construction Industry (BACI) in Uttara, Dhaka to expand the training capacity in the construction sector.

6 Project Location:

8. The Construction of BACI Training Center Under Bangladesh Association of Construction Industry (BACI) is located in sector 16, Uttara under Dhaka District (Beside

the E-passport Office) and, the Construction of BITAC Training Center under Bangladesh Industrial Technical Assistant Center (BITAC) is located in Tejgaon Industrial Area, Dhaka. Figure 1 shows the locations for both of the construction sites under Trench-3.

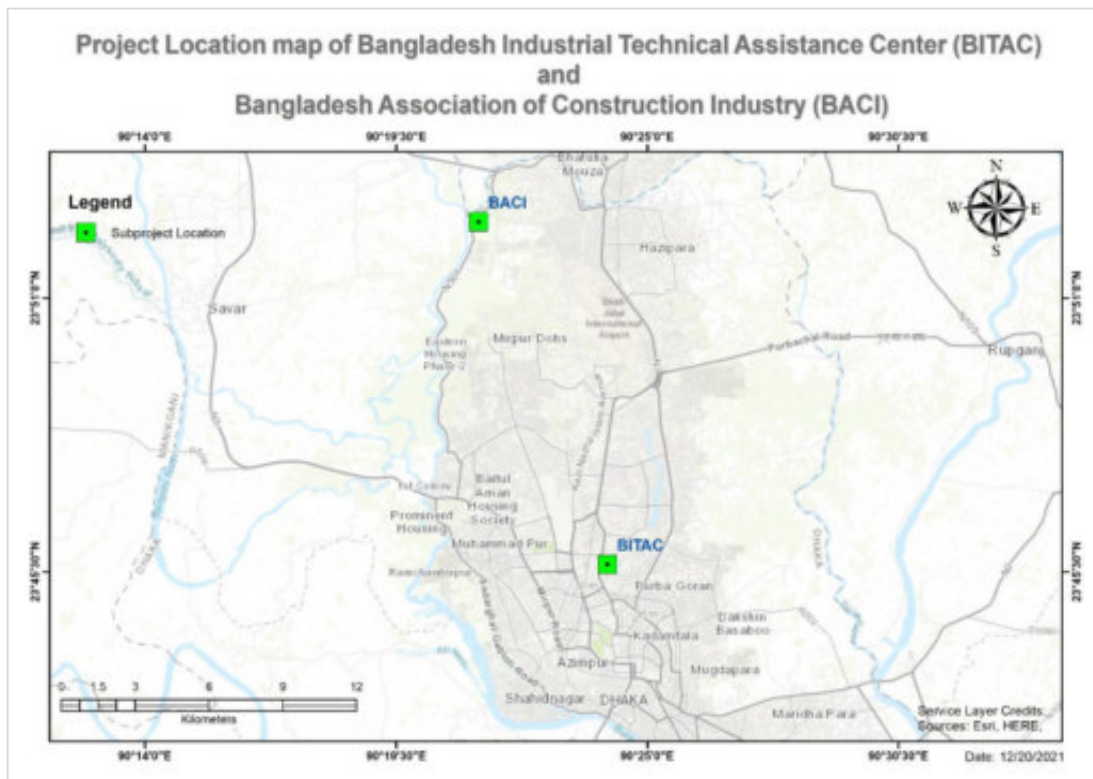



Figure 1: Project Location Map

Environmental Safeguards Category

 The SEIP Project under Tranche 3 is supporting for the renovation of BITAC training facilities and the new construction of BACI training facilities for construction skills training. The project has been categorized as B for environment under the ADB's Safeguards Policy Statement, 2009 (SPS, 20009). It is expected to have limited and minimum adverse environmental impacts under this project activity. However, the Initial environment examination (IEE) have been carried out for both of the sites named BITAC and BACI facilities, and environment management plans have been prepared in accordance with the environmental assessment review framework (EARF). Any potential environment impacts during construction are considered manageable as outlined in the environment management plan (EMP).

Physical Progress of Civil Works


 The new BITAC building is under construction in the BITAC premises at Tejgaon, Dhaka and a the new training facilities for BACI is at sector 16, Uttara, Dhaka. The list of expected civil works contracts and estimated time for advertisements is below:

Table 1: Civil works under Tranche 3 of SEIP.

Name of Work	Amount	Physical progress Status	Financial progress	Amount
WD-01: BITAC Training center (11-Storey building & Basement) Start: 6/01/2021 Finish date: 5/01/2023	\$ 3.00 million	<ul style="list-style-type: none"> 40% of total work completed 100% Foundation work completed 100% Basement floor civil works 100% GF & 1st floor works 2nd floor -60% (Ongoing) 	24 %	Installed CCTV for keeping the work on track. Contractor Increased workforce to meet the timeline.
WD-02: BACI Skill development Institute-T3 (04 Storey building & 02 Basement) Start: 30/11/2020 Finish date: 30/11/2022	\$7.50 million	<ul style="list-style-type: none"> 10% of total work completed 100% of Pilling works completed Preparatory works for casting foundation is ongoing 	10%	Contractor has been requested to increases workforce and improve working methodology to meet the dead line.

4 Scope of the Reporting Period

4. The scope of this environmental monitoring report is specific to the SEIP project for the construction of BITAC and BACI training center. This report has covered the evaluation of effect of the mitigation measures described in the environmental management plan for the constructions and renovation of training facilities by the Bangladesh Industrial Technical Assistance Centre (BITAC) at Tejgaon, Dhaka and Bangladesh Association of Construction Industry (BACI) at Uttara, Dhaka respectively. The reporting month of this semi-annual environmental monitoring report is from July to December 2021.

5 Purpose of the Monitoring Report

10. The Semi-annual Environmental Monitoring Report (EMR) presents the up to date progress 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, 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 tranche 3 has been summarized and analyzed to measure the monitoring parameters. This semi-annual environmental monitoring report consists of main parts: an Introduction section, Environmental monitoring, Environmental management and conclusion.

10 Methodology

11. The following environmental safeguard monitoring report is prepared during the construction phases of the referenced project to compare the environmental condition against the baseline condition established prior to commencement of project implementation. The mitigation action is being implement and also the effectiveness of the mitigation measures in protecting environment from adverse impacts of construction activities. Compliance monitoring which check whether prescribed action has been carried out, usually by visual observation, capture photographs and by use of checklist as per EMP.

12. During the monitoring period of July to December 2021, general meetings were conducted with relevant project personnel of the project influenced area to create a sense of environmental and safety awareness within all construction site.

13. The following scopes have been considered during the preparation of this semi-annual report to prepare the report-

- IEE Report including EMP tables have been reviewed to get proper idea about the EMP.
- Frequent site visit and monitoring is conducted by the consultant on both BACI and BITAC site in order to monitor the environmental safeguard of the project area.
- Photographs have been taken from the site during construction activities
- Environmental monitoring checklist has been fulfilled by consultant to monitor the environmental safeguard.

11 Package and Sub-project wise Progress Status

14. SEIP Tranche 3 has been started from January 2020 consisting of four outputs. The detail of the activities along with progress are provided below:

11.1 Output-1: Market responsive inclusive skills training delivered

15. The SEIP aims to improve job skills of new entrants and the existing workforce in priority economic sectors identified by the government, in order to ensure required skills are available according to industry standards. The priority sectors targeted by SEIP under Tranche 1 are:

- (i) readymade garment and textile,
- (ii) construction,
- (iii) information technology (IT),
- (iv) light engineering and manufacturing,
- (v) leather and footwear, and
- (vi) shipbuilding.

Three additional sectors are supported in Tranche 2:

- (i) agro-processing,
- (ii) tourism and hospitality, and
- (iii) nursing and caregiving.

16. For Tranche 3, the renewable energy sector has been chosen for skills training which is under process. The process of developing and approval of business plans for the implementing partners are ongoing and most of the Business plans have been finalized.

17. As of 31 December 2021, 22,688 trainee have been enrolled out of whom 8,471 are women i.e. 33.34%. In addition, 10,627 trainees have been certified out of whom 7,199 have been placed in job i.e., 67.74% under Tranche 3.

11.2 Output-2: Strengthening of Quality Assurance System

18. Tranche 3 will continue to support training of trainers, industry assessors and principals/managers from public and private training providers. The formation of master trainers will continue through a series of training programs, and master trainers will be engaged to deliver the training of trainers (TOT) programs. To further upskill the knowledge and domain skills of trainers, especially for advanced skills programs, trade-specific intense overseas training programs will be implemented for selected trade areas. So far 50 CS and 15 competency-based learning materials have been developed under Tranche 3.

19. MoU has been signed among SEIP, BITAC & Korea University of Technology and Education (KOREATECH) for developing BITAC as modern training center. The detail proposal development of Course curriculum, TOT & HR (Managers) development plan is ongoing.

11.3 Output-3: Strengthening of Institutions

- The Detail Engineering design and Drawings for the BITAC training center with bidding documents also was finalized with prior reviewed by ADB. The bid was floated on 28th June 2020 and the Contract was made on 24 December 2020. The construction work commenced on 6th January 2021 and expecting to finish by January 5, 2023.
- For BACI package, contract was made on 16 November 2020. The construction work commenced on 30 November 2020 and expecting to finish by November 2022.

11.4 Output-4: Monitoring and management for skills development strengthened

20. Tranche 3 will support SDCMU to roll out an online financial management system (FinMan) and to implement comprehensive financial management capacity building programs that include (i) orientation workshops on FM manual and other financial management requirements under SEIP training; (ii) follow-up capacity building at the field level to provide hands-on support to financial management personnel; and (iii) continuous follow-up and support to carry out all FM requirements under SEIP. The implementation of the above activities is in under process.

12 Document Preparation for IEE/EIA

21. The IEE for the project of Skills for Employment Investment Program Tranche 3 for Construction of two new training centres were prepared and disclosed in June 2019. The SEIP tranche-3 project has been classified as Category “B” as per the ADB Environmental Policy as stated in the SPS-2009.

13 Status on Relevant GoB Permits

22. The Status for taking initiatives for approval is as below and the copies are attached as annex-2.

Table 2: List of NOCs from different agencies:

SL	Permits	BITAC Site	BACI Site
1.	NOC from Civil aviation Authority	Received	Received
2.	NOC from Fire Service & Civil Defense Authority	Received	Received
3.	NOC from DoE	Submitted for approval	Received
4.	NOC from RAJUK	Received	Received

14 Summary of qualitative and quantitative monitoring data.

23. The construction works of BITAC and BACI training centres have been started and works are going on.

14.1 BITAC:

24. Two labour sheds, toilets for male and female have been constructed. The water supply at toilet is in adequate and suggested to provide pipe water for toilet purpose.

25. The BITAC construction site is located inside the BITAC premises in Tejgaon industrial area. The project area is bounded by thick tin barrier. Currently the construction site is being prepared for heavy construction activity (Roof Casting). Regular water spraying is done at the site in order to prevent any dust pollution.

14.1.1 NOISE LEVEL

~~26.~~ Being present in an Industrial area the optimum sound level for the construction site must maintain the limit of 70dB during day time and 60 dB during night time (According to Noise control rules, 2006, DoE). Noise barrier is set in order to abate dissemination of Noise to surrounding receptors. Instruction has been provided to maintain heavy vehicle and machineries with oil & grease to reduce noise.

14.1.2 DRINKING WATER SOURCE

~~27.~~ Drinking water source is a crucial component in an any construction site which is responsible for workers health. The BITAC construction site collects jar water form WASA as a groundwater source. Beside the WASA provides water for construction works and bathing & hygiene maintenance of the workers.

14.1.3 WASTE MANAGEMENT

~~28.~~ There were a several number of workers and engineers who are active the construction area. Generally, two types of waste generate form a construction site. construction waste and general waste. Construction waste contains Broken Bricks. Broken Rebar, Broken woods, wires, and sometimes cement-concretes. General waste contains food waste and organic waste generated by workers. Several dustbins are provided inside the subproject boundary in order to collect waste. The accumulated waste is later collected by city corporation vans and dumped in the waste dumping area defined by city corporation authority.

14.1.4 SANITATION AND HYGIENE

~~29.~~ Several sanitation facilities are developed in the subproject site both for labors and engineers for maintain proper sanitation in the area. Available water supply and handwashing facilities are also added to maintain hygiene. Regular cleaning and maintenance are done through responsible authority to keep it clean and Germ free.

14.1.5 OCCUPATIONAL HEALTH AND SAFETY

~~30.~~ Personal protective equipment's (PPE) is a mandatory constraints for workers in a construction site. All the labors are provided with proper personal protective equipment in order to maintain occupational health safety and to avoid any accident. Available safety signs with different types of safety tips are installed inside the project boundary for labors and workers.

~~31.~~ Firefighting equipment's including CO2 cylinders, Bucket, sands and water pump with long pipes are always ready in the site to minimize any kind of fire hazards.

~~32.~~ First Aid box and primary treatment facilities are available in the BITAC site for any short of emergency.

14.1.6 DOCUMENTATION INCLUDING GRIEVANCE REDRESS MECHANISM (GRM) SETUP:

~~33.~~ The site office always keeps record of all the labors attendance, payment schedule, working hours, EMP documents, funding agencies signboard, project layout documents. And other shorts of documents. The Grievance Redress Mechanism (GRM) has been established in order to record and solve the complaints from labors and nearby community for better output of the project.

14.1.7 COVID-19 PRECAUTIONS

~~34.~~ In order to protect workers form COVID-19 pandemic situation, musk and hand sanitizer is provided in the site for workers and labors for further abatement of COVID-19 virus. The workers keep safe distance between themselves when work in group.



Figure 2: COVID-19 Precaution measures taken in BITAC site

14.1.8 MOSQUITO CONTROL

35. Previous years data shows that November is a month when the Dengue fever becomes common due to the ADIS mosquitos. Smoking machine is used to control mosquito breeding in the project site under city corporation initiatives.

36. PPE, first aid boxes, soap and water are available at site. Hand sanitizer are available at site office. Infrared thermo meter is also available at BITAC site. An Environmental Officer is working at site appointed by the Contractor who is maintaining all the environmental issues as mentioned in the EMP. From SEIP side, a Construction Supervision Engineer is ensuring the implementation of EMP with assistances from Environmental Expert and Civil Engineer. A safety committee headed by the BITAC authority has been formed and look after the safety issue at site level.

14.2 BACI:

14.2.1 AIR AND DUST CONDITION

37. The BACI construction site is located at sector 16, Uttara, Dhaka and currently no major construction activity is taking place that may contribute to dust pollution. Beside the site is covered with small grass and low vegetation cover so dust pollution level is very low here. Air sample has been taken from BACI site to analyze the actual level of current air condition. However, available water spraying tools are present in the construction site which will be in effect by the contractor based on their activity. It is also suggested to spray water at least twice a day during ongoing construction activity in order to control dust pollution in the site.

14.2.2 NOISE LEVEL

38. Being present in a residential area the optimum sound level for the construction site must maintain the limit of 55dB during day time and 45 dB during night time. Currently there is no sensitive noise receptors except the nearby E-passport office of Uttara, Dhaka. However, the contractor is suggested to provide a noise barrier around the project

boundary and to maintain heavy vehicle properly in order to abate noise in the construction site. The canopy has been used to control the noise at site.

14.2.3 DRINKING WATER SOURCE

39. Drinking water source is a crucial component in an any construction site which is responsible for workers health. The BACI site contains a Deep submersible pump which is the main source of drinking water for workers and labors.

14.2.4 WASTE MANAGEMENT

40. There were few number of workers and engineers in the area in temporary base camps who are influencing the local environment. Generally, two types of waste generate form a construction site. construction waste and general waste.

41. Dustbins are established in the BACI construction site for collection of waste. Separate bins are to be followed to collected separate waste. Colored bins are established for collection of different types of waste

14.2.5 SANITATION AND HYGIENE

42. Several sanitation facilities are developed in the subproject site both for labors and engineers for maintain proper sanitation in the area. Available water supply and handwashing facilities are also added to maintain hygiene. Regular cleaning and maintenance are done through responsible authority.



Figure 3 : Sanitation and hygiene status in the BACI site

14.2.6 OCCUPATIONAL HEALTH AND SAFETY

43. Personal protective equipment's are provided for all of the labors to maintain safety. And to avoid any kind of accident. Signboards with different types of safety tips are installed inside the sub-project boundary. Firefighting equipment's including CO2 cylinders, Bucket, sands and water pump with long pipes are always ready in the site to minimize any kind of fire hazards. A safety committee headed by the BACI authority has been formed and look after the safety issue at site level

14.2.7 DOCUMENTATION INCLUDING GRIEVANCE REDRESS MECHANISM (GRM) SETUP:

44. The site office regularly keep record of all the labors attendance, payment schedule, working hours, EMP documents, funding agencies signboard, project layout documents, and other shorts of documents. The Contractor has been set up a grievance redress mechanism in order to record and solve the complaints from labors and nearby community.

14.2.8 COVID-19 PRECAUTIONS

45. Mask, sanitizer and hand gloves are provided to the workers in order to minimize spread of COVID-19 pandemic. Beside every one of the working site is in process to be vaccinated as soon as possible.



Figure 4: COVID-19 Precautions Measures taken in BACI site

Two labour sheds have been constructed at BACI site. Piling work is continuing. A toilet has been constructed at the north-east corner of the site. Water extracting by submergible pump and storing into the GAZI tank. The water is using for both domestic and drinking purpose. Construction materials of the shed are moderate. Labours from BACI was participated in the Occupational Health Safety and COVID-19 safety practice orientation session which was organized by SEIP.

1.13 Training and Capacity Building Activities.

14.3.1 BACI

The engineers provide regular orientation to the workers to properly maintain environmental compliance in the subproject site. Discussion meetings were conducted among environmental consultant, engineers and contractor personals present at the site. The issue discussed were health safety of the workers, waste management, environmental quality testing, Safe drinking water provisions, Maintenance of the PPE, protection of nearest surface water bodies, noise reduction and other environmental features.

The details of training and capacity building programs conducted during the reporting period of July to December 2021 is presented in the following table:

Table 3 : Training and Capacity Building Activities, BACI

Date	Name of the Training (i.e., EMP, H&S etc.)	Trainers Details	No. of Participants
22.11.2021	Occupational Health Safety, waste management, PPE and COVID-19 safety practices	Contractor, Project Manager, EHS officer, Site Engineer, Site Supervisors, & Workers of different categories	16

14.3.2 BITAC

Consultation with engineers and workers are being held for day to upgradation of a project site. The engineers and labors are regularly consult themselves in order to properly maintain environmental compliance in the project site. Besides, toolbox meeting before starting of works helps identifying possible hazards and reduce possibility of accidents. Discussion meeting was conducted among environmental consultant, engineers and contractor personals present on the BITAC site. The issue discussed were health safety of the workers, waste management, environmental quality testing, safe drinking water provisions, maintenance of the PPE, protection of nearest surface water bodies, Noise reduction and other environmental features.

Table 4 : Training and Capacity Building Activities, BITAC

Date	Name of the Training (i.e., EMP, H&S etc.)	Trainers Details	No. of Participants
25.11.2021	Occupational Health Safety, waste management, PPE and COVID-19 safety practices	Contractor, Project Manager, EHS officer, Site Engineer, Site Supervisors, & Workers of different categories	32

10 Summary of Key Issues and Remedial Actions:

Construction works has been started recently and the works are going without hampering the surrounding environment. No issues have been observed for rectification during this reporting period.

Table 4 : Registered Non-Compliance issues

Sl.	Name of activities	Type of non-compliances recorded	Date of corrective action request (CAR)	Compliance Status	Photo before Rectification	Photo after Rectification
	None					

10 Summary of accident/incident should be recorded as per following format:

Construction works has been started recently and the works are going without causing any accident or incident in this reporting period.

Table 5 : Accident/Incident Register

SI	Description	From July to December 2021
1	Fatal Accidents	Not reported
2	First Aid Cases (FAC)	A Few
3	Near Miss	Not reported
4	Tool Box meeting	Workers discuss on safety issues in the site on Regular Basis

17 Grievance Register

52. A site-specific Grievance Redress Mechanism (GRM) was designed to receive, assess, and resolve affected people's (APs) concerns, complaints, and grievances about the subproject's social and environmental performance. The GRM is aimed to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the development works. Complaints will be entry in a registrar following the below Table 7: Till now, no complain has been received from any person regarding the site and its activities.

53. A Grievance Redress Committee (GRC) is formulated for both BACI and BITAC site in order to properly maintain the GRM process. The GRC formation is provided below:

Table 6: GRC Members

Serial No	Name	Position	Profession
01	Md. Shamim Hossain	convener	Electric Engineer (SEIP)
02	Md. Mahabubuzzaman	Member	Manager (TEAL)
03	Md. Abdullah Mahmud	Member	Sub-Assistant Engineer, BITAC
04	Md. Hasan	Member	Safety Officer, TEAL

54. A GRM Committee is formulated for both BACI and BITAC site in order to properly maintain the GRM setup process. The sample committee formulation is showed in appendix 4 of this report.

Table 7 : Complaints Registered

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:							


18 Methods of Monitoring the parameters/Indicators


55. Construction works at both BITAC and BACI site is going on. The following parameters are being monitored in line with the IEE of Tranche 3 of SEIP project.


Table 8 : Environmental Monitoring Parameters & Methods

No	Environmental Issues /Parameters	Monitoring Method		
		Method	Location	Duration / Frequency
1. Pre-Construction Phase				
1.1	Tree plantation	Visual inspection	In the site	During the pre-construction period
2. Construction Phase				
2.1	Topography and Landscape Changes	Inspection	In the work site	Construction stage/ Weekly inspection
2.2	Air Quality	Monitoring is suggested in Both construction sites. (BACI site contains a very sensitive location- E- passport office)	construction site	Bi-annual monitoring
2.3	Noise Quality	Regular Monitoring	Construction site	Daily monitoring
2.4	Drinking water quality	Inspection	Labor camp & engineers' room	Bi-annual monitoring
2.5	Wastes and drainage congestion	Record of kinds and quantity of waste, and the disposal method	In the work site and Worker's camp	Daily
2.6	Disturbance to Existing Social Infrastructure and Services	Record of numbers construction vehicles	Project site	Continuous Record
2.7	Infectious Diseases such as COVID-19, HIV/AIDS	Labor health record	Related institutions	Continuous Record
2.8	Work condition (including work safety)	Record of accidents	Contractor's office	Continuous Record
2.9	Accidents	Record of accidents	Contractor's office	Continuous Record
3.0	Disturbance to Community traffic and installation of proper road signage	Records of road signage implemented, visual inspection	Along the approach road	Continuous record
3. Operation Phase				
3.1	Accidents	Record of accidents and fire	Along the road and buildings.	Continuous Record
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

Implementation Arrangements

 Project management comprises at four levels. At the highest level, the executing agency is the Finance Division headed by the Secretary under the Ministry of Finance (MOF). The project steering committee (PSC) chaired by the secretary of the Finance Division includes selected members from the Executive Committee of the NSDA, national project director, and other representatives from key ministries and institutions, with the executive project director (EPD) of SEIP as the member-secretary.

 At the second level a project implementation unit is headed by the national project director. The national project director provides policy advice, review funding, and release funds for SEIP.

 At the third level is the Skills Development Coordination and Monitoring Unit (SDCMU) headed by the EPD, which is serving as the program management unit. 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 SEIP.

At the fourth level, the Skills Development Implementation Committee (SDIC) headed by the EPD with representatives from all the partner agencies are providing 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.

In SDCMU level, DEPD (Public) is the focal person for monitoring and reporting the safeguard related components. With the assistance of Environmental Expert, Construction contractors are implementing the EMPs. In addition, the construction supervision consultant is supervising the EMPs activities in close consultation with SDCMU. The flow charts show the reporting lines' essential internal structures of key organizations

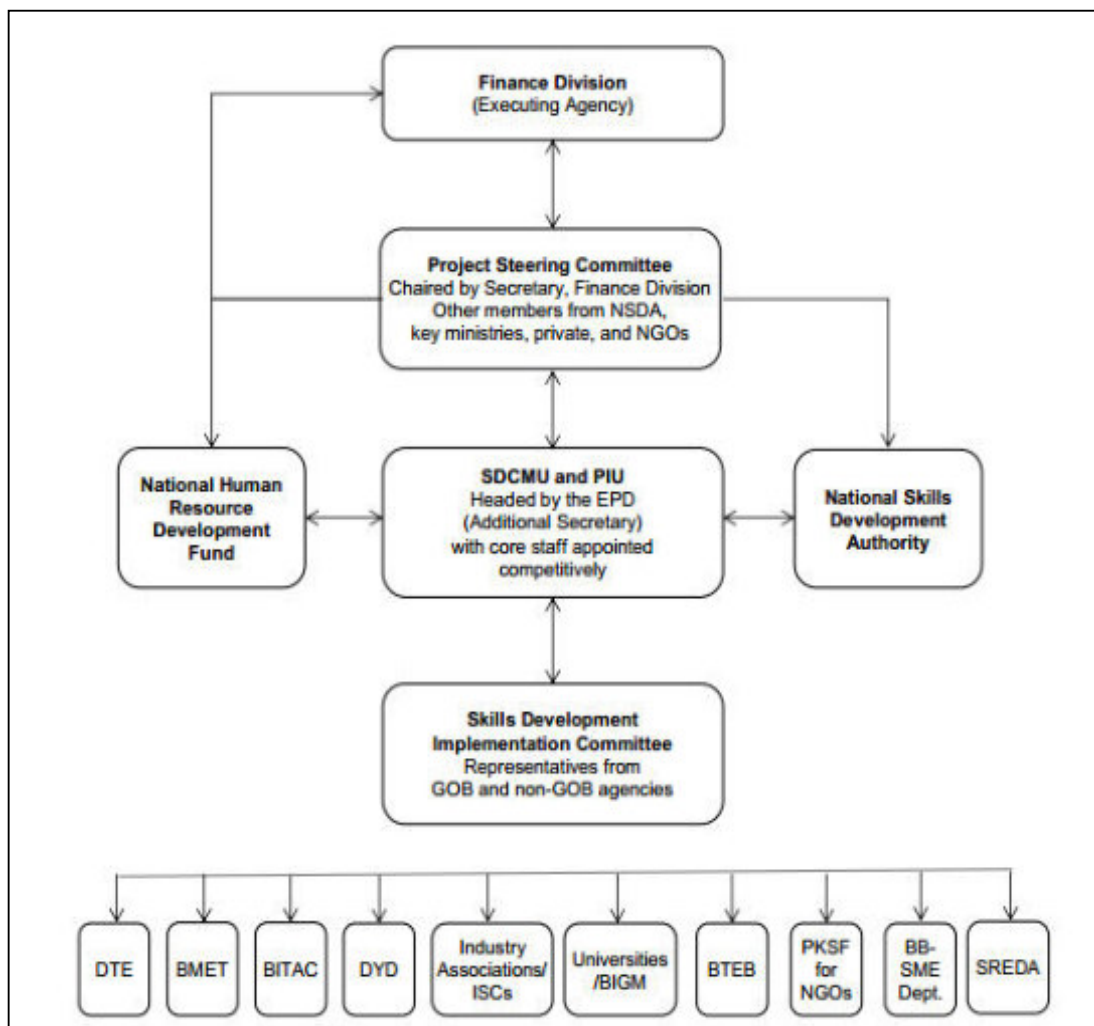


Figure 5 : Implementation Arrangements

20 Environmental Monitoring

20.1 Status IEE & SSEMP:

31. The physical work at both sites (BITAC and BACI) have been started. Site specific Environmental Management Plan (SSEMP) has been prepared and mentioned in the IEE. The environmental issues which have been identified in the IEE are under monitoring at sites as per suggested time and mitigation measures are initiated at the respective site. Environmental Officers from the Contractor side are monitoring the environmental impact issues and time to time supervised by the Environment Expert of SEIP at BITAC site. Necessary instruction are provided to the Contractor orally and by written through Environmental Site Observation Register Book at sites.

20.1.1 MONITORING PARAMETER'S STATUS (MONITORING PLAN)

32. The status of the monitoring parameters is stated below. The table has been compiled from IEE report under SEIP tranche 3.

Table 9 : Environmental Monitoring Plan for the BITAC and BACI

No	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility		Compliance Status
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision	
1. Pre-Construction Phase									
1.1	Tree plantation	Tree felling (5 matures, couple of samplings /ornamental trees) are expected at BITAC site. However, space is congested and there is no scope of replantation at the site. However, there is scope of plantation at BACI site. Tree planation at this site will improve the site's environmental significance as the site has been sand filled by Rajuk for development which was a precious wetland.	<ul style="list-style-type: none">Improvement of existing environment	Visual inspection	In the site	During the pre-construction period	Contractor	BACI, construction Supervision consultant, Environmental Expert-SEIP.	Will be complied after construction
2. Construction Phase									
2.1	Topography and Landscape Changes	Excavation along the edge of the building alignment will leave large unsafe holes.	<ul style="list-style-type: none">Restoration of changes due to construction activitiesVisual amenity	Inspection	In the work site	Construction stage/ Weekly inspection	Contractor	Construction Supervision Engineer, BITAC/BACI Environmental Expert-SEIP.	Complied.
2.2	Air Quality	<ul style="list-style-type: none">Dust resulting from construction workExhaust gas from construction machinery and vehicles used for mobilization of equipment	Evaluation of effect of the mitigation measure towards air pollution	Visual inspection is suggested since no sensitive areas nearby	In the work site	Daily	Contractor	Construction Supervision Engineer, BITAC/BACI, Environmental Expert-SEIP.	Complied. Uses ready-mix concreting and control earth cutting time
2.3	Wastes and drainage congestion	<ul style="list-style-type: none">Construction waste from construction workDomestic waste from workersHazardous waste such as dry batteries, etc.	Evaluation of effect of the mitigation measure for waste	Record of kinds and quantity of waste, and the disposal method	In the work site and Workers camp	Daily	Contractor	Construction Supervision Engineer, BITAC/BACI, Environmental Expert-SEIP.	Complied. Surface drain constructed.

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No	Environmental Issues	Significant Impact	Purpose of the Monitoring	Monitoring Method			Responsibility		Compliance Status
				Method of Collecting and Reporting Data	Location	Duration and Frequency	Implementation	Supervision	
2.4	Disturbance to Existing Social Infrastructure and Services	<ul style="list-style-type: none"> ▪ Increase in traffic Jam is expected to be low ▪ Increased road traffic may disturb the local residents ▪ Traffic jams caused by increased vehicles during construction 	Evaluation of effect of construction schedule	Record of numbers construction vehicles	Project site	Continuous Record	Contractor	Social Safeguards Expert, BITAC/BACI	Complied. Construction works at late night
2.5	Infectious Diseases such as HIV/AIDS/COVID-19	Temporary influx of migrant labor during construction may increase risk of infection	Evaluation of sanitation for labor	Labor health record	Related institutions	Twice a year	Contractor	Social Safeguards Expert, BITAC/BACI	Complied. COVID-19 compliance following daily
2.6	Work condition (including work safety)	Labor accidents	Evaluation of effect of the work safety plan	Record of accidents	Contractor's office	Continuous Record	Contractor	Social Safeguards Expert, BITAC/BACI	Complied. No accident happened
2.7	Accidents	Traffic accidents	Evaluation of effect of traffic schedule	Record of accidents	Contractor's office	Continuous Record	Contractor	Social Safeguards Expert, BITAC/BACI	Complied. No accident happened
2.8	Disturbance to Community traffic and installation of proper road signage	Traffic accidents, number of events are expected to be low	Evaluation of effect of the work safety plan, Evaluation of effect of traffic schedule	Records of road signage implemented, visual inspection	Along the approach road	Continuous record	Contractor	Environmental Expert-SEIP./social safeguards specialist, BITAC/BACI	complied
Operation Phase									
3.1	Accidents	<ul style="list-style-type: none"> ▪ Traffic accidents 	Evaluation of effect of the work safety plan	Record of accidents and fire	Along the r	Continuous Record	BACI/BITAC and all other SEIP institutes	BACI/BITAC and all other SEIP institutes	Will be complied

21 Environmental Quality Test

21.1. Environmental quality test is performed in both of the construction site 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, drinking water quality and surface water quality test are performed in the BACI and BITAC construction site in order to ensure proper environmental compliance.

The parameter tested under the subproject is listed below:

Serial No	Item	Parameter	Date of Test Performance
1.	Ambient Air Quality (AAQ)	PM ₁₀ , PM _{2.5} , SO _x , NO _x , & CO	28-12-21
2.	Ambient Noise Monitoring (NM)	DBA, 1 Hour Duration	28-12-21
3.	Drinking water (DW) / Groundwater (GW)	Temperature, pH, EC, TDS, DO, Salinity, As, FC, Fe	14-12-20; 15-11-21; 28-12-21
4.	Surface water (SW)	Temperature, pH, EC, TDS, DO, ORP, Phosphate, Nitrate, BOD, COD	28-12-21

The test results are provided in tables in the next section.

21.1 Result of Ambient Air quality

21.1.1. 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 it it maintains the standard and then take mitigation measures if needed. The air quality monitoring was performed at one subproject location each.

21.1.2. Results of the air quality monitored at the subproject locations have been shown in the following table

Table 10: Result of Ambient Air Quality Monitoring

Para-meter	Unit	AAQ_BACI	AAQ_BITAC	Bangladesh Standard**	Duration (hours)	Weather Condition
		23.875629° N 90.354927° E	23.761013° N 90.404041° E			
		BACI Construction site, (Beside E-Passport office) Uttara sector 16, Dhaka	BITAC construction area, Tejgaon Industrial Area, Dhaka			
		28/12/21 (10.00 am - 6.00 PM)	28/12/21 (10.00 am - 6.00 PM)			
PM _{2.5}	µg/m ³	60.28	63.67	65	24	Sunny
PM ₁₀	µg/m ³	113.4	133.42	150	24	
SO _x	µg/m ³	37.32	67.98	365	24	
NO _x	µg/m ³	23.71	43.2	100	Annual	
CO*	ppm	1.02	1.3	9	8	

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

36. The test result shows that concentration of all the air quality parameters for the BACI and BITAC subproject location are within the national standard set by DoE. The details test result of the site is attached in the appendix 5 of this report.

21.2 Result of Noise Level Measurement

37. Noise level for the subproject sites has been monitored during the day time only. The result of the noise level monitored along with details of the sampling location has been shown in Table 12.

Table 11: Result of Noise quality Monitoring

Location	Sample ID	GPS Location	Land Use Category	Dsyrr	Time		Noise Level (dBA) LAeq	Bangladesh Standard (DoE)
					Day			
					Start	End		
	BACI Construction site							
Inside the (BACI) Project Boundary	NM_BACI_01	23.875629° N 90.354927° E	Residential	28/12/2021	10.40 AM	11.40 AM	56.17	55.00
Beside the E-passport office premises	NM_BACI_02	23.875333° N 90.354877° E			12.00 PM	01.00 PM	57.4	
	BITAC Construction site							
Front side of BITAC Construction site, Tejgaon, Dhaka	NM_BITAC_01	23.761001° N 90.404041° E	Industrial	28/12/2021	11.35 AM	12.35 AM	68.1	75.00
Back side of BITAC Construction site, Tejgaon, Dhaka	NM_BITAC_02	23.761058° N 90.403700° E			12.40 PM	01.40 PM	63.7	
Notes: <ul style="list-style-type: none">Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)The sound level standards for the Industrial and Residential area are 75 dBA and 55 dBA respectively for day timeNoise Level is the average noise recorded over the duration of the monitoring period.								

38. The test result shows a little increase in noise level compared to the national standards in the BACI site but remained within the standards for BITAC site. The noise level exceeded in the BACI site due to some minor construction activity and workers movement in the project site.

21.3 Drinking water Quality

39. One (01) groundwater sample was collected from the sub project location each. The result of the groundwater sample with the GoB standards for potable water (ECR, 1997) is shown in Table 13.

Table 12: Drinking water Quality Test

Parameters	Unit	DW_BACI	DW_BITAC	Standard for Potable Water**	Analysis Method
		23.875352° N 90.354973° E	23.761130° N 90.404069° E		
		Inside the BACI Project Boundary, Uttara (Sector 16), Dhaka	Inside the BITAC Project Boundary, Tejgaon Industrial Area, Dhaka		
		28/12/21 11:15 AM	28/12/21 01:12 PM		
Temperature	°C	24.4	26.1	20-30	Multimeter
pH	-	6.8	6.7	6.5-8.5	Multimeter
Electrical Conductivity (EC)	µs/cm	313	131	NYS	Multimeter
Total Dissolved Solids (TDS)	mg/L	452	362	1000	Multimeter
Dissolved Oxygen (DO)	mg/L	6.1	6.2	6 or more	DO Meter
Salinity	ppm	152	76.4	<600	Multimeter
Arsenic	mg/L	0.001	0.001	0.05	AAS
Faecal Coliform	N/100ml	0	0	0	MFM
Iron	mg/L	0.48	0.67	0.3-1	AAS

**Standards for Drinking Water is followed by Environment Conservation Rules (ECR)' 97;

70. The test result shows that, all the water quality parameters measured in the subproject site is within the national standard set for Bangladesh. The details result description with analysis methods is provided in appendix 5 of this report.


21.4 Surface Water Quality Test (BACI Site Only)

71. One (01) Surface water sample was collected from the BACI subproject location. The result of the surface water sample with the GoB standards for potable water (ECR, 1997) is shown in Table 14.

Table 13: Test result of surface water quality

Parameters	Unit	SW_BACI	Standards for Inland Surface Water** (best fishing practice)	Analysis Method
		23.873409° N 90.352194° E		
		Turag River, Beside the BACI Project site, Uttara, dhaka		
		28/12/21 01:30 PM		
Temperature	°C	24.23	NYS	Multimeter
pH	-	7.6	6.5-8.5	Multimeter
Electrical Conductivity (EC)	µs/cm	245	NYS	Multimeter
Total Dissolved Solids (TDS)	mg/L	198	NYS	Multimeter
Dissolved Oxygen (DO)	mg/L	5.1	5 or more	DO Meter
Oxygen Reduction Potential (ORP)	mV	-123.8	NYS	Multimeter

**Standards for Inland Surface Water is followed by Environment Conservation Rule (ECR)'97;

 The test result of surface water shows that, all the parameters of the subproject location are within the national quality standards set by DoE.

21.5 Environmental Management

21.5.1 Compliance with Environmental Mitigation and Management Plan (EMP)

Table 14 : Compliance with Environmental Mitigation and Management Plan (EMP) for BITAC

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Status of the compliance
1. Demolition Phase				
0.1	Planning of demolition It is expected that manual demolition work will take place. If demolition is not planned properly, can create nuisance with deadly hazards. Absence of proper safety cautions, debris disposal and spoils managements plan etc can create havoc local environmental and even can cause death to demolition workers. Given the BITAC hostel to be demolished is single storied, thus risk is relatively low.	Developed a decommissioning plan for the proposed site including risk assessment and management plan for debris disposal, worker safety, solid waste management plan before construction starts. This was the contractor's responsibility and was supervised by the Construction Supervision Engineer and EHO Consultant.	BITAC authority and contractor, Environmental Expert (EE)- SEIP will monitor the mitigations.	The decommissioning plan is followed properly for risk assessment, debris disposal, safety and solid waste management plan under the supervision of EHO
2. Construction Phase				
2.1A	Obtain ECC from DoE;	Submitted for ECC to DoE	BITAC	The Requirements for ECC is been submitted to DoE.
2.1	Top soil loss followed by soil erosion <ul style="list-style-type: none"> Significant excavation, cut and fill is expected. 11 story building will also need concrete mixing, although the extent of time may not exceed couple of weeks. The proposed sites are on relatively flat land. BITAC site is on enclosed built-up area. The impacts are negative but short/medium term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> Utilizing readily available sources of materials. If contractor procuring materials from existing burrow pits and quarries, causing less cut and fill that leads to top soil loss. Burrow areas and quarries are complying with environmental requirements, as applicable. 	BITAC authority, CSC, EO and contractor, EE-SEIP will monitor the mitigations.	soil erosion is avoided in the site through proper management plan

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Status of the compliance
2.2	Noise Impacts <ul style="list-style-type: none"> - Construction noises may hamper every day educational activities of the students and teachers at BITAC site - Temporary increase in noise level and vibrations may be caused by excavation equipment, and the transportation of equipment, materials, and people. - Noise Impact on construction workers - The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> • Contractor fixed signboards in the construction areas with warning signs and texts that work is ongoing in the noise hazard areas. Workers in a posted noise hazard area are suggested to use hearing protection devices. • Utilizing comparatively better quality vehicles and machineries to limit noise and exhaust emissions, and ensuring that these are maintained to manufacturers' specifications at all times. • All vehicles and equipment are using in construction site not fully fitted with exhaust silencers. Using generators which is making comparatively lower sound and smoke. • To reduce noise pollution, the contractor is using mortar from ready mix plant. 	BITAC authority, CSC, EO and contractor, Env. Expert (EE)-SEIP is monitoring mitigation measures.	Noise barrier is installed, machinery is maintained with oil and grease to reduce noise from the source.
2.3	Water Pollution Excavation, run-off from stockpiled materials, and chemical contamination from fuels and lubricants may result to silt-laden runoff during rainfall, which may cause siltation and reduction in the quality of adjacent bodies of water, especially at BACI site	<ul style="list-style-type: none"> • BITAC site is well drained. The Contractor of the Project is carrying muddy by special made dump truck and carrying to the outside the main city which is using for filling low lying areas. • Following the general Waste Management Plan 	BITAC authority, CSC, EO and contractor, EE- SEIP is monitoring mitigation measures.	Construction waste and other solid waste is managed properly, so that I cannot mix with any waterbody
2.5	Air Quality: <ul style="list-style-type: none"> • Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants (such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites. • The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> • The proposed site at BITAC is within busy campus. Therefore, air pollution and public disturbance is expected from construction works and construction vehicles. Provide dust-proof measures like construction barrier at concrete mixing station, or mix concrete inside building to effectively control dust pollution. • Water in due time the construction site on non-rainy days, including the road section in construction and major transportation road. • Watering frequency are determining by the site Supervision Engineer according to the site requirements. 	BITAC authority, CSC, EO, Contractor, EE- SEIP is monitoring mitigation measures.	Regular water spray was done, materials were kept covered

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Status of the compliance
2.6	Community Health and Safety: <ul style="list-style-type: none"> Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; Construction works will impede the access of residents and businesses in limited cases. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> Contractor's activities and movement of staff are restricted to designated risky construction areas. Use small mechanical excavators to attain faster excavation progress. For rock and concrete breaking, use non-explosive blasting chemicals, silent rock cracking chemicals, and concrete breaking chemicals. Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. Create traffic regulation and diversion zones during construction work. The proposed site is on the main road, and it is expected that heavy vehicle movements can cause traffic nuisance. Therefore, traffic regulation and diversion will be important to avoid traffic nuisance. A generic Traffic Management Plan (TMP) is attached with this IEE. 	BITAC authority, CSC, EO, Contractor, EE-SEIP is monitoring mitigation measures.	Compliances and restrictions have been ensured in the site through GRM
2.7	Waste generation <ul style="list-style-type: none"> The site is expected to generate construction waste. Without proper management, this will pollute soil, water and air and spread public nuisance 	<ul style="list-style-type: none"> Update the 'Waste Management Plan and get approval from site supervising engineer and environmental officer. Conduct separate waste collection and promote recycling and reuse. Appropriate disposal of non-recyclable waste according to rules Hazardous waste should be treated under the related regulation 	BITAC authority, CSC, EO, Contractor, EE-SEIP is monitoring mitigation measures.	Dustbins were Made available in the Site for waste collection, then they are dumped in selected dumping place

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Status of the compliance
2.8	Worker's health and safety: <ul style="list-style-type: none"> There is invariably a safety risk when construction works such as excavation and earthmoving are conducted in populous areas. Workers need to be mindful of the occupational hazards, which can arise from working in height and excavation works. Potential impacts are negative and long-term but reversible by mitigation measures. 	<ul style="list-style-type: none"> Comply with requirements of Government of Bangladesh Labour Law of 2006 (amended in 2013) and all applicable laws and standards on workers' health and safety (H&S). Ensure that all site personnel have a basic level of environmental awareness training. If necessary, the environmental management specialist and/or a translator shall be called to the sites to further explain aspects of environmental or social behavior that are unclear. Produce and implement a site H&S plan which include measures as: (i) excluding the public from worksites; (ii) ensuring all workers are provided with and required to use personal protective equipment (reflectorized vests, footwear, gloves, goggles and masks) at all times; (iii) providing H&S training for all site personnel; (iv) documenting procedures to be followed for all site activities; and (v) maintaining accident reports and records. 	BITAC authority, CSC, EO, Contractor, EE-SEIP is monitoring mitigation measures.	Complied. Electrical Engineer-SEIP has facilitated health safety and COVID-19 safety practice orientation to BITAC and BACI construction workers.
2.9	Traffic disruption BITAC site is on busy premises. Expected minor impact may rise from traffic movement (heavy vehicles) during construction works	<ul style="list-style-type: none"> Warning lights should be set up along the construction road sections, guiding the access of vehicles. Follow the TMP stipulated in Appendix I of this IEE 	BITAC authority, CSC, EO and Contractor. EE-SEIP is monitoring mitigation measures.	Complied. The Contractor of BITAC has been taken mitigation measures like cautionary signboard, signs, security guards etc. Being followed TPM
3. Post Construction Phase				
3.1	Post-construction clean-up: Damage due to debris, spoils, excess construction materials.	<ul style="list-style-type: none"> Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; All excavated roads shall be reinstated to original condition; All disrupted utilities restored; 	BITAC authority, CSC, EO and Contractor. EE-SEIP will monitor conditions as stated in the IEE.	The Contractor will follow post construction conditions after completion of works.

Table 15 : Compliance status with Environmental Mitigation and Management Plan (EMP) for BACI

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Compliance status
1. Planning Phase				
1.1	Climate Enhancement Measures The BACI site is located on a low-lying area that has potential of flooding.	Follow Environmental Enhancement Measures stipulated in the IEE like as Rain water harvesting, Solar lighting, Water management, Green building materials	BACI authority, Contractor, EE-SEIP is monitoring mitigation and enhancement measures.	The Project is ensuring the mitigation measures during construction phase.
2. Construction Phase				
2.1	Disturbances in Ecological setting. The construction/campsites are devoid of vegetation, birds or local fauna. No impact is expected during construction or operation.	<ul style="list-style-type: none"> The BACI site is barren and wetlands is nearby. It is possible to plant a few trees in the site during construction. Trees with small but long canopy should be preferred during plantation. About 20 plants can be planted in the site given the current design. 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	Complied. The Project is ensuring the mitigation measures. Plantation of trees will be done after construction phase
2.2	Noise Impacts <ul style="list-style-type: none"> Temporary increase in noise level and vibrations may be caused by excavation equipment, and the transportation of equipment, materials, and people. Noise Impact on construction workers The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> BACI site is not populated and traffic is absent. Therefore, noise impacts are expected to be restricted within the site workers. Utilize modern vehicles and machinery with the requisite adaptations to limit noise and exhaust emissions, and ensure that these are maintained to manufacturers' specifications at all times. All vehicles and equipment used in construction shall be fitted with exhaust silencers. Use silent-type generators (if required). 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	Complied. The Project is ensuring the mitigation measures during construction phase
2.3	Water Pollution Excavation, run-off from stockpiled materials, and chemical contamination from fuels and lubricants may result to silt-laden runoff during rainfall, which may cause siltation and reduction in the quality of adjacent bodies of water	<ul style="list-style-type: none"> There are waterbodies near to the site. Water pollution may occur in this water bodies. See the general Waste Management Plan at Appendix II. Awareness must be raised among workers on solid waste management. Specific dumping containers are to be kept in the site. All waste materials should be disposed in proper places after completion of construction. 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	Complied. The Project is ensuring the mitigation measures during construction phase

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Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Compliance status
2.4	Air Quality: <ul style="list-style-type: none"> Conducting works at dry season and moving large quantity of materials may create dusts and increase in concentration of vehicle-related pollutants (such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons) which will affect people who live and work near the sites. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> The sand and other such dispersible material must be removed after completion of work. Provide dust-proof measures like construction barrier at concrete mixing station, or mix concrete inside building to effectively control dust pollution. Water in due time the construction site on non-rainy days, including the road section in construction and major transportation road. Watering frequency shall be determined by the site supervision personnel according to the actual situation. 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	<p>Complied.</p> <p>The Project is ensuring the mitigation measures during construction phase</p>
2.5	Community Health and Safety: <ul style="list-style-type: none"> Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; Construction works will impede the access of residents and businesses in limited cases. The impacts are negative but short-term, site-specific within a relatively small area and reversible by mitigation measures. 	<ul style="list-style-type: none"> Contractor's activities and movement of staff will be restricted to designated construction areas. Use small mechanical excavators to attain faster excavation progress. For rock and concrete breaking, use non-explosive blasting chemicals, silent rock cracking chemicals, and concrete breaking chemicals. Under no circumstances may open areas or the surrounding bushes be used as a toilet facility. Create traffic regulation and diversion zones during construction work. The proposed site is on the main road, and it is expected that heavy vehicle movements can cause traffic nuisance. Therefore, traffic regulation and diversion will be important to avoid traffic nuisance 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	<p>Complied.</p> <p>BACI is located in a newly developed area at Uttara 3rd phase where traffic movement is most insignificant. However, due precautionary measures will be taken for traffic, pedestrian and worker's safer movements.</p>

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Compliance status
2.6	Climate extremities due to geographic location BACI site is located in a flood vulnerable zone. Therefore, climate extreme events should be considered during construction	<ul style="list-style-type: none"> Plinth height should be considered using flood level analysis Painting should be weatherproof and building design should consider ample space for accommodate more people during flood and storm event. 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	Complied. The Project will ensure the required mitigation measures.
2.7	Waste generation <ul style="list-style-type: none"> The site is expected to generate construction waste. Without proper management, this will pollute soil, water and air and spread public nuisance 	<ul style="list-style-type: none"> Awareness must be raised among workers on solid waste management. Specific dumping containers are to be kept in the site. All waste materials should be disposed in proper places after completion of construction Update the 'Waste Management Plan and get approval from site supervising engineer and environmental officer. Conduct separate waste collection and promote recycling and reuse. Appropriate disposal of non-recyclable waste according to rules Hazardous waste should be treated under the related regulation 	BACI authority, CSC, Contractor. EE-SEIP is monitoring mitigation and enhancement measures.	Complied. The Project is ensuring the mitigation measures.
2.8	Worker's health and safety: <ul style="list-style-type: none"> There is invariably a safety risk when construction works such as excavation and earthmoving are conducted in populous areas. Workers need to be mindful of the occupational hazards, which can arise from working in height and excavation works. Potential impacts are negative and long-term but reversible by mitigation measures. 	<ul style="list-style-type: none"> Comply with requirements of Government of Bangladesh Labour Law of 2006 (amended in 2013) and all applicable laws and standards on workers' health and safety (H&S). Ensure that all site personnel have a basic level of environmental awareness training. If necessary, the environmental management specialist and/or a translator shall be called to the sites to further explain aspects of environmental or social behavior that are unclear. Produce and implement a site H&S plan which include measures as: (i) excluding the public from worksites; (ii) ensuring all workers are provided with and required to use personal protective equipment (reflectorized vests, footwear, gloves, goggles and masks) at all times; (iii) providing H&S training for 	BACI authority, CSC, Contractor. EE-SEIP has provided Health Safety and COVID-19 safety practice orientation.	Complied. The Project is ensuring the required health safety and enhancement measures.

Skills for Employment Investment Program (SEIP) Tranche 3

Ref. No.	Impact/Issue	Mitigation Measure	Responsibility	Compliance status
		all site personnel; (iv) documenting procedures to be followed for all site activities; and (v) maintaining accident reports and records.		
3. Post Construction Phase				
3.1	Post-construction clean-up: Damage due to debris, spoils, excess construction materials.	<ul style="list-style-type: none"> Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; All excavated roads shall be reinstated to original condition; All disrupted utilities restored; 	BACI authority, CSC, Contractor. EE-SEIP will monitor the agreed conditions of the Contractor.	Complied. The Project will ensure the conditions after completion of construction of BACI site.

21.6 Strategy for COVID-19 Pandemic and H&S Guideline

73. The contractors were asked to submit the detail plan for COVID-19 pandemic and health & safety measures during the construction work. Each contractor (both BITAC & BACI packages) submitted the COVID-19 management plans which were included in the contract documents. The main issues were focused on providing the hand hygiene facilities, practice respiratory hygiene & keep physical distancing for sites and residence. An orientation session on occupational health safety and COVID-19 safety practices have been provided in BITAC site including participants from BACI in Dhaka on 10 June 2021. There were 25 participants in the mentioned orientation. The orientation was based on use of PPE and interim safety guidelines on COVID-19 published by ADB. Also instructed to the Contractors and participants to follow strictly the COVID-19 plans submitted by the Contractors to the authority.

74. The safety plan on COVID-19 prepared by respective contractor and SDCMU ensures the implementation in the site level.

Table 16 : COVID-19 response performance at work site

COVID-19 Response questions	BITAC	BACI	Comments
Locate the closest medical establishment equipped with COVID - 19 response facilities.	Holy Family Hospital, BSMMU	Lubna General Hospital	Within half an hour travel time distance
Engage a full time EHS professional at site	FC	FC	A full time EHS specialist is engaged in both site
Purchase thermometer gun, soap, hand sanitizer, disinfectants and PPEs (mask, hand gloves, hard shoes etc.) and keep it at worksite office.	FC	FC	Mentioned equipment are made available in the site
Establish site entrance protocol. Redesign the site safety notices/signboards/protocol according to the ADB guidelines	FC	FC	The facilities are developed in the site
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.	PC	PC	Disinfectant tub for shoes is absent, but shoes and other common tools are sprayed regularly by sanitizer.
Provide every personnel working in the site with mask, hand gloves and hard shoes for their personal use.	FC	FC	
Everyone entering the worksite must wear a mask, gloves and hard shoes	FC	PC	Sometime workers are unwilling to wear Boot and Helmet during hot day but it is always ensured the safeties.
Daily worksite protocol	FC	FC	
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.	FC	FC	Environmental Officer is fully engaged for ensure COVID-19 and other occupational Health Safety issues.

COVID-19 Response questions	BITAC	BACI	Comments
At the start and end of the day disinfect the total worksite.	FC	FC	
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.	FC	FC	At the starting of the day, instructions on all the safety messages including COVID-19 guidelines are given and strictly monitor to follow all the days in the site.
Arrange a mandatory site brief on COVID awareness in the morning. The session must be conducted by the EHS/medical professional.	FC	FC	At the starting of the day, instructions on all the safety messages including COVID-19 guidelines are given and strictly monitor to follow all the days in the site.
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.	PC	PC	Contractor has been instructed to re design the existing labour camp for well ventilation and spaces.
Before sharing common tools/machines at worksite, ensure to disinfect.	FC	FC	
Discourage site personnel to gather and gossip at any time, rather encourage physical distance while chatting/discussing.	FC	FC	Sometimes they sit together without keeping required social distances.
Restrict worksite personnel to go outside unnecessarily. Also restrict campsite personnel to go outside without any valid cause.	FC	FC	In the name of urgent issues some times they go outside the site for a short time
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.	No	No	No report
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.	FC	FC	Environmental Expert of SEIP and Environmental Officer of Contractor provided onsite training on PPE use, how it will keep clean, make disinfectant, wash hands for how long and times and when etc. in each week.

Note: PC: Partially Compliance; FC: Fully Compliance

22 Compliance with loan covenants

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

Table 17 : The compliance status of SEIP tranche 3 with respect to loan covenants is presented in table below:

SI No	Status of Loan Covenants	Status of Compliance
1	Environment The Borrower shall ensure, and cause each of the Project Implementing Agencies to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environmental Safeguards; (c) The EARF and (d) all measures and requirements set forth in the IEEs, the EMPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	The Project is ensuring (a) all applicable laws and regulations of the Borrower, relating to environment, health and safety, involuntary Resettlement and small ethnic communities; (b) the communities Safeguards; and (c) The EARF and (d) all measures and requirements set forth in the IEEs, the EMPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.
2	Land Acquisition and Involuntary Resettlement The Borrower shall ensure, and cause each of the Project Implementing Agencies to ensure, that the Project does not have any involuntary resettlement impacts within the meaning of the Safeguard Policy Statement. In the event that the Project does have any such impact, the Borrower shall take all steps required to ensure that the Project complies with the applicable laws and regulations of the Borrower, the Safeguard Policy Statement, the RF and any corrective or preventative actions set forth in a Safeguard Monitoring Report.	The BITAC and BACI training centers under SEIP Tranche 3 are under construction stages at their existing training campus and new and govt. allocated land respectively. Hence, there is no issue of involuntary resettlement. There is no threat of hampering resettlement of small ethnic community people risks, or agricultural land due to project activities and hence no such requirement for reinstating pathways, other local infrastructure, and agriculture land to at least their pre-project condition upon the completion of construction.
3	Small Ethnic Community Peoples The Borrower shall ensure, and cause each of the Project Implementing Agencies to ensure, that the preparation, design, construction, implementation and operation of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to small ethnic community peoples; (b) the Small Ethnic Community Peoples Safeguards; (c) the SECPP and (d) all measures and requirements set forth in the SECPP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	There is no intervention in this project which can hamper environment and possibility of dislocation of ethnic minority. As such no separate budget allocation and dedicated manpower is required to implement EARF, RF and SECPP.
4	Human and Financial Resources to Implement Safeguards Requirements	

SI No	Status of Loan Covenants	Status of Compliance
	The Borrower shall make available, or cause each of the Project Executing Agencies to make available, necessary budgetary and human resources to fully implement the EMPs and the SECPP.	Environmental Expert is already been appointed by SEIP to close monitoring of EMP implementation. Sufficient budget has been kept for implementing the EMPs and the SECPP.
5	<p>Safeguards Related Provisions in Bidding Documents and Works Contracts</p> <p>The Borrower shall ensure, and cause each of the Project Implementing Agencies to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures and requirements relevant to the contractor set forth in any safeguards documents (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report;</p> <p>(b) make available a budget for all environmental and social measures;</p> <p>(c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or small ethnic community peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEEs, the EMPs and SECPP;</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and</p> <p>(e) fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>	<p>(a) All required provisions on Safeguard related issues, as specified in EMPs, were included in the bidding documents for BITAC and BACI construction work.</p> <p>(b) Sufficient budget has been allocated for the environmental and social measures</p> <p>(c) No issues were noticed.</p> <p>(d) Record will be kept infrastructure prior to starting to transport materials and construction; and</p> <p>(e) Complied.</p>
6	<p>Safeguards Monitoring and Reporting</p> <p>The Borrower shall do the following, or shall cause each of the Project Implementing Agencies to do the following:</p> <p>(a) submit semi-annual Safeguards Monitoring Reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project, promptly inform ADB of the</p>	<p>(a) The semi-annual Safeguards Monitoring Report from January to June 2021 submitted to ADB and Semi-annual Safeguards Monitoring Report of July to December 2021 soon.</p>

SI No	Status of Loan Covenants	Status of Compliance
	<p>occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMPs and the SECPP promptly after becoming aware of the breach.</p>	<p>(b) The civil works for constructing BACI and BITAC training centers are ongoing. No accidents have been occurred as such no report has not been submitted to ADB.</p> <p>(c) No issues were noticed.</p>

23 CONCLUSION AND RECOMMENDATIONS

74. In the key sectors, Tranche 3 will result in enhanced inclusive access to basic, mid-level, and advanced skills training. . Both the BITAC and BACI training centers are in the process of being built on their own site. There will be no land acquisition, relocation, ethnic issues, historical heritage, ecological deterioration, water pollution, or inorganic discharge, the negative environmental consequences will be transient, localized, and work-related. The environmental management officer from both sites (BACI and BITAC) are always engaged in environmental compliance monitoring. Environmental monitoring checklist is being followed regularly to ensure proper management plan as mentioned in the IEE & EMP. Occupational Health Safety is a major issue for all types of construction sites. Moreover, COVID-19 Pandemic has created a new trauma in every sector. Regular safety meeting and training is provided to the labors in order to increase labor skills. Contractor followed the health safety plan for the construction sites. During the construction phase, the contractor is fully liable to ensure environmental compliance through proper initiatives to minimize effect on local environment through solid waste, waste water, fire, fecal sludge, open pit and other sort of unhygienic things so,

75. BITAC and BACI sites, Contractors shall follow the IEEs prepared for both sites and also follow EMP as stated during operational phases. The EMPs, SEMP and GAP documents must be followed properly.

Annex 1: Environmental Quality Test Appendix

Air Quality Monitoring



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Name of the Project	Bangladesh Association of Construction Industry (BACI) Under Skills for Employment Investment Program.
Description of sample	Ambient Air Quality (AAQ)
Location	23.875629° N; 90.354927° E
Sample Collector	Collected by DSCL Personnel
Sampling Date	28 December 2021

Ambient Air Quality Analysis

Para-meter	Unit	AAQ_BACI	Bangladesh Standard**	Duration (hours)	Weather Condition	Method of Analysis
		23.875629° N 90.354927° E BACI Construction site, (Beside E-Passport office) Uttara sector 16, Dhaka				
PM _{2.5}	µg/m ³	60.28	65	24	Sunny	Anroqual Series 500 Portable Air quality Monitor
PM ₁₀	µg/m ³	113.4	150	24		
SO _x	µg/m ³	37.32	365	24		
NO _x	µg/m ³	23.71	100	Annual		
CO*	ppm	1.02	9	8		CO Meter

Note:

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

NYS: Not Yet Standardized

Location	Site Description
BACI Construction site, (Beside E-Passport office) Uttara sector 16, Dhaka	<ul style="list-style-type: none"> Construction activity was Ongoing Visual dust pollution was low The weather was sunny during the monitoring period The area was surrounded by moderate vegetation
AAQ_BACI	

Test Performed by:
Muhammad Anwar Iqbal
Jr. Environmental Specialist



Checked By:
Md. Mashur Rahman
Deputy Manager

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Name of the Project	Bangladesh Industrial Technical Assistance Centre (BITAC) Under Skills for Employment Investment Program.
Description of sample	Ambient Air Quality (AAQ)
Location	23.761013° N; 90.404041° E
Sample Collector	Collected by DSCL Personnel
Sampling Date	28 December 2021

Ambient Air Quality Analysis

Para-meter	Unit	AAQ_BITAC	Bangladesh Standard**	Duration (hours)	Weather Condition	Method of Analysis
		23.761013° N; 90.404041° E BITAC construction area, Tejgaon Industrial Area, Dhaka				
PM _{2.5}	µg/m ³	63.67	65	24	Sunny	Oceanus OC 300 and OC 100 Portable Gas Detector
PM ₁₀	µg/m ³	133.42	150	24		
SO _x	µg/m ³	67.90	365	24		
NO _x	µg/m ³	43.2	100	Annual		
CO*	ppm	1.3	9	8		CO Meter

Note:

** The Bangladesh National Ambient Air Quality Standards have been taken from the Environmental Conservation Rules, 1997 which was amended on 19th July 2005 vide S.R.O. No. 220-Law/2005.

NYS: Not Yet Standardized

Location	Site Description
BITAC construction area, Tejgaon Industrial Area, Dhaka	<ul style="list-style-type: none"> Construction activity was Ongoing Visual dust pollution was moderate The weather was sunny during the monitoring period
AAQ_BITAC	<ul style="list-style-type: none"> Stockpiles were covered during the monitoring period

Agha

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Mashur

Checked By:
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Noise Measurement



Development Solutions Consultant Limited

Multidisciplinary Development Consultants

Name of the Project	Bangladesh Association of Construction Industry (BACI) Under Skills for Employment Investment Program.
Description of sample	Noise Level measurement
Sample Collector	Collected by DSCL Personnel
Sampling Date	28 December 2021

Noise Level Analysis

Location	Sample ID	GPS Location	Land Use Category	Time		Noise Level (dBA) LAeq	Bangladesh Standard (DoE)
				Day			
				Start	End		
Inside the (BACI) Project Boundary	NM_BACI_01	23.875629° N 90.354927° E	Residential	10.40 AM	11.40 AM	56.17	55.00
Beside the E-passport office premises	NM_BACI_02	23.875333° N 90.354877° E		12.00 PM	01.00 PM	57.4	
Notes: <ul style="list-style-type: none">Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)The sound level standards for the Residential area are 55 dBA for day time.Noise Level is the average noise recorded over the duration of the monitoring period.							

Location	Site Description
Inside the (BACI) Project Boundary NM_BACI_01	<ul style="list-style-type: none"> Construction activity was Ongoing Some Machine was generating noise (i.e. Grinding machine) Vehicle movement was low People movement was low
Beside the E-passport office premises NM_BACI_02	<ul style="list-style-type: none"> Vehicle movement was moderate People movement was moderate

Signature
Test Performed by:
Muhammad Anwar Iqbal
Jr. Environmental Specialist



Signature
Checked By:
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Name of the Project	Bangladesh Industrial Technical Assistance Centre (BITAC) Under Skills for Employment Investment Program.
Description of sample	Noise Level measurement
Sample Collector	Collected by DSCCL Personnel
Sampling Date	28 December 2021

Noise Level Analysis

Location	Sample ID	GPS Location	Land Use Category	Time		Noise Level (dBA) LAeq	Bangladesh Standard (Dof)
				Day			
				Start	End		
Front side of BITAC Construction site, Tejgaon, Dhaka	NM_BITAC_01	23.761001° N 90.404041° E	Industrial	11.35 AM	12.35 AM	68.1	75.00
Back side of BITAC Construction site, Tejgaon, Dhaka	NM_BITAC_02	23.761058° N 90.403700° E		12.40 PM	01.40 PM	63.7	
Notes: <ul style="list-style-type: none">Land use category is based on the classification provided in the Noise Pollution Control Rules (2006)The sound level standards for the industrial area is 75 dBA for day time.Noise Level is the average noise recorded over the duration of the monitoring period.							

Location	Site Description
Front side of BITAC Construction site, Tejgaon, Dhaka NM_BITAC_01	<ul style="list-style-type: none"> Construction activity was Ongoing Some Machine was generating noise Vehicle movement was low People movement was high
Back side of BITAC Construction site, Tejgaon, Dhaka NM_BITAC_02	<ul style="list-style-type: none"> Vehicle movement was low People movement was low The project area is protected by noise barrier

Ajmal

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Drinking Water quality Test



Development Solutions Consultant Limited

Multidisciplinary Development Consultants

Name of the Project	Bangladesh Association of Construction Industry (BACI) Under Skills for Employment Investment Program.
Description of sample	Drinking water Quality Test
	23.875352° N 90.354973° E
Sample Collector	Collected by DSCL Personnel
Sampling Date	28 December 2021

Drinking Water Quality Test

Parameters	Unit	DW_BACI	Standard for Potable Water**	Analysis Method
		23.875352° N 90.354973° E Inside the BACI Project Boundary, Uttara (Sector 16), Dhaka		
Temperature	°C	24.4	20-30	Multimeter
pH	-	6.8	6.5-8.5	Multimeter
Electrical Conductivity (EC)	µs/cm	313	NYS	Multimeter
Total Dissolved Solids (TDS)	mg/L	452	1000	Multimeter
Dissolved Oxygen (DO)	mg/L	6.1	6 or more	DO Meter
Salinity	ppm	152	<600	Multimeter

**Standards for Drinking Water is followed by Environment Conservation Rule (ECR)'97;

* On-site Test Result;

NYS- Not Yet Standardized

Location	Site Description
Inside the BACI Project Boundary, Uttara (Sector 16), Dhaka DW_BACI	<ul style="list-style-type: none"> Water is collected through deep submerciable pump and stored in plastic tank Labours use this water for drinking and washing purpose The plastic tank is regularly cleaned to ensure safe water



Test Performed by:
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Environmental Specialist



Checked By:
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	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	
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Lab Memo: 390/CC, DPHE, CL, Dhaka

Date: 22-12-2020

Physical /Chemical/ Bacteriological Analysis of Water Sample

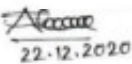
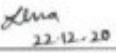
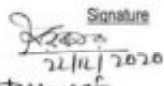

Sample ID: CEN2020120142	Sample Receiving date: 14-12-2020
Ref. Memo No: RESL/2021/Nil & Dated: 14-12-2020	Sample Source: Tube Well
Sent by: Md. Mohibul Hasan, Asst. Engineer, Reliable Engineering & Solutions Ltd., Dhaka.	Dist: Dhaka, Upa:
Care Taker: Reliable Engineering & Solutions Ltd.	Union:, Vill.: Mogbazar Satrasta
Sample Collection date: 14-12-2020	Date of Testing: 14/12/2020-22/12/2020

LABORATORY TEST RESULTS:

Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Arsenic (As)	0.05	0.001	mg/L	AAS	0.001
2	Coliform (Faecal)	0	0	N/100ml	MFM	-
3	Iron (Fe)	0.3-1	0.48	mg/L	AAS	0.05
4	Salinity	-	0.13	%	Multimeter	-
5	Total Dissolved Solid (TDS)	1000	144	mg/L	Multimeter	-

Comments: Sample was collected & supplied by client.

N.B: AAS- Atomic Absorption Spectrophotometer, MFM- Membrane Filtration Method, LOQ- Limit of Quantitation.

Test Performed by: 1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer  22.12.2020 2.) Name: Taslima Akhter Designation: Sample Analyzer  22.12.20	Countersigned/Approved by: 1.) Name: Mita Sarker Designation: Senior Chemist  22/12/2020 2.) Name: Md. Biplob Hossain Designation: Chief Chemist  22/12/2020 Md. Biplob Hossain Chief Chemist Department of Public Health Engineering Central Laboratory Mohakhali, Dhaka
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Development Solutions Consultant Limited

Multidisciplinary Development Consultants

Name of the Project	Bangladesh Industrial Technical Assistance Centre (BITAC) Under Skills for Employment Investment Program.
Description of sample	Drinking water Quality Test
	23.761130° N 90.404069° E
Sample Collector	Collected by DSCL Personnel
Sampling Date	28 December 2021

Drinking Water Quality Test

Parameters	Unit	DW_BITAC	Standard for Potable Water* *	Analysis Method
		23.761130° N 90.404069° E Inside the BITAC Project Boundary, Tejgaon Industrial Area, Dhaka		
Temperature	°C	26.1	20-30	Multimeter
pH	-	6.7	6.5-8.5	Multimeter
Electrical Conductivity (EC)	µs/cm	131	NYS	Multimeter
Total Dissolved Solids (TDS)	mg/L	362	1000	Multimeter
Dissolved Oxygen (DO)	mg/L	6.2	6 or more	DO Meter
Salinity	ppm	76.4	<600	Multimeter

**Standards for Drinking Water is followed by Environment Conservation Rule (ECR) 97;

* On-site Test Result;

NYS- Not Yet Standardized

Location	Site Description
Inside the BITAC Project Boundary, Tejgaon Industrial Area, Dhaka	<ul style="list-style-type: none"> Water is collected through DWASA water Jar Engineers and Labours use this water for drinking purpose
DW_BITAC	

A. Iqbal

Test Performed by:
Muhammad Anwar Iqbal
Jr. Environmental Specialist



M. Rahman

Checked by:
Md. Mashiur Rahman
Deputy Manager



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Lab Memo: 390/ CC, DPHE, CL, Dhaka

Date: 29-11-2021

Physical /Chemical/ Bacteriological Analysis of Water Sample



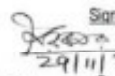

Sample ID: CEN2021110248	Sample Receiving date: 15-11-2021
Ref. Memo No: RESL/2021/NII & Dated: 15-11-2021	Sample Source: Tube Well
Sent by: Md. Mohibul Hasan, Asst. Engineer, Reliable Engineering & Solutions Ltd., Dhaka.	Dist: Dhaka, Upa:
Care Taker: Reliable Engineering & Solutions Ltd.	Union:, Vill.: Mogbazar Satrasta
Sample Collection date: 15-11-2021	Date of Testing: 15/11/2021-28/11/2021

LABORATORY TEST RESULTS:


Sl.#	Water quality parameters	Bangladesh Standard	Concentration present	Unit	Analysis Method	LOQ
1	Arsenic (As)	0.05	0.001	mg/L	AAS	0.001
2	Coliform (Faecal)	0	0	N/100ml	MFM	-
3	Iron (Fe)	0.3-1	0.67	mg/L	AAS	0.05
4	Salinity	-	0.15	‰	Multimeter	-
5	Total Dissolved Solid (TDS)	1000	152	mg/L	Multimeter	-

Comments: Sample was collected & supplied by client.

N.B: AAS- Atomic Absorption Spectrophotometer, MFM- Membrane Filtration Method, LOQ- Limit of Quantitation.

Test Performed by: 1.) Name: Md. Saiful Alam Khosru Designation: Sample Analyzer  29.11.2021 2.) Name: Taslima Akhter Designation: Sample Analyzer  29.11.21	Countersigned/Approved by: 1.) Name: Mita Sarker Designation: Senior Chemist  29/11/2021 2.) Name: Md. Biplab Hossain Designation: Chief Chemist  29/11/2021 Md. Biplab Hossain Chief Chemist Department of Public Health Engineering Central Laboratory Mohakhali, Dhaka
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Surface water Quality Test


Development Solutions Consultant Limited
 Multidisciplinary Development Consultants


Name of the Project	Bangladesh Association of Construction Industry (BACI) Under Skills for Employment Investment Program.			
Description of sample	Surface water Quality Test			
Location	23.873409° N 90.352194° E			
Sample Collector	Collected by DSCCL Personnel			
Sampling Date	28 December 2021			


On site Surface Water Quality Test


Parameters	Unit	SW_BACI	Standards for Inland Surface Water** (best fishing practice)	Analysis Method
		23.873409° N 90.352194° E Turag River, Beside the BACI Project site, Uttara, dhaka		
Temperature	°C	24.23	NYS	Multimeter
pH	-	7.6	6.5-8.5	Multimeter
Electrical Conductivity (EC)	µs/cm	245	NYS	Multimeter
Total Dissolved Solids (TDS)	mg/L	198	NYS	Multimeter
Dissolved Oxygen (DO)	mg/L	5.1	5 or more	DO Meter
Oxygen Reduction Potential (ORP)	mV	-123.8	NYS	Multimeter


**Standards for Inland Surface Water is followed by Environment Conservation Rule (ECR) 97;
NYS- Not Yet Standardized

Location	Site Description
Turag River, Beside the BACI Project site, Uttara, dhaka SW_BACI	<ul style="list-style-type: none"> This water body is a old part of the Turag River (now it is not directly connected with it) Water hyacinths is seen available in the water body Fish were seen frequently moving in the water body Water is used for fishing practice


 Test Performed by:
Muhammad Anwar Iqbal
 Jr. Environmental Specialist




 Checked By:
Md. Mashur Rahman
 Deputy Manager



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Annex 2: Site progress Pictures

