Ref. No.: JV-ALDLP-BR-24-006 Date :15 January 2024

Mr. Md. Shuboktagin
Project Director
Bangladesh Railway, Rail Bhaban (7th Floor)
16 Abdul Ghani Road, Dhaka 1000, Bangladesh

Project: Contract No.: PD/ALDLP/ADB-EIB/2015: Construction of Dual Gauge Double Line and Conversion of Existing Railway into Dual Gauge between Akhaura-Laksam

Subject: Response to Comments of ADB on the draft Semi-Annual Environmental Monitoring Report for the period July-December 2023

Reference: (i) Email of ADB Staff Halima Ferdusi dated 11 January 2023;
(ii) Project Administrative Manual, Chapter VII.A (Environment Safeguards), para. 42

Dear Sir,

This has reference to the email we received from the ADB Halima Ferdousi dated 11 January 2023, that relayed the Bank's comments on the draft Semi-Annual Environmental Monitoring Report covering the period July-December 2023. In this regard, we have revised the report accordingly herewith attached, and provided the draft response to all of the comments raised. The revised Semi-Annual Report also had an update of the Project's overall performance as of 31 December 2022, as well as the results of the 100% tree inventory of 2022 plantations.

On the Bank's recommendations for the submission of the "Site Specific Tree Plantation Establishment and Rehabilitation Program for 2024 and the tree plantation maintenance and protection program during the Defects Liability Period", we propose that this be submitted separately from our response to ADB's comments and revised Semi-Annual Report.

Should you have any questions or clarifications on the revised Semi-Annual Report or the draft response to ADB Comments, please do not hesitate to contact our International Resident Social, Resettlement and Gender Specialist Alan Salvador.

Sincerely yours,

15.01.2024

Md. Khairul Alam
Acting Team Leader
Construction Supervision of Akhaura-Laksam Double Track Project
E-mail: khairulalammd59@gmail.com

Attachment: 1. Comments of ADB on the Semi-Annual Environmental Monitoring Report.
2. Semi-Annual Environmental Monitoring Report for the period July-December 2023.

PROPOSE RESPONSE TO ADB COMMENTS

S.I.	COMMENTS	RESPONSE	REMARKS
1	**GENERAL COMMENTS:** • GOB has now promulgated a new version of the ECR in 2023. All references and provisions in the ECR 1997, have to be substituted by the corresponding provisions in the ECR, 2023. There is also a new rule on air quality called APCR (Air Pollution Control Rules), 2022. This rule should be substituted for ECR'97 in reference to all national environmental quality standards (ambient air quality, surface and groundwater quality).	• Done. All references in the report have been revised to reflect the latest GOB environmental guidelines (ambient air, surface water and ground water quality).	
2	**COVER PAGE:** • Since the report is a submission from the EA to ADB, kindly review and replace the quoted input "Prepared by the ALDLP Construction Supervision Consultant for the Bangladesh Railway" to "Prepared by the Bangladesh Railway, Government of Bangladesh for the Asian Development Bank."	• Done. The quoted input had been modified.	• Please refer to the cover page.
3	**EXECUTIVE SUMMARY:** • Page i, para 3 and Page 5, para 20: ECC renewed by DOE was valid until 01 May 2023 and the renewal process is still underway. This excessively extended duration for renewal process needs to be explained in the revised EMR.	Done. The explanation on why there is a delay in securing the ECC renewal for the current fiscal year had been included in the Executive Summary.	• The ECC renewal application was submitted to DOE (Chittagong Office) on 21 November 2023 (please refer to Annex 7 for the received copy). • Under DOE Environmental Conservation Rules 2023, the renewal fee for Projects like ALDLP had been significantly increased from BDT100,000 to BDT500,000. Funds annually allocated for the application was not enough. In view of this, justification had been required from

S.I.	COMMENTS	RESPONSE	REMARKS
			the Project in order to secure additional funds.
4	• Page ii, para 9 mentions that "During the reporting period that covers both rainy season (July - October) and rainy months (November-December)"- Nov-Dec are dry months, please correct the quoted input.	• Done. The appropriate correction had been made.	
5	**INTRODUCTION:** • Page 1, Para 4: Please revisit and correct the quoted input "This semi-annual report covers the progress of the EMP implementation during the period of January to June 2023", which is an artefact of previous EMR.	• Done. The appropriate correction had been made.	
6	• Page 9, para 43: Kindly review and verify the reporting figures, which appear disproportionate when compared to information from prior EMR reports. Request clarification on the 208 reports in total, including 172 monthly environmental reports, 28 quarterly reports, 13 semi-annual environmental monitoring reports, and 7 annual environmental reports.	• Done. The appropriate correction had been made.	The Environmental Reports include: • 170 Monthly Environmental Monitoring Report (85 Environmental Quality Monitoring Report & 85 Construction Period Mitigation Measure Report) • 27 Quarterly Environmental Reports; • 13 Semi-Annual Report • 6 Annual Report • 2 Site Specific EMP
7	**Environmental Quality Monitoring:** • Page 10, para 45: Please revisit and replace the quoted input "Inland Surface Water, Environment Conservation Rules (ECR) and 1997-Schedule 3. Similarly, the groundwater test results were on the	• Done. The appropriate DoE guidelines were substituted in the test.	

S.I.	COMMENTS	RESPONSE	REMARKS
	other hand, compared to the Drinking Water Standard ECR Schedule-3, 1997" to ECR, 2023.		
8	• Page 11, Table 2.1: Thank you for providing the ALDLP surface water quality results for the reporting period. We appreciate that the revised EMR includes the latest Bangladesh Inland Surface water quality standard (ECR 2023) in the table. Also, interpretate the result and compare with DoE standards and baseline and so on.	• Done. The appropriate DoE guidelines were substituted in Table 2.1. Additional interpretation of the surface water results were included in Paragraph 48.	
9	• Page 12, Table 2.2: Thank you for providing the groundwater quality results for the reporting period. We appreciate that the revised EMR includes the latest Bangladesh drinking water quality standard (ECR 2023). Also, interpretate the result and compare with DoE standards and baseline and so on.	• Done. The appropriate DoE guidelines were substituted in Table 2.2. Additional interpretation of the surface water results were included in Paragraph 49.	
10	• Page 13, Table 2.3: Thank you for providing the ALDLP's ambient air quality measurement results for the reporting period, as well as a comparison to the baseline. We appreciate that the revised EMR includes the latest Bangladesh Air quality standard (Air pollution control rules 2022).	• Done. The appropriate DoE guidelines were substituted in Table 2.3.	
11	• Environmental Quality Monitoring for air, noise and groundwater quality in EMO building was done as semi-annually (July) in 2023 which is supposed to be done quarterly. This should be justified in the revised EMR.	• All Project construction works were scheduled to be completed by 31 October 2023, which coincides with the closing of the Project loan. So all monitoring works were also scheduled to end with the construction	

S.I.	COMMENTS	RESPONSE	REMARKS
		activities, which included the EMO Environmental Quality Monitoring. It was for this reason that no Environmental Quality monitoring was done in the 4th Quarter 2023.	
12	**Status of Tree Plantations:** • Page 30; Table 3.5 and 3.6: Thank you for sharing the status of 2023 tree plantation establishment and rehabilitation program as of Dec 2023. It is noted that 116,555 saplings are planned to be planted in 2023, but 89,774 have been planted. Furthermore, sapling mortality is extremely high. The subcontractor should have a sufficient number of watch guards to protect and maintain their existing plantations. From now on, the PMU should submit a separate "Site Specific Tree Plantation Establishment and Rehabilitation Plan" along with an updated status on a monthly basis	• Duly Noted. An updated Site Specific Tree Plantation Establishment and Rehabilitation Plan will be a separate submission to this Semi-Annual Environment Monitoring Report.	• Since the Project is now in the Defects Liability Period (DLP), the focus of the "Site Specific Tree Plantation Establishment and Rehabilitation Plan will be on Plantation Protection and Maintenance.
13	**Grievance Redress Mechanism:** • Page 45: No environment GRC has yet been created for the Project. This situation has existed ever since environmental issues had been addressed at the Project level. A CAP should be included for this major non-compliance in the revised EMR.	The need for the establishment of the Grievance Redress Committee (GRC) for Project Environmental concerns is no longer appropriate due to the following reasons: a. Construction works at the ALDLP had substantially been completed and so no significant activity will be implemented that may cause environmental issues or complaints. b. Demobilization and clean-up of the Project construction site is almost completed, with the	• The Project is substantially completed, and it is already in the Defects Liability Period (DLP).

S.I.	COMMENTS	RESPONSE	REMARKS
		exception of Akhaura station and EMO Building where construction works are at their completion stages. c. No significant grievances have been received by the Project since its commencement. Now that the Project is in the Defects Liability Period, it is unlikely that any significant environmental issues or grievances will still be created.	
	Corrective Action Plan: • Table 5.1, page 45: We appreciate for providing the CAP implementation status for the prior EMR; we have found a few minor partial compliances. We would appreciate it if you could update the revised SEMP with the CAP for the upcoming EMR along with EMO buildings in the format shown below:	• Done. The Corrective Action Plan table was revised following the prescribed format. (please refer to the revised Table 5.1 in page 45).	
	Appendix: • Thank you for providing the laboratory test results for ambient air quality, noise level, surface water quality, and ground water quality (Appendix 4, Pages 80-95). Please replace the attached test result with a clear, readable laboratory test report as the current one is not readable.	• Done. The test results have been replaced with a better-quality ones. (please refer to the revised Annex 4).	

BANGLADESH RAILWAY

CONSULTING SERVICES CONTRACT
FOR CONSTRUCTION SUPERVISION OF
AKHAURA-LAKSAM DOUBLE TRACT PROJECT

ADB Loan No.:3170-BAN(SF)

Contract No.: PD/ALDLP/CSC/02/2016

Document Title:

SEMI-ANNUAL ENVIRONMENT MONITORING REPORT

JULY - DECEMBER 2023

Document Number		
Rev. No.	Date	Revision Description
02	14/01/2024	Second Draft

Prepared by	**DOHWA Engineering Co. Ltd., Korea** ***In Joint Venture with*** **Korea Rail Network Authority, Korea;** **Oriental Consultants Global Co. Ltd., Japan;** **Balaji Railroad Systems Limited, India; and** **Development Design Consultants Ltd., Bangladesh**

Semi-Annual Environmental Monitoring Report (July - December 2023)

January 2024

BAN 3169 & 3170: SASEC Railway Connectivity: Akhaura-Laksam Double Track Project

Prepared by the Bangladesh Railway, Government of Bangladesh for the Asian Development Bank

Government of the People's Republic of Bangladesh

MINISTRY OF RAILWAYS

BANGLADESH RAILWAY

SOUTH ASIA REGIONAL ECONOMIC COOPERATION RAILWAY CONNECTIVITY: AKHAURA-LAKSAM DOUBLE TRACK PROJECT

Semi Annual Environmental Monitoring Report
July - December 2023

CONSULTING SERVICES CONTRACT FOR CONSTRUCTION SUPERVISION OF AKHAURA-LAKSAM DOUBLE TRACK PROJECT

ADB Loan No.: 3170-BAN (SF)

Submitted To : ADB BRM, Dhaka

Submitted By : Project Director, ALDLP, Bangladesh Railway

Prepared By : Construction Supervision Consultant, ALDLP, Bangladesh Railway

EXECUTIVE SUMMARY

The Akhaura-Laksam Double Line Project, is part of Dhaka-Chittagong Railway corridor, that is a component of the Trans-Asian Railway Network, SASEC, SAARC & BIMSTEC corridors in Bangladesh. The project entails the double tracking of a 72 km rail line, upgrading of 2 major and 11 minor stations; and a few hundred meters of access roads in eastern Bangladesh.

The land use in the project area is mainly agricultural with no significant environmental features or protected areas. The Project is basically an expansion of an existing single track to double railway line, thereby increasing its current capacity to convey passengers and cargo not only along the Akhaura to Laksam track segment, but the whole Dhaka to Chittagong network. In view of this site condition and nature of the Project, it has been categorized as ADB Environment Category B, where the environmental impacts are known, limited in scope to within the Project area and its adjacent environ, short-term, reversible, and can be mitigated with proper implementation of the prescribed Environmental Management Plan (EMP) contained in the Initial Environmental Examination (IEE) that was prepared for the Project During the Detailed Design Phase.

Other reportorial requirements complied by the Project was the Environmental Impact Assessment (EIA) report that was prepared in compliance to the European Investment Bank (EIB) Environmental and Social Handbook (2013), as well as the EIA report in fulfillment of the requirements of the Department of Environment (DoE), Ministry of Environment and Forests, Government of Bangladesh for red category projects. Likewise, the Project annually renews its Environmental Compliance Certificate (ECC) with the DoE. For this calendar year, the ECC renewal application had been submitted to the DoE on 21 November 2023 for their approval. Delays in the application was related to the substantial increase in the application fee following Environment Conservation Rules (ECR 2023) from BDT100,000 to BDT500,00. Funds allocated was not enough, and much justification was submitted by the Project to BR to secure additional funds to pay the prescribed filing fee.

Protection of the Environment is one of the most important policy that ADB, EIB and the Bangladesh government subscribed to. ADB and EIB is seriously concerned about this issue and strictly ensure that any development project financed by them will not significantly affect the natural and social environment of the Project site and its adjacent environs. The Project Loan Agreement prescribes that ADB's Safeguard Policy Statement (SPS-2009) through the EMP be complied with by the Executing Agency throughout the Project implementation.

The Project has also instituted measures consistent with the guidelines prescribed by the World Health Organization (WHO) and Bangladesh Government Directorate, in order to help control the spread of Covid-19 virus. These prevention measures that include discouraging personnel from unnecessary movement within and outside of the Project site, inclusion of Covid-19 prevention lectures in the regular tool-kit meetings and at the HIV/AIDS STD prevention seminars that are attended by construction workers; distribution of face masks to construction workers, and installation of wash areas in the workplace, as well as disinfecting booths in Project offices. The body temperature of persons are taken as well as observing any Covid-19 symptoms, for persons entering offices to avoid possible virus contamination. An ambulance is on stand-by at the Project site 24/7 to ferry sick or injured persons to nearby medical facilities when necessary. While there were no case of the pandemic infection in the Project during the reporting period, however, should any staff experience Covid-19 like symptoms, they will be promptly isolated, tested in government accredited laboratories and if found positive for the virus, are quarantined until they get a negative test result. Offices of these infected staff are also quickly sanitized.

Project Status

As of 31December 2023, the Project has achieved 99.77% cumulative progress (against total work sections), as well as a 93.96% overall cumulative financial progress (against total contract sum). Embankment works is 143.665 km (99.84%) complete with 71.72 km (99.68%) and 71.945 km (100%) upline and downline built. Bridge work is 100% (12 units) and 100% (12 units) complete for upline and downline respectively. Culverts are 100.0% (45 units) and 99.3% (44 units) completed for upline and

downline respectively. Station buildings (13 units) are 99.6% completed. The overall track linking is 98% complete with 180.558 km of new tracks laid, 71.945 km, 71.945 km, 12.136 km, 10.727 km and 13.805 km are for upline main, downline main, up loop, down loop and other lines respectively. Signaling works is about 97% complete.

ADB has indicated during the latest Project Review Mission (4-9 June 2023), that no further time extension will be given to the Project completion set at 30 June 2023. In view of this, all works should be completed by then (30 June 2023).

Environmental Monitoring

All anticipated negative environmental impacts, appropriate mitigation measures and monitoring requirements have been defined in Environment Management Plan (EMP). There are two types of Environmental Monitoring works being conducted in the Project, the first of which is the Compliance monitoring of EMP implementation and the second is the Environmental Quality Monitoring. A third party had been hired through the Contractor, to perform both monitoring works. The Sub-Contractor EQMS conducts periodic site inspection, focusing on the contractor's work areas, construction waste disposal sites, vegetative rehabilitation of embankments and opened areas, restoration of local access used as haul roads, clean-up of completed works such as station buildings, site offices, bridges, culverts and others. During the reporting period, the MS Excel-based reporting system that had been developed during the first quarter of the year 2021, is in continued use in the monitoring of the Contractor's compliance to the EMP. The system provided a mechanism by which non-compliant activities are tracked up to the time these are resolved.

Similarly, the Environmental Quality Monitoring is done by conducting sampling in preselected sites within the Project area. Every month, EQMS conducts air quality and noise level monitoring and ground water sampling in 2 of 13 major and minor stations; as well as surface water sampling in 2 preselected nearby waterways that intersect the construction site. Monitoring will be shifted to 2 other stations and 2 nearby surface water bodies in the following month and so on. While Section 1 and 2 had already been handed over by CTM JV to BR, there are defects in the completed works that required rectification. Similarly, in view of the completion of works in Section 1 and 2, the Project had resumed monitoring in these Sections to determine what is the current environmental conditions after the Sections have been completed. During the reporting period, monitoring at the Engineer's Management Office (EMO) Building construction site located at Fulbaria, Dhaka had been continued.

During the reporting period that covers both rainy season (July - October) and dry months (November-December), on-site measurement of air quality and noise level were done using portable analyzers; while surface and ground water quality from preselected water bodies/sources is performed by securing grab water samples, and transporting them in suitable containers, and analyzed in government registered laboratories using standard methods for specific analytical parameters set by the Government environment agency. The results of the analysis were compared to the government set standards to determine compliance. A brief description is provided to explain the test results as well as recommendations to remedy the situation when necessary. The EQM is conducted every month.

Water Quality Monitoring

Surface water quality monitoring had been performed at 4 natural waterways along the Project alignment on a monthly basis during reporting period that is between the months of July - November 2023. This sampling period was within the rainy and dry seasons. All samples taken, had exhibited parameter concentrations that are within the DOE standards. Similarly, groundwater samples taken from 10 stations indicate that the test results for all samples were compliant to government set standards.

Air Quality Monitoring

A total of 10 ambient air samples were collected from 10 Railway Stations and the EMO Building construction site. The ambient status of major air pollutants viz. Particulate Matter (SPM, PM_{10} and $PM_{2.5}$), Sulfur Dioxide (SO_2), Oxides of Nitrogen (NO_x), and Carbon Monoxide (CO) have been assessed by monitoring air quality. All parameters of air quality are found within the acceptable limits specified by the DoE. $PM_{2.5}$ values are between 9.59 to 39.46 ug/m^3; PM_{10} have results between 22.12 to 70.64 ug/m^3; SPM was measured between 49.52 to 118.61 ug/m^3; SO_2 is between 2.37 to 14.31

ug/m^3; NO_x figures is between 10.37 to 33.89 ug/m^3; while CO levels are between 0.01 to 0.23 ppm. All of the test results are found compliant with the DOE standard for the said contaminants.

Noise Level Monitoring

Ambient noise levels have been monitored from Railway Stations of the ALDLP project, adjacent "quiet areas" such as Mosques and schools; and other areas where Project construction were conducted. Potential noise intensity vary and dependent on the distance from the source, site land use, topography, presence of obstructions and meteorological factors. From the noise level measured from twenty four sampling locations during the day, done over the period of 6 months; 3 stations (12.5%) had slightly exceed the government prescribed daytime threshold for quiet areas of 50 dB(A) for rail station and EMO mosques (Akhaura, Comilla and EMO Building). These mosques are located along the access road of the stations and EMO Building that are affected by the noise emanating from the movement of vehicles, commuters and pedestrians rather than the construction work. Similarly, for night monitoring, 9 stations (37.5%) have also fail to meet DOE noise threshold levels corresponding to the zone category. However, with the exception of the EMO Building site, the Project has no night time construction at or near those stations, the noise measured were would come from the surrounding environment. At the EMO Building site, there are also 2 other construction Projects located nearby that contribute to the ambient noise.

Tree Plantation

To mitigate the estimated 55,000 trees logged as a result of ALDLP implementation, the Project entails to replace these trees through a "Compensation Tree Plantation and Rehabilitation Program". Under the program, three times the number of trees felled will be planted along the completed track embankments, around train stations and environmental sensitive areas. Tree planting has commenced in 2020 and continued to this year. For the 2023 tree planting season, a total of 89,774 saplings of various tree species have been planted along the track embankment areas (81.6% of 70,500 saplings and 39,500 saplings of combined new plantation and replanting targets). A total of 124,050 saplings (100% of annual target) had been procured, transported and maintained at the temporary satellite nursery near the Mainamati station. From these initial sapling stock, 89,774 saplings had been planted at the site. Similarly, about 92,050 holes had been dug and provided with fertilizers, and from these holes, the 89,774 saplings were planted.

Overall, a total of 273,200 trees have been planted, however about 70,599 saplings have died and so the estimated live trees of 186,688 would yield a survival rate of 68.17%. A 100% tree inventory for 2022 plantation had been conducted by a team from CSC and CTM-JV, to determine the actual number of live trees per species at the site. The inventory data on surviving trees in all Sections (29,407 trees) and their respective quality (81.9% compliant to standards) had been processed and reflected in the overall tree plantation progress. The results of the inventory was used for updating of the "Compensation Tree Plantation Establishment and Rehabilitation Program" for 2023. This program is to cover all the tree plantation requirements of the Project such as track embankment stabilization, train station landscaping and noise attenuation for noise sensitive areas. Maintenance and protection works for the tree plantation will be continued by the Subcontractor Bismillah Nursery.

Results of Environmental Monitoring and Compliance Measures

The EMP compliance monitoring results reveal that most of the mitigation measures identified in the EMP are complied with by the Contractor. Corrective actions have been prescribed by the third party monitor EQMS for the appropriate action of the Contractor, while good practices are also encouraged to be continued. There are however, a few prescribed measures that have not been adequately complied with by the contractor and as such, their immediate attention were called to address these short comings at the soonest possible time. Among the non-compliance that need to be rectified is the habitual non-wearing of issued Personal Protective Equipment (PPE) by some construction subcontracted laborers; and proper temporary storage and disposal of waste oil and other petroleum products.

The implementation of the EMO Building EMP have likewise been mostly complied, with the exception of a few items such as a) daily house cleaning at the construction site and workers camp; b) ensuring the proper use of PPEs by laborers while in the workplace; and c) replacement of worn-out safety signs.

Health & Safety

During the reporting period, there were no reports of serious accidents within the workplace that result in stoppage of the construction activities. Overall, for the average 1,805 and 1,761personnel mobilized by CTM at the ALDLP and EMO building site respectively, no case of fatal nor major injury had been recorded during the reporting period with the exception of 4 and 4 minor cases at the ALDLP and EMO Building site respectively, that only require first-aide. A total of 2,498,560 and 886,544 uninterrupted working hours for the ALDLP and EMO Building sites respectively, have been recorded as a result of the almost accident-free working condition. The Contractor continues to implement their Health & Safety Program, that includes activities such as tool-box meetings, distribution of appropriate PPE to workers, holding of HIV/AIDS and Covid-19 Prevention Seminars, provision of drinking water and sanitation facilities at site; and assignment of an ambulance 24/7 at the site to transport sick or injured personnel to the appropriate health facility. While attention will be made on implementing possible disciplinary action against worker's non-wearing of provided PPEs, the project will continue its information drive to increase in awareness training for workers, and installation of more appropriate Health & Safety posters at the workplace. When appropriate, sharing of accident/incident report with workers will be encouraged. A total of 38 trainings were conducted by the Contractor that was participated in by about 894 hired personnel, and resource persons were CTM JV senior Environment, Health & Safety Officers. A total of 34 HIV/AIDS STD prevention awareness seminars have been conducted during the reporting period, that were attended in by 332 construction workers and 294 members of the local community (140 females or 22.4%) within the Project sites.

Conclusions

Akhaura-Laksam Double Track project had generated a number of environmental impacts, such as those associated with the embankment construction, bridge/culvert installation or worker's campsite and housekeeping by the contractor. The EMP provides the specific guidelines which BR has put in place to prevent or mitigate these undesirable effects. The assessment of the Contractor's performance indicate compliance to the EMP, with a few individual site slippages that need rectification as prescribed in the Corrective Action Plan.

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ADF	Asian Development Fund
ALDLP	Akhaura- Laksam Double Line Project
BDT	Bangladesh Taka
BOQ	Bill of Quantities
BR	Bangladesh Railway
BG	Broad Gauge
CROW	Construction Right of Way
CSC	Construction Supervision Consultancy
DB	Dispute Board
DG	Dual Gauge
DOHWA JV	DOHWA Engineering Co.Ltd. Korea In Joint Venture
DPP	Development Project Pro-forma/Proposal
EIA	Environment Impact Assessment
EIB	European Investment Bank
GIBR	Government Inspector of Bangladesh Railway
GOB	Government of Bangladesh
IEE	Initial Environmental Examination
INGO	Implementation Non-Government Organization
IPC	Interim Payment Certificate
ITC	Instruction to Commence
LA	Land Acquisition
LC	Level Crossing
MG	Meter Gauge
MoF	Ministry of Finance
MoR	Ministry of Railways
MPR	Monthly Progress Report
OCR	Ordinary Capital Resource
PAM	Project Administrative Manual
PVD	Prefabricated Vertical Drain
RoB	Rail Over bridge
RoW	Right-of-Way
RP	Resettlement Plan
SAARC	South Asian Association for Regional Co-operation
SASEC	South Asia Sub-regional Economic Cooperation
SRP	Supplemental Resettlement Plan
TL	Team Leader of DOHWA Joint Venture
TOR	Terms of Reference

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I. INTRODUCTION

I.1 Project Background

1. The Akhaura-Laksam Double Line Project seeks to convert the existing 72 km track from Laksam Station to Akhaura Station to double track, as well as upgrade the existing 2 major and 11 minor stations along this route; install state of the art signaling and communications facilities within these stations; and upgrade existing level crossings and provide new ones in other critical road intersections. New railway stations of international standards, complete with offices, passenger waiting areas, prayer rooms, separate male and female sanitary toilets, ramps and railings for disabled persons and other appurtenances that are Elderly-Women-Child-Disabled (EWCD) friendly; had been and are in the process of being constructed. Likewise, residential buildings are being provided in most of these stations for use as accommodations of BR personnel that are assigned to these areas.

2. The upgraded rail facilities will complete the double tracking of the route from Dhaka to Chittagong, thereby providing an environment friendly alternative to other modes such as road based transport. The Initial Environmental Examination (IEE) prepared for the Project had identified 3 main benefits which includes traffic diversion and fuel savings. Once the 44 train sets are in operations, it estimated that about 64.4 million liters of fuel would be saved annually, a reduction of the country's carbon footprint by 145,000 tons/year, and installation of upgraded rail buildings following international design.

3. The implementation of the Project is expected to yield adverse environmental impacts during construction and operation phase. The IEE identified these adverse impact as: a) deterioration of existing local roads by construction hauling trucks; b) blockage of waterways by construction materials spillage or erosion of embankments; c) air and noise pollution affecting sensitive receptors; and d) poor housekeeping of construction camps and workplaces leading to water pollution of nearby surface water bodies.

4. An environmental management plan (EMP) had been developed and approved for execution in order to mitigate the negative effects of Project implementation. To ensure that the Project implementation is compliant to the approved EMP, monthly environmental monitoring is being conducted by a third party Subcontractor, under the supervision of the Consultant and the Employer BR PIU. This Semi-Annual report covers the progress of the EMP implementation during the period of July-December 2023. This report also provides information on corrective actions done for non-compliant works, as well as the progress of the tree planting program that seeks to replace the trees that had been removed as a result of Project implementation, as well as replacement of dead trees from last year's plantation program. In addition, information on the occupational health & safety program implementation during the reporting period has also been included in this report.

1.2 Rationale

5. The Preparation and Submission of the Semi-Annual Report on EMP Implementation Status is among the Project Loan Agreement conditions [Schedule 5, Number 12, item (a)] that was entered into by and between the Government of Bangladesh and the Asian Development Bank (ADB). The report is also a means ADB, EIB and GoB can help ensure that another Loan Agreement condition [Schedule 5, paragraph 6] is met where "*the Borrower and BR shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environment Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report."*[1]

1.3 Environmental Monitoring

6. The Project is engaged in two types of monitoring, the first is the Environmental Management Plan (EMP) compliance monitoring to record and assess the performance of the Contractor CTM JV in the implementation of the EMP which is part of its Scope of Work; and secondly the Environmental

[1] ADB Loan Number 3170 – BAN, Schedule 5 (Execution of Project: Financial Matters), paragraph 6 (Environment).

Quality Monitoring of key environments such as air, land and water using government prescribed analytical parameters in order to determine if the approved EMP is effective in mitigating the identified negative impacts that the Project implementation will create. The conduct of the environmental monitoring is through a third party that had been selected through the Contractor CTM JV. The environmental monitor called EQMS, performs both EMP compliance monitoring as well as the Environmental Quality Monitoring works. The Contract Supervision Consultant (CSC) Environmental team supervises the work of EQMS; while the overall supervision work is performed by the Executing Agency BR that has a Project Implementing Unit (PIU) who has designated one of its Deputy Directors as the environment Focal Person. The contents of this Semi-Annual (July-December 2023) EMP Implementation Status Report, contains the progress attained by the Project in complying with the EMP and verification of its effectivity in mitigating the negative impacts to the environment during the 6 months monitoring period. Lessons learned and recommendations are likewise provided for consideration of BR decision makers and planners for future projects.

1.4 Brief Project Description

7. The ALDLP has 3 outputs under the Design and Monitoring Framework, namely a) upgraded railway infrastructure; b) improved capacity of BR in Project Management and Implementation; and c) Improved Project Implementation unit in BR.

8. Under Output 1 (upgraded railway infrastructure), the following are the major Project components:

i. Construction of a second track in dual gauge;
ii. Reconstruction of the present track to dual gauge;
iii. Lengthening passing loops;
iv. Construction of new bridges;
v. Reconstruction of existing bridges and culverts;
vi. Modernization of signaling and telecommunication system; and
vii. Construction of 11 new stations and upgrading of 2 major stations.

9. Likewise, a modern computer-based interlocking signaling system will be installed; where this will be integrated with the Centralized Traffic Control system. **Table 1.1** below provides details of the Project components.

Table 1.1. Project Major Components

Project Component	Quantity
Major Bridges	12 bridges
Minor Bridges (culverts)	45 culverts
New Station	11 minor stations
Upgraded Station	2 major stations
Route km	72 km
Track	184.15 km
Level crossing	30

10. The project will support the Government of Bangladesh to upgrade about 72 km Akhaura-Laksam section of Dhaka Chittagong railway corridor to a double track railway line with modern signaling and telecommunication equipment. The section is part of a major sub-regional corridor and the Trans-Asia Railway network.

11. Output 3 on the other hand, entails the establishment and strengthening of a Project Implementation Unit (PIU) within the Executing Agency BR, that will oversee the ALDLP implementation. Currently, a BR PIU had been established for the implementation of the Project, which is manned by senior permanent officers of BR headed by a career Project Director, and supported by a Chief Engineer, an Additional Chief Engineer, and 4 Deputy Directors for Headquarters, Resettlement,

Works and Ways, and Signal & Telecommunications. Two Additional Directors have likewise been assigned to the PIU to provide on-site support to the PIU's activities. The Deputy Director for Headquarters has been designated as the Environment Focal Person on a concurrent capacity. The Deputy Director (Resettlement) had been designated as the Focal Person for Gender concerns.

12. Output 2 involves the holding of capacity-building activities for BR officials and staff to enable them to more effectively carryout their respective tasks in the Project and in other BR operating units. Several BR officials and staff had attended various trainings abroad covering various topics which includes among others project management and procurement.

1.5 Project Location

13. The Project is located within the Division of Chottogram found east of the capital city of Dhaka. Two Districts exercise jurisdiction over the Project site namely Cumilla and Brahmanbaria. Similarly, under the Cumilla District, there are 3 Upuzillas that are traversed by the Project which includes Bhramanpara, Burichang, Cumulla Saar, Daksmin and Laksam; while the Upazilla that cover the Project site in the Brahmanbaria Districts include Akhaura and Quasba. **Figure 1.1** contains the location map of the Project, while **Table 1.2** contains details of the administrative subdivision that exercise jurisdiction over the Project site.

Table 1.2. Location of the Akhaura-Laksam Double Line Project

Division	District	Upazilla
Chottogram	Brahmanbaria	Akhaura, Quasba
	Cumilla	Bhramanpara, Burichang, Cumilla Sadar, Cumilla Sadar Daksmin, Laksam.

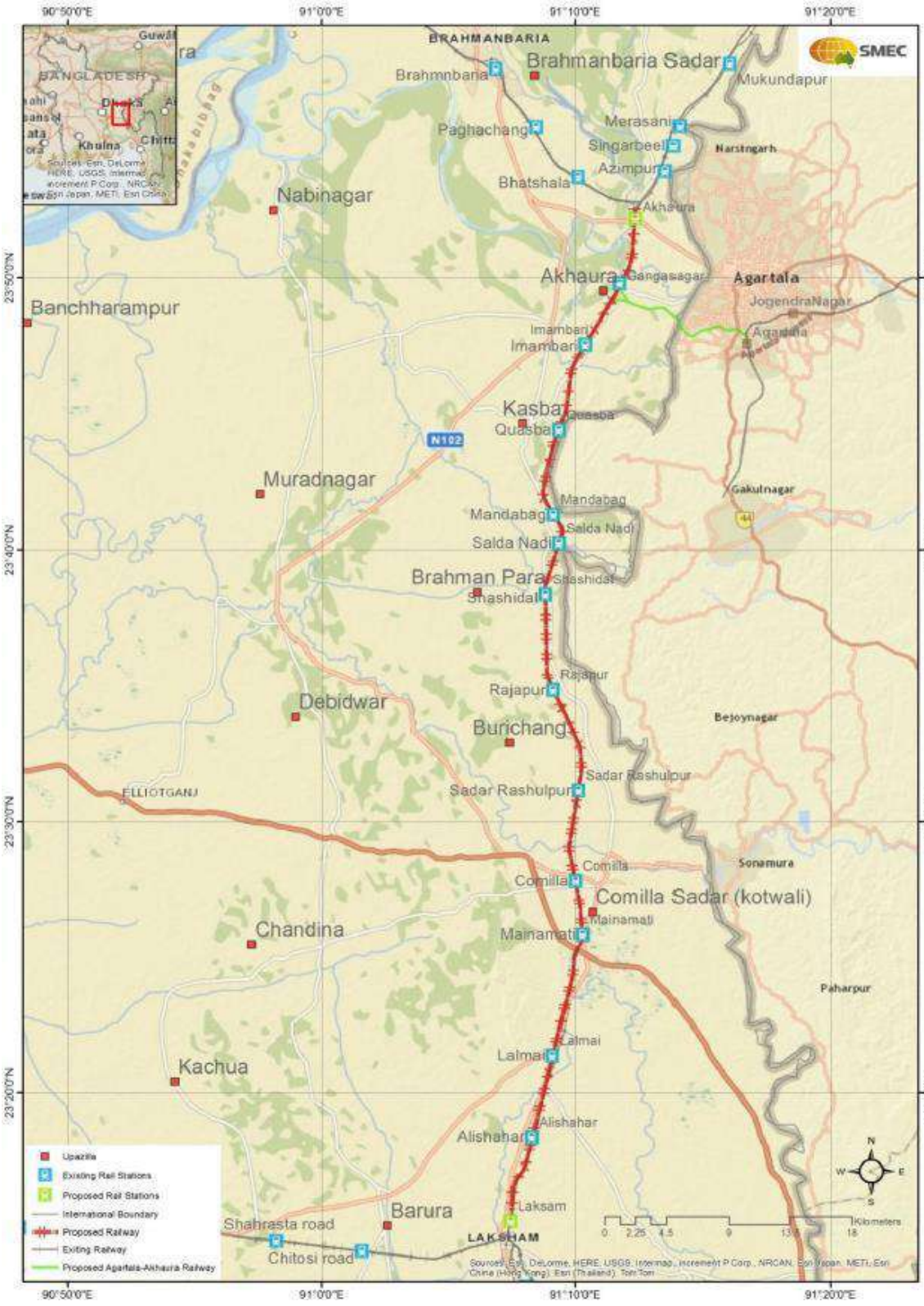
1.6 Progress in Project Implementation

14. As of 31 December 2023, the Project has achieved 99.77% cumulative progress (against total work sections), as well as a 93.96% overall cumulative financial progress (against total contract sum). Embankment works is at 143.665 km (99.84%) complete with 71.72 km (99.68%) and 71.945 km (100%) upline and downline respectively built. Bridge work is 100% (12 units) and 100% (12 units) complete for upline and downline respectively. Whereas culverts construction are 100% (45 units) and 99.3% (44 units) completed for upline and downline respectively. Station buildings are 99.6% completed. The overall track linking is 98% complete with 180.558 km of new tracks laid, where 71.945 km, 71.945 km, 12.136 km, 10.727 km and 13.805 km are for upline main, downline main, up loop, down loop and other lines respectively. Signaling works is about 97% complete.

Plate 1.1 Completed Comilla Railway Station

15. ADB has indicated during the latest Project Review Mission (4-9 June 2023), no further time extension will be given to the Project completion set at 30 June 2023. However, there are still works remaining after the ADB Loan had closed. These works which include the upgrading of the Akhaura Station, construction of the Quasba and Salda Nadi Stations and the EMO Building had continued up to the end of the year 2023. Works have been fully financed under the European Investment Bank Loan after ADB funding had closed in 30 June 2023.

Figure 1.1. Akhaura-Laksam Double Line Project Location Plan



1.7 Environmental Classification of the Project

16. This project was classified as Environment Category B according to the ADB Safeguard Policy Statement (SPS) 2009 as there are no environmentally sensitive sites within the project area. The project only entails the construction of tracks alongside an already existing railway line. Hence an Initial Environmental Examination (IEE) was required to comply with ADB safeguard reportorial requirements.

17. The European Investment Bank (EIB), a co-financier for this project on the other hand, requires the preparation of an Environmental Impact Assessment (EIA) in accordance with the requirements of EIB Environmental and Social Handbook, 2013-Version 9.0.

18. Moreover, in accordance with the requirements of the Department of Environment (DoE), Ministry of Environment and Forests, Government of Bangladesh; the project is classified as red category and requires a full EIA. This is due to the Project's estimated total cost of more than BDT 1 million and its component bridges having spans longer than 100 m, which puts the ALDLP under the red category following the Environmental Conservation Rules 1997.

1.8 Environmental Clearances

19. According to the Environmental Conservation Rules, 1997, the project falls under Red category and thus under the provisions of the Bangladesh Environment Conservation Act (1995), Bangladesh Railway (BR) need to obtain an Environmental Clearance Certificate (ECC) from the Department of Environment, Government of Bangladesh; before commencement of the construction works.

20. So on the 2nd of May 2016, an Environmental Clearance Certificate (ECC) was secured by BR from the Department of Environment (DOE) for the project that is valid for one year, by virtue of their memo no. DOE/Clearance/ 5209/2013/188, dated 02 May 2016. Subsequently yearly renewals of the ECC has been obtained by BR by lodging renewal applications of the environmental clearance to the environment agency. During the reporting period, BR had pursued the ECC renewal process with DOE. The appropriate application fee had been paid and documentary requirements such as the January-June 2023 Semi-Annual Environmental Monitoring Report had been submitted by BR through CSC Environment team, to DOE Regional Office at Chittagong on 21 November 2023. The renewed ECC is currently under process and will be released by DOE soon. Delays in the application was related to the substantial increase in the application fee following Environment Conservation Rules (ECR 2023) from BDT100,000 to BDT500,00. Funds allocated was not enough, and much justification was submitted by the Project to BR to secure additional funds to pay the prescribed filing fee. **Annex 7** contains the received copy of the ECC renewal application.

21. The Project has also filed an application for an ECC for the EMO Building. The consultant ENRCA hired by BR PIU to prepare the Initial Environmental Examination (IEE) Report that is the main requirement for the ECC application, had already submitted the document to the DOE for review. DOE has already issued its Area Clearance for the Project. Once the EMO Building is completed, DOE representatives will inspect the facility, and recommend the issuance of the structure's ECC once the inspectors are satisfied with the Project's compliance to the Environmental Management Plan (EMP) and other requirements prescribed by DOE. **Annex 8** contains a copy of the area clearance.

22. The same draft IEE report was likewise submitted to ADB for review, in conformity with the Project Loan Agreement. Following the comments of the Bank on the report, appropriate modifications were made by a combined team from CSC, CTM JV MAX and ENRCA. The main IEE Report had been accepted by ADB and was posted in the Bank's Website. The three IEE Appendices (i.e. Site Health & Safety Plan; Traffic Management Plan; and Excavation, Demolition and Disposal Plans) were upgraded by the combined CSC, CTM JV MAX and ENRCA team, and were subsequently approved by BR PIU for implementation by the Contractor in the EMO Building site.

1.9 Institutional Arrangements

Bangladesh Railway

23. The Executing Agency is the Bangladesh Railway that is the overall responsible to the Bangladesh Government, ADB and EIB for the smooth implementation of the Project. A Project Implementing Unit (BR-PIU) has been established and assigned senior permanent BR officers and staff to manage the Project. The PIU is headed by a career Project Director, who is assisted by a Chief Engineer (CE), Additional Chief Engineer (ACE), 4 Deputy Directors for Headquarters, Resettlement, Works and Ways, and Signal & Telecommunications. Two Additional Directors have likewise been

assigned to the PIU to provide on-site support to the PIU's activities. The Additional Chief Engineer (ACE) has been designated as the Environment Focal Person.

Environment and Social Safeguards Unit (ESSU)

24. Within the BR-PIU, an Environment and Social Safeguards Unit (ESSU) will be created that is tasked of overseeing the implementation of various Safeguard program such as the Environmental management Plan (EMP), the Resettlement Plan (RP) and the Gender Action Plan (GAP). The establishment of the ESSU within the BR-PIU is the first step towards its full institutionalization after the completion of the Project.

25. The objective of an ESSU is to build enough technical capacity within BR to permit it to oversee environmental and social safeguard matters arising from donor projects and to respond with technical knowledge to specific safeguard issues triggered by Project activities, or community complaints. Secondly, the ESSU should be able to manage the Consultants and oversee the Consultant's deliverables. Thirdly it will need to be able to fully address EIA requirements of the Project when the Engineer is no longer on the job. The ESSU will have to be able to assess environmental data, analyze it and define actions required to address non-compliant findings in a credible and timely manner. Finally, the ESSU should be able to provide training as needed to both contractors and BR staff in all aspects of environmental and social safeguards management.

26. The Environment and Social Safeguards Unit (ESSU) however has not yet been established at the moment due to shortages of qualified permanent staff in the agency. A number of senior staff have retired, and their replacements are still forthcoming. At the moment BR PIU senior officers are designated safeguards supervision position on a concurrent capacity such as the Additional Chief Engineer (ACE) who is the focal person for Environment. The creation of the ESSU can still be pursued in the near future when the qualified staff are available, however, by then the Project would have already been completed.

Construction Supervision Consultant (CSC)

27. There are other operating entities under the Project which includes the Construction Supervision Consultant (CSC) or "Consultant" task to supervising the day-to-day activities of the Construction Contractor CTM JV, which includes the implementation of the approved EMP, Health and Safety Program among others. The CSC has mobilized an international Resident Engineer for Environment, a Senior and 2 Junior Environment Specialist to oversee the Contractor's EMP implementation. The CSC prepares the Semi-Annual Environmental Monitoring Report covering the progress of the contractor in complying with the EMP as well as the Environmental Quality Report that is intended to confirm the effectiveness of the EMP in mitigating adverse environmental impacts.

28. During the reporting period, the Resident Social, Resettlement and Gender Specialist continues to perform the role of RE Environment on a concurrent capacity. He is supported by the 2 Jr. Environmental Specialist that are based in the CSC Comilla and Quasba Offices. The position of Sr Environmental Specialist had still not been filled-up long after the expiration of the last person who held the position.

CTM JV

29. The Contractor CTM JV is the main implementor of the EMP. At the start of their contract period, CTM JV was required to submit their own EMP, that was duly approved by the Engineer, and was the basis for their environmental implementation activities and served as the performance indicator for the monitoring work. The EMP is part of the Contractor's scope of works, and payment is obtained by CTM JV for the fulfillment of their environmental protection and monitoring works following set BOQ items.

EQMS

30. The environmental monitoring is done by the third party EQMS. Their services are availed of by the Project as a subcontract of CTM JV. EQMS performs both EMP Compliance Monitoring as well as Environmental Quality Monitoring. Every month, a team from EQMS visits the Project site to perform their EMP compliance monitoring using a checklist intended to guide the evaluation of the Contractor's environmental performance. A report is submitted by EQMS to CSC, covering the result

of their monthly activity. Similarly, EQMS also conducts on-site air quality and noise level monitoring in preselected stations using portable air quality and noise level measuring instruments; as well as collect surface and ground grab water samples for analysis in their laboratory for parameters prescribed by the government environment agency. The results of the environmental quality sampling is compared to prescribe government environmental quality thresholds to determine compliance to set standards. Exceedance to government standards is provided with explanation and recommendations for action when necessary. During the reporting period, EQMS had expanded its monitoring coverage to include the EMO Building. This is lieu of one monitoring station at Section 2, which is substantially completed.

ENRCA

31. As earlier mentioned, the ENRCA had been contracted out to prepare the IEE Report for the EMO Building by BR PIU through the Contractor CTM JV MAX.

Compensation Tree Plantation Sub-Contractor

32. A last but not the least implementor is the Compensation Tree Plantation Establishment subcontractor named the Bismillah Nursery. This organization is responsible for replacing the removed trees within the Project site, as a result of the construction works. Their scope of works include the production or procurement of quality planting materials such as tree saplings (i.e. timber, fruit-bearing, medicinal and fuel wood), site preparation, transport and out planting of saplings, replacement of dead saplings, plantation protection and maintenance. Bismillah Nursery replaced the first subcontractor Gumti Nursery, who abandoned the Project due to financial disputes with CTM JV. Out planting is only done during the rainy months to help ensure adequate availability of moisture to the saplings and less intense heat that can dry up the young plants. Dead out-planted saplings are promptly replaced by good quality ones also during the rainy months. However, due to the late implementation of the tree plantation program, the subcontractor had extended its tree planting works along the track embankment slopes up to the month of October 2023.

33. The Asian Development Bank and the European Investment Bank, being the development partner of GoB, conducts periodic monitoring of the performance by the Executing Agency in implementing the Project as well as compliance to the approved Safeguard measures which includes the EMP. Bank technical staff review reports submitted by the Executing Agency and conducts field verification Missions to validate the information contained in the progress reports, which includes the EMP compliance reports and the Environmental Quality monitoring reports. Bank technical consultants review the progress of the Project's environmental work, site issues that require rectification, and recommends corrective measures to resolve identified issues for rectification. **Figure 1.2** contains the Safeguards Implementation and Report Work Flow diagram.

Figure 1.2. Safeguards Implementation and Reporting Workflow

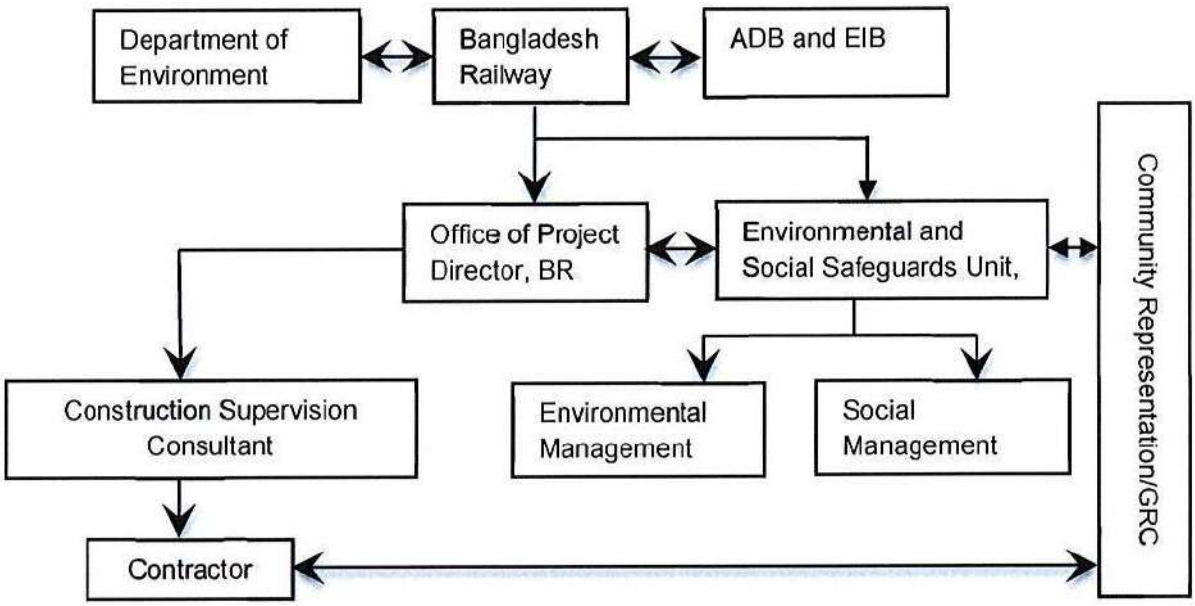


Table 1.3. List of Environmental Safeguard focal person engaged in ALDLP

Name	Designation	Email Address	Contact Number	Roles
1. PMU				
Rehyad Ahmed	Additional Chief Engineer	Reyad.aryed @gmail.com	01711691645	Project Focal Person
2. CSC Consultants				
Alan Salvador	Resident Social, Resettlement and Gender Spl	alansalvador2010 @gmail.com	01774684517	Acting Resident Engineer for Environment
Mahdi Hasan Mamun	Jr. Environmental Specialist	Mahdihasan5248 @gmail.com	01721007186	Supervise Contractor EMP implementation including tree plantation establishment (Sec 2&3 CTM-JV TOMA)
Nazmus Sakib	Jr. Environmental Specialist	Sakibcee16 @gmail.com	01673635168	Supervise Contractor EMP implementation including tree plantation establishment (Sect 1&2 CTM-JV MAX)
3. Contractor's Representative				
Md. Hanif	Environment, Health & Safety Officer, CTM-JV MAX	Mdhanif_58 @yahoo.com	01717158668	Oversees all Environment, Health & Safety Works of the Contractor for ALDLP Max Part
Md. Sohel Mia	Plantation Supervisor	Mail.sohelmia1999 @gmail.com	01647172268	Supervise the tree plantation establishment work
Mojibur Rahman Pannu	Accident Prevention Officer, CTM-JV TOMA	mpzibur@gmail.com	01720512572	Oversees all Environment, Health & Safety Works of the Contractor for ALDLP TOMA Part
Shahan Rahman Rimon	Environmental Officer	Shahanrahmanrimon @gmail.com	01981123096	Assist the EHSO implement all Environment, Health & Safety Works for ALDLP TOMA Part
Enamul SFT	Manager, Health, Environment & Safety, CTM-JV EMO	Enamul.sharif @maxgroup-bd.com	01313491901	Oversee the Environmental Management Plan implementation at the EMO Building site.

1.10 Environmental Management Plan

34. For this project the EIA report included (Table 38, Table 39, Table 40 and Table 41 of the EIA report**)** the Environmental Management Plan (EMP)**.** The EMP defines a set of mitigation and monitoring actions to be taken, in response to potential impacts predicted to take place during the pre-construction, construction and operating period of the Project. The sources of the impacts and the impacts were identified during the EIA study. The EMP is presented as two tables, defining not only impacts and mitigative and monitoring actions to be implemented, but also, where, when and who will be responsible for implementing them. The EMP describes well known and best practice mitigative action to be taken to prevent negative impacts from taking place and if that is not possible to mitigate them to an acceptable level. In addition, this EMP will:

- define measures to off-set or compensate irreversible negative impacts;
- specify the institutional arrangement for the implementation of the EMP; and
- identify means to enhance and maximize positive impacts.

35. The EMP (Table 38 and Table 39 of the EIA report) will be the main tool with which BR will manage environment impacts by applying both mitigative and monitoring measures in a technically credible and timely manner. The mitigation measures are considered successful when the impacts have either been eliminated or the residual effect complies with the environmental quality standards, policies, and legal requirement set by DoE. Mitigation measures are tracked via the monitoring program, which is described in the second of two EMP tables, and focuses on construction and operating period impacts.

36. As agreed with DoE, the construction of any large bridge (>100 m spans) which under DoE regulations would normally require their own EIA, and which DoE has exempted BR from doing, will be presented in more detail and with its own mitigative and monitoring requirements. These details for the Gomti River Bridge are provided in Chapter VI and Chapter IX in the EIA report.

37. The Contractor shall be responsible for preparing detailed documentation related to implementing this EMP. This should include information regarding scheduling, personnel, reporting and auditing requirements, training and detailed procedures for implementing the EMP. The Contractor's EMP and associated documentation shall be approved by BR prior to construction commences.

1.10.1 The Environmental Management Plan Implementation in different Phases of the Project

Preconstruction Phase

38. During the pre-construction period, several environment-related activities had been performed for the Project. These includes: a) the preparation of the Initial Environmental Examination (IEE) for approval of ADB; b) preparation of an Environmental Impact Assessment (EIA) report for the review and approval of the Department of Environment; and c) securing of environmental clearance for the Project from the DoE in compliance to government environmental laws. The IEE and EIAR had been prepared, reviewed and approved by ADB and DOE respectively; and the corresponding environmental clearance had been issued by the DOE for the Project. Moreover, this environmental clearance is renewed on an annual basis by the Project from the DOE designated district office of Chittagong. So, ever since the start of the ALDLP, the environmental clearance had been renewed 6 times by the CSC Environmental team in behalf of BR PIU for the Project. Currently, the application for the ECC renewal is under review by the DOE Chittagong District. **Annex 7** contains the ECC renewal application.

39. Once the Project had been approved and made effective; the BR-PIU was established, and procurement process for several contract packages commenced. For the construction contract package, the EMP had been integrated into the scope of works and corresponding budget also provided in the package, to help ensure that the environmental mitigation measures are implemented by the winning bidder. Upon the selection of the most responsive bid, the winning contractor CTM JV was required to submit their detailed EMP that was subject to the approval of the Engineer, who was also selected by the Employer following ADB procurement guidelines.

Construction Phase

40. The implementation of the EMP rests with the Contractor CTM-JV. To supervise the EMP works internally within CTM JV, the Contractor had deployed qualified senior staff, one for the MAX side of the Project; while the other for the TCCL part. They report directly to the respective Construction Manager of CTM MAX and TCCL. These personnel likewise coordinate their activities with the CSC Resident Environmental Specialist (Resident Social, Resettlement and Gender Specialist) who does the supervision work in behalf of the Employer. These Environmental Officers of CTM JV, also cover the Health and Safety concerns, which is under the supervision of the CSC Resident Health & Safety Engineer. However, since the Resident H & E Engineer had already demobilize, the supervision of the H & E is being done by the CSC mid-level Health and Safety Specialist.

41. Likewise, the Contractor CTM JV also shared some of its EMP scope to their Subcontractor. These works include the 3rd party environment monitoring to the company EQMS whose scope covers the EMP compliance monitoring, environmental quality monitoring and monthly report preparation. The other shared EMP task is the Compensation Tree Plantation and Rehabilitation Program which is being implemented by the recently hired Bismillah Nursery. Details of the EQMS scope of work is found in the subsequent paragraphs.

42. Since the issuance of the "Notice to Proceed" given by the Employer to CTM JV that marked the start of the construction phase, followed by the approval of the Contractor's detailed EMP by the Engineer (CSC), the mitigation measures prescribed in the EMP had been implemented by the Contractor, monitored by EQMS, and supervised by the CSC Environmental team. Regular monthly reports have been submitted by EQMS that were subject to the review and validation of CSC. These reports as well as the field inspection reports; form the basis for the Semi-Annual Reports prepared by the CSC Resident Social, Resettlement and Gender Specialist (who also serve as the acting RE Environmental Engineer), for submission to the Employer and subsequently forwarded to ADB for information and uploading to the ADB website in line with the Bank's transparency policy.

43. Since the start of the Project, a total of 205 reports have been prepared, which includes: 170 monthly environmental reports (monthly environmental quality monitoring report-85 and monthly Construction Period Mitigation Measure Report – 85); 27 Quarterly Environmental Reports; 13 Semi-Annual Environmental Monitoring Reports; 6 Annual Environmental Reports; and 2 Site Specific Environmental Management Plan. The monthly and quarterly environmental monitoring reports are prepared by the CTM Subcontractor EQMS, while the Semi-Annual Environmental Reports are done by CSC Environment team.

II. Environmental Quality Monitoring

2.1 Water Quality Monitoring

2.1.1 Surface and Ground Water Quality

44. Surface water sampling was based on the identification of major surface water bodies which has crossed the Construction site. Groundwater sampling locations on the other hand, were selected to obtain a representative water sample from various zones within the study area. The samples were collected from existing tube wells of the railway stations. The samples are stored in a suitable plastic container, and transported to a government accredited laboratory for analysis following standard methods.

45. The results of the surface water sample analysis were compared to the standards prescribed by government for Inland Surface Water, Environment Conservation Rules (ECR) 2023 - Schedule 2. Similarly, the groundwater test results were on the other hand, compared to the Drinking Water Standard, ECR 2023 Schedule-2. The standards have been presented along with the monitoring test results of surface and groundwater samples for comparison. Considering that the beneficial use for humans of the waterways sampled, is mostly for fisheries, then the water quality standards set for this beneficial use was made the basis for the analysis of water quality compliance to standards.

Results of Sampling and Laboratory Analysis

46. The surface water sampling was done for 4 sites (Salda River, Gumti River, and Shaindara River), and Hora River during both rainy and dry seasons from July to December. Table 2.1 contains the laboratory test results for the 5 water ways.

47. It can be noted that all water samples collected from 4 waterways yielded laboratory test results are compliant to Bangladesh surface water standard (Beneficial use fisheries as per ECR 2023) for pH, dissolved oxygen (DO) and 5-day Biological Oxygen Demand (BOD_5). For these surface water where the samples were taken, it appears that there is no significant contamination level found, and as such mitigation measures implemented in as far as surface water pollution is concerned is working. It can be noted that construction works most sections of the Project had been completed, with Sections 1 and 2 already handed over to BR PIU, and only the Akhaura Station and EMO Building has on-going construction works. The rest of the Project facilities are undergoing clean-up and demobilization of the contractor's equipment and personnel.

48. The DOE beneficial use standards (Water usable for fisheries) for DO and BOD_5 are at 5 mg/l (equal to or higher) and 10 mg/l (equal to or lower) respectively. Dissolved oxygen (DO) content of the surface waters were the samples taken are 6.1mg/l and above, which is more than the DOE standard. This means fish and other aquatic life in these sampled water bodies have enough DO for respiration and carryout their normal life cycle. BOD_5 on the other hand, is a measure of pollution in terms of the amount of DO needed in 5 days to stabilize organic pollutants in the water. The BOD5 level in the surface waters tested had values of 2.2 mg/l and below, which is significantly lower that the prescribed limit of 5 mg/l for surface water intended for fisheries. A low DO and high BOD_5 is a clear indication of a polluted river or surface waterway.

2.1.1 Ground Water Quality

49. The analysis of groundwater samples taken from the selected 10 stations had indicate that all comply with Bangladesh Drinking water Standards. These stations where ground water sampling were conducted include: EMO Building site and Saldanadi Station (July 2023); Sadar Rasulpur station and Kasba Station (August 2023); Cumilla and Akhaura Stations (September 2023); Lalmai and Shashidal Stations (October 2023) and Alishahar and Gangasagar Stations (November 2023). These test result values indicate that there is no contamination of the ground water by Project construction related activities at the monitoring stations from where the water samples were taken. The quality of groundwater tested and analyzed in the project area is provided in the following Table 2.2.

Table 2.1. Surface Water Quality in the Study Area during July - November 2023

S/N	Sampling Code	Location	pH	Temperature (^{0}C)	Electric Conductivity, EC (mS)	Total Dissolved Solids, TDS (mg/L)	Dissolve Oxygen, DO (mg/L)	Biochemical Oxygen Demand, BOD_5 (mg/L)	Chemical Oxygen Demand, COD (mg/L)	Total Suspended Solid, TSS (mg/L)
July 2023										
1	SWQ-1	Salda River Water (Upstream)	7.12	30.6	0.09	50	6.2	1.4	14	26
2	SWQ-2	Salda River Water (Downstream)	6.87	30.6	0.09	40	6.1	1.8	17	31
August 2023										
1	SWQ-1	Gumti River Water (Upstream)	6.96	32	0.11	50	6.2	1	7.1	29
2	SWQ-2	Gumti River Water (Downstream)	7.10	32.3	0.11	60	6.3	1.4	10.4	40
September 2023										
1	SWQ-1	Shaindhara River (Upstream)	7.31	31.5	0.22	110	6.7	1	10.4	22
2	SWQ-2	Shaindhara River (Downstream)	7.33	30.8	0.22	110	6.1	1.5	14.1	28
October 2023										
1	SWQ-1	Gumti River Water (Upstream)	6.94	24.9	0.12	60	6.8	1	9.5	21
2	SWQ-2	Gumti River Water (Downstream)	6.77	24.8	0.12	60	7.4	1.3	11.1	25
November 2023										
1	SWQ-1	Haora River Water (Upstream)	8.15	25.7	0.14	70	6.2	1.3	11.2	43
2	SWQ-2	Haora River Water (Downstream)	8.45	25.8	0.16	80	6.1	2.2	12	48
Bangladesh Standard										
		Source of drinking water supply only after disinfecting	6.5-8.5			1,000	6 or above	2 or less	10	
		Water usable for recreational activity	6.5-8.5			1,000	5 of more	3 or less	10	
		Source of drinking water supply after conventional treatment	6.0-9.0			1,000	5 or above	3 or less	25	
		Water usable by fisheries	6.0-9.0			1,000	5 or more	6 or less	50	
		Water usable by various process and cooling industries	6.5-8.5			1,000	1 or more	12 or less	100	
		Water usable for irrigation	6.5-8.5			1,000		12 or less	100	

*Note: BDL = Below Detection Limit; NR= Not Reported; Source: EQMS Field Survey and DPHE Central Laboratory LA= Lab analysis * Bangladesh Environment Conservation Rules, 2023- Schedule 2 (Standards for inland surface water).*

Table 2.2. Ground Water Quality in the Study Area during July - November 2023

S/N	Sampling Code	Location	pH	Temperature (^{0}C)	Phosphate (mg/L)	Manganese, Mn (mg/L)	Arsenic, As (mg/L)	Iron, Fe (mg/L)	Fecal Coliform, FC (N/100mL)
July 2023									
1	GWQ-1	EMO Building, Fulbaria, Dhaka	6.70	30	0.8	<0.01	<0.01	0.04	0
2	GWQ-1	Saldanodi Railway Station	6.64	29.8	0.6	<0.01	<0.01	0.08	0
August 2023									
1	GWQ-1	Sadar Rasulpur Railway Station	7.16	27.9	0.04	<0.01	<0.01	0.01	0
2	GWQ-2	Kasba Railway Station	6.50	27	0.03	<0.01	<0.01	0.26	0
September 2023									
1	GWQ-1	Cumilla Railway Station	6.89	31.2	0.05	<0.01	<0.01	0.18	0
2	GWQ-2	Akhaura Railway Station	7.10	22.6	0.06	<0.01	<0.01	0.09	0
October 2023									
1	GWQ-1	Lalmai Railway Station	6.60	24.7	2.5	0.1	<0.01	0.03	0
2	GWQ-2	Shashidol Railway Station	6.72	24.8	<0.01	0.1	<0.01	1.72	0
November 2023									
1	GWQ-1	Alishohor Railway Station	8.44	25.7	0.08	0.01	<0.01	0.17	0
2	GWQ-2	Gangasagor Railway Station	8.31	25.8	0.10	0.04	<0.01	0.13	0
		Bangladesh Standard Error! Bookmark not defined.	**6.5-8.5**	**20-30**		**0.40**	**0.05**	**0.3-1**	**0**

Note: BDL = Below Detection Limit; LA: Lab Analysis Still Going On; Source: EQMS Field Survey and DPHE Central Laboratory.

50. The quality of ground water taken from deep wells located within the Project site had been analyzed for physical, chemical and biological parameters prescribed by DOE in its ERC 2023 Schedule 2. Among the physical parameters include pH and temperature; the chemical parameters include heavy metals such as phosphate, manganese, arsenic, and iron. Biological parameters focus on fecal coliform. The ground water samples have pH levels between 6.5 to 8.44, which is within the DoE standard of 6.5-8.5. Similarly, the temperature of ground water samples ranges from 22.6-31.2 which are mostly within the DOE standard with the exception of Cumilla Station sample with a 31.2 degrees temperature. However, considering that the upgrading of the Cumilla Station had been completed in November 2022; it is possible that the temperature of sample may have been influenced by the ambient temperature at the time of sampling which is about 33 degrees.

51. For the heavy metals parameters, the manganese (<0.01 – 0.1 mg/l) and arsenic (<0.01 mg/l) content of ground water samples were below the maximum threshold prescribed by DOE (ECR 2023) at 0.40 mg/l and 0.05 mg/l respectively; which means these are compliant to the standards. Arsenic is a highly toxic metal and should be avoided at all times. The iron content of most samples (0.03 – 1.72 mg/l) is mostly compliant to the DOE standard (0.3-1 mg/l per ECR 2023) with the exception of the Shashidal sample having 1.72 mg/l concentration. The Shashidal station well will have a faint reddish coloration and rust like odor which makes it non-potable. The rest of the samples have minimal iron content which is compliant to the DOE standard.

52. The ground water samples were observed to have passed the lone biological parameter of fecal coliform. None of the samples were observed to have no trace of the pathogenic bacteria. Fecal coliform is present in human feces and is an indicator of sewage contamination of ground or surface water. Where fecal coliform is present, it is possible that there are also other pathogenic microorganisms present in the water source. Given the test results in Table 2.2, most of the ground water sampled are potable with the exception of Shashidal station deep well.

2.2 Air Quality Monitoring

53. A total of 10 sets of ambient air samples were collected from selected railway stations of the Project rail corridor between Akhaura and Laksam; as well as the Engineer's Management Office (EMO) Building site at Fulbaria, Dhaka. All ten (10) sets of samples were taken during both rainy and dry months of July to November 2023. The ambient status of major air pollutants such as Particulate Matter (SPM, PM10 and PM2.5), Sulfur Dioxide (SO_2), Oxides of Nitrogen (NO_x), and Carbon Monoxide (CO) have been covered in the monitoring work. Sampling time varies depending on the parameter, where $PM_{2.5}$, PM_{10}, SO_2, NOx were monitored for a period of 24 hours, while the parameters SPM and CO were measured for 8 hours. The air quality measurements were done using portable analyzers that were installed at the selected stations. The test results when compared to the Bangladesh air quality standards indicate that all of them are compliant at a level far below the set threshold. The test results would indicate that the EMP measures being implemented by the Contractor at the time of the air quality monitoring work, to minimize air pollution and dust control is working. During the reporting period, most of the construction works have been completed with the exception of the Akhaura Railway Station and the EMO Building. Dust control is also being implemented in the construction sites. **Table 2.3** below contains the ambient air quality monitoring test results from selected stations for the period July - November 2023, while **Figures 2.1** and **2.2** provides a graphical representation of the air quality monitoring results as well as the DOE standards.

Table 2.3. Air Quality monitoring during July - November 2023[1]

Sampling Code	Sampling Location	$PM_{2.5}$ µg/m³	PM_{10} µg/m³	SPM µg/m³	SO_2 µg/m³	NO_x[2] µg/m³	CO_2 ppm
July 2023							
AAQ-1	EMO Building, Fulbaria, Dhaka	39.46	70.64	118.61	12.39	33.89	0.23
Baseline Status	EMO Building, Fulbaria, Dhaka						
AAQ-2	Saldanodi Railway Station	20.8	37.24	68.35	6.51	23.11	0.12
Baseline Status	Saldanodi Railway Station	15.29	36.65	65.82	2.56	13.59	<2
August 2023							
AAQ-1	Sadar Rasulpur Railway Station	19.08	37.21	76.54	8.04	12.31	0.06
Baseline Status	Sadar Rasulpur Railway Station	11.32	27.76	48.57	2.41	12.57	<2
AAQ-2	Kasba Railway Station	16.33	29.17	62.03	8.78	14.23	0.04
Baseline Status	Kasba Railway Station	10.95	25.56	49.52	3.73	11.46	<2
September 2023							
AAQ-1	Cumilla Railway Station	14.71	27.08	56.41	9.50	16.57	0.01
Baseline Status	Cumilla Railway Station						
AAQ-2	Akhaura Railway Station	16.87	35.02	70.26	14.31	19.01	0.01
Baseline Status	Akhaura Railway Station	26.85	61.53	105.72	5.27	17.45	<2
October 2023							
AAQ-1	Lalmai Railway Station	23.09	44.53	91.24	12.61	14.71	0.06
Baseline Status	Lalmai Railway Station						
AAQ-2	Shashidol Railway Station	14.05	28.22	58.21	9.64	13.96	0.04
Baseline Status	Shashidol Railway Station	9.59	22.12	39.34	2.37	10.37	<2
November 2023							
AAQ-1	Alishohor Railway Station	13.15	27.74	55.26	7.81	11.61	0.05
Baseline Status	Alishohor Railway Station						
AAQ-2	Gangasagor Railway Station	14.10	26.35	56.19	8.05	13.34	0.05
Baseline Status	Gangasagor Railway Station	22.73	49.97	98.46	2.95	12.39	<2
Bangladesh Standard**Error! Bookmark not defined.**		**65**	**150**		**80**	**80**	
Duration (Hours)		**24**	**24**		**24**	**24**	

[1] The Bangladesh National Ambient Air Quality Standards have been taken from the Bangladesh Air Pollution Control Rules 2022, Schedule1

[2] The standard for Nitrogen dioxide was used for the Oxides of Nitrogen (NO_x)

Note:

All parameters shown in ***Table 4*** are within the acceptable limits specified by the DoE.

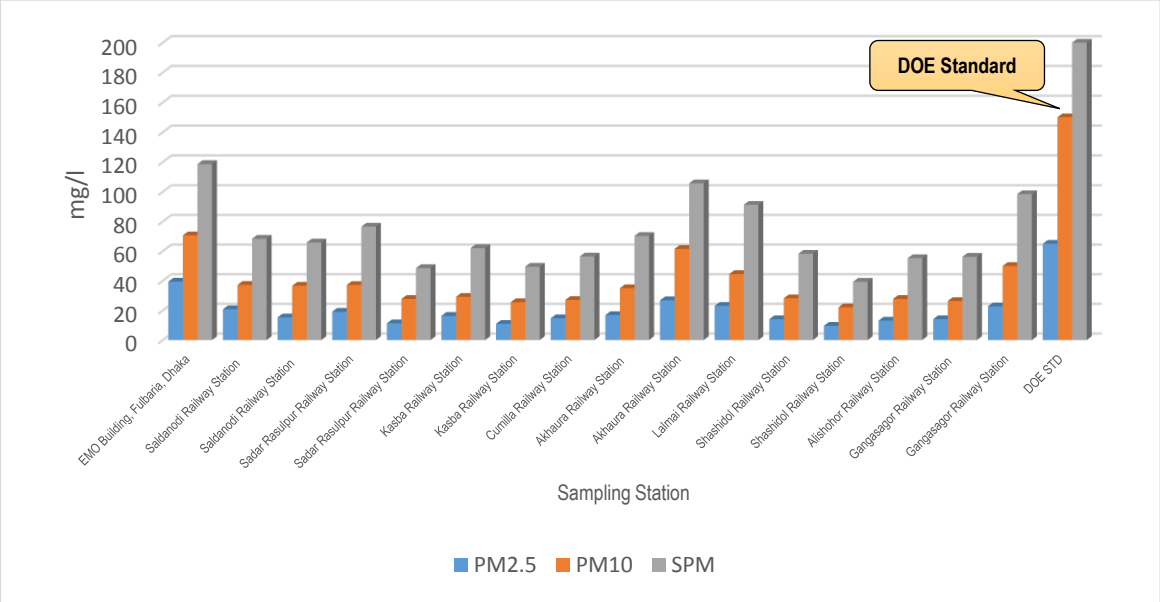


Figure 2.1. Air Quality Test Results for $PM_{2.5}$, PM_{10} and SPM

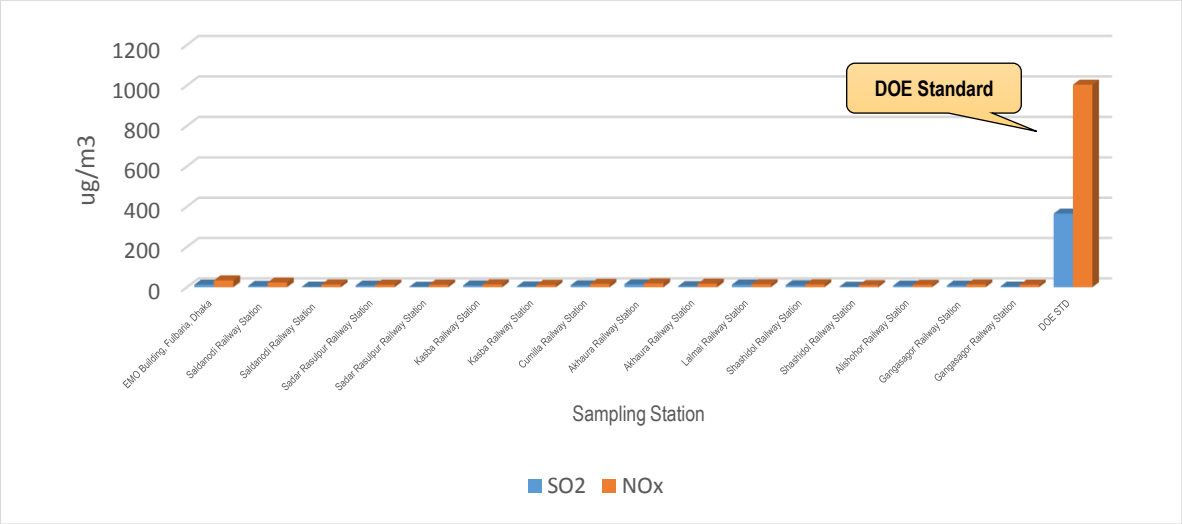


Figure 2.2. Air Quality Test Results for SO_2 and NO_x

2.3 Noise Level Monitoring

54. Ambient noise levels have been monitored from 8 railway stations of the ALDLP project, 8 noise sensitive areas, and the EMO Building site (Fulbaria, Dhaka) area with active construction activities and already completed works during this reporting period. Noise meter with data logger (Digital Noise Meter: Model no. GM 1357) was used to record the ambient noise levels. Twenty (24) noise level sampling locations had been selected which are located near sensitive receptors of the stations. The Detail list of sampling location is shown in **Table 2.5.** Noise level measurement was done continuously for 1 hour per monitoring site (day and night) and the power formula adopted in the Project's EIA was used to compute for the average noise level. The average Leq was recorded and compared to the prescribed ambient noise threshold for the specific zone on which the monitoring site is located; to determine compliance to government noise level standards. Reference is also made to the baseline data secured prior to the actual construction in order to determine if a significant increase in ambient noise level had been created at the monitoring site during the construction phase. Noise monitoring was also done in Project areas were construction had already been completed, to check on

the current ambient noise level. **Annex 5C** contains the methodology for the ambient noise monitoring.

55. Potential noise intensity reaching a receptor vary and dependent on the distance from the source, site land-use, topography, presence of obstacles and meteorological factors. In this project key noise source are operating trains, back-up electric generators, moving vehicles (Project vehicles and general public), operating construction equipment and people (i.e. construction workers, commuters, pedestrians, vendors).

Plate 2.1 Noise level monitoring by EQMS Environmental Spl at the EMO Building Construction site. CSC Jr. Environment Spl (right) observe the monitoring process .

56. For daytime and nighttime noise monitoring, for monitoring sites found within the Project site, the average ambient noise levels measured are mostly compliant to the government noise threshold for the relevant zone category with the exception of the EMO Building construction site. The EMO Building is located beside a very busy Phoenix Road at Fulbaria, Dhaka; and there are currently 2 other on-going construction works beside it, namely the Government Employee hospital Annex and the Arnexco Tower. However, for noise sensitive areas which are railway mosques, 6 (75%) out of 8 monitored, have their day average noise levels compliant with DOE standards for their specific land use (silent zone). These compliant Railway Jaime Mosque include: Saldanadi, Sadar Rasulpur, Kasba, Lalmai, and Shashidal and Alishohor railway stations. Only the Comilla and Akhaura Station Jaime Mosque had exceeded the standard. For the night noise level monitoring, all 8 sensitive areas near the Project site and EMO Building site, had exceeded the DOE standard and therefore non-compliant. These Mosques located near the Project stations include: Saldanadi, Sadar Rasulpur, Kasba, Lalmai, Shashidal, Cumilla and Akhaura and Alishohor and EMO Building. These noise sensitive areas are all located beside the access road to the respective stations, where local transport vehicles and pedestrians regularly pass through. With the exception of the Akhaura Station and EMO Buildings, all other stations, embankments and track construction are already completed. The noise monitored would most likely emanate from public vehicles and pedestrians that pass through the roads beside the mosques, most especially at night when the non-compliant measurements were recorded. The EMO Building Mosque is found along a busy Phoenix road in Dhaka which serves as a by-pass road for vehicles avoiding the main roads especially during peak vehicle traffic time periods.

57. One possible attenuation measure is to plant trees between the construction area and the mosques and school. Regulating the vehicular traffic in order to minimize the noise is not within the mandate of BR. The concerned local government would have to step in to control the vehicle movement during hours of prayer.

58. The methodology employed by EQMS is consistent with the approach done during the conduct of the EIA for the Project Feasibility Study. A one-hour measurement was done in the morning, and its average result was fed into a power formula that yield the average ambient noise level for the morning period. The power formula was derived as part of the EIA study. The results of noise level monitoring for both day and night measurements, is given in **Table 2.4**. Details of the noise monitoring methodology is found in Annex 6c.

Table 2.4. Results of noise level monitoring during July - November 2023

Month		Sampling Code	Location		Leq dB(A)[3]	Baseline Status	Zone[4]	Bangladesh Standard at day Time dB (A)	Remarks
July 2023	1	ANL-1	EMO Building, Fulbaria, Dhaka	Day	62.99		Mixed	60	High
				Night	53.14			50	High

Month		Sampling Code	Location		Leq dB(A)[3]	Baseline Status	Zone[4]	Bangladesh Standard at day Time dB (A)	Remarks
	2	ANL-2	Fulbaria Railway Jame Mosque	Day	62.36		Mixed	60	High
				Night	52.76			50	High
	3	ANL-3	Saldanodi Railway Station	Day	53.39	62.49	Mixed	60	Low
				Night	47.53			50	Low
	4	ANL-4	Ganganogor Jame Mosque	Day	49.08	55.82	Silent	50	Low
				Night	45.11			40	Low
August 2023	1	ANL-1	Sadar Rasulpur Railway Station	Day	53.07	63.51	Mixed	60	Low
				Night	48.33			50	Low
	2	ANL-2	Sadar Rasulpur Railway Station Jame Mosque	Day	49.26	52.25	Silent	50	Low
				Night	46.71			40	High
	3	ANL-3	Kasba Railway Station	Day	55.12	54.65	Mixed	60	Low
				Night	49.37			50	Low
	4	ANL-4	Kasba Railway Station Jame Mosque	Day	48.93		Silent	50	Low
				Night	47.25			40	High
September 2023	1	ANL-1	Cumilla Railway Station	Day	57.03	72.68	Mixed	60	Low
				Night	47.86			50	Low
	2	ANL-2	Cumilla Railway Station Jame Mosque	Day	54.17	66.10	Silent	50	High
				Night	48.36			40	High
	3	ANL-3	Akhaura Railway Station	Day	58.91	66.84	Mixed	60	Low
				Night	49.12			50	Low
	4	ANL-4	Akhaura Railway Station Jame Mosque	Day	53.44	60.98	Silent	50	High
				Night	46.67			40	High
October 2023	1	ANL-1	Lalmai Railway Station	Day	53.27	64.13	Mixed	60	Low
				Night	45.93			50	Low
	2	ANL-2	Lalmai Railway Station Jame Mosque	Day	49.16	59.12	Silent	50	Low
				Night	45.21			40	High
	3	ANL-3	Shashidol Railway Station	Day	56.79		Mixed	60	Low
				Night	47.37			50	Low
	4	ANL-4	Shashidol Railway	Day	48.06		Silent	50	Low
				Night	44.17			40	High

Month		Sampling Code	Location		Leq dB(A)[3]	Baseline Status	Zone[4]	Bangladesh Standard at day Time dB (A)	Remarks
			Station Jame Mosque						
November 2023	1	ANL-1	Alishohor Railway Station	Day	53.41	62.95	Mixed	60	Low
				Night	47.19			50	Low
	2	ANL-2	Alishohor Railway Station Jame Mosque	Day	45.35	61.83	Silent	50	Low
				Night	43.07			40	High
	3	ANL-3	Gangasaor Railway Station	Day	54.20	55.06	Mixed	60	Low
				Night	48.53			50	Low
	4	ANL-4	Gangasaor Railway Station Jame Mosque	Day	46.22		Silent	50	Low
				Night	42.73			40	High

[1] A-weighted decibel, abbreviated dB(A), is an expression of the relative loudness of sounds in air as perceived by the human ear. In the A-weighted system, the decibel values of sounds at low frequencies are reduced, as the ear is less sensitive to low audio frequencies, especially below 1000 Hz, than to high audio frequencies.
[2] Noise Pollution (Control) Rules, 2006.

*Source: EQMS Survey Team; EMP: Environmental Management Plan; NR: Not Reported; *Environmental Conservation Rules, 1997 (Schedule 4) (subsequent amendment in 2006)*

III. Environmental Management Plan Compliance

3.1 Progress of EMP Compliance during Construction Period

59. The implementation of the approved EMP is one of the conditions for the effectivity of the Project Loan Agreement. To ensure the contractor's compliance to the EMP, the Loan Agreement prescribe that these measures be incorporated into the bid documents as among the scope of work by the contractor.

60. During the actual EMP implementation by the Contractor, the monitoring of its compliance had been awarded to a third party that serves as an independent monitor. The third party monitor called EQMS is also tasked to conduct the Environmental Quality Monitoring to check if the EMP is effective in mitigating the projected negative environmental impacts. The CSC Environment team on the other hand, supervises the work of the third party monitor EQMS, and confirms their findings and recommendations for corrective action to be performed by the Contractor to remedy non-compliances of the EMP.

61. In response to the comments of ADB on the January – June 2020 Semi-Annual report on the quality of the EMP compliance monitoring, the CSC Social Safeguards team developed a new monitoring system that provides for a quantitative methodology to evaluate compliance by the Contractor to approved EMP, and contains a routine that allows for the identification and monitoring of non-compliant activities. Using MS Excel apps, the implementation of all major project components is evaluated for compliance to the EMP by an evaluator by giving a numerical score between 1 to 5 to each relevant mitigation measures as applied to each project component, where 1 is non-compliant and 5 is fully compliant. The MS Excel apps will consolidate all scores and generate a single number that can define if the Contractor is fully, partially or non-complaint to the EMP. The system was introduced to representative of CTM JV, CSC, and third party monitor EQMS in a 2 day workshop held in 23-24 March 2021.

62. Under the new system, the Project was divided into 83 components made up of 13 stations, 12 bridges, 43 culverts, 14 5 km segment of railway track & embankment, and 1 plant nursery. Each of these Sections are individually evaluated for compliance to EMP. Section 1 has 26 components (4 stations, 3 bridges, 14 culverts, 5 5 km long track/embankment); Section 2 has 25 components (4 stations; 5 bridges, 11 culverts, 4 5 km track/embankment, and 1 plant nursery) while Section 3 has 32 components (5 stations, 4 bridges, 18 culverts, 5 5 km long track/embankment).

3.2 EMP Progress Status During the Period July - November 2023

3.2.1 Overall EMP Compliance Status

63. For the reporting period (July – November 2023), the Project is evaluated as compliant to the approved EMP with an overall average rating of 5 points. Under the new reporting system, a score greater than or equal to 4 points ($\geq$ 4 points) is considered compliant to EMP. A score that is less than 4 points but equal to or greater than 3 ($>\underline{3}$ and <4) is considered as partially compliant. However, a score less than 3 points (< 3) is non-complaint. For the month of November 2023 that is evaluated in this report, it is in the aspect of supply and proper use of Personal Protection Equipment (PPE) that a rating 4.97 was obtained for Section 3. Local labor find it uncomfortable and inconvenient to wear the PPEs issued to them by the main Contractor CTM JV. These delinquent workers had to be reminded always to wear their PPE even when the supervisors and inspectors are not around. At the end of the reporting period, the Project is mostly completed and undergoing clean-up and demobilization. It is during this time, that construction debris and other waste materials are being collected, temporarily stored and hauled to appropriate disposal areas. This clean-up drive is foremost in Section 3, while Section 1 and 2 are mostly cleaned and construction equipment, materials and personnel had already been demobilized. Overall, an average rating of 5 had been garnered, meaning the ALDLP is compliant to the EMP. **Table 3.1** contains the overall summary of EMP compliance during the reporting period (July - November 2023), while **Table 3.2** contains the summary evaluation for all mitigation measures as of November 2023. **Table 3.3** on the other hand contains details of the Novermber 2023 status, while **Annex 1** contains the full evaluation table covering all of the 83 Project components, per EMP mitigation measure as of the month of November 2023 where most of the corrective measures were done.

Table 3.1. Summary Evaluation Of Compliance To The Environmental Management Plan (July-November 2023)

	MONTH	SECTION 1		SECTION 2		SECTION 3		OVERALL	
		RATING	REMARKS	RATING	REMARKS	RATING	REMARKS	RATING	REMARKS
1	Jul-23	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant
2	Aug-23	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant
3	Sep-23	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant
4	Oct-23	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant
5	Nov-23	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant
	AVERAGE RATING	5.0	Compliant	5.0	Compliant	5.0	Compliant	5.0	Compliant

Table 3.2 Summary Evaluation Of Compliance To Environmental Management Plan Per Section As of 30 November 2023

S.I.	GENERAL MITIGATION	SECTION 1		SECTION 2		SECTION 3		OVERALL	
		RATING	REMARKS	RATING	REMARKS	RATING	REMARKS	RATING	REMARKS
1	Noise and Attenuation Measures	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
2	Dust Control	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
3	Watercourse Impacts in Wetlands/Ponds/Rivers	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
4	Borrow and Dredging Site Impacts	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
5	Disposal of Construction Debris and other Wast e Materials	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
6	Servicing and Operating Equipment	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
7	Control of Petroleum Products	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
8	Protection of Topsoil and Soil Erosion	5.0	Compliant	5.00	Compliant	5.00	Compliant	5.00	Compliant
9	Occupational Health and Safety	5.0	Compliant	5.00	Compliant	4.97	Compliant	4.99	Compliant
	AVERAGE RATING	5.0	Compliant	5.00	Compliant	4.99	Compliant	5.00	Compliant

Table 3.3. SUMMARY OF COMPLIANCE TO EMP PER SECTION AS OF NOVEMBER 2023

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
1	**Noise and Attenuation Measures**							
	1	Use of modern plant and equi pment.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	2	All powered mechanical equipment and machinery to be fitted with noise abating gear such as mufflers for effective noise control in compliance with DoE regulat ions.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Locate rock crushing, concret e mixing and material shipment yards away from residential areas, schools, colleges and hospitals.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	4	Install temporary noise barriers near sensitive locations such as schools, reli gious places and hospitals	5.0	Compliant	5.0	Compliant	5.0	Compliant
	5	Providing the construction workers with suitable hearing protection like ear cap, or earmuffs etc.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	6	Noise quality monitoring to be carried out as per the schedule in the enviro nmental monitoring plan.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
2	**Dust Control**							
	1	Vehicles transporting construction material to be covered	5.0	Compliant	5.0	Compliant	5.0	Compliant
	2	Construction equipment to be maintained to a good standard and idling of engines discouraged.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Machinery emitting visible smoke to be banned from construction sites.	5.0	Compliant	5.0	Compliant	5.0	Compliant

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
	4	Contractor to prepare a dust suppression program detailing action to be taken to minimize dust generation (e.g . spraying of roads with water), and the equipment to be used.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	5	Dust masks to be provided to workers where dust hazards exist.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	6	Air quality monitoring to be carried out as per the schedule in the environmental monitoring plan.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	7	All roads, permanent or temp orary, pukka or katcha, that become dusty an d all areas where construction related activities are carried out, shall be subject to necessary dust suppression measures by watering, sweeping or other measures approved or directe d by the Engineer	5.0	Compliant	5.0	Compliant	5.0	Compliant
	8	Contractor shall not allow waste oil, lubricant or other petroleum derivatives to be used as dust suppressants and shall take all reasonable precautions to prevent accide ntal spillage of petroleum products, contact of such materials with soil or water course through discharge run-off, and or seepage	5.0	Compliant	5.0	Compliant	5.0	Compliant
	9	Contractor shall take all reaso nable measures to minimize dust-blowing from areas under his control by spraying water on stockpile, bare soil, haul road, un-surfaced traffic route and any other source of dust when conditions require dust suppression. If the Engineer considers that the dust suppression measures adopted by Contractor ineffective. Contractor shall in that case take further measure to minimize dust blowing at construction site as per his direction	5.0	Compliant	5.0	Compliant	5.0	Compliant

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
3	**Watercourse Impacts in Wetlands/Ponds/Rivers**							
	1	Adequate mitigation measure shall be undertaken to limit the impact on all water bodies within the Project area	5.0	**Compliant**	5.0	**Compliant**	5.0	**Compliant**
	2	Earth moving in the vicinity of watercourses shall be kept to a minimum to avoid sedimentation and contamination from fuel and lubricants.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Proper disposal of bricks, cement, and steel reinforcement which will be removed as part of the reconstruction of bridges/ culverts shall be ensured not to block stream flow.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	4	Temporary erosion and sedimentation control measures during rehabilitation of cross-drainage structures shall be undertaken to ensure that sediment laden run off does not enter the adjoining watercourses.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	5	Construction materials and waste shall not be discharged in watercourse during construction of bridges/culverts by implementing appropriate mitigation measure.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
4	**Borrow and Dredging Site Impacts**							
	1	Proper management of borrow pits and dredging sites so that water pollution and water logging may not be happened.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
5	**Disposal of Construction Debris and other Waste Materials**							
	1	No burning shall be allowed.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	2	No cleared debris shall be left lying on the surface of the ground or buried in any agricultural land.	5.0	Compliant	5.0	Compliant	5.0	Compliant

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
	3	Man-made construction debris shall be disposed of in disposal areas the location and nature of such disposal shall be subject to the approval of the Engineer.	5.0	Compliant	5.0	Compliant	4.9	Compliant
	4	All disposal areas shall be finally graded to a uniform and level condition and left such that they create a minimum impac t on the surrounding area.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
6	**Servicing and Operating Equipment**							
	1	Servicing of machines or equipment near rivers, streams or other bodies of water shall be carried out in such a manner as to avoid pollution with gasoline, diesel fuel, oil, grease, or surplus or disposable materials	5.0	Compliant	5.0	Compliant	5.0	Compliant
	2	Without limiting the generality of the foregoing, the Contractor shall ensure that all hydraulic systems, fuel systems and lubricating systems are in good condition to avoid leakage of petroleum products.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Fuel spills will not be condoned and care shall be taken to avoid overfilling machines.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	4	The Contractor shall have the proper equipment to transport fuel so that spillage will not occur. Automatic shut-off nozzles shall be installed on all fuel dispensing units.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	5	The Contractor shall have oil spill abatement equipment on the Site at all times.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	6	The type of equipment shall be subject to the approval of the Engineer, and the equipment shall be maintained in good working condition.	5.0	Compliant	5.0	Compliant	5.0	Compliant

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
	7	Disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP or as directed by the Engineer.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
7	**Control of Petroleum Products**							
	1	All petroleum products shall be stored in a designated storage location where any spillage can be safely maintained without contamination of the surrounding area. Storage of petroleum products shall not be permitted in the vicinity of streams rivers or to avoid groundwater contamination. be placed on subsurface of the storage room other bodies of water. Impermeable liner shall	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
8	**Protection of Topsoil and Soil Erosion**							
	1	Topsoil storage areas must be protected during the dry season from wind erosion by covering.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	2	Rapid re-vegetation and use of hydro-seeding and jute erosion protection mats will be applied in areas where erosion is noted during the regular monthly inspections.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Embankment site to be planted with trees to promote natural vegetation; as well as fast growing grasses.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	4	The stockpiling and/or disposal of material as aforesaid shall be such that the material is not placed in any area where natural drainage or storm water could pond and become stagnant, or where could erode the material and cause silting of the adjacent area or of any natural or man-made water course.	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant
9	**Occupational Health and Safety**							

MITIGATTION MEASURES			Section 1		Section 2		Section 3	
			Rating	Remarks	Rating	Remarks	Rating	Remarks
	1	Supply of appropriate personal protection equipment, such as safety boots, helmets, gloves, protective clothing, goggles and ear protection among the workers and enforce its use.	5.0	Compliant	5.0	Compliant	4.8	Compliant
	2	Follow the specification on construction safety as defined in civil works	5.0	Compliant	5.0	Compliant	5.0	Compliant
	3	Construction workers will be required to train in general health and safety matters and on specific hazards of their work	5.0	Compliant	5.0	Compliant	5.0	Compliant
	4	Must not hire child labor, age below 14	5.0	Compliant	5.0	Compliant	5.0	Compliant
	5	Hire, use of benefit from child Labor-Child labor (as defined by ILO Conventions 138 and 182) means that no workers under the age of 14 may be hired as general labors, and no workers under the age of 17 are to be hired for hazardous jobs.	5.0	Compliant	5.0	Compliant	5.0	Compliant
	6	Provide adequate number of toilet and other sanitation facilities in the offices, workplace, and worker's accommodations.,	5.0	Compliant	5.0	Compliant	5.0	Compliant
		Average Rating	5.0	Compliant	5.0	Compliant	5.0	Compliant

3.2.2 Noise Attenuation Measures

64. To help insure compliance to Clause 3.5 of the EMP that prescribes the implementation of noise attenuation measures, site monitoring work was performed by the third party monitor EQMS. The monitor had indicated that most of the 6 prescribed measures had generally been complied with under the prescribed EMP measures. These complied measures include a) use of modern plant and equipment that are properly maintained; b) installation of noise abatement gear on all powered equipment; and c) location of rock crushers and other noisy equipment and activities away from noise sensitive areas. These activities are confined to the Akhaura, Kasba and Shalda nadi Station yards where the remaining works are located. Other portions of the Project had already been completed as well as clean-up and demobilization of personnel and equipment.

65. While it can be noted that ear protection had not been provided to workers that may be exposed to extreme noisy environment, these safety gear however are not necessary during reporting period. Most of the noisy construction work involving heavy equipment have already been completed in Sections 3; while Section 1 and 2 had been completed and handed over by the Contractor to BR PIU. There are a few backhoe and hauling trucks still deployed at the site, however, the noise generated from these equipment are low and will not require the need for workers to wear ear protection. Work at the Quasba and Saldanadi stations is mostly complete during the reporting period. Works had previously been delayed due to after the Indian High Command objections to the works. Construction of these facilities resumed during the first semester of 2023, with the use of minimal equipment and mostly manual labor were deployed. In view of these events, construction-related noise created is very minimal, and therefore ear protection against noise is not needed by the workers at the construction site.

3.2.3 Dust Control

66. The third party monitor EQMS had noted, that all of the 9 measures prescribed had been fully complied with by the Contractor. While it can be noted that trucks transporting construction materials are still not being covered, however, only fine excavated material may serve as the source of dust, others such as steel reinforcements, cables, concrete slabs do not cause dust. Since much of the earthworks had already been completed, so dust resuspension from unpaved access roads remains the source of the particulate matter. However, considering that the construction activities had been conducted mostly during the rainy season, so the level of watering had not been significant. Very minimal temporary stockpiles of earth and sand were observed to be covered by canvass or sprayed with water regularly by the contractor.

67. Watering of all main and access roads, and unpaved track embankments are being done by the contractor whenever and wherever necessary. As mentioned earlier, the degree of watering is no longer as intensive during the reporting period since: a) it is already the rainy season; and b) minimal construction activities undertaken. As compared with the level followed during the dry season (January-May), current activities are already minimal, and focused mainly on Akhaura station, Kasba and Saldanadi stations.

3.2.4 Watercourse Impacts in Wetlands/Ponds/Rivers/Canals

68. During the reporting period, it was observed that all of the watercourse impact preventive measures had been fully complied with. These fully achieved measures during the reporting period include: a) All waterways where Construction activities are conducted, are maintained open at all times, else temporary diversion works adequate to convey surface water flow are installed; b) Earth moving in the vicinity of watercourses are kept to a minimum ; c) temporary erosion and sedimentation control measures are installed during rehabilitation of drainage structures; d) construction materials and waste are not dumped into water courses and are deposited into designated disposal areas; and e) the proper and prompt disposal of construction wastes is partially compliant. As noted in earlier Sections of this report, the bridge and culvert works are already complete. Debris and water diversion works were already removed and so no Project related debris are present that may partly hinder the flow of surface water that traverses the bridge and culverts that had been constructed.

3.2.5 Borrow and Dredging Site Impacts

69. During the reporting period, there were no borrowing nor dredging activity performed by the Contractor. It is for this reason that this activity had not been covered in the monitoring work performed by EQMS.

3.2.6 Disposal of Construction Debris and other Waste Materials

70. Most of the mitigation measures related to proper storage and disposal of construction waste has been complied during the reporting period. These measures include: a) no burning was allowed; b) No construction debris left lying on the surface of the ground, pond or buried in agricultural areas; c) discarded waste were properly covered with earth before abandoned in a manner that blends with the surrounding environment; d) disposal areas are graded to a uniform level. It can be noted that the mitigation measure of proper disposal of man-made construction related debris in disposal areas will need to be emphasized. As the construction activities in many Project areas are complete and the 3 remaining station works are winding down due to completion of the works, care will need to be made in the temporary storage, collection, transport and disposal of the residual waste materials. The Contractor has exerted effort to temporarily store waste materials at designated open storage sites; where small size waste is promptly collected and disposed of promptly, while big materials such as concrete slabs, broken steel beams, etc. are deferred until suitable heavy equipment and trucks are available to transport them to authorized disposal sites.

3.2.7 Servicing and Operating Equipment

71. All of the mitigation measures prescribed under Servicing of Construction Equipment had been complied with. These measures include: a) avoidance of servicing equipment near water course; b) ensuring equipment hydraulic, fuel and lubricating systems are properly operating to avoid oil spillage; c) non-condoning of spillages; d) provision of proper equipment for transporting and/or filling fuel and other petroleum products; e) securing first the approval of the Engineer prior to the deployment of equipment at the site; and f) disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP. Construction equipment are important element that facilitates the construction work effectively and on a timely manner. Moreover, their proper use and maintenance will ensure the machines' longer service life, minimizes costly down time due to equipment brake down, and government imposed penalties due to pollution of adjacent environs.

72. However, the 5th and 7th (last) mitigation measure under the servicing and operating equipment (provision of proper oil spill abatement equipment and proper disposal of used oil, lubricants, tires, etc.), were partially complied in the Quasba station. Efforts were made by CTM JV TCCL to built a waste oil storage facility, however, due to lack of funds, a poor quality structure was erected in its place. The structure had a concrete slab flooring and corrugated galvanized iron sheet roofing, however bamboo posts were installed to hold the roof with no walls provided. Likewise, a few drums were provided that is not enough to store the waste oil deposited in the existing concrete oil sump. The attention of the Contractor was called by CSC to fast track the proper removal of the waste oil from their Quasba oil storage facility. CTM JV MAX on their part had been using their company's garage located at Chinki Astana (Mireshorai Upasilla) that is about 45 km away from Comilla, to service their construction equipment requiring major repair/maintenance work. The units requiring major servicing will be taken to the garage by trailer and returned to the construction site once the servicing is completed. Other existing equipment servicing facility located at Lalmai Station is only doing minor work (i.e. change oil, change tires, change hydraulic fluid, etc.), while the Gumti construction yard is currently serving as fuel storage and filling station.

73. Waste oil and other petroleum products are collected by the Contractor, and temporarily stored in the used oil storage facilities at the Lalmai and Quasba stations, to await their collection for proper treatment/disposal by a licensed contractor. The spent oil/lubricants at the Lalmai construction yard are kept in tightly sealed steel drums, and stored in sheds having waterproof concrete floor with roofing.

74. For other hazardous waste such as broken equipment parts, rusting small pieces of reinforcement bars and other metallic construction waste materials, these are normally collected by the Contractor, temporarily stored at selected areas within the Construction area, and then sold to buyers who use them as scrap materials. Those scraps not sold, as well other wastes such as broken glass, broken bulbs, are brought to the authorize local government garbage disposal area for deposit.

3.2.8 Control of Petroleum Products

75. The storage of petroleum products in suitable places with proper impermeable bottom, located at a distance away from water bodies is an essential measure to help insure the prevention of any accidental spillage that may contaminate the soil and eventually ground water of which majority of rural people in the country are dependent on for their domestic water needs. During the reporting period, it has been observed that most of the construction sites and yards where petroleum products are stored, comply with the measure. As had been mentioned earlier only a few areas had been retained as storage facilities for fuel and other petroleum products, which are Lalmai, Gumti and Quasba construction yards. The temporary storage for waste oils and related products is in Lalmai and Quasba construction yards. As mentioned earlier in paragraph 71, the Quasba storage facility for waste oil in sealed drums does not fully conform to standards. The Contractor should allocate adequate funds in order to upgrade the present structure to acceptable standards.

76. Servicing/maintenance work for vehicles and equipment are done in Lalmai and Quasba construction yards. Disposable items from maintenance work such as spent oil filters, broken fan belts, soiled rags, and others should be separated from the used oil and other spent petroleum products, temporary stored in dry place while awaiting disposal in the approved deposit site. Reusable or recyclable items (i.e. drums, boxes, etc.) can be separated from rest and donated to interested schools, madrasas, private individuals. Refueling on the other hand are either done at the Gumti and Quasba construction yards, or at site using tankers. Drip pans have been used and placed below the equipment/vehicle fuel tank while filling to help prevent accidental spillage onto the soil.

77. Similarly, the Contractor needs to ensure that those abandoned facilities be properly cleaned and restored to at least their pre-Project conditions. Since waste petroleum are hazardous substances, appropriate modification of the existing storage facilities will need to be made such as installing of walls to ensure that possible spillages due to improper handling or storage, will not flow to the adjacent areas, most especially drainage or water bodies thereby polluting them (adjacent areas).

3.2.9 Occupational Health and Safety

78. The other major activity where deficiencies were observed are in the Occupational Health and Safety Program. While this program got a compliant average score, there are activities that are non-compliant that require attention. These non-compliant activities include: a) the regular and proper use of supplied Personal Protective Equipment (PPE); and provision of adequate sanitary toilet and clean water supply at the construction sites.

79. While CTM JV provides the PPEs, however, its proper utilization by the contract unskilled labor, still has much to be desired. There are still workers observed not wearing the PPE since they find it inconvenient to use. Only when CSC engineers visit the site will these erring workers wear them. Since Section 1 and 2 had during the reporting period been handed over by the contractor to BR, then only Section 3 construction workers will require constant reminder to wear their PPEs. The Contractor had been issued reminders about these deficiencies. Construction supervisors should be more vigilant to prevent their local contracted workers with no properly worn PPE from working. Details on the occupational health and safety measures are found in **Table 3.7.**

80. For the provision of sanitary toilets and clean water supply at the construction site, this issue had been addressed by the Contractor, most especially when the works are focused on three railway stations. During the reporting period, there was a decrease in construction activities such that a corresponding decrease in manpower and support services had been pursued. For the CTM-JV MAX personnel, they are occupying the partially completed Signals & Telecom Office at the Akhaura Yard, while for the CTM-JV TOMA, the workers are still using their existing temporary Kasba and Imambari Station accommodations. TOMA workers are transported to and from their accommodations to the work site and back.

3.2.10 Protection of Topsoil and Soil Erosion

81. All 5 measures were fully complied with by the Contractor under the protection of topsoil and soil erosion mitigation measures. These compliant activities include: a) protection of topsoil storage

areas from wind and rain; b) prompt protection of open embankments using appropriate methods that includes hydroseeding among others; c) planting of selected embankments with appropriate tree saplings and maintenance and protection of the established plantations; d) proper selection of stockpiling and disposal areas; and e) proper siting of disposable materials in areas located away from water bodies, flood prone and erodible slopes. At present, the Contractor is in its 3rd year of implementing the "Compensation Tree Plantation Establishment and Rehabilitation Program" which aims to replace the trees that had been cut along the track alignment, as a result of the Project implementation. The established track embankment slope which are susceptible to soil erosion are planted with suitable tree species which is expected to help protect the top soil, prevent soil erosion as and stabilize the track embankments. In other embankment slope areas not intended for planting, sodding grass is applied.

3.3 Compensatory Tree Plantation Establishment and Rehabilitation Program

3.3.1 Objective of tree plantation

82. The objective of the tree plantation and replacement program is to compensate for the loss of trees due to the implementation of the Akhaura-Laksam double line railway Project. Other major objectives of the program are:

- To protect the affected cultural/sensitive areas located within 50 m from the ROW boundary;
- To enhance the health of the existing ecosystem;
- To reduce the impacts of air pollution and dust as trees are known to be natural sink for air pollutants; and
- To arrest soil erosion at the embankment slopes.

3.3.2 Scope of tree plantation

83. About 31,749 timber trees, 13,546 fruit trees, 188 medicinal trees, 4,166 banana clumps, and 5,693 bamboo poles of different sizes had been cut due to the implementation of Project at pre-construction and construction periods. Approximately, 55,000 trees had been removed from the study area, but are under the process of being replaced under the Project. The Compensation Tree Plantation Establishment and Rehabilitation Program intends to plant at least three times the number of fallen trees and other forest products. These trees and other important forest products are being planted on both sides of the widened track embankments, station building areas, and new station access road alignments and along affected cultural/sensitive areas within 50m from the ROW boundaries. Therefore, more than165,000 trees and other forest products have already been planted and maintained by the Contractor. Following ADB's requirements, the Contractor will protect and maintain the established plantation until its handover to BR after the end of the Defects Liability Period.

3.3.3 Status of tree plantation

84. For this year 2023, compensation tree plantation establishment and rehabilitation had commenced in the second week of June 2023. Contractor has targeted to plant 76,650 saplings during the rainy months of June to October 2023, which is made up of 70,500 and 6,150 saplings for the track embankments and around the completed railway stations respectively. Tree planting around the completed stations had commenced in December 2022, and continues up to this reporting period. More details are provided in later sections.

85. It was reported that about 43,200 saplings have been planted by CTM-JV Max during the reporting period, at the Black Cotton Zone (BCZ) area, which far exceeded its target of 37,000 saplings planted. The construction of the track and its embankments at the BCZ) had been completed during the previous reporting period (January-June 2023), which allowed the Project to pursue the tree planting along the embankment slope and adjacent areas in the area. For the CTM-JV TOMA part, the Contractor was able to plant a total of about 46,574 tree saplings of which, 20,885 are for new plantations (62.3%) and 20,885 saplings (65%) are for replacement planting of damaged trees. About 124,000 tree saplings were procured during the report activity. Likewise, about 92,050 holes have been dug on which most of the saplings were planted. For the BCZ area, inorganic fertilizers were applied on the base of the samplings, while in Section 3 (TOMA side), organic fertilizers were used. **Table 3.5** contains the status of the 2023 tree plantation establishment and rehabilitation program.

Table 3.5. Status of 2023 Tree Plantation Establishment and Rehabilitation Program

ACTIVITY	SECTION 1 & 2 (MAX)			SECTIONS 2&3 (TOMA)			TOTAL		
	TARGET	ACTUAL	%	TARGET	ACTUAL	%	TARGET	ACTUAL	%
Seedling Production	0	0	0.00%	0	0	0.00%	0	0	0.00%
Seedling Procurement	38,050	75,865	199.38%	86,000	48,135	55.97%	124,050	124,000	100%
Site Preparation	37,000	48,200	130.27%	78,100	43,850	56.15%	115,100	92,050	79.97%
New Plantation (2023 Embankment)	37,000	43,200	116.76%	33,500	20,885	62.34%	70,500	64,085	90.90%
New Plantation (2023 Station)	1,050	0	0.00%	5,100	0	0.00%	6,150	0	0.00%
Replacement planting	0	0	0.00%	39,500	25,689	65.04%	39,500	25,689	65.04%
Maintenance & Protection	38,050	43,200	113.53%	78,505	46,574	59.33%	116,555	89,774	77.02%

86. Overall, of the 165,000 tree saplings targeted to be planted, a total of 273,853 saplings have already been installed by the Project corresponding to 166% of total target. The total saplings planted included the new plantations and replacement for some of the dead saplings. From this total (273,853 saplings), 173,081 saplings were planted in Sections 1 & 2 (MAX); while 100,772 are in Section 2&3 (TOMA). Further, 184,079 saplings were planted between 2020 and 2022 (Section 1&2 MAX– 129,881 saplings and Section 2&3 TOMA – 54,198 saplings). In 2023 on the other hand, 89,774 saplings were planted in 2023 that is made up of 43,200 saplings in Section 1&2 MAX, and 46,574 saplings in Section 2 & 3 TOMA side. The Black Cotton Zone (BCZ) area had the most number of saplings planted so far at 43,200 numbers. Section 2&3 (TOMA) plantations can be found in many chainages starting near the Akhaua Station Yard, to the BCZ area.

87. If no replanting is considered, the total number of trees planted is recorded at 230,040 saplings for track embankment, while Station Landscaping are at 1,200 saplings installed at the completed Alishahar and Mainamati stations. It is the obligation of the Contractor to replace all dead saplings, else they cannot bill their second 25% or third payments for the dead saplings.

88. However, overall sapling mortality was high, totaling to 70,599 saplings or 25.8% of total planted. Since the actual tree planting program for 2023 had not yet undergone 100% survival assessment, it is not yet appropriate to measure the survival rate of the newly planted saplings. This inventory is done at end of the current dry season some time May or June 2024. The Subcontractor Bismillah Nursery had deployed watch guards to protect and maintain their established plantations. **Table 3.6** contains the overall status of the ALDLP Tree Plantation Establishment and Rehabilitation Program.

Table 3.6. Overall Status the Tree Plantation Establishment and Rehabilitation Program as of 31 December 2023

	2020-2022			2023			Total	
	Section 1 & 2 (MAX)	Section 2&3 (TOMA)	Subtotal	Section 1 & 2 (MAX)	Section 2&3 (TOMA)	Subtotal	2020 - 2023	Overall Target
Annual Tree Plantation Establishment target	98,700	69,500	168,200	38,500	78,100	116,600	284,800	165,000
a. Track Embankment	93,700	69,500	163,200	37,000	73,000	110,000	273,200	123,750
b. Railway Stations	5,000	0	5,000	1,500	5,100	6,600	11,600	41,250
Total Tree Saplings Planted								
a. New Planting + Replacement	129,881	54,198	184,079	43,200	46,574	89,774	273,853	165,000
b. New Planting (Embankment) only	96,500	43,766	140,266	43,200	46,574	89,774	230,040	
c. New Planting (Stations) only	1,200	0	1,200	0	0	0	1,200	
Dead tree saplings	49,479	21,120	70,599	0	0	0	70,599	--
Total Surviving Trees	72,423	24,491	96,914	43,200	46,574	89,774	186,688	165,000
% Survival	55.76%	45.19%	52.65%	100.00%	100.00%	100.00%	68.17%	100%

100% Tree Inventory of 2022 Tree Plantation

89. In order to determine the survival rate of trees planted and reconcile the number of actual surviving trees from the 2022 tree plantations, a joint tree inventory team was created with members from both CSC and CTM JV. The work entails the 100% counting of all surviving trees from the 2022 plantations, on a per species and quality basis. The work had commenced in 15 May 2023 and was completed just before the Eid Udha holiday. The result of the inventory can be instrumental in determining which tree species are performing well and those that do not meet specifications.

90. So far, the team had completed inventorying the surviving planted trees in all Sections. The raw data gathered that were noted down in a checklist prepared by the CSC Environment team, and were encoded in a computer using the MS EXCEL data base prepared by CSC Environment team. The software automatically processed the survey data and generated appropriate summary tables that can be used for assessment purposes. The Contractor can also use these inventory results for their billing purposes subject to the Contract measurement and payment procedures. At the time of this report, the team had completed the data encoding of all raw survey results from all Sections. The results of the 2022 100% tree inventory can be found in Table 3.6.

Tree Inventory Results

91. Based on the results of the tree inventory conducted in Sections 1, 2 and 3 for the 2022 plantation, most (81.9%) of surviving trees comply with the prescribed standards for planted trees. These standards include: healthy (absence of signs of infestation), at least 1 m height, broad evergreen leaves and branches. It was observed that surviving timber trees perform better at 85.3% compliant, followed by fuel wood trees at 81.9%, and medicinal trees at 74.2%. On a species basis, the timber tree Mangium *(Acasia mangium)* has the highest compliance rate of 91.9% for the 1,003 surviving trees (1,003/1,091 saplings), which is followed by another fruit tree palm (*Borossus flabelliformis*) with 88.8% (700/788 saplings) and the third placer is the timber tree Akasmoni (*Acasia auricoliformis*) with 88.3% compliance (14,047/15,917 saplings). The species with the most number of surviving trees is the timber tree Akasmoni (*Acasia auricoliformis*) with 15,917 trees (88.3% compliant). This was followed by the medicinal tree Arjun *(Terminalia arjuna)* with 1,512 trees (80.7% compliant). **Table 3.7** contains the summary of tree inventory results of trees planted in 2022 that had survived in all Project Sections.

Plate 3.1. CSC Jr. Environment Specialist (right) examines an acasimoni (*Acasia auricoliformis*) and notes its quality, while a CTM JV members counts the number of surviving trees during the 100% tree inventory of the 2022 plantation.

Table 3.7. Summary of Tree Inventory Results (2022 Tree Plantation)

TREE TYPE	TREE SPECIES	STATUS OF LIVE TREES				
		Compliant	Non-Compliant	Total	Compliant %	Non-Compliant %
Timber	Akasmoni (*Acasia auricoliformis*)	14,047	1,870	15,917	88.3%	11.7%
	Mangium (*Acasia mangium*)	1,003	88	1,091	91.9%	8.1%
	Kat badam (*Terminalia calappa*)	434	137	571	76.0%	24.0%
	Mehogani (*Swietenia mahogani*)	314	93	407	77.1%	22.9%
	Bakul *(Mimusops elengi)*	478	278	756	63.2%	36.8%
	Raj Koroi *(Albizia richardiana)*	454	199	653	69.5%	30.5%
	Jarul (*Lagerstroemia speciosa)*	741	266	1,007	73.6%	26.4%
	Jam (*Acacia acuminata)*	480	160	640	75.0%	25.0%
	Segun *(Tectona grandis)*	1	2	3	33.3%	66.7%
	Subtotal	17,952	3,093	21,045	85.3%	14.7%

TREE TYPE	TREE SPECIES	STATUS OF LIVE TREES				
		Compliant	Non-Compliant	Total	Compliant %	Non-Compliant %
Fruit-bearing	Olive (*Olea europaea*)	266	198	464	57.3%	42.7%
	Palm (*Borossus flabelliformis*)	700	88	788	88.8%	11.2%
	Date palm (*Phonix syslvestries*)	111	31	142	78.2%	21.8%
	Mango (*Mangifera indica*)	202	242	444	45.5%	54.5%
	Jackfruit (*Artocarpus heterophyllus*)	571	242	813	70.2%	29.8%
	Boroi (*Ziziphus mauritiana)*	194	35	229	84.7%	15.3%
	Subtotal	2,044	836	2,880	71.0%	29.0%
Medicinal	Neem (*Asarlira chalaindica*)	34	23	57	59.6%	40.4%
	Bohera (*Terminalia belliricha*)	514	487	1,001	51.3%	48.7%
	Horitoki *(Terminalia chebula)*	785	127	912	86.1%	13.9%
	Arjun *(Terminalia arjuna)*	1,512	361	1,873	80.7%	19.3%
	Amloki *(Phyllanthus emblica)*	600	209	809	74.2%	25.8%
	Bel *(Aegle marmelos)*	48	7	55	87.3%	12.7%
	Subtotal	3,493	1,214	4,707	74.2%	25.8%
Fuel-Wood	Radhachura *(Caesalpinia pulcherrima)*	26	13	39	66.7%	33.3%
	Krisnachura (*Delonix regia*)	108	27	135	80.0%	20.0%
	Ipil-ipil (*Leucaena leucocephala*)	105	21	126	83.3%	16.7%
	Chatim *(Alstonia scholaris)*	293	100	393	74.6%	25.4%
	Khadam *(Neolamarckia Cadamba)*	65	17	82	79.3%	20.7%
	Subtotal	597	178	775	77.0%	23.0%
	Total	24,086	5,321	29,407	81.9%	18.1%

**Source: 100% CSC and CTM JV Joint tree inventory for 2022 plantations*

92. The relatively lesser performers are mostly fruit-bearing trees where only overall 71.0% complied with standards. On a per species basis however, the timber tree Segun *(Tectona grandis)* had the least compliance rate of 33.3% (1/3 saplings) and so the planting of these should be avoided. Other least performers includes the fruit-bearing tree Mango (*Mangifera indica*) at 45.5% (242/444 saplings) and the medicinal tree species Bohera (*Terminalia belliricha*) at 51.3% (514/1,001 saplings), the fruit tree Olive (*Olea europaea*) at 57.3% (266/464 saplings). Likewise, of the 29,407 trees inventoried, 21,045 (71.6%) are timber trees; 2,880 (9.8%) are fruit trees; 4,707 (16.0%) are medicinal trees; and 775 (2.6%) are fuel woods.

93. In terms of survival, based on RFIs (Request for Inspections) a total of 42,866 saplings were planted of which, Section 1&2 MAX has 27,800 saplings and Section 2&3 TOMA has 15,066 saplings. Considering that only a total of 29,407 trees have been counted during the inventory, indicates a current survival rate of 50.5%. If compared to previous year (2022) Semi-Annual Report (July-December 2022) estimated tree plantation survival rate of 54.31% for Sections 1,2 and 3 for its 2020-2021 plantation, it can be seen that there had been a reduction of the number of surviving trees. The possible cause of this reduction are: a) the lack of adequate plantation maintenance and protection applied to the planted trees; and b) unsuitable tree planting area. Discussion on the causes of the low survival rate, as well as other challenges facing the tree plantation program are found in subsequent sections.

Challenges encountered in the Tree Plantation Maintenance and Protection

94. The implementation of the tree plantation maintenance and protection had encountered several challenges during the reporting period. This include: a) Internal financial problem of the Contractor resulting in the lack of financial support to the tree plantation maintenance and protection; b) uncontrolled foraging by domestic animals at the newly planted areas; and c) irresponsible tree cutting by the Maintenance crew of the Cumilla Rural Electrification Association.

Internal Financial Situation of Contractor

95. The Contractor had been experiencing internal financial difficulty. This condition has

manifested at the site in terms of reduced manpower, insufficient construction materials, delayed in payment for personnel and staff, delayed logistical support to the Consultant team, and many others. The Compensation Tree Plantation Establishment and Rehabilitation Program has also been affected by his financial problem. Inadequate funds by the Contractor had result in payment delays to their subcontractor, delays in payments of plantation workers resulting in resignations by watch guards, and others. The reduction of the survival rate in Section 2 & 3 (TOMA) plantation from 51.7% (2020-2021plantation) to 40.5% (2022 plantation) based on the 100% tree inventory data, may be an indication of the continued financial problem leading inadequate plantation protection and maintenance. Unless CTM JV can resolve their internal financial problem during this terminal phase of the ALDLP, the adverse impact of this matter to the tree planation establishment performance will not be resolve.

Trees Affected by Uncontrolled Foraging of Domestic Animals

96. Cases of tree plantation fires, vandalism and vegetative cover removal/cultivation of the embankment slope for agriculture by local people in a number of track segments of the Project had again appeared in both tracks where public consultation meetings have already been conducted, as well as for those not yet pursued. For those segments already covered, coordination with the local officials for the identification of persons responsible for the damages and possible courses of action are easily pursued. So in the case of the assault done on the CTM JV MAX Plantation Supervisor by the owner of a foraging goat at the BCZ tree plantation, CSC called the attention of the concerned Union officer and BR Railway Police (Cumilla Station), both of which identified the culprit and took appropriate action.

Plate 3.3. CSC Project Coordinator chairs the public consultation meeting at the 4 No. Amratoli Union Council that has supervision over lands near the Sadar Rasulpur Station area.

97. However, there are other track segments whose Mouza were not covered in the previous public consultation meetings, have experienced some vandalism that yielded significant damages in the plantations. These damages were caused by uncontrolled foraging by domestic animals owned by local people, cutting of matured trees and excavation of the embankment for vegetable garden purposes. One such incident occurred near the Gumti bridge. Local people cut the trees and excavated the embankment. Upon hearing of the incident, CSC Environmental team had organized a consultation meeting with the 4 No. Amratoli Union Council that has jurisdiction over the area. During the meeting the CSC representatives did the following: a) disclose to the local officials and concerned local residents on the nature of the Project; b) relayed its benefits to the country and local people; and c) enumerated possible consequences if these plantations and embankments are vandalized or even damaged. The local leaders committed to support the Project; but suggested that the Project deploy watch guards to the site, so that local people will know where they can pasture their animals and avoid the place.

98. Another meeting was held with the Senior General Manager of the Cumilla Rural Electrification Association and his Deputy General Manager for line 2 on 13 December 2023 regarding the irresponsible cutting of Project trees by their REA line 2 Maintenance Crew. The SGM committed instructed his 4 Deputy General Manager to stop cutting ALDLP trees and instead just do trimming of tree branches and leaves that are compromising their electric power transmission lines. **Table 3.8** contains the list of meetings held, objectives, participants and agreements made. Of interest to note that local government officials mentioned that they were never consulted regarding the Project and informed of their role in its construction and operations. These local leaders had expressed their desire to assist the Project such as in the protection of the tree plantation established. **Annex 8** contains one of the highlights of the meetings with local

Plate 3.4. CSC Project Coordinator Naim Khan (center) briefs the Cumilla Rural Electrification Association (REA) Senior General Manager (2nd from left) and Deputy General Manager (line 2) about the ALDLP. CSC Safeguards team members listens attentively to Mr. Khan's presentation.

leaders and residents.

Track Embankment slope poor tree planting site

99. Since the start of the compensation tree plantation and rehabilitation program, it had been reported that the survival rate of trees planted along the track embankment had been decreasing, from a combined 54.31% (all sections) from the years 2020 – 2021; to a combined rate of 50.50% in 2022. This downward trend may also be partly caused by the poor planting site conditions.

100. For good plant growth, the following elements need to be present: a) right temperature; b) sunlight; c) water; d) air; e) nutrients; f) soil and g) time[5]. Plants need the right temperature at the right time in order that they may be able to grow following their life cycle. Extreme temperatures are most unsuitable for plant life. It is fortunate that Bangladesh is in a tropical climatic condition and so ambient temperatures are appropriate for plant life. Sunlight on the other hand, allows most green leafy plants to manufacture their food through the process of photosynthesis. Water along with oxygen and carbon dioxide in the air, and nutrients in the soil are the raw materials the plant need to produce their food during photosynthesis. Time is also needed by plants to carryout their lifecycle, where the rainy season is normally the period of fast growth due to the presence of rain water that irrigates the them (plants) and carry essential nutrients with them to the roots through spaces/voids or cracks in the soil.

101. The tree planting sites are found mostly along the track embankment slopes. These sites only have a portion of the essential elements for good plant growth. These elements include: a) favorable temperatures; b) adequate sunlight; c) limited water; d) air; and e) time. The compacted soil along the track is most unsuitable for plant growth. The soil itself is mostly devoid of organic matter so that no voids/spaces in the soil matrix may be created especially when these (organic matter) eventual decomposition[6], very limited plant nutrients are also present. In view of this, very minimal water nor nitrogen (air) or other nutrients is able to reach the roots of the planted trees saplings. Compacted soil also hinders the growth of plant roots that seeks to reach out for more grounds thereby improving the anchorage of plants to the soil, as well as well as seek out sources of water, nitrogen and other nutrients. Productive soils are those that are loose, to allow the movement of water, nitrogen and other nutrients to reach the plant roots that absorbs them through the process of osmosis. Nitrogen are fixed to the roots by fungi through the process called mycorrhiza. For compacted soils such as those in the track embankments, these processes are constrained.

Plate 3.5. Surviving timber trees found mostly at the bottom of the embankment slope. Saplings planted near the top or middle of the embankment slope either died or has poor growth.

102. Similarly, the embankments are compacted at an angle to promote more stability, reduce soil erosion potential and reduce water infiltration thereby further depriving the plants of much needed water. The sloping embankments favors surface water run-off rather than infiltration. Rain water mostly flows down the slope, rather than infiltrate through the soil to where the plant roots are located.

103. Much of the nutrients come from the organic fertilizer that are applied to the holes dug along the embankment slopes, where the saplings are to be planted. These fertilizers normally come in the form of dried cow dung. However, once these limited supplementary nutrients are consumed by the growing plant, then further growth will be limited.

104. For future railway Projects requiring embankment slope stabilization measures, better use grasses or cover crops to help control soil erosion. If trees are to be planted, these should be installed at the flat terrain, starting from the embankment toe area outwards thereby allowing cultivation of the soil, application of organic matter and better water infiltration.

[5] https://gardens.duke.edu

[6] https://www.qld.gov.au/environment/land/management/soil/soil-terms

Table 3.8. Summary of Public Information Meetings Conducted

Date	Meeting Location	Participants	Topics Discussed	Agreements Made
29 November 2023	Amratoli Union Council Office, Adarsha Sadar Upazilla (Comilla)	a. Union Chairperson Quazi Mozammal Hoque); b. Members of the Amratoli Union Council; c. Union Awami League President Abu Hanif d. CSC Project Coordinator Naim Khan; e. CSC Jr. Envi Spl N. Sakib f. CSC Jr. Resettlement Spl. G. Faroque; g. CTM JV MAX Plantation Supervisor; and h. Bismillah Nursery owner Abu Kashem	a. Project description b. Benefits of the Project to the Country's Economy and People; c. Purpose of the tree plantation established along the track embankment slope; d. Catastrophe that may be created by the destruction of the tree plantation. e. What local government and their constituents can do to help protect the trees and railway tracks. f. Request of local leaders and people for the restoration of rural roads broken by CTM JV MAX's heavy equipment and vehicles. g. Recommendations of local leaders for the Project to deploy watchguards to deter local people from vandalizing the plantations.	• Local leaders appreciated the briefing; • Mr. Naim Khan to relay to CSC top management, the request of Union leaders and local people to instruct CTM JV MAX to restore all rural roads they have broken in compliance to Contract provisions; • CSC to instruct CTM JV to mobilize Watch Guards as a deterrence for local people from vandalizing the tree plantations.
13 December 2023	Cumilla Rural Electrification Association (REA) Office, Cumilla	a. Senior General Manager Mostafizur Rahman, Cumilla REA b. Deputy General Manager Md Masudul Alam, Cumilla REA 2 c. CSC Project Coordinator Naim Khan d. CSC Resident Social/ Resettlement/Gender A. Salvador e. CSC Jr. Envi Spl. N. Sakib; f. CTM JV MAX Plantation Supervisor Sohel	a. Project description b. Benefits of the Project to the Country's Economy and People; c. Purpose of the tree plantation established along the track embankment slope; d. Catastrophe that may be created by the destruction of the tree plantation. e. Illegal cutting of ALDLP trees by REA2 Maintenance Crew. f. Project request for REA Maintenance crew to stop tree cutting and instead do only trimming of leaves and branches.	• Cumilla REA SGM appreciated the briefing; • SGM M. Rahman committed to instruct all his DGMs for REA lines 1-4 to ensure cutting of ALDLP trees stops and only allow trimming of leaves and branches.

3.4 Engineer's Main Office (EMO)

105. The Bangladesh Railway had issued the notice to proceed to the Contractor for the construction of the EMO Building at the last quarter of 2022. However, there were a number of prerequisites that have not been addressed prior to the commencement of work at the site. Among these requirements is the submission of an Initial Environmental Examination Report (IEER) for the EMB Building Construction and Operations; as well as securing an Environmental Clearance Certificate (ECC) from the Department of Environment (DoE). It was only in June 2023 that the IEER have been completed by the Preparer. The draft IEE Report was submitted to both ADB and DOE for review. Following comments from ADB, the draft final IEE Report was prepared by a combined team from the IEER Consultant (preparer), CSC Environment team and the Contractor CTM-JV MAX. The main report was found acceptable by ADB and was published in their website. However, 3 appendices were required to be upgraded to an implementable plan which includes: a) Occupational health and Safety Plan (OHSP); b) Traffic Management Plan (TMP) and c) Waste Management Plan (WMP). At the time of this report writing, the 3 plans had already been prepared by the Contractor CTM JV MAX based on comments raised by CSC and the IEER consultant; and had been approved by BR-PIU Project Director and CSC Team Leader for implementation at the EMO Building site. These plans along with the EMP, are the basis for the monitoring and supervision by the Engineer of the Contractor's performance. Annex 9 contains the is the Locational Clearance issued by the DOE to the Project. Following DOE procedures, once the EMO Building is completed and satisfactorily inspected by the said agency (DOE) in as far as compliance to the approved Environmental Management Plan (EMP), will an Environmental Compliance Certificate (ECC) will be issued to the Project, that is renewed on an annual basis.

Implementation of EMO EMP

106. At the time of this report preparation, the implementation of the EMP for the EMO Building is being implemented by the Contractor CTM JV MAX, and monitored by the Subcontractor EQMS under the supervision of the CSC Environmental team. The Contractor has complied with most of the EMP requirements, but will have to improve on a number of prescribed mitigation measures. Table 3.9 contains the summary of the EMP compliance by the Project, while Table 3.10 contains details of the Contractor's performance in compliance with the approved EMP.

Table 3.9. Summary of Compliance to EMO EMP

S.I.	GENERAL MITIGATION	EMO Building	
		RATING	REMARKS
1	Site Development	4.40	Complied
2	Demolition and Other Earthmoving Works	4.20	Complied
3	Traffic Management	4.00	Complied
4	Impact on Ambient Air	4.17	Complied
5	Impact on Ambient Noise	4.33	Complied
6	Impact on Water Bodies	3.71	Complied
7	Occupational Health & Safety Hazards	4.13	Complied
8	Employment	4.50	Complied
	AVERAGE RATING	4.18	Complied

Table 3.10. Status of Implementation of EMO Environmental Management Plan

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
1. Site Development	Ambient noise, fugitive dust, runoff & flooding, soil erosion, surface water contamination & safety concerns	• Cutting & Filling operations to be kept at a minimum; • Construction of a proper drainage facility; • Regular sprinkling on open area to reduce dust; • Cut & Filling to be done during dry season; • Install shore piles & horizonal beam support to prevent collapse of excavated areas. • Restore surrounding areas prior to demobilization. • Replacement planting of cut trees.	• Cutting & Filling operations already completed; • Drainage facility for building completed; • Water sprinkling on open area to reduce dust done when necessary during rainy season; • Cut & Filling already completed; • Installed Shore piles & horizonal beam support have already been removed. EMO Building basement already completed. • Surrounding areas will be restored prior to demobilization. • Replacement planting of cut trees. after construction is completed.	RATING: **4.4** **COMPLIANT** Mostly complied with the exception of: • Surrounding areas (within EMO compound) and replacement planting to be done once construction is completed.	• Replacement planting of cut trees to be incorporated into the EMO Building's landscaping plan.
2. Demolition and other earthworks	Ambient noise, fugitive dust, runoff & flooding, soil erosion, solid waste generation, surface water contamination & safety concerns	• Water spraying of demolition site and access road to minimize dust generation; • Cover debris with geotextile or plastic to prevent wind dispersion of dust particles; • Separate and properly dispose of different types of waste, such as hazardous materials, recycleables, biodegradables, and other general wastes. • Recycle or reuse materials whenever feasible, reducing the amount of waste deposited in the local landfill. • Comply with local regulations on waste management and engage	• During the rainy season, water spraying of demolition site and access road done only when necessary; • Many of waste materials are recycled or reused. Those with value are sold to interested parties, or deployed to other contractor's projects; • Waste segregation adopted. Food & kitchen waste collected in plastic drums and collected by licensed waste management company for disposal in City waste facility. • Complied with local	RATING: **4.2** **COMPLIANT** Mostly complied with the exception of: • Debris or construction waste and materials are left exposed to the rain and wind at the construction site. Contractor reasoned that waste collection is daily and materials are mostly wet by rain and so no dust is generated. • There are no hazardous waste generated in the Project. Only limited volume of fuel are stored at the site, which is enough	• Appropriate color coded waste bins to be provided at the site corresponding to the type of waste generated such as : biodegradables/kitchen waste; recyclables; inert waste; hazardous waste, etc. • Hazardous materials such as fuel, and acetylene/oxygen tanks to be placed in a secured place, with concrete flooring and roofing. Appropriate warning signages to be installed to warn workers and visitors of the hazardous

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
		license waste management service providers for collection and disposal of waste.	regulations on waste management and engaged a local licensed waste management service provider for collection and disposal of waste.	for a day's operations of the crane. Other construction equipment and vehicles are filled at the Contractor's garage outside the Project site.	materials.
3. Traffic Management	Aggravate the local vehicular traffic condition along Phoenix Road especially during peak traffic hours.	• Develop and implement a traffic management plan to ensure the convenient and safe movement of vehicles and pedestrians around the construction site. • Provide adequate internal parking for authorized Project vehicles and visitors. • Provide toolbox meeting for Project drivers to create awareness on road safety; • Coordinate with local authorities to minimize traffic disruptions and ensure public safety during construction activites.	• Developed and implemented a traffic management plan; • Provided a minimal space for internal parking for authorized Project vehicles and visitors. • Held toolbox meetings for Project drivers to create awareness on road safety; • Coordinate with local authorities to minimize traffic disruptions especially during the deliveries of construction materials and ready mixed concrete to the site.	RATING **4.0** **COMPLIANT** Mostly complied with the exception of: • Internal parking is still not adequate due to the presence of the fabrication yard and reinforcement bars stockpile in front of the Project field office. This sometimes cause vehicular parking on the street. • Signages are already old and sometimes unreadable. Needs replacement. • No traffic aide is provided to assist Project or visitor vehicles entering/exiting the EMO compound.	• Clear the area around the Site Office of debris and unused form works to allow the transfer of the fabrication yard and construction material stockpiles in their place. This way additional space may be made available for vehicular parking. • Provide traffic aid. The security guard at the gate can be deputized as traffic aid.
4. Impact on Ambient air	Air pollution and dust emissions affecting the health of neighbors and construction workers.	• Conduct monthly monitoring of ambient air quality; • Regular sprinkling of water of debris and open areas to minimize fugitive dust emissions; • Transport of construction materials and/or waste in tarpaulin-covered trucks; • Sand and other dispersible materials should be stored at a safe place within the construction site and for only a minimum construction period; • Removal of soil/mud on vehicles before leaving the site; • Complaints of dust-related	• Conducted monthly monitoring of ambient air quality; • During the rainy season, regular sprinkling of water on debris and open areas not necessary and only done during dry days; • Transport of construction materials and/or waste in tarpaulin-covered trucks; • Ready mixed concrete are used for casting, which are regularly delivered at the site. No Sand nor aggregates needed. Only excess	RATING: 4.17 **COMPLIANT** Almost all of mitigation measures complied with the exception of: • Sprinkling of water on debris and open areas only done during the dry season. Due to frequent rain at the site, this)watering) was only done during few instances. • No washing of vehicle tires before leaving the compound. The sand placed during the first semester of the year covered on the	• Sprinkling of water on debris and open areas are to be resumed during the dry season. • Pave access road with concrete to minimize sand and mud sticking of vehicle tires.

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
		ailments among construction workers and neighbors to be given access to medical facilities.	excavation materials, and other construction debris are collected and temporarily stored in one area of the site. These are collected every night and transported to the Contractor's land for disposal. • No complaints of dust-related ailments among construction workers and neighbors were attended to during the reporting period.	open parking lot was able to minimize the generation of mud that sticks to the tires. Very minimal sand if ever is scattered by existing vehicles to the local roads.	
Impact on Ambient Noise	Noisy construction activities to disturb adjacent institutional areas (i.e. government hospital, police & female dormitories, railway mosque)	• Minimize as much as technically practicable , the use of noisy construction equipment; • Excessively noisy construction activities to be properly scheduled to avoid simultaneous generation, and implement them during the regular working hours; • Noise generated by construction equipment should comply with applicable DOE noise standards; • Regular monitoring of ambient noise generated at the site • Provide ear protection for workers engaged in very noisy construction activities; and • Properly maintain Project construction equipment	• Demolition, excavation and structural works which employ noise equipment have already been completed. Currently, finishing works do not require any noisy equipment. • Mostly manual labor is used with the support of two overhead cranes tasked to hoist construction materials from temporary storage area to the construction site. Rotary cutters are also used to size reinforcement bars to their desired lengths for use in the concrete casting. • Noise generated by construction equipment comply with applicable DOE noise standards; • Regular monitoring of ambient noise generated at the site is being done. • Project regularly maintain their construction equipment at their company garage located out side of the Project area.	RATING: **4.33** **COMPLIANT** The Project has mostly complied with the mitigation measures with the exception of: • Non-issuance of ear protection from excessive noise. Contractor claims that the noise generated by their overhead cranes is not laud enough to impair hearing.	Current construction activities are mainly manually done with the exception of the crane that hoist materials to the work area, and small rotary cutters that size the reinforcement bars to the desired length/dimension. These activities do not require ear protection devices.
Impact on Water Bodies	Deterioration of surface and ground water quality	• Septic tanks with soak pit should be provided in the construction	• Septic tanks had been provided, but these have no	RATING: **3.71** **PARTIALLY COMPLIANT**	

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
	as a result of contamination by construction waste.	area, to avoid contamination of the ground water. • Adequate drainage facility to be installed at the construction site to avoid water logging that may serve as breeding area for mosquitos that may carry malaria or dengue. • Strick supervision should be maintain in order to avoid the blockage of city drainage facilities by construction debris. • The Contractor shall have appropriate equipment to transport fuel so that spillage will be avoided. Automatic shut-off nozzles shall be installed on all fuel dispersing units. • The Contractor to have oil spill abatement equipment such as oil spill pans among others , on the site at all times. Persons assigned to operate these equipment are to be properly trained on its use; • Conduct regular water quality monitoring of ground water; • Disposal of used oil, lubricants, tires, etc. shall be inaccordance with the EMP or as directed by the Engineer.	soak pit. • Drainage facility had been installed at the basement. However, ground level canals tasked to convey surface water to the City street drainage have not yet been construction. During strong rain, pools of water is temporarily created. It is possible that these flooded areas have become a breeding ground for mosquitos that may carry malaria and/or dengue. • Strict supervision is maintained in order to avoid the blockage of city drainage facilities by construction debris. • The Contractor have been utilizing appropriate container to transport fuel so that spillage will be avoided. Automatic shut-off nozzles is installed on the fuel dispersing unit. Only the lifting crane requires refilling on site. Other vehicles are filled at the off-site garage of the Contractor. • Conducted regular water quality monitoring of ground water is being conducted; • Servicing of Project vehicles and equipment are being done in CTM MAX garage outside of the Project area. Disposal of used oil, lubricants, tires, etc. are being done by the contracted licensed waste collectors.	The Project has mostly complied with the mitigation measures with the exception of: • Non-installation of a soak pit at the septic tanks installed at the site. • Drainage facility at the ground level need to be installed in order to adequately remove surface rain water from the construction site grounds.	• The Contractor needs to install soak pit alongside the septic tanks. • Contractor to design and install an efficient drainage system that can remove excess rain water collected at the ground level construction site.
Occupational Health	Work related accidents,	• A Health & Safety Plan	• A Health & Safety Plan had		

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
& Safety Hazards	spread of infectious diseases among construction workers & neighbors, work stoppages due workers treatment from diseases, complaints/ law suit from neighbors.	acceptable to ADB and BR, to be prepared prior to the start of construction; • H&S trainings should be conducted for all construction personnel and workers, including good housekeeping, cleanup of construction debris and spills, and working in confined spaces and heights. • Construction workers to be provided and properly wear appropriate Personal Protection Equipment (PPE) at all times while engaged in construction work. • Pedestrians to be prevented from entering the construction area; and access to the site to be restricted to authorized Project personnel and visitors; • WHO and Bangladesh Government guidelines for the reventon of HIV/AIDS STD, Human trafficking, COVID-19 and Dengue and other infectious diseases, to be implemented at the Project site. • Ensure regular house cleaning at the construction site and worker's camp; • Provide adequate sanitation facilities in the workplace and the worker's camp; including potable water supply, clean water for washing & bathing, and waste collection and disposal system. • Conduct public awareness program to inform nearby residents of the Project, its activities, negative impacts and mitigation measures intended to	been prepared and approved by BR, It is currently being implemented at the site. A Health & Safety Officer and an assistant had been assigned to the site. • H&S trainings are being conducted for all construction personnel and workers. • Construction workers are provided with PPEs, and these are worm most of time while engaged in construction work. • The compound's fence had been repaired and a steel sliding gate had been installed to prevent un-authorized persons from entering the construction area. A security guard is assigned to the gate to ensure that authorized Project personnel and visitors can enter the site; • WHO and Bangladesh Government guidelines for the prevention of HIV/AIDS STD, Human trafficking, COVID-19 and Dengue and other infectious diseases, are implemented at the Project site. An HIV/AIDS STD, Human trafficking, COVID-19 and Dengue prevention awareness program is being implemented monthly at the site. • Coordination had been done with the local City health Office for the daily fogging of the site against mosquitos. • Regular house cleaning at the construction site and worker's	RATING: **4.13** **COMPLIANT** The Project has mostly complied with the mitigation measures with the exception of: • A number of contracted labor have the habit of removing their PPEs when they feel uncomfortable at the workplace. Supervisors appear to be helpless in enforcing the wearing of PPEs at all times at the workplace. • Proper house cleaning should be implemented on a daily basis to ensure that cleanliness and sanitation is maintained at the construction site. • Common bathing and washing facilities to be provided with an enclosure, so that the bathing workers will not be exposed to visitors.	• Contractor to strictly enforce the proper wearing of PPEs while at the workplace. • Contractor to ensure proper daily housecleaning at the construction site and at the worker's camp. • Contractor to install an appropriate divider that will cover the bathing workers from visitors.

Project Activity	Potential Impact	Mitigation Measures	Actual Implementation	Compliance Status	Action Required (if any)
		address the negative effects.	camp are being conducted. • A centralized toilet, and potable and cleaning water supply facilities are provided. in the workplace. The bathing and washing area is a common area beside the toilet facilities. Waste collection and disposal system had been established, which includes the contraction of a licensed waste collection and disposal company. Daily waste collection is being done.		
Employment	Qualified personnel are given equitable employment opportunities, regardless of gender, race, and creed.	• Contractor to follow applicable International Labor Organization policies (ILO) and Bangladesh Labor laws; • Equal opportunities for employment and equal pay for equivalent work of Project personnel, regardless of gender, race or creed. • Priority hiring of qualified local labour; • Child labour is not allowed.	• Contractor is following applicable International Labor Organization policies (ILO) and Bangladesh Labor laws; • Equal opportunities for employment and equal pay for equivalent work of Project personnel, regardless of gender, race or creed had been followed. However, no females have attempted to apply for a job in the Project with the exception of cooks preparing the worker's daily meals. • Child labor is not allowed.	RATING**: 4.5** **COMPLIANT** • The Project is mostly compliant with the exception of the following: • The Subcontractors had so far utilized migrant workers at the site.	• The Contractor to explore the possibility of hiring qualified local labor.

IV. Compliance to Environment Related Project Covenants

4.1 Compliance with National Environmental Laws

107. The environmental legislation of GoB emphasizes reducing the negative impacts of infrastructure development projects and enhancement of the positive effects. This conforms to the National Environmental Policy 1992 that was enacted by the government, based on the Agenda 21 of Rio de Jenero Conference, and subsequent enactments of the Bangladesh Environmental Conservation Act (ECA) 1995 and Bangladesh Environmental Conservation Rules (ECR) 1997. The DOE guidelines however do not specifically provide measures for railway tracks, station buildings and bridges.

4.2 Compliance with ADB SPS 2009 Guidelines

108. According to the ADB Social Policy Safeguards (SPS 2009), the project falls under Environment Category B and hence an IEE was sufficient to meet the Bank's environmental requirements. An IEE report was prepared by the Consultant engaged by ADB during appraisal in 2014. In addition, an updated Environmental Management Plan (EMP) was prepared during the detailed design stage in 2016. In view of these, the project had conformed with the ADB Safeguard Policy Statement (SPS 2009).

4.3 Contractor Compliance

Compliance with EMP

109. Overall, the contractor is able to comply with the mitigation measures as prescribed in the Project Environmental Management Plan (EMP) which is also part and parcel of their Contract TOR. As mentioned in earlier chapters of this report, there are however site specific non-compliance that require to be resolved by the contractor. A corrective action plan was provided to help remedy the situation. CTM JV has mobilized 2 focal persons for Section 1 & 2, and the other for Section 3 to coordinate the implementation of the EMP and respond to instructions by CSC for any environment related concerns.

Environmental Monitoring Reports

110. The contractor began submitting monthly environmental monitoring reports based on the approved template and Table of Contents provided by ADB starting from November 2016. Based on the monthly environmental monitoring reports covering the months of July - December 2023 prepared by the Subcontractor EQMS, this Semi-Annual Environment Monitoring Report was prepared by CSC. While the Environmental Quality Monitoring Report format used by EQMS had been maintained, however the "Construction Period Environmental Mitigation Measures Report" format had been appropriately revised to cater to the information requirement of the Bank. By using an MS Excel based data base, EQMS is able to determine the compliance performance by the Contractor for each mitigation measure prescribed in the EMP, for each construction site (i.e. track embankment, bridges, stations, earthworks, etc.), and the consolidated performance is summarized for the whole Project for the appreciation of the report users which includes BR PIU and ADB.

Landscaping and Site Restoration

111. It was observed that borrow areas that had been returned to their respective owners, have turned them into fishponds. The reuse of the land into a productive enterprise is in itself a landscaping restoration by its original owners. During the reporting period, site restoration had been performed by the Contractor due to the completion of most construction works, with the exception of works in the Akhaura,

Quasba and Saldanadi stations. The boarder guard issue at the Quasba and Saldanadi had cause the suspension of works until early 2023, when the Indian government had finally lifted their objections of the ALDLP Project whose track alignment and 2 stations lies within 100 m of the Indian-Bangladesh common border. The Compensation Tree plantation establishment and rehabilitation program" had been continued to be implemented during the reporting period through a Subcontractor. Details of the Program is provided in Chapter 3.3.

4.4 Compliance to ADB Review Mission

During the ADB Project Review Mission held between 4-9 June 2023, a number of Corrective Actions were recommended for the effective implementation of the Environmental Management Plan (EMP) of the ALDLP, as well as for the EMO Building construction. These corrective actions required, their respective status are found in Table 4.1.

Table 4.1. Corrective Action Plan Recommended by ADB Project Review Misson

S.I.	Recommended Corrective Action Measures	Timeline	Implementation Status	Remarks
1	Submission of the Initial Environmental Examination Report (IEER) of the EMO Building	30 June 2023	• IEER of EMO Building submitted to ADB and DOE for review and approval. • IEER posted at ADB website. • DOE has already issued its Locational clearance.	• All comments of ADB are incorporated in the posted IEER • DOE locational clearance is found in **Annex 9_**.
2	CSC to monitor the implementation of the EMO EMP.	Monthly up to 31 October 2023	• EQMS monitors EMO EMP Implementation & Environmental Quality Status • CSC Environment team supervises EQMS work	• EQMS and CSC had continued to monitor up to December 2023.
3	Submission of monthly tree plantation establishment progress report.	Monthly up to 31 October 2023	• Project to submit monthly tree planation status report from July to October 2023	• The July-December 2023 tree plantation status is incorporated in this Semi-Annual Report
4	Renew Environmental Compliance Certificate (ECC) with the Department of Environment (DOE) for physical year 2023-2024	30 June 2023	• ECC renewal application has been submitted to DOE Regional Office at Chittagong. Awaiting issuance by DOE of renewed ECC.	• BR paid the prescribed ECC renewal application of BDT500,000, which is 5 times the previous rate. • New Environmental Law (ECR 2023) increased application fee from BDT 100,000 to BDT 500,000. • Received ECC Renewal Application is found in **Annex 7**
5	A Project Completion Report on Environment to be submitted by the end of October 2023	31 October 2023	• The Environment PCR will be prepared prior to the mobilization of the ADB PCR Mission in 2024.	

V. Corrective Action Plan

112. Despite the compliant implementation of the EMP by the Contractor, a few site specific deficiencies had been identified and corresponding corrective action is necessary to address these issues. However, the institutionalization of the Environment and Social Safeguards Unit (ESSU) appears not to be doable during the remaining time of the Project. The lack of qualified personnel in BR has prevented the creation of the ESSU. Recruitment

of new professional personnel by the BR had not yet been pursued as of this reporting time. **Table 5.1** below contains the mitigation measures that had not been fully complied with, the location of these infringements, the nature of the non-compliance, the prescribed corrective action, the responsible persons and the time-line for action.

Table 5.1 Corrective Action Plan

S.I.	Location of Non-Compliance	Corrective Action Prescribed	Target Date	Responsibility
1	Quasba Base Camp (CTM JV TOMA)	Proper storage of petroleum products and waste need to be implemented following prescribed methods mentioned in the EMP. Contracted collector to regularly retrieve waste oil from site for treatment/ disposal.	29 February 2024	Mr. Shahan Rahman Rimon (Environment Engineer, TCCL)
2	Sections 2 & 3	Strict enforcement on the proper use of PPEs when in the workplace. Consider imposition of penalties for habitual violators.	29 February 2024	Mr. Shahan Rahman Rimon (Environment Engineer, TCCL)

VI. Other Issues

6.1 Establishment of the Environment and Social Safeguards Unit

113. Bangladesh Railways has recognized the gap in their technical capacity and engaged Environment Consultant (CSC) to address safeguard issues and to supervise the implementation of EMPs. BR is committed to establishing an Environmental and Social Safeguards Unit (ESSU) to manage safeguards across the agency. The persons intended to be assigned to this unit will require capacity-building sessions to enable them to carry-out their assigned tasks. However this ESSU has not yet been consummated at the time of this report due to the shortage of qualified permanent BR personnel. Considering that the Project is mostly completed, it may not be possible for the institutionalization of the ESSU under the remaining time of the ALDLP. It may be possible for the ESSU to be established under new incoming BR Railway Projects, so long as the Bangladesh Railway top management is committed to implementing this institutional building.

6.2 Grievance Redress Mechanism

Environment

114. The Project loan agreement has prescribed the establishment of a Grievance Redress Mechanism (Schedule 5, paragraph 5) in the project that can address possible complaints emanating from stakeholders. The Project Administrative Manual (Chapter VII, Item C, paragraph 47) further defines the scope of the GRM. The PAM mentions that issues be first referred to the Executing Agency (EA) level (i.e. project site, BR-PIU, BR) and only when it is not resolved, will the case be forwarded to the Grievance Redress Committee for action. The Project Initial Environmental Examination Report (Chapter VII) provided the rationale, composition of the GRC, its function, process followed in resolving cases brought to it, publication of resolutions.

115. At present, no Environment GRC has yet been created for the Project. This condition had been so since complaints related to the environment if any, had been resolved at the Project level. The CSC Environment and Social Safeguards team also function as the informal grievance redress team at the project site. Complaints related to safeguards are first referred to CSC by either the local people or the Contractor for resolution.

116. The CSC Jr. Environment and/or Resettlement specialists (depending on the case), hear the details of the complaint and report the details to the CSC Resident Social, Resettlement and Gender Specialist (RSRGS). Upon learning on the facts of the case, the CSC RSRGS will arrange for a meeting with the aggrieved party with representative of the Contractor and do an actual site inspection to better appreciate the situation. If the case can be resolved at the RSRGS level, then an amicable solution will

be reached, documented and appropriate report will be sent to the Employer for their record. However, if the case will require CSC and/or BR PIU opinion/decision, a report will be prepared and sent to CSC headquarters and/or BR for their action. It is only when the case cannot be resolved at the BR level will a GRC will be needed. During the reporting period, no formal complaint related to environment that had been received by the Project, that required the CSC Environment team to address. However, consultation meetings were pursued by the CSC Environment team as part of the Project's information dissemination drive, promote people's participation in the protection of the established tree plantation and track embankments, and at the same time listen to any complaints or grievances that the local people and their respective leaders have related to the Project.

117. During the reporting period, the CSC Environment team had 2 consultation meetings, one of which was held at the Amratoli Union Council Office, Adarsha Sadar Upazilla (Comilla). During this meeting, the local leaders expressed their disappointment with the Contractor who had not restored some of their local roads that they damaged. The task of restoring damaged hauling roads by the Contractor is part of their contract, which they are obliged to comply with. CSC has subsequently issued a letter to the Contractor to restore the local roads they have damaged. So far a proposal was submitted by the Contractor for the consideration of BR PIU, that calls for the rebuilding of one local road near the Gumti bridge area that serves as access to a local high school. CSC is currently awaiting for clarification from the Contractor if said road construction had been incorporated in their approved budget ceiling under the European Investment Bank (EIB) funding, before favorably endorsing such proposal to the Employer for approval.

Health & Safety

118. The ALDLP Construction works is mostly complete save for minor works at the Akhaura, Quasba and Salda nadi Stations. During the period, the Contractor had complied with most of the H&S requirements with the exception of effective enforcement on the proper use of PPEs for its contracted workers. Workers find these PPEs uncomfortable and would remove them during hot weather and in the absence of their supervisors and/or CSC health & safety inspectors.

119. At the EMO Building Construction site, much of the hazardous safety risks associated with completed construction works such as demolition, earthworks and structural works had been minimized. The Contractor was able to manage the works (i.e. installation of reinforcement bars, welding, form works, cement casting using ready mixed concrete, etc.) had been done without any reportable accidents/injuries. What remains at the end of this reporting period are mostly finishing works (i.e. installation of tiles, windows, bathroom fittings, electrical wirings and lighting fixtures, painting, etc.) which employs mainly skilled manpower to carry out the task.

6.3 Covid-19 Prevention Program

120. In response to the rapidly degrading Covid-19 pandemic situation within the ALDLP track alignment and stations, the Project has pursued a pro-active approach to the prevention and control of the virus. As would be describe in detail in health and safety Chapter VI (Section 6.22) , the Project has pursued a preventive approach. Construction supervisors and workers are provided a short orientation on the nature of the virus and how to prevent its spread as part of the monthly HIV/AIDS prevention seminars; face masks and hand sanitizers have been distributed to all members of the construction team; wash stations had been installed in many work sites; and disinfection booths were also placed at major construction yards.

121. In the event personnel do get infected by Covid-19 virus and its new variants, instruction was given to office managers/construction supervisors to first isolate the possible infected person, arrange for RT PCR Swab test or Rapid Antigen Test (RAT) to confirm if indeed the illness is Covid-19 related, disinfect the work area/accommodations, and report the case to higher authorities for information or further action. An ambulance is on a 24/7 hour standby at the Comilla Station Office, ready to convey any sick person for isolation, testing, treatment, or retrieval from the health facility.

122. As a result of the measures undertaken by the Project, no Covid-19 related cases at the site had been reported during the reporting period (July - December 2023). For the EMO Building site, there were a number of Dengue cases among the contracted laborers. Infected individuals were promptly isolated and provided with medical attention until they area able to recover. In addition, regular coordination had been done by the Contractor with the concerned local government authorities to

conduct regular daily fogging of the EMO Building premises, most especially the temporary lodging areas. **Annex 3** contains photographs of the Covid-19 prevention measures in place at the Project site.

6.4 Training/Capacity Building Status

123. The contractor CTM JV held at total of 38 trainings (13 CTM-JV-MAX, 12 CTM-JV-TOMA, and 13 CTM-JV MAX for EMO Building) during the reporting period, that was participated in by 894 Contractor's personnel. The 14 capacity building activities conducted by the Contractor CTM-JV-MAX include: a) Tool Box Meeting for Site Safety Rules with Bridge Workers (10 July 2023); b) Tool Box Meeting for Site Safety Rules (15 July 2023); c) Training for Safe Rail Passing with Points Men (10 August 2023); d) Safety Instruction Program with Tree Plantation Workers (12 August 2023), e) Tool Box Meeting for Site Safety Rules – Track Workers (26 September 2023), f) Safety Introduction for Work in Heights with Steel Fixing Workers (29 September 2023), g) Tool Box Meeting for Site Safety Rules with Construction Workers (30 September 2023), h) Tool Box Meeting Before Work with Construction Workers (6 October 2023), i) Safety Instruction Program with Points Men (15 October 2023); j) Tool Box Meeting for Site Safety Rules with Construction Workers (28 November 2023); k) Safety Driving and Road Safety Training for Drivers and Operators (10 December 2023); and l) Awareness Training for Track Workers (14 December 2023). A total of 333 personnel hired by CTM JV MAX attended the trainings. The resource person of the CTM JV MAX trainings was the CTM-JV MAX In-charge of Health, Safety & Environment Mr. Abu Hanif.

Plate 6.1 CTM Health & Safety Officer conducts a Tool-Box meeting at the EMO Building site before starting work. Photograph taken on 23 November 2023.

124. The 12 capacity-building activities of CTM-JV-TOMA include the following: a) Tool box meeting for site safety rules with Bridge Workers (7 July 2023); b) Tool Box Meeting for Site Safety Rules – Track Workers (21 July 2023); c) Training for Safe Rail Passing with Points Men (5 August 2023); d) Training for Safe Rail Passing with Gate Men (9 February 2023); e) Safety Instruction Program with Tree Plantation Workers (29 August 2023); f) Tool Box Meeting for Site Safety Rules on Track Workers (8 September 2023); g) Safety Induction for Work in Heights with Steel Fixing Workers (23 September 2023); h) Tool Box Meeting for Site Safety Rules with Construction Workers (25 September 2023); i) Tool Box Meeting Before Work with Construction Workers (6 October 2023); j) Safety Instruction Program with Points Men (30 October 2023); k) Awareness Training for Track Workers (7 November 2023); l) Tool Box Meeting fr Safety Rules with Construction Workers (28 November 2023); and m) Safe Driving and Road Safety Training for Drivers and Operators (5 December 2023). A total of 172 Contractor's personnel attended the trainings. The resource person was the CTM-JV TOMA Health & Safety Officer Md. Mozibur Rahman.

125. The 13 capacity-building activities of CTM-JV-MAX for the EMO Building site include the following: a) Tool Box Meeting for Site Safety Rules with Welding Workers (21 July 20230; b) Tool Box Meeting for Site Safety Rules on Working at Heights (29 July 2023); c) Safety Induction for Working on Heights with Steel Fixing Workers (9 August 2023); d) Safety Induction for Working on Heights with Steel Fixing Workers (25 August 2023); e) Tool Box Meeting for Fire Safety Rules (26 September 2023); f) Safety Induction for Working on Heights with Steel Fixing Workers (29 September 2023); g) Tool Box Meeting for Site Safety Rules with Construction Workers (30 September 2023); h) Tool Box Meeting Before Work with Construction Workers (16 October 2023); i) Safety Instruction Program (25 October 20230; j) Dengue Awareness Training (25 October 2023); k) Tool Box Meeting for Site Safety Rules with Construction Workers (28 November 2023); l) Safe Driving and Road Safety Training for Drivers and Operators (11 December 2023) and Safe Driving and Road Safety Training for Drivers and Operators (13 December 2023). A total of 362 Contractor's personnel attended the trainings. The resource person was the CTM-JV MAX Health & Safety Officer Enamul Sharif. **Table 6.1** below contains details of the conducted trainings.

Table 6.1. Training and Capacity Building Activities (July - December 2023)

Date	Name of Training	Trainers Details	No. of Partici-pants
1. ***Contractor Initiated Trainings (CTM-JV-MAX)***			
10th July 2023	Tool Box Meeting For Site Safety Rules with Bridge Worker	Md. Abu Hanif	20
15th July 2023	Tool Box Meeting For Site Safety Rules (Track Work)	Md. Abu Hanif	13
10th August 2023	Training for Safe Rail Passing with points Men	Md. Abu Hanif	19
12th August 2023	Safety Instruction Program with Tree Plantation Workers	Md. Abu Hanif	23
26th September 2023	Tool Box Meeting For Site Safety Rules (Track Workers)	Md. Abu Hanif	35
29th September 2023	Safety Induction For Work in Height with Steel Fixing Workers	Md. Abu Hanif	26
30th September 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Abu Hanif	34
06th October 2023	Tool Box Meeting Before Work with Construction Workers	Md. Abu Hanif	32
15th October 2023	Safety Instruction Program with Points Men	Md. Abu Hanif	29
17th Nov. 2023	Awareness Training For Track Work	Md. Abu Hanif	33
28th Nov. 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Abu Hanif	20
10th December 2023	Safe Driving and Road Safety Training for Drivers and Operators	Md. Abu Hanif	22
14th December 2023	Awareness Training For Track Workers	Md. Abu Hanif	27
		Subtotal	333
2. ***Contractor Initiated Trainings (CTM-JV-TOMA)***			
07th July 2023	Tool Box Meeting For Site Safety Rules with Bridge Workers	Md. Mozibur Rahman	10
21th July 2023	Tool Box Meeting For Site Safety Rules (Track Workers)	Md. Mozibur Rahman	12
05th August 2023	Training for Safe Rail Passing with points Men	Md. Mozibur Rahman	11
29th August 2023	Safety Instruction Program with Tree Plantation Workers	Md. Mozibur Rahman	15
08th September 2023	Tool Box Meeting For Site Safety Rules (Track Workers)	Md. Mozibur Rahman	22
23th September 2023	Safety Induction For Work in Height with Steel Fixing Worker	Md. Mozibur Rahman	10
25th September 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Mozibur Rahman	18
06th October 2023	Tool Box Meeting Before Work with Construction Workers	Md. Mozibur Rahman	20
30th October 2023	Safety Instruction Program with Points Men	Md. Mozibur Rahman	12
07th November 2023	Awareness Training For Track Workers	Md. Mozibur Rahman	17
28th November 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Mozibur Rahman	15
05th December 2023	Safe Driving and Road Safety Training for Drivers and Operators	Md. Mozibur Rahman	10
		Subtotal	172
3. ***Contractor Initiated Trainings (CTM-JV-MAX) for EMO Building Site***			
21th July 2023	Tool Box Meeting For Site Safety Rules with Welding Workers	Md. Enamul Sharif	10
29th July 2023	Tool Box Meeting For Site Safety Rules on Working at heights	Md. Enamul Sharif	30
05th August 2023	Safety Induction For Work on Heights with Steel Fixing Workers	Md. Enamul Sharif	22
25th August 2023	Safety Induction For Work on Heights with Steel Fixing Workers	Md. Enamul Sharif	26
26th September 2023	Tool Box Meeting For fire Safety Rules	Md. Enamul Sharif	50
29th September 2023	Safety Induction For Work on Height with Steel Fixing Worker	Md. Enamul Sharif	25
30th September 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Enamul Sharif	45
16th October 2023	Tool Box Meeting Before Work with Construction Workers	Md. Enamul Sharif	33
25th October 2023	Safety Instruction Program	Md. Enamul Sharif	19
12th November 2023	Dengue Awareness Training	Md. Enamul Sharif	33
28th November 2023	Tool Box Meeting For Site Safety Rules with Construction Workers	Md. Enamul Sharif	27
11th December 2023	Safe Driving and Road Safety Training for Drivers and Operators	Md. Enamul Sharif	19
13th December 2023	Safe Driving and Road Safety Training for Drivers and Operators	Md. Enamul Sharif	23
		Subtotal	362
		Total	894

VII. Occupational Health and Safety

7.1 Safety measures during construction period

126. On behalf of the contractor, a Health & Safety officer is supervising the occupational health and safety (OHS) arrangement at the work site. From starting to completion of the embankment, bridge/culvert, track and building construction work, many safety measures are being implemented by contractor. They have installed barricades around active construction areas to protect the commuting public. Informative sign were installed at strategic places to warn the general public of hazardous areas to avoid. Strong barricades made from galvanized iron sheets were installed around bridge construction sites, as well as sensitive works. There are instances that reflectorized plastic tapes were likewise installed to warn commuters and pedestrians of on-going construction works.

127. During the reporting period July - December 2023, the Project has shown good performance in terms of prevention of accidents in the workplace. No fatal accidents had occurred, no lost time injuries (LTI) was recorded, no worker was in need of major medical treatment with the exception 09 cases that only require first-aid treatment for minor cuts and bruises. No field personnel were recorded to have been diagnosed with the Corona virus during the reporting period. Moreover, tool box meetings are conducted by the contractor and their workers prior to the start of the work to help insure they (workers) are reminded of the health and safety protocols that are in effect in the Project.

128. The Health & Safety conditions at the EMO Building site also have a good safety record in the sense that no fatal accident had occurred, no lost time was recorded resulting from reportable accidents and only minor injuries were observed that were easily treated using standard first aid applied by training safety personnel. Similar to the ALDLP site, no case of Corona Virus were detected among the construction workers. **Table 7.1** and Table 7.2 below contains a summary of accidents/incidents that had been recorded for the ALDLP and EMO Building construction sites respectively, during the reporting period of July - December 2023.

Table 7.1. ALDLP Summary of Accidents/Incidents (July – December 2023)

No.	Description of Report Items	CTM-JV-TOMA		CTM-JV-MAX		Overall	
		July - December 2023	Cumulative	July - December 2023	Cumulative	July - December 2023	Cumulative
1	Total manpower (engaged daily average)	3,302	679	1,197	1,126	4,499	1,805
2	Total man-hours worked	792,480		1,706,080		2,498,560	
3	Cumulative Man-hours worked since start		12,548,009		18,345,776	0	30,893,785
4	Total man-hours worked without Loss Time Accidents (LTA)	792,480	12,548,009	1,706,080	18,345,776	2,498,560	30,893,785
5	Total Man-days lost due to Loss-Time Accidents (LTA)	0	0.5	0	144	0	144.5
6	Number of Reported LTA	0	0.17	0	5	0	5.17
7	Number of minor injury/first-aid cases	0	4	9	17	9	21
8	Number of Reportable Accident/Incident	0	1	0	3	0	4
9	Number of near miss incidents	0	0	0	0	0	0
10	Number of Major Injury	0	0	0	0	0	0
11	Number of Fatal Accident	0	0	0	0	0	0
12	Number of Dangerous Occurrence	0	0	0	0	0	0
13	Frequency Rate = (Number of Reportable LTA x 1000000)/Man-hours Worked	0	0.01	0	0.27	0	0.29
14	Severity rate = (Man-days Lost due to Reportable LTA x 1000000)/Man-hours Worked	0	0.32	0	0.98	0	1.30

No.	Description of Report Items	CTM-JV-TOMA		CTM-JV-MAX		Overall	
		July - December 2023	Cumulative	July - December 2023	Cumulative	July - December 2023	Cumulative
15	Incidence rate = (Number of Reportable LTA x 1000)/Average number of persons employed	0	0.26	0	4.44	0	4.70
16	Cumulative AIR (Accident Incident Rate), AIR = (Number of Reportable Accident, Incident X 1000)/Average Daily Manpower	0	1.47	0	2.66	0	4.14

Table 7.2 **EMO Building Construcion Summary of Accidents/Incidents (July – December 2023)**

No.	Description of Report Items	CTM-JV-MAX	
		July - December 2023	Cumulative
1	Total manpower (engaged daily average)	3,630	1,761
2	Total man-hours worked	886,544	886,544
3	Cumulative Man-hours worked since start	32,489,377	32,489,377
4	Total man-hours worked without Loss Time Accidents (LTA)	886,544	886,544
5	Total Man-days lost due to Loss-Time Accidents (LTA)	0	18
6	Number of Reported LTA	0	10.17
7	Number of minor injury/first-aid cases	4	155
8	Number of Reportable Accident/Incident	0	17
9	Number of near miss incidents	0	10
10	Number of Major Injury	0	0
11	Number of Fatal Accident	0	2
12	Number of Dangerous Occurrence	0	0
13	Frequency Rate = (Number of Reportable LTA x 1000000)/Man-hours Worked	0	0.31
14	Severity rate = (Man-days Lost due to Reportable LTA x 1000000)/Man-hours Worked	0	4.43
15	Incidence rate = (Number of Reportable LTA x 1000)/Average number of persons employed	0	5.78
16	Cumulative AIR (Accident Incident Rate), AIR = (Number of Reportable Accident, Incident X 1000)/Average Daily Manpower	0	9.65

7.2 Status of implementation of the Occupational Health & Safety Plan

129. CTM had conducted several safety trainings for its workers during the reporting period. These trainings include: The safety promotional events content elements such as– safety awareness training, working on heights training, safety for drivers and equipment operators, and several tool box meetings to prepare workers prior to their everyday construction works. They have also installed many type of safety promotional posters in their workplace, which may need new replacement due to wear and tear. In order to minimize incidence of non-wearing of PPEs issued to the construction workers, more awareness trainings will be conducted and additional Health and Safety posters will be installed on strategic locations. When adequate, it is encouraged accident reports/incident reports can be shared with the workers. They are also trying to ensure the provision and regular use of personal protective equipment for workers' safety.

7.3 Orientation session on HIV/AIDS and STI Awareness Activities

- Managing, monitoring of HIV/AIDS prevention program
- Holding of awareness sessions on HIV/AIDS prevention for both Construction workers and members of the local community
- Provision of medical and counseling services.
- Condom, facemask and IEC materials distribution.
- Posters on HIV/AIDS STD prevention are installed in all railway stations and work sites.

Description

130. Many Project personnel are deployed in the ALDLP and EMO Building sites, where large number of local community members are also residing and working. The workers and the community people are not aware of the dangers of HIV/AIDS STD based on the result of an awareness survey conducted by the contracted NGO UDOY. Orientation session on HIV/AIDS and STI Awareness/Prevention under ALDLP has been conducted at the construction sites, that was attended in by Project construction workers and members of the local communities. The NGO UDOY had been subcontracted to hold the HIV/AIDS STD Awareness and Prevention seminars. During the reporting period, a total of 34 seminars where held, that was attended by 332 workers and 294 community members. Of these total number, about 140 participants are females (22.4%). **Table 7.3** contains the summary of the orientation sessions on HIV/AIDS STD awareness/prevention that were conducted during the reporting period.

Table 7.3. Orientation Seminars on HIV/AIDS and STI Awareness/Prevention

SI No	Location	Date	Participants				
			Workers	Community Members	Total	Females	%
01	Akhaura and Quasba, Stations & EMO Building	July 2023	85	59	144	24	16.7%
02	Akhaura and Quasba, Stations & EMO Building	August 2023	76	69	145	37	25.5%
03	Akhaura and Gangasagar Stations & EMO Building	September 2023	62	20	82	20	24.4%
04	Akhaura and Quasba, Stations & EMO Building	October 2023	49	20	69	10	14.5%
05	Akhaura and Quasba, Stations & EMO Building	November 2023	35	47	82	22	26.8%
06	EMO Bldg., Akhaura & Saldanadi Stations	December 2023	38	53	91	38	41.8%
	Total		332	294	626	140	22.4%

7.4 COVID -19 Strategy

131. The coronavirus disease 2019 (COVID‑19) pandemic is exacting a huge toll on individuals, families, communities, and societies across the world. Daily lives have been profoundly changed, economies have fallen into recession, and many of the traditional social, economic, and public health safety nets that many people rely on in times of hardship have been put under unprecedented strain.

132. Speed, scale, and equity must be our guiding principles. Speed, because the explosive nature of the virus means every day lost in implementing effective response capacities and behaviors costs lives; scale, because everyone in society has a part to play in building the

Plate 7.1 NGO UDOY Team Leader Dr. Kamal (standing left) gives an overview of HIV/AIDS STD virus, how it is transmitted and prevention measures during an Awareness Seminar at the EMO Building site participated in by Construction Workers. Photograph taken on 17 September 2023.

capacities required to control this pandemic; and equity, because everyone is at risk until the virus is controlled everywhere in the world: collective resources must be directed to where there is greatest risk. COVID-19 is a truly global crisis: the only way to overcome it is together, in global solidarity.

7.5 Action taken against the spreading of Covid-19

133. Several numbers of COVID-19 awareness program executed following WHO guideline. Distribution of masks and gloves, spraying of disinfectant at potential entry points, Installation of hand washing facilities and Disinfectant booths at several key points within project sites have been performed by the Contractor with direct supervision from CSC.

- Regular and thorough hand washing with soap and water or hand;
- Hand hygiene stations, such as hand washing and hand rub dispensers are provided;
- Face masks and paper tissues are provided;
- Measures to keep a social distance of at least 1 meter between people and avoid direct physical contact has been introduced;
- Awareness program were held on the prevention of Covid-19 infection among workers and engineer, and this was done right after the HIV/AIDS STD prevention awareness program;
- Regular environmental cleaning and disinfection are on-going;
- Individuals who develop symptoms consistent with COVID-19 were reported, kept self-isolated, and brought to a medical professional or the local COVID-19 information line for advice on testing and referral (for further treatment);
- Enhance cleaning and disinfection of objects and surfaces that are touched regularly, including all shared rooms, surfaces, floors, bathrooms, and changing rooms;
- Provide PPE and training on its proper use—e.g., masks, disposable gowns, and disposable gloves or heavy-duty gloves that can be disinfected. Provide face or eye protection (medical mask) during cleaning procedures that generate splashes (e.g., washing surfaces);
- Enhance hand hygiene—regular hand washing with soap and water or use of alcohol-based hand rub— before entering and after leaving enclosed machinery, vehicles, confined spaces, and before putting on and after taking off PPE;
- Provide posters, videos, and electronic message boards to increase awareness of COVID-19 among workers, and promote safe individual practices at the workplace and engage workers in providing feedback on the preventive measures and their effectiveness;
- Provide regular information about the risk of COVID-19 using official sources such as government agencies and the World Health Organization, and emphasize the effectiveness of adopting protective measures and counteracting rumors and misinformation; and
- Body temperature checked by Thermal body temperature machine at potential entry points.

VIII. Conclusion

134. On the basis of the environmental monitoring reports submitted by the third-party monitor EQMS that had been duly verified by the CSC Environment team, it can be concluded that the Contractor has generally complied with the mitigation measures provided in the Environmental Management Plan (EMP).

135. There are, however, site specific deficiencies of the contractor that needs to be addressed which include: a) proper storage of petroleum products and disposal of waste oil; and b) regular wearing of PPE at the workplace.

136. The results of environmental monitoring of surface and ground water quality, air quality, and noise levels are generally compliant to the standards set by the Department of Environment. Only 3 day and 9 night monitoring sites located in 2 and 8 railway station mosques respectively, and at the EMO Building site had exceeded the acceptable noise level threshold for quiet zone areas. Since there are no night time construction at the 12 noise monitoring sites, then the cause of the noise exceedance is not related to Project construction. Likewise, the said railway mosques are located beside main roads whose noise primarily comes from non-Project vehicles, pedestrians and traders. Possible noise attenuation would be the planting of trees between the quiet zone and the noise generators. It can be noted that in the EMO Building construction site, there are 2 other adjacent on-going works which contributes to the increased noise levels that exceed the allowable DOE noise threshold for the specific landuse.

137. The Compensation Tree Plantation Establishment and Rehabilitation Program had started to implement its 2023 tree plantation establishment program during the end of the reporting period. A total of 89,774 saplings were planted along the track embankment slope and none yet at the completed stations corresponding to 81.6% of annual target of 70,500 saplings and 39,500 saplings of new and replacement trees planted. Overall, a total of 273,853 saplings have been planted with about 186,688 live trees for a 68.17% survival rate. The 100% tree inventory for 2022 tree plantation had been complete, where a total of 29,407 confirmed live trees were counted corresponding to 50.5% survival. The dead saplings will be replaced during this year 2023 tree plantation program. Protection and maintenance work of the existing and new plantations are on-going under the new Subcontractor Bismillah Nursery.

138. A corrective action plan (Table 5.1) was proposed for action that aims to resolve the site specific non-compliant or partially compliant mitigation measures. The CAP implementation status show that only 3 major issues is still in the process of being resolved. Storage and disposal of waste oil will need to be improved at the Quasba station yard specifically temporary storage of oil-filled drums in covered sheds with concrete waterproof flooring, promptly collect and proper disposal of spent vehicle/equipment maintenance materials. While personnel directly hired by the Contractor comply with the "no PPE, no work" regulation; however, subcontracted labor are still delinquent in this respect. Likewise, the ESSU will need to be established to manage the environment and social safeguards requirements of the Bangladesh Railway.

139. Grievance redress had been kept at the Project site level with CSC Environment team doing the resolution of cases with environmental concerns. During the reporting period, no complaint related to environmental matters were received by the CSC. Grievances that did reach the consultants were related to the delays in payments by BR PIU of compensation and other resettlement benefits due to displaced Project affected persons.

140. Consultation Meetings with local leaders and some of their constituents from Amratoli Union Council (Adarsha Sadar Upazilla, Comilla); as well with the officials of the Cumilla Rural Electrification Administration (REA) were held by a team from CSC Environment team and CTM JV. These meetings were done due to damages caused by local people; as well as the REA maintenance crew on portions of the established tree plantation. CSC Project Coordinator informed the local government leaders and some of their constituents; as well as the REA top management, on the benefits of the Project to the country and to the local people, the negative impact the destruction of the tree plantation and track embankment slope can bring which includes destabilization of the railway embankment leading to train accidents. The Amratoli Union Council and its participating constitues committed to: a) support the project; b) share the information provided to their friends and families; c) prevent others from damaging the tree plantation and track embankment, and d) report any violation of the agreement to the local leaders and CSC and/or CTM. Similarly, the Cumilla REA Senior General Manager agreed to: a) Instruct his Deputy General Managers for REA Lines 1-4, to stop cutting ALDLP trees, and instead perform only trimming of leaves and branches; and b) Instruct his Maintenance crews to coordinate any tree trimming activities with CSC and BR PIU.

141. The Project has put in place Covid-19 preventive measures. This includes implementation of government prescribed health protocols at the workplace, conduct of awareness seminars for construction workers on prevention measures against the virus, distribution of face mask and hand sanitizers, posting of informative materials on Covid-19 prevention, installation of hand washing stations and provision of clean water at the construction sites; disinfection booths at the field offices, available ambulance on stand-by 24/7 ready to convey sick personnel to nearby health facilities, arrangements for RT-PR Swab test for possible infected persons and assigned isolation rooms at site for confirmed cases. A total of 38 HIV/AIDS STD Prevention Awareness Seminars had been conducted that was participated in by 332 construction workers and 294 community members, of which 140 are females (22.4%). During the reporting period, there were no reported incidence of Covid-19 related infection among Project personnel.

ANNEXES

ANNEX 1. DETAILED EMP COMPLIANCE STATUS

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

No.	Mitigation Measures	SECTION 1: STATION BUILDINGS: Laksam Station	Alishahar Station	Lalmai Station	Mainamati Station	Comilla Station	BRIDGES: Bridge 231	Bridge 232	Bridge 234	CULVERTS: Culvert 226	Culvert 227	Culvert 228	Culvert 229	Culvert 230	Culvert 233	Culvert 235	Culvert 236	Culvert 237	culvert 238	Culvert 239	Culvert 240	Culvert 241	Culvert 242	TRACK WORK: km 130+675 TO 135+675	km 135+675 to 140+675	km 140+675 to 145+675	km 145+675 to 150+675	km 150+675 to 155+200	AVERAGE RATING
1	**Noise and Attenuation Measures**																												
1	Use of appropriate modern plant and/or equipment, that are properly maintained following the manufacturer's specifications and original manual, specifically on the control of noise and smoke emissions.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	All powered mechanical equipment and machinery to be fitted with noise abating gear such as mufflers for effective noise control, in compliance with DoE regulations.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Locate rock crushing, concrete mixing and aggregate materials storage facilities, construction yards away from noise sensitive areas such as residential sites, schools, colleges and hospitals; to a distance that attenuates the disturbance to a level conforming with DOE standards.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Install temporary noise barriers near sensitive locations such as schools, religious places and hospitals; whenever ambient noise generated by Project Construction exceeds DOE prescribed thresholds.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	Construction Workers and supervisors exposed to extremely noisy working environment, to be provided with suitable noise protection equipment like ear muffs, etc.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	Noise level monitoring to be carried out as per the prescribed schedule in the environmental monitoring plan.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2	**Dust Control**																												
1	Vehicles transporting construction and waste material to be covered		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	Construction equipment and vehicles to be properly maintained in good working condition following manufacturer's standards, and idling of engines discouraged.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Machinery emitting visible smoke to be banned from construction sites.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Contractor to prepare and implement upon the approval of the Engineer, a dust suppression program detailing action to be taken to minimize dust generation (e.g. spraying of roads with water), and the equipment to be used.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	Dust masks to be provided to workers where dust hazards exist.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	Air quality monitoring to be carried out as per the schedule in the environmental monitoring plan.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	All roads, permanent or temporary, pukka or katcha, that become dusty and all areas where construction related activities are carried out, shall be subject to necessary dust suppression measures such as watering, sweeping, prevention of speeding vehicles on unpaved roads or other measures approved or directed by the Engineer.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
8	Contractor shall not allow waste oil, lubricant or other petroleum derivatives to be used as dust suppressants and shall take all reasonable precautions to prevent accidental spillage of petroleum products, contamination of such materials with soil or surface/ground water, through discharge run-off, and/or seepage.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
9	Contractor shall take all reasonable measures to minimize dust-blowing from areas under his control by spraying water on stockpile, bare soil, haul road, un-surfaced traffic route and any other source of dust when conditions require dust suppression.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
3	**Watercourse Impats in Wetlands/Ponds/Rivers**																												
1	All waterways where Construction activities are conducted, shall be maintained open at all times, else a temporary diversion works adequate to convey surface water flow will be installed. The wetland is to be restored, after the completion of the works.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	Earth moving in the vicinity of watercourses shall be kept to a minimum to avoid sedimentation and contamination from fuel and lubricants.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Proper and prompt disposal of construction wastes such as soil, broken bricks, concrete, and steel reinforcement which are dismantled from structures, in connection to the reconstruction of bridges/ culverts. These spoils should not to block stream		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Temporary erosion and sedimentation control measures (i.e. sedimentation pond, etc.) during rehabilitation of drainage structures, shall be undertaken to ensure that sediment laden run-off does not enter the adjoining watercourses.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	Construction materials and waste shall not be dumped into watercourse during construction of bridges/culverts, and instead deposited in designated disposal sites approved by the Engineer.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

SECTION 1

		Mitigation Measures	STATION BUILDINGS					BRIDGES			CULVERTS														TRACK WORK					AVERAGE RATING
			Laksam Station	Alishahar Station	Lalmai Station	Mainamati Station	Comilla Station	Bridge 231	Bridge 232	Bridge 234	Culvert 226	Culvert 227	Culvert 228	Culvert 229	Culvert 230	Culvert 233	Culvert 235	Culvert 236	Culvert 237	culvert 238	Culvert 239	Culvert 240	Culvert 241	Culvert 242	km 130+675 TO 135+675	km 135+675 to 140+675	km 140+675 to 145+675	km 145+675 to 150+675	km 150+675 to 155+200	AVERAGE
4		**Borrow and Dredging Site Impacts**																												
	1	Secure and properly rehabilitate borrow sites, to prevent soil erosion/sedimentation and serve as breeding grounds for rodents and insect vectors.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5		**Disposal of Construction Debris and other Waste Materials**																												
	1	No burning shall be allowed.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	No construction-related debris shall be left lying on the surface of the ground, pond or buried in any agricultural land.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Man-made construction-related debris shall be deposited in disposal areas, the location and nature of such site, shall be subject to the approval of the Engineer.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Before abandoning disposal areas, these shall be covered with earth and leveled in a manner that these blend with the surrounding environment.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6		**Servicing and Operating Equipment**																												
	1	Whenever possible, avoid servicing machines or equipment near rivers, streams or other bodies of water. If unavoidable, servicing shall be carried out in such a manner, as to avoid pollution of the water body with gasoline, diesel fuel, oil, grease, and/or other related waste materials (i.e. oil filter, radiator coolant, etc.).		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	The Contractor shall ensure that all hydraulic, fuel and lubricating systems, are maintained in good working condition to avoid leakage of petroleum products into the environment.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Fuel spills will not be tolerated and care shall be taken to avoid overfilling machines.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	The Contractor shall have the appropriate equipment to transport fuel so that spillage will be avoided. Automatic shut-off nozzles shall be installed on all fuel dispensing units.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	The Contractor shall have oil spill abatement equipment such as oil drip pans among others, on the site at all times. Persons assigned to operate these equipment are to be properly trained on its use.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	All type of equipment to be used in the Project, shall be subject to the approval of the Engineer, and shall be maintained in good working condition following the manufacturer's standards.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	7	Disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP or as directed by the Engineer.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7		**Control of Petroleum Producrts**																												
	1	All petroleum products shall be stored in a suitable facility where any spillage can be safely controlled to avoid contamination of the surrounding areas. Storage of petroleum products shall not be permitted in the vicinity of streams, rivers or other bodies of water. To avoid groundwater contamination, impermeable liner shall be placed on subsurface of the petroleum products storage area.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
8		**Protection of Topsoil and Soil Erosion**																												
	1	Topsoil of storage areas must be covered by suitable material especially during the dry season, to prevent wind erosion		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Promptly protect open soil erosion-prone areas such as embankment slopes using appropriate methods such as vegetative measures, hydro-seeding and others.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Open embankment slopes are to be planted with suitable vegetation such as grasses, cover crop or fast-growing tree species. In some cases concrete blocks will be used instead.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	In the selection of sites for the use of stockpiling and disposal of construction materials, natural drainage, storm drain or ponds should be avoided in order to prevent water logging.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Topsoil and/or any organic materials excavated from the construction site, is to be stockpiled in a suitable area as defined in item 8.4 above, for use in the Project's compensatory tree plantation program; or when in excess amounts, these soil can be donated/sold to interested parties or deposited in approved disposal sites		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
9		**Occupational Health and Safety**																												
	1	Provide personal protection equipment appropriate to the construction workers' job; which may include among others, safety vest, safety shoes, helmets, gloves, welding protective eye glasses, harness, safety goggles and ear protection, and others; and enforce its proper use		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Prepare, submit and implement a Health and Safety Program acceptable to the Engineer.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	All Construction Workers are to be trained in general health and safety guidelines, especially on howto manage hazards specific to their respective work. Tool-box health & Safety sessions are to be conducted by the construction foremen with the workers prior to starting the work day.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Must not hire Child labor, or persons with ages 14 and below.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	No persons with age between 17 and 15, are to be hired for hazardous duties.		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	Provide adequate number of toilet and other sanitation facilities in the offices, workplace, and worker's accommodations.,		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

		Mitigation Measures	SECTION 2																											
			STATION BUILDINGS				BRIDGES					CULVERTS											Track Work				Gumti Nursery	AVERAGE RATING
			Sadar Rasulpur Station	Rajapur Station	Shashidal Station	Sabla Nadi Station	Bride 243	Bridge 246	Bridge 249	Bridge 259	Bridge 261	Culvert 244	Culvert 245	Culvert 247	Culvert 248	Culvert 250	Culvert 251	Culvert 252	Culvert 253	Culvert 254	Culvert 255	Culvert 241 A	km 155+200 to 160+200	km 160+200 to 165+200	km 165+200 to 170+200	170+200 to 175+200	Gumti Nursery	AVERAGE RATING
1	**Noise and Attenuation Measures**																													
	1	Use of appropriate modern plant and/or equipment, that are properly maintained following the manufacturer's specifications and original manual, specifically on the control of noise and smoke emissions.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	All powered mechanical equipment and machinery to be fitted with noise abating gear such as mufflers for effective noise control, in compliance with DoE regulations.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Locate rock crushing, concrete mixing and aggregate materials storage facilities, construction yards away from noise sensitive areas such as residential sites, schools, colleges and hospitals; to a distance that attenuates the disturbance to a level conforming with DOE standards.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Install temporary noise barriers near sensitive locations such as schools, religious places and hospitals; whenever ambient noise generated by Project Construction exceeds DOE prescribed thresholds.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Construction Workers and supervisors exposed to extremely noisy working environment, to be provided with suitable noise protection equipment like ear muffs, etc.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	Noise level monitoring to be carried out as per the prescribed schedule in the environmental monitoring plan.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2	**Dust Control**																													
	1	Vehicles transporting construction and waste material to be covered	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Construction equipment and vehicles to be properly maintained in good working condition following manufacturer's standards, and idling of engines discouraged.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Machinery emitting visible smoke to be banned from construction sites.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Contractor to prepare and implement upon the approval of the Engineer, a dust suppression program detailing action to be taken to minimize dust generation (e.g. spraying of roads with water), and the equipment to be used.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Dust masks to be provided to workers where dust hazards exist.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	Air quality monitoring to be carried out as per the schedule in the environmental monitoring plan.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	7	All roads, permanent or temporary, pukka or katcha, that become dusty and all areas where construction related activities are carried out, shall be subject to necessary dust suppression measures such as watering, sweeping, prevention of speeding vehicles on unpaved roads or other measures approved or directed by the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	8	Contractor shall not allow waste oil, lubricant or other petroleum derivatives to be used as dust suppressants and shall take all reasonable precautions to prevent accidental spillage of petroleum products, contamination of such materials with soil or surface/ground water, through discharge run-off, and/or seepage.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	9	Contractor shall take all reasonable measures to minimize dust-blowing from areas under his control by spraying water on stockpile, bare soil, haul road, un-surfaced traffic route and any other source of dust when conditions require dust suppression.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
3	**Watercourse Impats in Wetlands/Ponds/Rivers**																													
	1	All waterways where Construction activities are conducted, shall be maintained open at all times, else a temporary diversion works adequate to convey surface water flow will be installed. The wetland is to be restored, after the completion of the works.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Earth moving in the vicinity of watercourses shall be kept to a minimum to avoid sedimentation and contamination from fuel and lubricants.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Proper and prompt disposal of construction wastes such as soil, broken bricks, concrete, and steel reinforcement which are dismantled from structures, in connection to the reconstruction of bridges/ culverts. These spoils should not to block stream flow.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Temporary erosion and sedimentation control measures (i.e. sedimentation pond, etc.) during rehabilitation of drainage structures, shall be undertaken to ensure that sediment laden run-off does not enter the adioining watercourses.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Construction materials and waste shall not be dumped into watercourse during construction of bridges/culverts, and instead deposited in designated disposal sites approved by the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	**Borrow and Dredging Site Impacts**																													
	1	Secure and properly rehabilitate borrow sites, to prevent soil erosion/sedimentation and serve as breeding grounds for rodents and insect vectors.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

	Mitigation Measures	SECTION 2																											
		STATION BUILDINGS				BRIDGES					CULVERTS												Track Work				Gumti Nursery	AVERAGE RATING
		Sadar Rasulpur Station	Rajapur Station	Shashidal Station	Saida Nadi Station	Bride 243	Bridge 246	Bridge 249	Bridge 259	Bridge 261	Culvert 244	Culvert 245	Culvert 247	Culvert 248	Culvertt 250	Culvert 251	Culvert 252	Culvert 253	Culvert 254	Culvert 255	Culvert 241 A	km 155+200 to 160+200	km 160+200 to 165+200	km 165+200 to 170+200	170+200 to 175+200	Gumti Nursery	AVERAGE RATING
5	**Disposal of Construction Debris and other Waste Materials**																												
1	No burning shall be allowed.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	No construction-related debris shall be left lying on the surface of the ground, pond or buried in any agricultural land.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Man-made construction-related debris shall be deposited in disposal areas, the location and nature of such site, shall be subject to the approval of the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Before abandoning disposal areas, these shall be covered with earth and leveled in a manner that these blend with the surrounding environment.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	**Servicing and Operating Equipment**																												
1	Whenever possible, avoid servicing machines or equipment near rivers, streams or other bodies of water. If unavoidable, servicing shall be carried out in such a manner, as to avoid pollution of the water body with gasoline, diesel fuel, oil, grease, and/or other related waste materials (i.e. oil filter, radiator coolant, etc.).	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	The Contractor shall ensure that all hydraulic, fuel and lubricating systems, are maintained in good working condition to avoid leakage of petroleum products into the environment.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Fuel spills will not be tolerated and care shall be taken to avoid overfilling machines.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	The Contractor shall have the appropriate equipment to transport fuel so that spillage will be avoided. Automatic shut-off nozzles shall be installed on all fuel dispensing units.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	The Contractor shall have oil spill abatement equipment such as oil drip pans among others, on the site at all times. Persons assigned to operate these equipment are to be properly trained on its use.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	All type of equipment to be used in the Project, shall be subject to the approval of the Engineer, and shall be maintained in good working condition following the manufacturer's standards.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	Disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP or as directed by the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5.0	5.0	5.0	5.0	5.0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	**Control of Petroleum Producrts**																												
1	All petroleum products shall be stored in a suitable facility where any spillage can be safely controlled to avoid contamination of the surrounding areas. Storage of petroleum products shall not be permitted in the vicinity of streams, rivers or other bodies of water. To avoid groundwater contamination, impermeable liner shall be placed on subsurface of the petroleum products storage area.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
8	**Protection of Topsoil and Soil Erosion**																												
1	Topsoil of storage areas must be covered by suitable material especially during the dry season, to prevent wind erosion	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	5	4.8		
2	Promptly protect open soil erosion-prone areas such as embankment slopes using appropriate methods such as vegetative measures, hydro-seeding and others.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Open embankment slopes are to be planted with suitable vegetation such as grasses, cover crop or fast-growing tree species. In some cases concrete blocks will be used instead.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	In the selection of sites for the use of stockpiling and disposal of construction materials, natural drainage, storm drain or ponds should be avoided in order to prevent water logging.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	Topsoil and/or any organic materials excavated from the construction site, is to be stockpiled in a suitable area as defined in item 8.4 above, for use in the Project's compensatory tree plantation program; or when in excess amounts, these soil can be donated/sold to interested parties or deposited in approved disposal sites	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4.8	4.8	4.8	4.8	5	5.0		
9	**Occupational Health and Safety**																												
1	Provide personal protection equipment appropriate to the construction workers' job; which may include among others, safety vest, safety shoes, helmets, gloves, welding protective eye glasses, harness, safety goggles and ear protection, and others; and enforce its proper use.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	Prepare, submit and implement a Health and Safety Program acceptable to the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	All Construction Workers are to be trained in general health and safety guidelines, especially on how to manage hazards specific to their respective work. Tool-box health & Safety sessions are to be conducted by the construction foremen with the workers prior to starting the work day.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Must not hire Child labor, or persons with ages 14 and below.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	No persons with age between 17 and 15, are to be hired for hazardous duties.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

		Mitigation Measures	SECTION 3																																
			STATION BUIDINGS					BRIDGES				CULVERTS																							AVERAGE RATING
			Mandabag Station	Quasba Station	Imambari Station	Gangasagar Station	Akhaura Station	Bridge 262	Bridge 263	Bridge 272	Brige 276	Culvert 256	Culvert 260	Culvert 264	Culvert 265	Culvert 266	Culvert 267	Culvert 268	Culvert 269	Culvert 270	Culvert 271	Culvert 273	Culvertt 274	Culvert 275	Culvert 277	Culvert 281	Culvert 282	Culvert 1	Culvert 2	km 175+200 to 180+200	km 180+200 to 185+200	km185+200 to 190+200	km190+200 to 195+200	km 195+200 to 202+650	
1	**Noise and Attenuation Measures**																																		
	1	Use of appropriate modern plant and/or equipment, that are properly maintained following the manufacturer's specifications and original manual, specifically on the control of noise and smoke emissions.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	All powered mechanical equipment and machinery to be fitted with noise abating gear such as mufflers for effective noise control. in compliance with DoE regulations.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Locate rock crushing, concrete mixing and aggregate materials storage facilities, construction yards away from noise sensitive areas such as residential sites, schools, colleges and hospitals; to a distance that attenuates the disturbance to a level conforming with DOE standards.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Install temporary noise barriers near sensitive locations such as schools, religious places and hospitals; whenever ambient noise generated by Project Construction exceeds DOE prescribed thresholds	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Construction Workers and supervisors exposed to extremely noisy working environment, to be provided with suitable noise protection equipment like ear muffs, etc.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	Noise level monitoring to be carried out as per the prescribed schedule in the environmental monitoring plan.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
2	**Dust Control**																																		
	1	Vehicles transporting construction and waste material to be covered	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Construction equipment and vehicles to be properly maintained in good working condition following manufacturer's standards, and idling of engines discouraged.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Machinery emitting visible smoke to be banned from construction sites.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Contractor to prepare and implement upon the approval of the Engineer, a dust suppression program detailing action to be taken to minimize dust generation (e.g. spraying of roads with water), and the equipment to be used	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Dust masks to be provided to workers where dust hazards exist.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	6	Air quality monitoring to be carried out as per the schedule in the environmental monitoring plan.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	7	All roads, permanent or temporary, pukka or katcha, that become dusty and all areas where construction related activities are carried out, shall be subject to necessary dust suppression measures such as watering, sweeping, prevention of speeding vehicles on unpaved roads or other measures approved or directed by the Engineer	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	8	Contractor shall not allow waste oil, lubricant or other petroleum derivatives to be used as dust suppressants and shall take all reasonable precautions to prevent accidental spillage of petroleum products, contamination of such materials with soil or surface/ground water, through dischange run-off, and/or seepage	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	9	Contractor shall take all reasonable measures to minimize dust-blowing from areas under his control by spraying water on stockpile, bare soil, haul road, un-surfaced traffic route and any other source of dust when conditions require, dust suppression	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
3	**Watercourse Impats in Wetlands/Ponds/Rivers**																																		
	1	All waterways where Construction activities are conducted, shall be maintained open at all times, else a temporary diversion works adequate to convey surface water flow will be installed. The wetland is to be restored, after the completion of the works.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	2	Earth moving in the vicinity of watercourses shall be kept to a minimum to avoid sedimentation and contamination from fuel and lubricants.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	3	Proper and prompt disposal of construction wastes such as soil, broken bricks, concrete, and steel reinforcement which are dismantled from structures, in connection to the reconstruction of bridges/ culverts. These spoils should not to block stream flow.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	4	Temporary erosion and sedimentation control measures (i.e. sedimentation pond, etc.) during rehabilitation of drainage structures, shall be undertaken to ensure that sediment laden run-off does not enter the adjoining watercourses.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	5	Construction materials and waste shall not be dumped into watercourse during construction of bridges/culverts, and instead deposited in designated disposal sites approved by the Engineer	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	**Borrow and Dredging Site Impacts**																																		
	1	Secure and properly rehabilitate borrow sites, to prevent soil erosion/sedimentation and serve as breeding grounds for rodents and insect vectors.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
		Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF NOVEMBER 2023

No.	Mitigation Measures	SECTION 3																																
		STATION BUIDINGS					BRIDGES				CULVERTS																							AVERAGE RATING
		Mandabag Station	Quasba Station	Imambari Station	Gangasagar Station	Akhaura Station	Bridge 262	Bridge 263	Bridge 272	Brige 276	Culvert 256	Culvert 260	Culvert 264	Culvert 265	Culvert 266	Culvert 267	Culvert 268	Culvert 269	Culvert 270	Culvert 271	Culvert 273	Culvertt 274	Culvert 275	Culvert 277	Culvert 281	Culvert 282	Culvert 1	Culvert 2	km 175+200 to 180+200	km 180+200 to 185+200	km185+200 to 190+200	km190+200 to 195+200	km 195+200 to 202+650	
5	**Disposal of Construction Debris and other Waste Materials**																																	
1	No burning shall be allowed.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	No construction-related debris shall be left lying on the surface of the ground, pond or buried in any agricultural land.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Man-made construction-related debris shall be deposited in disposal areas, the location and nature of such site, shall be subject to the approval of the Engineer.	3	3	3	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4.8
4	Before abandoning disposal areas, these shall be covered with earth and leveled in a manner that these blend with the surrounding environment.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	4.5	4.5	4.5	5	4.5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4.9
6	**Servicing and Operating Equipment**																																	
1	Whenever possible, avoid servicing machines or equipment near rivers, streams or other bodies of water. If unavoidable, servicing shall be carried out in such a manner, as to avoid pollution of the water body with gasoline, diesel fuel, oil, grease, and/or other related waste materials (i.e. oil filter, radiator coolant, etc.)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	The Contractor shall ensure that all hydraulic, fuel and lubricating systems, are maintained in good working condition to avoid leakage of petroleum products into the environment.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Fuel spills will not be tolerated and care shall be taken to avoid overfilling machines.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	The Contractor shall have the appropriate equipment to transport fuel so that spillage will be avoided. Automatic shut-off nozzles shall be installed on all fuel dispensing units.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	The Contractor shall have oil spill abatement equipment such as oil drip pans among others, on the site at all times. Persons assigned to operate these equipment are to be properly trained on its use.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	All type of equipment to be used in the Project, shall be subject to the approval of the Engineer, and shall be maintained in good working condition following the manufacturer's standards.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	Disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP or as directed by the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5.0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	**Control of Petroleum Producrts**																																	
1	All petroleum products shall be stored in a suitable facility where any spillage can be safely controlled to avoid contamination of the surrounding areas. Storage of petroleum products shall not be permitted in the vicinity of streams, rivers or other bodies of water. To avoid groundwater contamination, impermeable liner shall be placed on subsurface of the petroleum products storage area.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
8	**Protection of Topsoil and Soil Erosion**																																	
1	Topsoil of storage areas must be covered by suitable material especially during the dry season, to prevent wind erosion	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
2	Promptly protect open soil erosion-prone areas such as embankment slopes using appropriate methods such as vegetative measures, hydro-seeding and others.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	Open embankment slopes are to be planted with suitable vegetation such as grasses, cover crop or fast-growing tree species. In some cases concrete blocks will be used instead.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	In the selection of sites for the use of stockpiling and disposal of construction materials, natural drainage, storm drain or ponds should be avoided in order to prevent water logging.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	Topsoil and/or any organic materials excavated from the construction site, is to be stockpiled in a suitable area as defined in item 8.4 above, for use in the Project's compensatory tree plantation program; or when in excess amounts, these soil can be donated/sold to interested parties or deposited in approved disposal sites.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
9	**Occupational Health and Safety**																																	
1	Provide personal protection equipment appropriate to the construction workers' job; which may include among others, safety vest, safety shoes, helmets, gloves, welding protective eye glasses, harness, safety goggles and ear protection, and others; and enforce its proper use.	3	3	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4.8
2	Prepare, submit and implement a Health and Safety Program acceptable to the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
3	All Construction Workers are to be trained in general health and safety guidelines, especially on how to manage hazards specific to their respective work. Tool-box health & Safety sessions are to be conducted by the construction foremen with the workers prior to starting the work day.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
4	Must not hire Child labor, or persons with ages 14 and below.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
5	No persons with age between 17 and 15, are to be hired for hazardous duties.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
6	Provide adequate number of toilet and other sanitation facilities in the offices, workplace, and worker's accommodations..	3.5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
7	Prepare and implement an HIV/AIDS STD prevention Program, acceptable to the Engineer.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
8	Hiring of personnel, job assignment and pay scale, shall be done irrespective of gender, race, creed, political affiliation, and social status.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5.0
	Average Rating	4.56	4.75	5.00	5.00	4.75	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.0
	Overall all Rating	4.41	4.43	4.45	4.50	4.43	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.5

ALDLP ENGINEER'S MAIN OFFICE (EMO) BUILDING

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF 31 DECEMBER 2023

		Mitigation Measures	
1	**Site Development**		
	1	Cutting and filling operations to be kept at a minimum.	5
	2	Construction of a proper drainage facility.	3
	3	Regular water sprinkling to be used to minimize fugitive dust emissions.	4
	4	Cut and filling to be done during the dry season.	5
	5	Installl shore piles and horizontal beam support to prevent the collapse of excavated areas following approved construction drawings.	5
		Average Rating	4.40
2	**Demolition and Other Earthmoving Works**		
	1	Water spraying of demolition site and access road to minimize dust generation,	4
	2	Cover debris with geotextiles or plastic sheets to prevent wind dispersal of dust particles.	4
	3	Separate and properly dispose of different types of waste, such as hazardous materials, recyclables and general debris.	4
	4	Recycle or reuse materials whenever feasible, reducing the amount of waste sent to landfills.	4
	5	Comply with local regulations and engage license waste management service providers for the collection and disposal of waste.	5
		Average Rating	4.20
3	**Traffic Management**		
	1	Develop and implement a traffic management plan to ensure the convenient and safe movement of vehicles and pedestrians around the construction site.	5
	2	Clearly mark designated routes for construction vehicles and establish appropriate signage to guide vehicular traffic.	3
	3	Provide adequate internal parking for authorized Project vehicles and visitors	3
	4	Provide tool box training for Project drivers to create awareness on road safety.	5
	5	Coordinate with local authorities to minimize traffic disruptions and ensure public safety during construction activities.	4
		Average Rating	4.00
4	**Impact on Ambient Air**		
	1	Conduct monthly monitoring of ambient air quality of the construction site.	4
	2	Regular water sprinkling of open areas to minimize fugitive dust emissions.	4
	3	Transport of construction materials and/or waste in tarpaulin-covered trucks.	5
	4	Sand and other dispersible materials should be stored at a safe place within the construction site, and only for a minimum working period.	5
	5	Removal of soil/mud from tires of trucks and other construction vehicles before leaving the site.	3
	6	Complaints of dust-related ailments among construction workers and neighbors to be given access to medical attention.	4
		Average Rating	4.17

ALDLP ENGINEER'S MAIN OFFICE (EMO) BUILDING

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF 31 DECEMBER 2023

		Mitigation Measures	
5	**Impact on Ambient Noise**		
	1	Minimize as much as technically practicable, the use of noisy construction equipment at the construction site.	4
	2	Excessive noise generating activities to be properly scheduled to reduce simultaneous exposure, and as much as practicable conducted during day time.	4
	3	Noise generated by all construction equipment should comply with applicable noise standards.	4
	4	Regularly monitor ambient noise level to ensure compliance to DOE noise standards.	4
	5	Provide ear protection devices to construction workers exposed to excessive abmient noise.	5
	6	Properly maintain construction equipment and vehicles.	5
		Average Rating	4.33
6	**Impact on Water Bodies**		
	1	Septic tank with soak pit should be provided in the construction area, to avoid contamination of the ground water.	3
	2	Adequate drainage facility to be installed at the construction site to avoid water logging that may serve as breeding area for mosquitoes that may carry malaria or dengue.	3
	3	Strict supervision should be maintained inorder to avoid the blockage of city drainage facilities by construction debris.	4
	4	The Contractor shall have the appropriate equipment to transport fuel so that spillage will be avoided. Automatic shut-off nozzles shall be installed on all fuel dispensing units.	4
	5	The Contractor shall have oil spill abatement equipment such as oil drip pans among others, on the site at all times. Persons assigned to operate these equipment are to be properly trained on its use.	3
	6	Conduct water quality monitoring of ground water.	4
	7	Disposal of used oil, lubricants, tires, etc. shall be in accordance with the EMP or as directed by the Engineer.	5
		Average Rating	3.71
7	**Occupational Health & Safety Hazards**		
	1	A Health & Safety (H&S) Plan acceptable to ADB and BR, to be prepared prior to the start of construction	5
	2	H&S training should be conducted for all construction personnel and workers, including good housekeeping, cleanup of debris and spills, and working in confined spaces, and at heights.	5
	3	Construction workers are to wear properly Personal Protective Equipment (PPE) at all times while engaged in construction work.	4
	4	Pedestrians to be segregated from construction area, and access to construction site to be restricted to authorized BR Officials, Project officials and personnel.	5
	5	WHO and Bangladesh Government guidelines for the prevention of HIV/AIDS, Human Trafficking, COVID-19, Dengue and other infectious diseases, to be implemented at the Project site.	5

ALDLP ENGINEER'S MAIN OFFICE (EMO) BUILDING

DETAILED ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE STATUS AS OF 31 DECEMBER 2023

		Mitigation Measures	
	6	Ensure regular house cleaning at the construction site and workers camp.	3
	7	Provide adequate sanitation facilities in the work place and the workers camp, including potable water supply, clean toilet & bath, and waste collection and disposal system.	3
	8	Conduct public awareness program to inform nearby residents of the Project activities, negative impacts and mitigation measures ment to address the undesirable effects.	3
		Average Rating	4.13
8	**Employment**		
	1	Contractor to follow applicable International Labor Organization policies and Bangladesh Labor laws.	5
	2	Equal opportunities for employment and equal pay for equivalent work of Project personnel, regardless of gender, race or creed.	5
	3	Priority hiring of qualified local residents.	5
	4	Child labour is not allowed.	4
		Average Rating	4.50
		Overall all Ratimg	4.18

ANNEX 2
WEEKLY TREE PLANTATION ESTABLISHMENT PROGRAM

PROGRESS OF TREE PLANTATION ESTABLISHMENT & MAINTENANCE FOR THE MONTH OF NOVEMBER 2023 (CTM JV MAX - SECTIONS 1 & 2)

		ACTIVITIES		Unit	June 23				July 23				August 23			
					W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
		Nursery Operation														
	1	Sapling Production														
		Total	Target	Saplings	0	0	0	0	0	0	0	0	0	0	0	0
			Actual	Saplings	0	0	0	0	0	0	0	0	0	0	0	0
	2	**Sapling Procurement**														
		a. Timber Trees	Target	Saplings	1,250	1,250	1,250	1,250	2,125	2,125	2,125	2,125	625	625	625	625
			Actual	Saplings	0	0	8,000	0	0	0	6,000		6,500		1,500	2,300
		b. Fruit Trees	Target	Saplings	750	750	750	750	1,275	1,275	1,275	1,275	375	375	375	375
			Actual	Saplings	0	0	4,800	0	0	0	3,600		3,900		900	1,380
		c. Medicinal Trees	Target	Saplings	250	250	250	250	425	425	425	425	125	125	125	125
			Actual	Saplings	0	0	1,600	0	0	0	1,200		1,300		300	460
		d. Fuel Wood	Target	Saplings	250	250	250	250	425	425	425	425	125	125	125	125
			Actual	Saplings	0	0	1,600	0	0	0	1,200		1,300		300	460
		Total	Target	Saplings	2,500	2,500	2,500	2,500	4,250	4,250	4,250	4,250	1,250	1,250	1,250	1,250
			Actual	Saplings	65,000	65,100	81,100	81,100	81,100	81,100	93,100	93,100	106,100	106,100	106,100	113,700
	3	Sapling Maintenance		Saplings	65,000	65,100	81,100	81,100	81,100	81,100	93,100	93,100	106,100	106,100	106,100	113,700
2		**Plantation Establishment**														
	1	Site preparation (Staking/hole digging/fertilization)	Target	hectares/holes	2500	2500	2500	2500	4250	4250	4250	4250	1250	1250	1250	1250
			Actual	hectares/holes	0	5000	3000	3000	4500	0	2000	2000	4000	4700	3000	4600
		Location		chainage	Up Line- Ch: 161+300 to 165+975, Up Line of BCZ Area (Pitambar to Paikota area)				Track embankment (Ch: 158+800 to Ch: 165+900) Down Line, Land Scaping at Lalmai, Maynamati, Comilla, Sadar Rosulpur, Rajapur				Track embankment (Ch: DL-158+575 to 163+400) Down Line,		Track embankment (Ch: DL- 163+400 to 165+900) Down Line,	
	2e	Outplanting New 2023	Target	hectares/holes	2500	2500	2500	2500	4250	4250	4250	4250	1250	1250	1250	1250
			Actual	hectares/holes	0	0	3000	3000	4500	0	2000	2000	4000	4700	3000	4600
		Location		chainage	Up Line- Ch: 161+300 to 165+975, Up Line of BCZ Area (Pitambar to Paikota area)				Track embankment (Ch: 158+800 to Ch: 165+900) Down Line, Land Scaping at Lalmai, Maynamati, Comilla, Sadar Rosulpur, Rajapur				Track embankment (Ch: DL-158+575 to 163+400) Down Line,		Track embankment (Ch: DL- 163+400 to 165+900) Down Line,	
3		Ring weeding/fertilization/	Target	Saplings	2500	2500	2500	2500	4250	4250	4250	4250	1250	1250	1250	1250
			Actual	Saplings	0	0	3000	3000	4500	0	2000	2000	4000	4700	3000	4600
	2	Location		chainage	Up Line- Ch: 161+300 to 165+975, Up Line of BCZ Area (Pitambar to Paikota area)				Track embankment (Ch: 158+800 to Ch: 165+900) Down Line, Land Scaping at Lalmai, Maynamati, Comilla, Sadar Rosulpur, Rajapur				Track embankment (Ch: DL-158+575 to 163+400) Down Line,		Track embankment (Ch: DL- 163+400 to 165+900) Down Line,	
		Protection/Patrolling	Target	hectares/holes	2500	2500	2500	2500	4250	4250	4250	4250	1250	1250	1250	1250
			Actual	hectares/holes	81302	81402	84402	87402	91902	91902	93902	95902	4000	4700	3000	4600
	3	Location		chainage	Up Line- Ch: 161+300 to 165+975, Up Line of BCZ Area (Pitambar to Paikota area)				Track embankment (Ch: 158+800 to Ch: 165+900) Down Line, Land Scaping at Lalmai, Maynamati, Comilla, Sadar Rosulpur, Rajapur				Track embankment (Ch: DL-158+575 to 163+400) Down Line,		Track embankment (Ch: DL- 163+400 to 165+900) Down Line,	

PROGRESS OF TREE PLANTATION ESTABLISHMENT & MAINTENANCE FOR THE MONTH OF NOVEMBER 2023 (CTM JV MAX - SECTIONS 1 & 2)

		ACTIVITIES		Unit	September 23				October 23				November 23				Total
					W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	
		Nursery Operation															
	1	Sapling Production															
		Total	Target	Saplings	0	0	0	0	0	0	0	0	0	0	0	0	0
			Actual	Saplings	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	**Sapling Procurement**															
		a. Timber Trees	Target	Saplings	250	250	250	250	0	0	0	0	0	0	0	0	17,000
			Actual	Saplings	1,000	1,000	1,000	1,000	200	500	500	500	500	0	0	0	30,500
		b. Fruit Trees	Target	Saplings	150	150	150	150	0	0	0	0	0	0	0	0	10,200
			Actual	Saplings	600	600	600	600	120	300	300	300	300	0	0	0	18,300
		c. Medicinal Trees	Target	Saplings	50	50	50	50	0	0	0	0	0	0	0	0	3,400
			Actual	Saplings	200	200	200	200	40	100	100	100	100	0	0	0	6,100
		d. Fuel Wood	Target	Saplings	50	50	50	50	0	0	0	0	0	0	0	0	3,400
			Actual	Saplings	200	200	200	200	40	100	100	100	100	0	0	0	6,100
		Total	Target	Saplings	500	500	500	500	0	0	0	0	0	0	0	0	34,000
			Actual	Saplings	113,700	115,700	117,700	119,700	120,100	121,100	122,100	123,100	124,100	0	0	0	124,100
	3	Sapling Maintenance		Saplings	113,700	115,700	117,700	119,700	120,100	121,100	122,100	123,100	124,100	124100	124100	124100	
2		**Plantation Establishment**															
	1	Site preparation (Staking/hole digging/fertilization)	Target	hectares/holes	500	500	500	500	0	0	0	0	0				34,000
			Actual	hectares/holes	2000	2000	2000	2000	400	1000	1000	1000	1000				48,200
		Location		chainage	Track embankment (Ch: DL- 158+575 to 166+000) Down Line,				Track embankment (Ch: DL- 162+300 to 163+300) Down Line, and Track embankment (Ch: UL- 163+000 to 163+800) Up Line								
	2e	Outplanting New 2023	Target	hectares/holes	500	500	500	500	0	0	0	0	0	0	0	0	34,000
			Actual	hectares/holes	2000	2000	2000	2000	400	1000	1000	1000	1000	0	0	0	43,200
		Location		chainage	Track embankment (Ch: DL- 158+575 to 166+000) Down Line,				Track embankment (Ch: DL- 162+300 to 163+300) Down Line, and Track embankment (Ch: UL- 163+000 to 163+800) Up Line								
3		Ring weeding/fertilization/	Target	Saplings	500	500	500	500	0	0	0	0	0	0	0	0	34,000
			Actual	Saplings	2000	2000	2000	2000	400	1000	1000	1000	1000	0	0	0	43,200
	2	Location		chainage	Track embankment (Ch: DL- 158+575 to 166+000) Down Line,				Track embankment (Ch: DL- 162+300 to 163+300) Down Line, and Track embankment (Ch: UL- 163+000 to 163+800) Up Line								
		Protection/Patrolling	Target	hectares/holes	500	500	500	500	0	0	0	0	0	0	0	0	34,000
			Actual	hectares/holes	2000	2000	2000	2000	400	1000	1000	1000	1000				124,100
	3	Location		chainage	Track embankment (Ch: DL- 158+575 to 166+000) Down Line,				Track embankment (Ch: DL- 162+300 to 163+300) Down Line, and Track embankment (Ch: UL- 163+000 to 163+800) Up Line								

ANNEX 3. PHOTOGRAPHS

ANNEX 3A. ENVIRONMENTAL MONITORING

Plate 1. Ambient Noise level monitoring at Railway Mosque beside the EMO Building site. Picture taken on 2 August

Plate 2. Ambient noise level monitoring at the EMO Building construction site. Picture taken on 2 August 2023.

Plate 3. Surface water sample taken from Gumti River. Picture taken on 2 August 2023

ANNEX 3 B. DUST CONTROL

Plate 4. Photograph of CTM JV TOMA Water Tanker. Picture taken on 21 August 2023.

Plate 5. Photograph of CTM JV MAX water tanker at the Akhaura Station area. Picture taken on 20 December 2023.

Plate 6. Photograph of watering of unpaved track embankment at the Quasba Station Yard. Picture taken on 21 August 2023.

ANNEX 3C. DISPOSAL OF CONSTRUCTION DEBRIS AND OTHER WASTE MATERIALS

Plate 7. Photograph of excess construction materials, excavation spoils and cut trees deposited in temporary storage area prior to disposal in LGU authorized sites, on 16 November 2023

Plate 8. Photograph of old railway track that had been deposited in a temporary storage area at Quasba Station. Picture taken on 16 November 2023.

Plate 9. Excavated materials from EMO Building earthworks awaiting collection by Contractor's trucks for transport and reuse as backfill materials for their other Projects. Picture taken on 5 December 2023.

ANNEX 3D. CONTROL OF PETROLEUM PRODUCTS

Plate 10. Photograph of the Quasba Fuel refilling station. Picture taken on 16 November 2023.

Plate 13. Photograph of the fuel filling station at the Quasba Construction yard. Picture taken on 16 November 2023.

Plate 11. Photograph of the Lalmai Fuel Filling Tank at Lalmai Station. Picture taken on 22 October 2023.

ANNEX 3E. OCCUPATIUONAL HEALTH AND SAFETY

Plate 13. NGO UDOY distribute informative materials on HIV/AIDS STD Prevention to local communities around the EMO Building as part of the HIV/AIDS STD Prevention Awareness Seminar Picture taken on 5 December 2023.

Plate 14. Toolbox meetings held prior to starting the work at the EMO Building site. Picture taken on 23 November 2023

Plate 15. Safety signs installed on the front perimeter wall of the EMO Building site. Picture taken on 10 July 2023.

Plate 16. Medical Check-up provided by NGO UDOY after HIV/AIDS STD Prevention Seminar to EMO Construction Workers. Picture taken on 5 December 2023.

Plate 17. Gatemen deployed at a temporary railway level crossing, to regulate the movement of vehicular traffic. Picture taken on 10 July 2023.

Plate 18. Routine temperature check to detect potential Covid-19 cases at the Gangasagar Station. Picture taken on 22 November 2023.

ANNEX 3F. COMPENSATORY TREE PLANTATION AND REHABILITATION PROGRAM

Plate 19. CSC Team Leader Raymond Sawyer (center) instructs CSC Jr. Environmental Specialists N. Sakib and M. Hassan (left) on proper procedure of validating tree plantations at the Salda Nadi Railway Station. CSC Jr. Resettlement & Gender Spl. N. Akter (right) Photograph taken on 16 August 2023.

Plate 20. CSC Project Coordinator (PC) Mr. Naim Khan (left) and CSC Resident Social/ Resettlement & Gender Spl A. Salvador investigate the damages caused by Cumilla Rural Electrification Association Maintenance Crew on the 2020 tree plantation. Photograph taken on 13 December 2023.

Plate 21. CSC Project Coordinator (PC) Mr. Naim Khan (left) inspects the healthy 2023 tree plantation at chainage km196+900 (upline) located in Section 3. Photograph taken on 18 December 2023

Plate 22. CSC PC inspects a segment of the tree plantation at chainage km192+400 (downline) that lacks maintenance & protection. Weeds are found almost covering the planted saplings. Photograph taken on 18 December 2023.

Plate 23. CSC PC Mr. Naim Khan (right) inspects a healthy tree plantation at chainage km197+700 (upline). CSC Jr. Environmental Spl. M. Hassan (left) looks on. The pond had served as a barrier against foraging animals. Photograph taken on 18 December 2023.

Plate 24. CSC PC Mr. Naim Khan (left) inspects a healthy 2021 plantation of Acacia auricoliformis at chainage km178+900 (upline). CSC Jr. Environmental Spl. M. Hassan (right) looks on. Photograph taken on 17 May 2023.

ANNEX 3G.
WATERCOURSE IMPACTS IN WETLANDS/PONDS/RIVERS

Plate 25. Waterway at Bridge 261 (Salda Nadi bridge) already cleared of debris. Photograph taken on 19 October 2023.

Plate 26. Waterway at Bridge 276 already cleared of debris. Photograph taken on 21 October 2023.

Plate 27. EQMS Surface Water Monitoring at a free flowing Gumti River at Gumti Bridge. Photograph taken on 22 October 2023.

ANNEX 3H. HIV/AIDS STD AWARENESS AND PREVENTION SEMINARS

Plate 28. HIV/AIDS Awareness & Preventive Seminar held at a local community that was participated in by women near the Quasba Station. Photograph taken on November 2023.

Plate 29. A Focus Group Discussion held by CSC Safeguards team and NGO UDOY with Transgenders after the HIV/AIDS Awareness & Preventive Seminar held at the CSC Akhaura Office. Photograph taken on 19 October 2023.

Plate 30. Medical clinic conducted after the HIV/AIDS STD Prevention Awareness Seminar held at the EMO Building site. Photograph taken on 27 August 2023.

ANNEX 3J. EMO BUILDING CONSTRUCTION

Plate 31. Regular Tool box meetings before work, being done at the EMO Building Site. Photograph taken on 23 November 2023.

Plate 32. Safety informative signs installed at the front perimeter wall of EMO Building construction site. Debris also temporarily piled for collection by licensed contractor. Photograph taken on 26 July 2023.

Plate 33. All EMO Bldg. Personnel have been issued PPEs. Photograph taken on 8 August 2023.

ANNEX 4. LABORATORY TEST RESULTS

All Test Results | July 2023

Ref: EQMS/Air Quality/202308281055

EQMS ENVIRONMENTAL LABORATORY

Test Results of Ambient Air Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Air Quality
Sampling Location : EMO Building-Fulbaria, Dhaka and Saldanodi Railway Station
Sampling Date : 30 July to 2 August 2023
Reporting Date : 20 August 2023

Result of Ambient Air Quality Test

Sampling Locations	$PM_{2.5}$	PM_{10}	SPM	SO_2	NO_X	CO
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	ppm
AAQ-1	39.46	70.64	118.61	12.39	33.89	0.23
AAQ-2	20.08	37.24	68.35	6.51	23.11	0.12
Bangladesh Standard*	65	150	200	365	100**	9
Duration (Hours)	24	24	8	24	24	8

* The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997 which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005.
** The Bangladesh Standards for oxides of nitrogen (NO_X) is annually.

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Ref: EQMS/Noise Level/202308281056

EQMS ENVIRONMENTAL LABORATORY

Test Results of Noise Level

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Noise Level
Sampling Location : EMO Building-Fulbaria, Dhaka, Saldanodi Railway Station, and nearby sensitive receptors
Sampling Date : 30 July to 2 August 2023
Reporting Date : 20 August 2023

Result of Noise (dB)

Sampling Locations	Location Settings	Time	Leq in dB(A)	Bangladesh Standard dB(A)*	Remarks
ANL-1	Mixed area	Day	62.99	60	High
		Night	53.14	50	High
ANL-2	Mixed area	Day	62.37	60	High
		Night	52.76	50	High
ANL-3	Mixed area	Day	53.39	60	Low
		Night	47.53	50	Low
ANL-4	Silent area	Day	49.08	50	Low
		Night	45.11	40	High

* Noise Pollution (Control) Rules, 2006.

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Ref: EQMS/Water Quality/202308281057

EQMS WET LABORATORY

Test Results of Surface Water Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Surface Water Quality
Sampling Location : Saida River
Sampling Date : 2 August 2023
Reporting Date : 20 August 2023

Result of Surface Water Quality

Sampling Locations	pH	Temp	EC	TDS	DO	BOD_5	COD	TSS
		°C	mS	mg/L	mg/L	mg/L	mg/L	mg/L
SWQ-1	7.12	30.6	0.09	50	6.2	1.4	14	26
SWQ-2	6.87	30.6	0.09	40	6.1	1.8	17	31
Bangladesh Standard*								
Source of drinking water for supply only after disinfecting	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable for recreational activity	6.5-8.5	-	-	-	5 or more	-	-	-
Source of drinking water for supply after conv. treatment	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable by fisheries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable by various process and cooling industries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable for irrigation	6.5-8.5	-	-	-	5 or more	-	-	-

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Inland Surface Water)

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Ref: EQMS/Water Quality/202308281058

EQMS WET LABORATORY

Test Results of Groundwater Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Groundwater Quality
Sampling Location : EMO Building-Fulberia, Dhaka and Saldanodi Railway Station
Sampling Date : 30 July to 2 August 2023
Reporting Date : 20 August 2023

Result of Groundwater Quality

Sampling Locations	pH	Temp	Phosphate	Manganese	Arsenic	Iron	Fecal Coliform, FC
		°C	mg/L	mg/L	mg/L	mg/L	N/100mL
GWQ-1	6.70	30.0	0.8	<0.01	<0.01	0.04	0
GWQ-2	6.64	29.8	0.6	<0.01	<0.01	0.08	0
Bangladesh Standard*	6.5-8.5	20-30	6.0	0.1	0.05	0.3-1	0

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Drinking Water)

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All Test Results | August 2023

Ref: EQMS/Air Quality/ 202309261191

EQMS ENVIRONMENTAL LABORATORY

Test Results of Ambient Air Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Air Quality
Sampling Location : Sadar Rasulpur Railway Station and Kasba Railway Station
Sampling Date : 20 August to 23 August 2023
Reporting Date : 15 September 2023

Result of Ambient Air Quality Test

Sampling Locations	$PM_{2.5}$	PM_{10}	SPM	SO_2	NO_X	CO
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	ppm
AAQ-1	19.08	37.21	76.54	8.04	12.31	0.06
AAQ-2	16.33	29.17	62.03	8.78	14.23	0.04
Bangladesh Standard*	65	150	200	365	100**	9
Duration (Hours)	24	24	8	24	24	8

* The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997 which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005.
** The Bangladesh Standards for oxides of nitrogen (NO_X) is annually.

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Ref: EQMS/Noise Level/ 202309261192

EQMS ENVIRONMENTAL LABORATORY

Test Results of Noise Level

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Noise Level
Sampling Location : Sadar Rasulpur Railway Station, Kasba Railway Station, and nearby sensitive receptors
Sampling Date : 20 August to 23 August 2023
Reporting Date : 15 September 2023

Result of Noise (dB)

Sampling Locations	Location Settings	Time	Leq in dB(A)	Bangladesh Standard dB(A)*	Remarks
ANL-1	Mixed area	Day	53.07	60	Low
		Night	48.33	50	Low
ANL-2	Silent area	Day	49.26	50	Low
		Night	46.71	40	High
ANL-3	Mixed area	Day	55.12	60	Low
		Night	49.37	50	Low
ANL-4	Silent area	Day	48.93	50	Low
		Night	47.25	40	High

* Noise Pollution (Control) Rules, 2006.

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Ref: EQMS/Water Quality/ 202309261193

EQMS WET LABORATORY

Test Results of Surface Water Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Surface Water Quality
Sampling Location : Gomti River
Sampling Date : 20 August 2023
Reporting Date : 15 September 2023

Result of Surface Water Quality

Sampling Locations	pH	Temp	EC	TDS	DO	BODs	COD	TSS
		°C	mS	mg/L	mg/L	mg/L	mg/L	mg/L
SWQ-1	6.96	32.0	0.11	50	6.2	1.0	7.1	29
SWQ-2	7.10	32.3	0.11	60	6.3	1.4	10.4	40
Bangladesh Standard*								
Source of drinking water for supply only after disinfecting	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable for recreational activity	6.5-8.5	-	-	-	5 or more	-	-	-
Source of drinking water for supply after conv. treatment	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable by fisheries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable by various process and cooling industries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable for irrigation	6.5-8.5	-	-	-	5 or more	-	-	-

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Inland Surface Water)

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Ref: EQMS/Water Quality/ 202309261194

EQMS WET LABORATORY

Test Results of Groundwater Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Groundwater Quality
Sampling Location : Sadar Rasulpur Railway Station and Kasba Railway Station
Sampling Date : 20 August to 23 August 2023
Reporting Date : 15 September 2023

Result of Groundwater Quality

Sampling Locations	pH	Temp	Phosphate	Manganese	Arsenic	Iron	Fecal Coliform, FC
		°C	mg/L	mg/L	mg/L	mg/L	N/100mL
GWQ-1	7.16	27.9	0.04	<0.01	<0.01	0.01	0
GWQ-2	6.50	27.0	0.03	<0.01	<0.01	0.26	0
Bangladesh Standard*	6.5-8.5	20-30	6.0	0.1	0.05	0.3-1	0

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Drinking Water)

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All Test Results | September 2023

Ref: EQMS/Water Quality/202308281062

EQMS WET LABORATORY

Test Results of Groundwater Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Groundwater Quality
Sampling Location : Cumilla Railway Station and Akhaura Railway Station
Sampling Date : 17 September to 20 September 2023
Reporting Date : 12 October 2023

Result of Groundwater Quality

Sampling Locations	pH	Temp	Phosphate	Manganese	Arsenic	Iron	Fecal Coliform, FC
		°C	mg/L	mg/L	mg/L	mg/L	N/100mL
GWQ-1	6.89	31.2	0.05	<0.01	<0.01	0.18	0
GWQ-2	7.10	22.6	0.06	<0.01	<0.01	0.09	0
Bangladesh Standard*	6.5-8.5	20-30	6.0	0.1	0.05	0.3-1	0

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Drinking Water)

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Ref: EQMS/Water Quality/202308281061

EQMS WET LABORATORY

Test Results of Surface Water Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Surface Water Quality
Sampling Location : Gomti River
Sampling Date : 20 September 2023
Reporting Date : 12 October 2023

Result of Surface Water Quality

Sampling Locations	pH	Temp	EC	TDS	DO	BOD_5	COD	TSS
		°C	mS	mg/L	mg/L	mg/L	mg/L	mg/L
SWQ-1	7.31	31.5	0.22	110	6.7	1.0	10.4	22
SWQ-2	7.33	30.8	0.22	110	6.1	1.5	14.1	28
Bangladesh Standard*								
Source of drinking water for supply only after disinfecting	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable for recreational activity	6.5-8.5	-	-	-	5 or more	-	-	-
Source of drinking water for supply after conv. treatment	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable by fisheries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable by various process and cooling industries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable for irrigation	6.5-8.5	-	-	-	5 or more	-	-	-

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Inland Surface Water)

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Ref: EQMS/Noise Level/202308281060

EQMS ENVIRONMENTAL LABORATORY

Test Results of Noise Level

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Noise Level
Sampling Location : Cumilla Railway Station, Akhaura Railway Station, and nearby sensitive receptors
Sampling Date : 17 September to 20 September 2023
Reporting Date : 12 October 2023

Result of Noise (dB)

Sampling Locations	Location Settings	Time	Leq in dB(A)	Bangladesh Standard dB(A)*	Remarks
ANL-1	Mixed area	Day	57.03	60	Low
		Night	47.86	50	Low
ANL-2	Silent area	Day	54.17	50	High
		Night	48.36	40	High
ANL-3	Mixed area	Day	58.91	60	Low
		Night	49.12	50	Low
ANL-4	Silent area	Day	53.44	50	High
		Night	46.67	40	High

* Noise Pollution (Control) Rules, 2006.

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Ref: EQMS/Air Quality/202308281059

EQMS ENVIRONMENTAL LABORATORY

Test Results of Ambient Air Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Air Quality
Sampling Location : Cumilla Railway Station and Akhaura Railway Station
Sampling Date : 17 September to 20 September 2023
Reporting Date : 12 October 2023

Result of Ambient Air Quality Test

Sampling Locations	$PM_{2.5}$	PM_{10}	SPM	SO_2	NO_X	CO
	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ppm
AAQ-1	14.71	27.08	56.41	9.50	16.57	0.01
AAQ-2	16.87	35.06	70.26	14.31	19.01	0.01
Bangladesh Standard*	65	150	200	365	100**	9
Duration (Hours)	24	24	8	24	24	8

* The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997 which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005.
** The Bangladesh Standards for oxides of nitrogen (NO_2) is annually.

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All Test Results | October 2023

Ref: EQMS/Air Quality/202311221455

EQMS ENVIRONMENTAL LABORATORY

Test Results of Ambient Air Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Air Quality
Sampling Location : Lalmai Railway Station and Shashidal Railway Station
Sampling Date : 22 October to 25 October 2023
Reporting Date : 16 November 2023

Result of Ambient Air Quality Test

Sampling Locations	$PM_{2.5}$	PM_{10}	SPM	SO_2	NO_X	CO
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	ppm
AAQ-1	23.09	44.53	91.24	12.61	14.71	0.06
AAQ-2	14.05	28.22	58.21	9.64	13.96	0.04
Bangladesh Standard*	65	150	200	365	100**	9
Duration (Hours)	24	24	8	24	24	8

* The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997 which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005.
** The Bangladesh Standards for oxides of nitrogen (NO_x) is annually.

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Ref: EQMS/Noise Level/202311221456

EQMS ENVIRONMENTAL LABORATORY

Test Results of Noise Level

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Noise Level
Sampling Location : Lalmai Railway Station, Shashidal Railway Station, and nearby sensitive receptors
Sampling Date : 22 October to 25 October 2023
Reporting Date : 16 November 2023

Result of Noise (dB)

Sampling Locations	Location Settings	Time	Leq in dB(A)	Bangladesh Standard dB(A)*	Remarks
ANL-1	Mixed area	Day	53.27	60	Low
		Night	45.93	50	Low
ANL-2	Silent area	Day	49.16	50	Low
		Night	45.21	40	High
ANL-3	Mixed area	Day	54.73	60	Low
		Night	47.37	50	Low
ANL-4	Silent area	Day	48.06	50	Low
		Night	44.17	40	High

* Noise Pollution (Control) Rules, 2006.

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Ref: EQMS/Water Quality/202311221457

EQMS WET LABORATORY

Test Results of Surface Water Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Surface Water Quality
Sampling Location : Gomti River
Sampling Date : 22 November 2023
Reporting Date : 16 November 2023

Result of Surface Water Quality

Sampling Locations	pH	Temp	EC	TDS	DO	BOD_5	COD	TSS
		°C	mS	mg/L	mg/L	mg/L	mg/L	mg/L
SWQ-1	6.94	24.9	0.12	60	6.6	1.0	9.5	21.0
SWQ-2	6.77	24.8	0.12	60	7.4	1.3	11.1	25.0
Bangladesh Standard*								
Source of drinking water for supply only after disinfecting	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable for recreational activity	6.5-8.5	-	-	-	5 or more	-	-	-
Source of drinking water for supply after conv. treatment	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable by fisheries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable by various process and cooling industries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable for irrigation	6.5-8.5	-	-	-	5 or more	-	-	-

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Inland Surface Water)

Received by:
Md. Shihabuddin Ahmed
Technical Manager
EQMS Consulting Limited

Analyzed by:
Md. Jubaer Ahmed
Chemist
EQMS Consulting Limited

Checked by:
Md. Jahidul Islam
Quality Manager
EQMS Consulting Limited

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Lab Office: Flat # F1, House # Ta-134/A, Bolshakhi Sarani, Gulshan-Badda Link Road, Dhaka – 1212
Toronto Office: 7 Arnot Street, Scarborough Ontario, M1K4B5 Canada

Ref: EQMS/Water Quality/202311221458

EQMS WET LABORATORY

Test Results of Groundwater Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Groundwater Quality
Sampling Location : Laimai Railway Station and Shashidal Railway Station
Sampling Date : 22 October to 25 October 2023
Reporting Date : 16 November 2023

Result of Groundwater Quality

Sampling Locations	pH	Temp	Phosphate	Manganese	Arsenic	Iron	Fecal Coliform, FC
		°C	mg/L	mg/L	mg/L	mg/L	N/100mL
GWQ-1	6.60	24.7	2.5	0.1	<0.01	0.03	0
GWQ-2	6.72	24.8	<0.01	0.1	<0.01	1.72	0
Bangladesh Standard*	6.5-8.5	20-30	6.0	0.1	0.05	0.3-1	0

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Drinking Water)

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Toronto Office: 7 Arnot Street, Scarborough Ontario, M1K4B5 Canada

All Test Results | November 2023

Ref: EQMS/Air Quality/202312121554

EQMS ENVIRONMENTAL LABORATORY

Test Results of Ambient Air Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Air Quality
Sampling Location : Alishahar Railway Station and Gangasagar Railway Station
Sampling Date : 19 November to 22 November 2023
Reporting Date : 11 December 2023

Result of Ambient Air Quality Test

Sampling Locations	$PM_{2.5}$	PM_{10}	SPM	SO_2	NO_X	CO
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	ppm
AAQ-1	13.15	27.74	55.26	7.81	11.61	0.05
AAQ-2	14.10	26.35	56.19	8.05	13.34	0.05
Bangladesh Standard*	65	150	200	365	100**	9
Duration (Hours)	24	24	8	24	24	8

* The Bangladesh National Ambient Air Quality Standards have been taken from the Environment Conservation Rules, 1997 which was amended on 19 July 2005 vide S.R.O. No. 220-Law/2005.
** The Bangladesh Standards for oxides of nitrogen (NO_2) is annually.

Received by:
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Toronto Office: 7 Arnot Street, Scarborough Ontario, M1K4B5 Canada

Ref: EQMS/Noise Level/202312121555

EQMS ENVIRONMENTAL LABORATORY

Test Results of Noise Level

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Ambient Noise Level
Sampling Location : Alishahar Railway Station, Gangasagar Railway Station, and nearby sensitive receptors
Sampling Date : 19 November to 22 November 2023
Reporting Date : 11 December 2023

Result of Noise (dB)

Sampling Locations	Location Settings	Time	Leq in dB(A)	Bangladesh Standard dB(A)*	Remarks
ANL-1	Mixed area	Day	53.41	60	Low
		Night	47.19	50	Low
ANL-2	Silent area	Day	45.35	50	Low
		Night	43.07	40	High
ANL-3	Mixed area	Day	54.20	60	Low
		Night	48.53	50	Low
ANL-4	Silent area	Day	46.22	50	Low
		Night	42.73	40	High

* Noise Pollution (Control) Rules, 2006.

Received by:
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Checked by:
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Toronto Office: 7 Arnot Street, Scarborough Ontario, M1K4B5 Canada

Ref: EQMS/Water Quality/202312121556

EQMS WET LABORATORY

Test Results of Surface Water Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Surface Water Quality
Sampling Location : Haora River
Sampling Date : 22 November 2023
Reporting Date : 11 December 2023

Result of Surface Water Quality

Sampling Locations	pH	Temp	EC	TDS	DO	BOD_5	COD	TSS
		°C	mS	mg/L	mg/L	mg/L	mg/L	mg/L
SWQ-1	8.15	25.7	0.14	70	6.2	1.3	11.2	43
SWQ-2	8.45	25.8	0.16	80	6.1	2.2	12.0	48
Bangladesh Standard*								
Source of drinking water for supply only after disinfecting	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable for recreational activity	6.5-8.5	-	-	-	5 or more	-	-	-
Source of drinking water for supply after conv. treatment	6.5-8.5	-	-	-	6 or above	-	-	-
Water usable by fisheries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable by various process and cooling industries	6.5-8.5	-	-	-	5 or more	-	-	-
Water usable for irrigation	6.5-8.5	-	-	-	5 or more	-	-	-

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Inland Surface Water)

Received by:
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Checked by:
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Ref: EQMS/Water Quality/202312121557

EQMS WET LABORATORY

Test Results of Groundwater Quality

Project Name : Akhaura-Laksam Double Line Project (ALDLP)
Description of Sample : Groundwater Quality
Sampling Location : Alishahar Railway Station and Gangasagar Railway Station
Sampling Date : 19 November to 22 November 2023
Reporting Date : 11 December 2023

Result of Groundwater Quality

Sampling Locations	pH	Temp	Phosphate	Manganese	Arsenic	Iron	Fecal Coliform, FC
		°C	mg/L	mg/L	mg/L	mg/L	N/100mL
GWQ-1	8.44	25.7	0.08	0.01	<0.01	0.17	0
GWQ-2	8.31	25.8	0.1	0.04	<0.01	0.13	0
Bangladesh Standard*	6.5-8.5	20-30	6.0	0.1	0.05	0.3-1	0

* Bangladesh Environment Conservation Rules, 1997 - Schedule 3 (Standards for Drinking Water)

Received by:
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ANNEX 5B

AMBIENT AIR QUALITY MONITORING METHODOLOGY

A total of 2 (two) ambient air samples were collected from the railway station areas of the project rail corridor between Akhaura and Laksam. The ambient status of major air pollutants viz. Particulate Matter (SPM, PM_{10}, and $PM_{2.5}$), Sulfur Dioxide (SO_2), Oxides of Nitrogen (NO_x), and Carbon Monoxide (CO) have been assessed by monitoring air quality at two railway stations of the project.

The portable wireless HAZ-SCANNER ™ HIM-6000 Hazardous Incident Monitor was used to scan, measure, and document critical pollutants including nitrogen dioxide, carbon monoxide, sulfur dioxide, and particulates. Sampling and analysis of ambient air quality was conducted by referring to the recommendation of the United States Environmental Protection Agency (USEPA). The Haz-Scanner Environmental Perimeter Air Station (EPAS) was used to collect ambient air monitoring data. Sampling rate or air quality data was measured automatically every one to five minutes and directly recorded onsite for measured parameters (SO_2, NO_2, CO, PM_{10}, $PM_{2.5}$ and SPM) as shown in Table 1-1. Different analysis methods are integrated in the instrument, such as Particulates 90 Infrared Light Scattering for particulate matters (PM_{10}, $PM_{2.5}$ and SPM), filter for lead analysis and electrochemical sensors for toxic gases (CO, NO_2, and SO_2).

Table 1-1. Methods of Air Quality Sampling and Analysis

Parameter	Machine Name	Methods of Testing	Analysis Method
$PM_{2.5}$	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer
PM_{10}	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer
SPM	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer
NO_x	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer
SO_2	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer
CO	Hazz Scanner HIM 6000	On site recording	Light Scanner Nephotometer

As per the national standard, CO and SPM were monitored for 8 hours to compare with the national standard. For PM_{10}, $PM_{2.5}$, and SO_2, the standard duration is 24-hour data whereas the standard duration for NOx is annual. So, standard duration varies from parameter to parameter. So the Hazz Scanner HIM 6000 was operated for 8 hours in peak traffic time (mostly from 10:00am to 6:00pm) and a conversion equation (given below) was used to convey the data from specific time period to expected time period. The equation has been used in many approved EIA report and is as follows:

$$C_{long} = C_{short} (t_{short}/t_{long})^p$$

Where, C_{long} = Expected output in specific time
C_{short} = Outcome during Monitoring Period
T_{short} = Specific time period during monitoring (in minutes)
T_{long} = Expected time period (in minutes)
P = Exponential factor where the value is 0.30

ANNEX 5C

AMBIENT NOISE LEVEL MONITORING METHODOLOGY

In all cases, the sound level meter (SLM) was mounted on a tripod at 1.5 m above ground level and at least 3.5 m away from any sound reflecting surfaces. The SLM was oriented towards the facility of interest for each measurement taken. The measurements were made using a Noise data logger (Digital Noise Meter: Model no. SLM25TK). The SLM was calibrated before the noise monitoring survey was carried out. The sound level is recorded in form of A-weighted equivalent continuous sound pressure level (Leq) values with the use of A-weighing filters in the noise measuring instrument.

Then noise level data will be analyzed to Leq. Noise level data are also compared with the DoE standard ECR 1997.

ANNEX 6. CALIBRATION CERTIFICATE

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

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CERTIFICATE of CALIBRATION

Certificate No. 02309096666
Issue Date 13/09/2023

Customer Details:

Name	**EQMS Consulting Limited**
Address	Flat # F1, House # Ta-134/A, Boishakhi Sarani, Gulshan-Badda Link Road, Dhaka-1212, Bangladesh.
Tel	+880 1742 556466
E-mail	jubaer.ahmed@eqms.com.bd

Details of Unit Under Calibration (UUC):

Description	Combo Meter
Manufacturer	HANNA
Model/Type	HI98130
Serial Number	N/P
ID No.	**EQMS#97**
Range/working Range	Ref. On Obs.
Least Count	Ref. On Obs.
Accuracy	As Per Instrument
Location of Calibration	Laboratory
Visual Inspection	OK
Date of Calibration	09/09/2023
Suggested Due Date	08/09/2024
Calibration Procedure	The calibration had been performed in accordance with calibration procedure COP/SCS/111 (Procedure based on Comparision Method).
Calibration Result	The details of standard equipment used for calibration & result of calibration are given in page 2 & 3.
Conclusion	For the status of measurements please refer to the guidance notes.

Environment: (certified against calibrated digital temperature & humidity meter)

Temperature (°C)	25±3
Relative Humidity (%RH)	40 to 60

Change in temperature and relative humidity of the Laboratory during the calibration was less than 0.3°C per hour and 5.0% per 4 hours respectively.

This certificate is issued strictly in accordance with the requirements of ISO 17025:2017. All calibration equipments are traceable to the International Standards . Documentary evidence is available upon request.

ISO/IEC :17025
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STANDARD CALIBRATION SERVICE PRIVATE LIMITED

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CERTIFICATE of CALIBRATION

Details of Standard Equipment Used for Calibration:

Sl. No.	Description	Make	Inst. Sl. /ID NO.	Certificate No.	Validity	Calibrated By
01	RTD with Indicator	Eurotherm/ Tempsens	SCS/RTD/01	QSI/0428/22/12	20/12/2023	QSI-INDIA
02	pH 4, pH 7, pH 10 Solution	Agilent	SCS/PH/4,7,10	8680-5571	22/07/2024	Agilent
03	Thermo Hygrometer(Data Logger)	CEM	SCS/DL/05	QSI/0528/22/10	09/10/2023	QSI-INDIA
04	TDS Solutions	Traceable Standard Solution				
05	EC Solutions	Traceable Standard Solution				

Guidance Notes:

Status A The measurement is within tolerance, due allowances having been made for the uncertainty of the measurement.

Status B The measurement may be out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status C The measurement is out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status D No conclusion can be drawn, because the standard(s) do(es) not specify a tolerance for this measurement.

OBSERVATION:

Before Calibration:

Sl. No.	Solution (pH)	U.U.C Value (pH)	Error (pH)	Tolerance	Status	Uncertainty
01	4.00	4.04	-0.04	N/S	D	±0.2% of rdg
02	7.00	7.07	-0.07	N/S	D	
03	10.00	10.10	-0.10	N/S	D	

After Calibration:

Sl. No.	Solution (pH)	U.U.C Value (pH)	Error (pH)	Tolerance	Status	Uncertainty
01	4.00	4.00	0.00	N/S	D	±0.2% of rdg
02	7.00	7.00	0.00	N/S	D	
03	10.00	9.99	0.01	N/S	D	

TDS OBSERVATION:

Obs. No.	Solution (ppt)	U.U.C Value (ppt)	Error (ppt)	Tolerance	Status	Uncertainty
01	3.00	3.00	0.00	N/S	D	±0.03% of rdg
02	5.00	5.00	0.00	N/S	D	
03	6.44	6.43	0.01	N/S	D	
04	10.00	9.97	0.03	N/S	D	

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E-mail: info@scsbd-ltd.com, www.scsbd-ltd.com

CERTIFICATE of CALIBRATION

EC OBSERVATION:

Obs. No.	Solution (mS/cm)	U.U.C Value (mS/cm)	Error (mS/cm)	Tolerance	Status	Uncertainty
01	5.0	5.00	0.00	N/S	D	±0.03% of rdg
02	10.0	9.99	0.01	N/S	D	
03	15.0	14.98	0.02	N/S	D	
04	20.0	19.96	0.04	N/S	D	

The overall uncertainty shall be calculated as per ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level.

Notes:
1. The values mentioned above are the mean readings.
2. No adjustment was done during the calibration.
3. Any section marked, "N/A" means Not Applicable, "N/P" means Not Provided, "N/R" means Not Readable, "N/S" means Not Specified.

Calibrated By:

Md. Mobinul Islam
(Calibration Engineer)

Issued By:

Md. Arman Ahmed Razu
(Technical Manager)

End of Calibration Certificate

SCS
Standard Calibration Service

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

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CERTIFICATE of CALIBRATION

Certificate No. 02309096663
Issue Date 13/09/2023

Customer Details:

Name	**EQMS Consulting Limited**
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Tel	+880 1742 556466
E-mail	jubaer.ahmed@eqms.com.bd

Details of Unit Under Calibration (UUC):

Description	Dissolved Oxygen (DO Meter)
Manufacturer	EXTECH
Model/Type	DO600
Serial Number	322291
ID No.	**EQMS # 559**
Range (mg/L)	0 to 20
Least Count (mg/L)	0.01
Accuracy	As Per Instrument
Location of Calibration	Laboratory
Visual Inspection	OK
Date of Calibration	09/09/2023
Suggested Due Date	08/09/2024
Calibration Procedure	The calibration had been performed in accordance with calibration procedure COP/SCS/68
Calibration Result	The details of standard equipment used for calibration & result of calibration are given in page 2.
Conclusion	For the status of measurements please refer to the guidance notes.

Environment: (certified against calibrated digital temperature & humidity meter)

Temperature (°C)	25±3
Relative Humidity (%RH)	40 to 60

Change in temperature and relative humidity of the Laboratory during the calibration was less than 0.4°C per hour and 4.0% per 4 hours respectively.

This certificate is issued strictly in accordance with the requirements of ISO 17025:2017. All calibration equipments are traceable to the International Standards . Documentary evidence is available upon request.

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

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E-mail: info@scsbd-ltd.com, www.scsbd-ltd.com

CERTIFICATE of CALIBRATION

Details of Standard Equipment Used for Calibration:

Sl. No.	Description	Make	Inst. Sl. /ID NO.	Certificate No.	Validity	Calibrated By
01	RTD with Indicator	Eurotherm/ Tempsens	SCS/RTD/01	QSI/0428/22/12	20/12/2023	QSI-INDIA
02	Thermo Hygrometer(Data Logger)	CEM	SCS/DL/05	QSI/0528/22/10	09/10/2023	QSI-INDIA
03	Do Solution	Traceable Standard Solution				

Guidance Notes:

Status A The measurement is within tolerance, due allowances having been made for the uncertainty of the measurement.

Status B The measurement may be out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status C The measurement is out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status D No conclusion can be drawn, because the standard(s) do(es) not specify a tolerance for this measurement.

OBSERVATION:

Before Calibration:

Sl. No.	Standard Value (mg/L)	U.U.C Value (mg/L)	Error (mg/L)	Tolerance (mg/L)	Status	Uncertainty (mg/L)
01	5.0	5.05	-0.05	N/S	D	±0.1 % of rdg.
02	10.0	10.11	-0.11	N/S	D	
03	20.0	20.16	-0.16	N/S	D	

After Calibration:

Sl. No.	Standard Value (mg/L)	U.U.C Value (mg/L)	Deviation (mg/L)	Tolerance (mg/L)	Status	Uncertainty (mg/L)
01	5.0	5.00	00.00	N/S	D	±0.1 % of rdg.
02	10.0	10.00	00.00	N/S	D	
03	20.0	19.99	00.01	N/S	D	

The overall uncertainty shall be calculated as per ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level.

Notes:

1. The values mentioned above are the mean readings.
2. No adjustment was done during the calibration.
3. Any section marked, "N/A" means Not Applicable, "N/P" means Not Provided, "N/R" means Not Readable, "N/S" means Not Specified.

Calibrated By:

Md. Mobinul Islam
(Calibration Engineer)

Issued By:

Md. Arman Ahmed Razu
(Technical Manager)

End of Calibration Certificate

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CERTIFICATE of CALIBRATION

Certificate No. 02302030968
Issue Date 02/03/2023

Customer Details:

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Tel	+880 1742 556466
E-mail	jubaer.ahmed@eqms.com.bd

Details of Unit Under Calibration (UUC):

Description	Haz Scanner
Manufacturer	Environmental Devices Corporation
Model/Type	HIM-6000
Serial Number	918157
ID No.	**EQMS # 437**
Range/working Range	Ref on Obs
Least Count	Ref on Obs
Accuracy	As Per Instrument
Location of Calibration	Laboratory
Visual Inspection	OK
Date of Calibration	02/03/2023
Suggested Due Date	01/03/2024
Calibration Procedure	The calibration had been performed in accordance with calibration procedure COP/SCS/119 (Procedure based on Comparision Method).
Calibration Result	The details of standard equipment used for calibration & result of calibration are given in page 2 & 4.
Conclusion	For the status of measurements please refer to the guidance notes.

Environment: (certified against calibrated digital temperature & humidity meter)

Temperature (°C)	25±3
Relative Humidity (%RH)	40 to 60

Change in temperature and relative humidity of the Laboratory during the calibration was less than 0.3°C per hour and 5.0% per 4 hours respectively.

This certificate is issued strictly in accordance with the requirements of ISO 17025:2017. All calibration equipments are traceable to the International Standards . Documentary evidence is available upon request.

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Laboratory Location
House # 427, Road # 6/2
Shaheenbagh, Tejgaon, Dhaka-1215
Tel: +88-02-48117267, Cell: +880 1921 612324, +880 1919 958147-50
E-mail: info@scsbd-ltd.com, www.scsbd-ltd.com

CERTIFICATE of CALIBRATION

Details of Standard Equipment Used for Calibration:

Sl. No.	Description	Make	Inst. Sl. /ID NO.	Certificate No.	Validity	Calibrated By
01	Portable Flue Gas Analyzer	LOOBO	SCS/PFGA/01	QSI/0275/23/02	16/02/2024	QSI-INDIA
02	Stop Watch	CASIO	SCS/SW/01	QSI/1537/22/02	10/06/2023	QSI-INDIA
03	Thermo Hygrometer (Data Logger)	CEM	SCS/DL/05	QSI/0528/22/10	09/10/2023	QSI-INDIA

Status A The measurement is within tolerance, due allowances having been made for the uncertainty of the measurement.

Status B The measurement may be out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status C The measurement is out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status D No conclusion can be drawn, because the standard(s) do(es) not specify a tolerance for this measurement.

Sulfur Dioxide SO_2 : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppb)	U.U.C Value (ppb)	Error (ppb)	Tolerance	Status	Uncertainty
01	0.0	0.0	0.00	N/S	D	±0.03% of rdg
03	1.01	1.0	0.01	N/S	D	
03	3.02	3.0	0.02	N/S	D	
04	5.04	5.0	0.04	N/S	D	

Nitrogen Dioxide NO_2 : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppm)	U.U.C Value (ppm)	Error (ppm)	Tolerance	Status	Uncertainty
01	0.00	0.0	0.00	N/S	D	±0.03% of rdg
02	1.01	1.0	0.01	N/S	D	
03	3.02	3.0	0.02	N/S	D	
04	5.02	5.0	0.02	N/S	D	

Carbon Monoxide CO : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppm)	U.U.C Value (ppm)	Error (ppm)	Tolerance	Status	Uncertainty
01	0.00	0.00	0.00	N/S	D	±0.03% of rdg
02	1.01	1.00	0.01	N/S	D	
03	5.03	5.00	0.03	N/S	D	
04	10.05	10.00	0.05	N/S	D	
05	20.07	20.00	0.07	N/S	D	

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

www.scsbd-ltd.com

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Ammonia NH3 : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppm)	U.U.C Value (ppm)	Error (ppm)	Tolerance	Status	Uncertainty
01	0.00	0.0	0.00	N/S	D	±0.03% of rdg
02	1.01	1.0	0.01	N/S	D	
03	3.02	3.0	0.02	N/S	D	
04	5.04	5.0	0.04	N/S	D	

Nitrogen Oxide NOx : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppb)	U.U.C Value (ppb)	Error (ppb)	Tolerance	Status	Uncertainty
01	0.00	0.0	0.00	N/S	D	±0.03% of rdg
02	0.99	1.0	-0.01	N/S	D	
03	2.97	3.0	-0.03	N/S	D	
04	4.95	5.0	-0.05	N/S	D	

Nitrogen Oxide NOx : (verified against calibrated master equipment)

Sl. No.	STD. Value (ug/m3)	U.U.C Value (ug/m3)	Error (ug/m3)	Tolerance	Status	Uncertainty
01	0.00	0.0	0.00	N/S	D	±0.03% of rdg
02	0.98	1.0	-0.02	N/S	D	
03	2.95	3.0	-0.05	N/S	D	
04	4.93	5.0	-0.07	N/S	D	

Hydrocarbon CH4 : (verified against calibrated master equipment)

Sl. No.	STD. Value (ppm)	U.U.C Value (ppm))	Error (ppm)	Tolerance	Status	Uncertainty
01	0.00	0.0	0.00	N/S	D	±0.03% of rdg
02	1.01	1.0	0.01	N/S	D	
03	3.03	3.0	0.03	N/S	D	
04	5.06	5.0	0.06	N/S	D	

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CERTIFICATE of CALIBRATION

Time: (verified against calibrated master equipment)

Sl. No.	STD. Value (h:mm:ss.sss)	U.U.C. Value (h:mm:ss.sss)	Tolerance (%)	Status	Uncertainty(Sec.)
01	00:00:00.000	00:00:00.000	N/S	D	±0.15
02	00:00:30.021	00:00:30.000	N/S	D	
03	00:01:00.057	00:01:00.000	N/S	D	±0.25
04	00:10:00.103	00:10:00.000	N/S	D	
05	00:30:00.138	00:30:00.000	N/S	D	
06	01:00:00.205	01:00:00:000	N/S	D	
07	02:00:00.249	02:00:00:000	N/S	D	
08	03:00:00.326	03:00:00:000	N/S	D	±11
09	04:00:00.508	04:00:00:000	N/S	D	
10	05:00:00.815	05:00:00:000	N/S	D	

The overall uncertainty shall be calculated as per ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level.

Notes:
1. The values mentioned above are the mean readings.
2. No adjustment was done during the calibration.
3. Any section marked, "N/A" means Not Applicable, "N/P" means Not Provided, "N/R" means Not Readable, "N/S" means Not Specified.

Calibrated By:

Md. Shamim Khan
(Calibration Engineer)

Issued By:

Md. Arman Ahmed Razu
(Technical Manager)

End of Calibration Certificate

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

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CERTIFICATE of CALIBRATION

Certificate No. 02309096668
Issue Date 13/09/2023

Customer Details:

Name	**EQMS Consulting Limited**
Address	Flat # F1, House # Ta-134/A, Boishakhi Sarani, Gulshan-Badda Link Road, Dhaka-1212, Bangladesh.
Tel	+880 1742 556466
E-mail	jubaer.ahmed@eqms.com.bd

Details of Unit Under Calibration (UUC):

Description	Sound Level Meter
Manufacturer	CENTER
Model/Type	Center 322
Serial Number	070404820
ID No.	**EQMS # 170**
Range/working Range (dB)	30 to 130
Least Count (dB)	0.1
Accuracy	As per Instrument
Location of Calibration	Laboratory
Visual Inspection	OK
Date of Calibration	09/09/2023
Suggested Due Date	08/09/2024
Calibration Procedure	The calibration had been performed in accordance with calibration procedure SCS.WI-09M (Procedure based on comparision method).
Calibration Result	The details of standard equipment used for calibration & result of calibration are given in page 2.
Conclusion	For the status of measurements please refer to the guidance notes.

Environment: (certified against calibrated digital temperature & humidity meter)

Temperature (°C)	20±2
Relative Humidity (%RH)	40 to 60

Change in temperature and relative humidity of the Laboratory during the calibration was less than 0.3°C per hour and 5.0% per 4 hours respectively.

This certificate is issued strictly in accordance with the requirements of ISO 17025:2017. All calibration equipments are traceable to the International Standards . Documentary evidence is available upon request.

ISO/IEC :17025
Accredited Laboratory

STANDARD CALIBRATION SERVICE PRIVATE LIMITED

www.scsbd-ltd.com

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E-mail: info@scsbd-ltd.com, www.scsbd-ltd.com

CERTIFICATE of CALIBRATION

Details of Standard Equipment Used for Calibration:

Sl. No.	Description	Make	Inst. Sl. /ID NO.	Certificate No.	Validity	Calibrated By
01	Sound Level Meter	CEM	SCS/SLM/01	QSI/1229/23/06	16/06/2024	QSI-INDIA
02	Thermo Hygrometer(Data Logger)	CEM	SCS/DL/05	QSI/0528/22/10	09/10/2023	QSI-INDIA

Guidance Notes:

Status A The measurement is within tolerance, due allowances having been made for the uncertainty of the measurement.

Status B The measurement may be out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status C The measurement is out of tolerance, due allowances having been made for the uncertainty of the measurement.

Status D No conclusion can be drawn, because the standard(s) do(es) not specify a tolerance for this measurement.

OBSERVATION:

Sound, "A" Weighting: (verified against calibrated master equipment)

Sl. No.	Description	Standard Value (dB)	U.U.C. Value (dB)	Error (dB)	Tolerance (dB)	Status	Uncertainty (dB)
01	Sound Level	94.0	94.0	0.0	N/S	D	±1.2
02		114.0	114.0	0.0	N/S	D	±1.2

Sound, "C" Weighting: (verified against calibrated master equipment)

Sl. No.	Description	Standard Value (dB)	U.U.C. Value (dB)	Error (dB)	Tolerance (dB)	Status	Uncertainty (dB)
01	Sound Level	94.0	94.0	0.0	N/S	D	±1.2
02		114.0	114.1	0.1	N/S	D	±1.2

The overall uncertainty shall be calculated as per ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level.

Notes:

1. The values mentioned above are the mean readings.
2. No adjustment was done during the calibration.
3. Any section marked, "N/A" means Not Applicable, "N/P" means Not Provided, "N/R" means Not Readable, "N/S" means Not Specified.

Calibrated By:

Md. Mobinul Islam
(Calibration Engineer)

Issued By:

Md. Arman Ahmed Razu
(Technical Manager)

End of Calibration Certificate

ANNEX 7. DOE RECEIVED ECC RENEWAL APPLICATION

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
প্রকল্প পরিচালক এর কার্যালয়
"আখাউড়া থেকে লাকসাম পর্যন্ত ডুয়েলগেজ ডাবল রেললাইন নির্মাণ এবং
বিদ্যমান রেললাইনকে ডুয়েলগেজে রূপান্তর" শীর্ষক প্রকল্প
বাংলাদেশ রেলওয়ে, রেলভবন, ঢাকা।

নং- পিডি/এএলডিএলপি/পরিবেশ/০৩/২০২১- ১৮১ তারিখঃ ১৬.১১.২০২৩

প্রাপকঃ পরিচালক
চট্টগ্রাম বিভাগীয় কার্যালয়
পরিবেশ অধিদপ্তর
লাকির হোসেন রোড, খুলশী,
চট্টগ্রাম-৪২০২।

বিষয়ঃ "আখাউড়া থেকে লাকসাম পর্যন্ত ডুয়েলগেজ ডাবল রেললাইন নির্মাণ এবং বিদ্যমান রেললাইনকে ডুয়েলগেজে রূপান্তর" শীর্ষক প্রকল্পের অনুকূলে ইস্যুকৃত পরিবেশ অধিদপ্তরের ছাড়পত্র ২০২৩-২০২৪ সালের জন্য নবায়ন ফি প্রদান প্রসঙ্গে।

উপর্যুক্ত বিষয়ে জানানো যাচ্ছে যে, "আখাউড়া থেকে লাকসাম পর্যন্ত ডুয়েলগেজ ডাবল রেললাইন নির্মাণ এবং বিদ্যমান রেললাইনকে ডুয়েলগেজে রূপান্তর" শীর্ষক প্রকল্পের ২০২২-২০২৩ সালের জন্য পরিবেশগত ছাড়পত্র নবায়ন করা হয় যার মেয়াদ গত ০১.০৫.২০২৩ তারিখে উত্তীর্ণ হয়েছে। পরিবেশ অধিদপ্তরের নিয়মানুযায়ী এ প্রকল্পের ২০২৩-২৪ সালের পরিবেশগত ছাড়পত্র নবায়ন ফি বাবদ ১ম দফা জনতা ব্যাংকের মাধ্যমে এ চালান নং-২২২৩-০০২০৪৯৩৯৭৮১ তারিখঃ ৩০.০৫.২০২৩ টাকা ১,২৫,০০০/- টাকা এবং ভ্যাট বাবদ চালান নং- ২২২৩-০০২০৪৯৮৮২৪১, টাকা ১৮,৭৫০/- তারিখঃ ৩০.০৫.২০২৩ প্রদান করা হয় (কপি সংযুক্ত)

বাংলাদেশ গেজেট, অতিরিক্ত ৫মার্চ, ২০২৩ খ্রিঃ মোতাবেক পরিবেশের ছাড়পত্র ও ছাড়পত্রের নবায়ন ফি ১,২৫,০০০/- টাকা হতে ৫,০০,০০০/- টাকা নির্ধারন করা হয়। ফলে অতিরিক্ত ৩,৭৫,০০০/- টাকা এবং ভ্যাট ৫৬,২৫০/- টাকাসহ সর্বমোট ৪,৩১,২৫০/- টাকা জনতা ব্যাংকের এ চালান নং-২৩২৪-০০১৭১৩২৬৭৩১, তারিখঃ ১৩.১১.২০২৩ এবং চালান নং-২৩২৪-০০১৭১৩৫৫৩২১, তারিখঃ ১৩.১১.২০২৩ খ্রিঃ এর মাধ্যমে পরিশোধ করা হয় (কপি সংযুক্ত)।

এমতাবস্থায়, বর্ণিত প্রকল্পের অনুকূলে ২০২৩-২০২৪ সালের পরিবেশগত ছাড়পত্র নবায়নের প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য অনুরোধ করা হলো।

সংযুক্তি ঃ (১) এ চালানের মূল কপি-৪টি
(২) ২০২২-২৩ সালের ছাড়পত্র নবায়নের ফটোকপি-১টি
(৩) অনলাইন দরখাস্তের হার্ড কপি-১ সেট
(৪) Environmental Monitoring report 3 copies.

(আল ফাতাহ মোঃ মাসউদুর রহমান)
প্রকল্প পরিচালক (অ. দা.)

অনুলিপিঃ সদয় অবগতির জন্য প্রেরণ করা হলোঃ

১. মহাপরিচালক, পরিবেশ অধিদপ্তর, পরিবেশ ভবন, ই-১৬, আগারগাঁও, ঢাকা-১২০৭।

ANNEX 8. SAMPLE HIGHLIGHT OF THE MEETING WITH LOCAL LEADERS AND RESIDENTS ALONG TRACK EMBANKMENT

INTERNAL MEMO

December 04, 2023

FOR: Mr. Raymond Sawyer
Team Leader

THRU: Mr. Naim Khan
Project Coordinator

THRU: Alan Salvador
Resident Social/Resettlement/Gender Specialist

FROM: Nazmus Sakib
Jr. Environment Specialist

SUBJECT: **Highlights of the Public Consultation Meeting with the Chairman and Members of Amratoli Union Council on the protection of the planted tree saplings under the ALDLP, held on 29th November 2023.**

I. Background:

1. The compensation tree plantation and rehabilitation program of ALDLP is being implemented as one of the mitigation measures intended to replace trees damaged by Project implementation. This program is prescribed under the approved ALDLP Environmental Management Plan (EMP) and is part of the Contractor's Terms of Reference (TOR). However, there has been some challenges faced by the Project in the implementation of the plantation program, particularly in protection and maintenance of the planted tree saplings from damages caused by some local residents' and their livestock. One of the affected area is in section 2 of Max part, from North Side of Gumti Level Crossing to South Side of Sadar Rasulpur Station area (Chainage: 157+350 - 158+800 Upline). This whole area fall under the 4 no. Amratoli Unions Council.

2. Recent damages to the tree plantation had been reported by CTM-JV in their reference letter no. CTM letter Ref: CTM JV/TL/ALDLP/BR/23/6626 dated 9 November 2023. In response to this letter, CSC Environmental Team had investigated the sites and submitted their "Back-to-Office" report containing their findings and recommendations. A letter was subsequently sent by CSC to CTM-JV (Ref: JV-ALDLP-CO-23-721 dated 22 November 2023) to confirm their reported damages, and provided instructions to the Contractor on the next steps they are to follow.

3. In addition, a public Consultation meeting had been organized on 29 November 2023, by CSC Safeguards team at the Amratoli Union Council, where local people cut the matured trees and portions of the track embankment purposely for vegetable production. The affected area is located North of Gumti Bridge (Brd 243) at chainage km157+350 to km157+650. The meeting was intended to inform the concerned local officials and residents of the project, its benefits and risk associated with damages to the tree plantation caused by the local residents' detrimental activities. CSC was represented by CSC Project Coordinator Mr. Naim Khan, Mr. Nazmus Sakib (Jr. Environment Specialist), and Mr. Golam Faroque (Jr.

Resettlement Specialist). CTM JV MAX was represented by their tree plantation supervisor Mr. Sohel, and Bismillah Nursery supervisor Mr. Asraful.

II. Highlights of the Meeting at Amratoli Union Council Office

4. On 29th November 2023, around 11.30 am in the morning, Project Coordinator Mr. Naim Khan along with CSC environmental and safeguards team and CTM JV representatives reached the 4 No. Amratoli Union Council, Adarsha Sadar Upazilla, Cumilla. The Union Council Chairman Mr. Quazi Mozammal Hoque and his council members welcomed Mr. Naim Khan and others members of the ALDLP cordially. They expressed their heartiest gratitude that Mr. Naim Khan paid his visit to their union council.

5. Naim Khan highlighted the importance of development projects in Bangladesh. He then informed them about the rail connectivity network projects of the Government, and briefly explained the benefits of the ALDLP to their lives. He narrated the importance of trees in our lives, as well as the ALDLP tree plantation program.

6. The Union chairman expressed his disappointment on the work of the contractor MAX. He said that Max had misbehaved, and did not coordinate with them during their work period. The union Awami League President Mr. Abu Hanif on the other hand, stated that in his area, the Kalkhar par to Janata Bajar Road, that crosses the rail line, had been severely damaged by the construction vehicles and machineries of MAX during the execution of the project's works. This road goes towards the Indian border. The other affected roads are the Rosulpur - Badhyavumi road rail crossing (South side of Sadar Rasulpur Station) and Banasua - Birendra High School Access Road (Beside Gumti North Level Crossing).

7. The local officials mentioned that during Project execution period, the local residents had to tolerate the temporary inconvenience created by the construction works. However, now that the work had already been completed, MAX had not bothered to restore the local access roads that their vehicles and heavy equipment had damaged. The contractor did not restore the road they damaged after their work was finished, which is a violation of their Contract Provisions (GCC Sub-Clause 11.2 *"Upon the completion of construction, the Contractor shall fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-Project condition as recorded by the Contractor in consonance with its obligation in Clause 4.18*". At present, it was reported that the road is slowly being repaired by LGED.

8. It was also reported that the local People's health had been seriously affected. They had been suffering from dust allergies and asthma, resulting from resuspended dust from broken or even cleared roads. Many times minor accidents happened at the rail crossings. Local leaders complain that many of their constituent's livelihood were also affected. About 100 autorickshas used to ply the Kalkhar par - Janata Bajar Road. However, after the said road was damaged by the construction vehicles and equipment, the number of these public utility vehicles had drastically been reduced to only 16.

9. The local political leader described the importance of this road that so many people use. He said this broken and unrepaired road may become a significant political issue during upcoming National Election. More than 5,000 registered voters use the Banasua Road, while more than 4,000 voters use the Rasulpur road.

10. The chairman suggested that at the time of ongoing work, contractor and/or consultant should have coordinated with them. Max always promised that they would repair the damages they have caused

to local access infrastructure, but they never fulfilled their promise. They had a good start but their finishing was poor. It is possible that this non-compliace to Contract provisions is only known to the site construction management, and had not been relayed ot their higher management.

11. Mr. Naim Khan understood their complaints and agreed that without the restoration or replacement of the damaged local access infrastructures, no new development project may reach the affected local people. He expressed his joy that ALDLP is almost finished and people of this area can be benefitted. He however also expressed his sadness upon knowing the sufferings of local people resulting from the damaged access roads. A development project aims to improve the lives of local people, but in this area, people's lives had deteriorated due to the damaged access roads.

12. The chairman requested Mr. Naim Khan to convey their sufferings and complains to Max's higher authority. Mr. Naim Khan assured him (chairperson) that he will pass on these messages to the proper persons. Mr. Chairman assured Mr. Naim Khan that he will warn the people near the rail track, that they should not cause any further harm to the project's trees and embankment slope.

13. Another good point raised by the Chairman, regarding the importance of protection and maintenance work that the tree plantation requires. He said that , if periodic maintenance and protection had been done properly, local people would fear to do any type of harm to the trees, knowing that there are people engaged to maintain and protect these plantation sites.

14. Mr. Naim Khan said that, it is a lesson for all of us that no development project will bring significant benefit, without addressing the problems of the grassroot level people. Then he thanked all present union council committee and local people for their help and support and ended the meeting.

15. There being no more matters to be discussed, the meeting was formally adjourned.

III. Visit to the affected site recommendations

16. After the meeting, Mr. Naim Khan along with other ALDLP members visited an affected site near bridge no. 246 (Chainage: 158+650 Upline). There he witnessed how local residents uprooted and cut our project's planted trees and cut the embankment slope for their vegetable cultivation. While returning from site, he (Naim Khan) saw an ongoing work in the road in front of Moulovi Nagar Jam-e-Mosque and in the Gumti north level crossing.

IV. Recommendations

17. In view of the above findings, the CSC team is proposing the following recommendations:

a. CTM-JV to ensure proper maintenance and protection of the established tree plantations, so that local people will know that the planted trees are government property; that they understand their responsibility to protect these trees; and fear the consequences if they damage the planted trees;
b. CTM-JV to restore the damaged access roads in conformity with GCC Sub-Clause 11.2;
c. Mr. Khan to inform Max's higher authority, CSC Team Leader and ALDLP PD about this visit and the highlights of the public consultation meeting;

d. CTM JV to provide timely information about damages caused by the local people, and promptly restore the damage plantations until its formal handover to BR PIU; and
e. Close coordination to be established with concerned Local authorities and people on matters related to tree plantation protection and restoration of damaged access roads.

18. For your information and further instructions, Sir.

Prepared by:

NAZMUS SAKIB
Jr. Environment Specialist

Noted By:

ALAN SALVADOR
Resident Social, Resettlement
And Gender Specialist

NAIM KHAN
Project Coordinator

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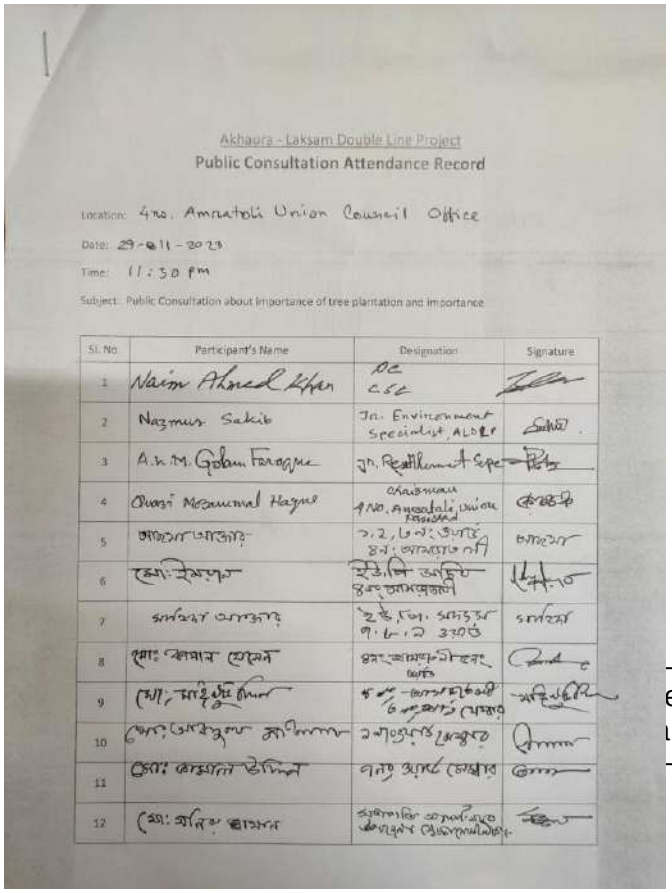
APPENDIX 1. PICTURES OF CONSULTATION MEETING

Plate 1-3. CSC & CTM team held a consultation meeting at the Amratoli Union Council office, with the chairman Mr. Quazi Mozammal Hoque and council members and local political leaders.
Location: 4 No. Amratoli Union Parishad, Adarsha Sadar Upazilla, Cumilla

APPENDIX 2. PICTURES OF SITE VISIT

Plate 4-10: CSC & CTM team visit the tree plantation site near Bridge 246 (chainage 158+650 upline) to see affected site.

APPENDIX 3. ATTENDANCE SHEETS



Akhaura - Laksam Double Line Project

Public Consultation Attendance Record

Location: 4no. Amratoli Union Council Office

Date: 29-11-2023

Time: 11:30 pm

Subject: Public Consultation about importance of tree plantation and importance

Sl. No	Participant's Name	Designation	Signature
1	Naim Ahmed Khan	DC CSC	
2	Nazmus Sakib	Jr. Environment Specialist, ALDRP	
3	A.K.M. Golam Faruque	Jr. Resettlement Spec.	
4	Quazi Mozammal Hague	Chairman 4 No. Amratoli Union Parishad	
5			
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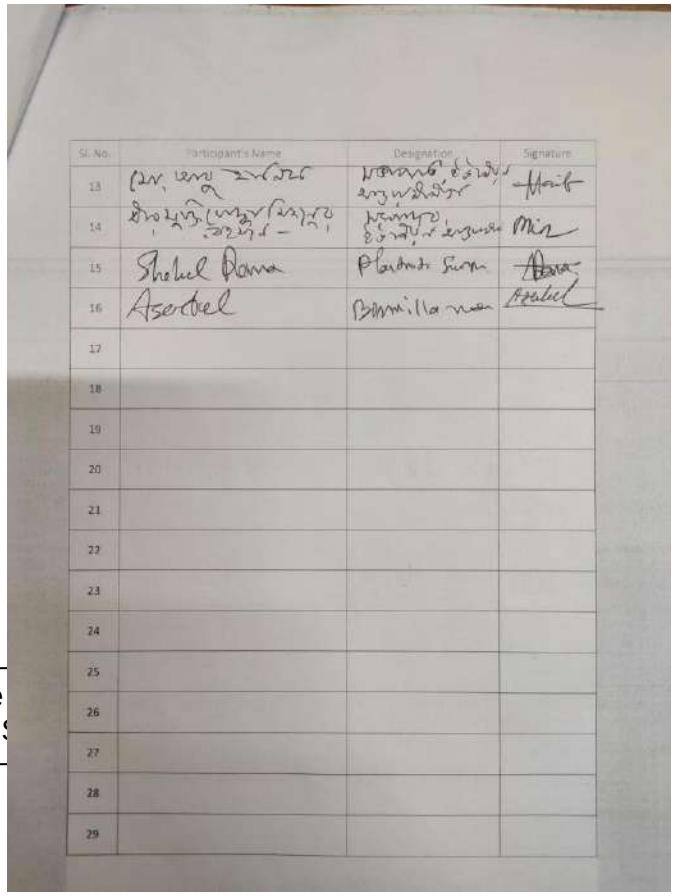

Sl. No.	Participant's Name	Designation	Signature
13			
14			
15	Shahel Rana	Plantation Supervisor	
16	Asadul	Bismillah Nursery	
17			
18			
19			
20			
21			
22			
23			
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ANNEX 9. LOCATIONAL CLEARANCE ISSUED BY THE DEPARTMENT OF THE ENVIRONMENT (DOE) FOR THE EMO BUILDING

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

অবস্থানগত ছাড়পত্র

ছাড়পত্র নং: ২৩-১০২৬৬৫

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

প্রতিষ্ঠান/প্রকল্পের নাম	:	Construction of 4-Storied Engineers Main Office (EMO) Building with 16-Storied Foundation and Three Basements
উদ্যোক্তার নাম	:	Md. Shuboktagin
সনাক্তকরণ নং	:	১৪৯৬৮০
প্রতিষ্ঠান/প্রকল্পের কার্যক্রম	:	Other
প্রতিষ্ঠান/প্রকল্পের শ্রেণী	:	Orange
প্রতিষ্ঠান/প্রকল্পের ঠিকানা	:	District: Dhaka Thana: Shahabug Area: Fulbaria
প্রদানের তারিখ	:	২৭ জুলাই ২০২৩
মেয়াদ উত্তীর্ণের তারিখ	:	২৬ জুলাই ২০২৪

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

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

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

অবস্থানগত ছাড়পত্র জন্য প্রযোজ্য শর্তাবলী:

১ . এ ছাড়পত্র ফুলবাড়িয়া রমনা মৌজা, শাহবাগ, ঢাকায় প্রস্তাবিত ১৬ তলা ফাউন্ডেশনের তিনতলা বেজমেন্টসহ চারতলা বিশিষ্ট ইঞ্জিনিয়ার্স মেইন অফিস (ইএমও) বিল্ডিং নির্মাণ নির্মাণের জন্য প্রযোজ্য।

(২) ভবন নির্মাণ কাজ শুরুর পূর্বে রাজউক/যথাযথ কর্তৃপক্ষের অনুমোদিত ভবনের লে-আউট প্লান ও ডিজাইন অত্র দপ্তরে দাখিল করতে হবে।

(৩) সিভিল এভিয়েশনের অনুমোদিত উচ্চতার বাইরে ভবন নির্মাণ করা যাবেনা।

(৪)দাখিলকৃত নকশা মোতাবেক বহুতল ভবনের পয়ঃবর্জ্য পরিশোধনের জন্য দাখিলকৃত ডিজাইন মোতাবেক সেপটিক ট্যাংক নির্মাণ করতে হবে।

(৫) ভবন নির্মাণ শেষে পরিবেশগত ছাড়পত্র গ্রহণ ব্যতিরেকে ভবন ব্যবহার শুরু করা যাবে না।

(৬)ভবনটি বিইইইআর (বিল্ডিং এনার্জি এফিসিয়েন্সী এন্ড এনভায়রনমেন্ট রেটিং) গাইড লাইন বা অন্য কোন গ্রীন বিল্ডিং রেটিং অনুসারে ভবনটি এনার্জি এফিসিয়েন্ট ও গ্রীন বিল্ডিং হিসেবে নির্মাণ করতে হবে এবং নির্মাণ শেষে এ সংক্রান্ত প্রমাণক দাখিল করতে হবে।

(৭) ভবন নির্মাণের সময় উৎপন্ন বর্জ্য পরিবেশসম্মত পদ্ধতিতে অপসারণ করতে হবে।

(৮) ভবন নির্মাণকালে কঠিন বর্জ্য ব্যবস্থাপনায়, উৎসে বর্জ্য পৃথকীকরণ করতে হবে এবং বর্জ্য হ্রাস, পুনঃব্যবহার ও পুনঃচক্রায়ন অনুসরণ করতে হবে। এছাড়া পৃথকীকৃত জৈব বর্জ্য আবৃত অবস্থায় উপযুক্ত সময়ে নিকটস্থ ট্রান্সফার স্টেশন/ডাম্পিং গ্রাউন্ডে স্থানান্তর/পরিবহনের বিষয়টি উদ্যোক্তা নিজস্ব উদ্যোগ/সিটি কর্পোরেশনের সহায়তায় নিশ্চিত করবেন।

(৯) অত্র দপ্তরে দাখিলকৃত নকশা মোতাবেক Septic tank/STP, Open space, Basement ventilation system, Greenery space ইত্যাদি নির্মাণ করে সংরক্ষণ করতে হবে।

(১০) ভবন নির্মাণ কার্যক্রম দ্বারা পরিবেশ ও প্রতিবেশের ক্ষতিসাধন করা হলে Polluters Pay Principle অনুসারে ক্ষতিপূরণ ধার্য করে আদায় করা হবে।

(১১)ভবনে কোন হোটেল/রেস্টুরেন্ট, ডায়াগনস্টিক সেন্টার/ হাসপাতাল/স্বাস্থ্য সেবা প্রতিষ্ঠান বা কোন শিল্প-কারখানা স্থাপন করা যাবে না। যদি করতে হয় তবে পরিবেশ অধিদপ্তরের পূর্বানুমোদন গ্রহণ করতে হবে।

(১২) ভবন নির্মাণকালে শব্দ দূষণ ও বায়ু দূষণ নিয়ন্ত্রণে যথাযথ ব্যবস্থা গ্রহণ করতে হবে এবং শব্দ দূষণ (নিয়ন্ত্রণ) বিধিমালা, ২০০৬, বায়ুদূষণ (নিয়ন্ত্রণ) বিধিমালা, ২০২২ ও পরিবেশ সংরক্ষণ বিধিমালা, ২০২৩-এ বর্ণিত মানমাত্রা মেনে চলতে হবে।

(১৩) শব্দ দূষণ (নিয়ন্ত্রণ) বিধিমালা ২০০৬ অনুসারে সন্ধ্যা ৭(সাত) টা হতে সকাল ৭(সাত) টা পর্যন্ত মিকচার মেশিনসহ নির্মাণ কাজে ব্যবহৃত অন্যান্য যন্ত্রপাতি চালানো যাবে না।

(১৪) মহামান্য হাইকোর্ট বিভাগের রিট পিটিশন নম্বর ৯১৬/২০১৯ এর বিগত ২৯/০১/২০১৯ তারিখের আদেশ অনুযায়ী ভবন নির্মাণকালে বায়ু/ডাস্ট দূষণ নিয়ন্ত্রণকল্পে দৈনিক অন্ততঃ দুইবার পানি ছিটাতে হবে।

(১৫)আইইই প্রতিবেদনে উল্লিখিত পরিবেশগত নেতিবাচক প্রভাব মোকাবেলায় গৃহীত প্রশমনমূলক ব্যবস্থা যথাযথভাবে বাস্তবায়ন করতে হবে এবং দাখিলকৃত মনিটরিং প্লান অনুযায়ী প্রতিবার নবায়নের আবেদনের সময় এ সংক্রান্ত প্রতিবেদন দাখিল করতে হবে।

(১৬) ভবন নির্মাণ চলাকালীন উপযুক্ত নিরাপদ বেষ্টনী বা নিরাপত্তামূলক ব্যবস্থা গ্রহণ করতে হবে। রাস্তার উপর নির্মাণ সামগ্রী রেখে জনসাধারণ/যানবাহন চলাচলে প্রতিবন্ধকতা সৃষ্টি করা যাবে না। নির্মাণ সামগ্রী আবৃত অবস্থায় ও পরিবহনকারী যানবাহনের চাকা পরিষ্কার করে পরিবহন করতে হবে। নির্মাণ সামগ্রী লোড করা বা আনলোড করার সময় এবং ভবন নির্মাণকালে বায়ু দূষণ ও শব্দ দূষণ করা যাবে না।

(১৭) নির্মাণ শ্রমিকদের নিরাপত্তামূলক সামগ্রী যেমন: হেলমেট, বুট, সেফটি বেল্ট, গ্ল্যাভস ইত্যাদি সরবরাহ ও ব্যবহার নিশ্চিত করতে হবে। নির্মাণ শ্রমিক ও কর্মচারীদের জন্য স্বাস্থ্যসম্মত টয়লেট, গোসলখানা, বিশুদ্ধ পানি ও বিশ্রামাগারের ব্যবস্থা করতে হবে।

(১৮) পরিবেশবান্ধব নির্মাণ সামগ্রী যেমন: জ্বালানী সাশ্রয়ী পোড়ানো ইট, কংক্রিট, হলো ব্লক/হলোব্রিক, লো ইমিশন সিমেন্ট ইত্যাদি ব্যবহার করতে হবে।

(১৯) ভবন নির্মাণ কাজের সময় কোন নির্মাণ সামগ্রী বস্তু ড্রেনেজ লাইনে/পয়ঃলাইনে ফেলা যাবে না।

(২০) ভবনের দেয়ালে কাঁচ ব্যবহারের ক্ষেত্রে কম তাপ পরিবাহী কাঁচ/শব্দ দূষণ প্রতিরোধী কাঁচ ব্যবহার করতে হবে। এ সংক্রান্ত প্রমাণক এ কার্যালয়ে আগামী নবায়নের সময় দাখিল করতে হবে।

(২১) বেইজমেন্ট, রান্নাঘর, টয়লেটসহ ভবনে পর্যাপ্ত প্রাকৃতিক আলো ও বাতাস চলাচলের জন্য যথাযথ ব্যবস্থা গ্রহণ করতে হবে।

(২২) ভবনের জেনারেটর রুম/সাব-স্টেশন কক্ষ বন্যা প্লাবিত জলমগ্ন লেভেলের (Flood Level) উপরে রাখতে হবে।

(২৩) ভবনে রেইন ওয়াটার হার্ভেস্টিং-এর ব্যবস্থা রাখতে হবে এবং বৃষ্টির পানি সংরক্ষণের জন্য জলাধার/রেইন ওয়াটার কালেকশন ট্যাংক নির্মাণ করতে হবে।

(২৪) ভবনের চারপাশে আবশ্যিক উন্মুক্ত স্থানে (৩৩% জায়গায়) ও ছাঁদে উপযুক্ত/দেশীয় প্রজাতির গাছ লাগিয়ে সবুজায়ন করতে হবে।

(২৫) অগ্নি নির্বাপনকল্পে ভবনে যথাযথ ব্যবস্থাদি যেমন: ফায়ার এক্সিট, ফায়ার এক্সটিংগুইসার, ফায়ার হাইড্রেন্ট, ইমারজেন্সি লাইট, জলাধার ইত্যাদি ব্যবস্থাদি রাখতে হবে।

(২৬) ভবনে বিদ্যুৎসাশ্রয়ী শীতাতপ নিয়ন্ত্রণ যন্ত্র, লিফট, পারদবিহীন বাতি, ব্যবহার করতে হবে। ভবনে ওজোন স্তর ক্ষয়কারী বস্তু ব্যবহৃত হয়, এমন কোন সরঞ্জাম ব্যবহার করা যাবে না। ভবনে পানিসাশ্রয়ী সামগ্রী ব্যবহার করতে হবে।

(২৭) ইমারত নির্মাণ বিধিমালা, ২০০৮ অনুযায়ী, বহুতল ভবনের সম্মুখস্থ রাস্তার ন্যূনতম প্রশস্ততা বজায় রাখতে হবে। প্রস্তাবিত ভবনে গাড়ি প্রবেশ ও বহির্গমণের জন্য যথাযথ স্পেস বিশিষ্ট র‍্যাম্প নির্মাণসহ নিজস্ব জায়গায় "পার্কিং-বে" তৈরি করতে হবে।

(২৮) ভবনে প্রাকৃতিক ও কৃত্রিম পদ্ধতিতে আলো-বাতাস প্রবেশের ব্যবস্থা; যথাযথ সাইজের সেপটিক ট্যাংক ও সোক পিটের/এসটিপি এর সেকশনাল ড্রইং, জৈব ও অজৈব ২টি গার্বেজ বিন; যথাযথ প্রশস্ততা বিশিষ্ট ফায়ার সিঁড়ি ইত্যাদি প্রস্তাবিত ভবনের নকশায় অন্তর্ভুক্ত করে ইমারত নির্মাণ বিধিমালা, ২০০৮ এর আলোকে নির্মাণ কাজ সম্পন্ন করতে হবে।

(২৯) বায়ু দূষণ নিয়ন্ত্রণের জন্য নির্মাণ সামগ্রী ঢেকে রাখতে হবে এবং নির্মাণ সামগ্রী পরিবহনের সময়ও ঢেকে পরিবহন করতে হবে।

(৩০) এই ছাড়পত্র জারির তারিখ হতে পরবর্তী ০১(এক) বছরের জন্য বহাল থাকবে এবং মেয়াদ শেষ হবার অন্ততঃ ৩০(ত্রিশ) দিন পূর্বে নবায়নের জন্য অনলাইনে আবেদন করতে হবে।

(৩১) বহুতল ভবন নির্মাণ প্রকল্পের বিরুদ্ধে পরিবেশ দূষণের অভিযোগ উত্থাপিত হলে এবং এ দপ্তরের তদন্তে তা প্রমাণিত হলে পরিবেশ অধিদপ্তরের নির্দেশনা মোতাবেক নিয়ন্ত্রণমূলক ব্যবস্থা গ্রহণ করতে হবে।

(৩২) এ পর্যায়ে প্রাপ্ত ও পরিবেশিত তথ্যের ভিত্তিতে এ ছাড়পত্র প্রদান করা হলো। পরবর্তীতে কোনো তথ্য অসম্পূর্ণ, ত্রুটিপূর্ণ বা অসত্য কিংবা গোপন করা হয়েছে মর্মে প্রমাণিত হলে এবং বর্ণিত শর্তের কোনটি ভঙ্গ করলে এই ছাড়পত্র বাতিল বলে গণ্য হবে এবং প্রকল্পের বিরুদ্ধে আইনগত ব্যবস্থা গৃহীত হবে।

(৩৩) এ ছাড়পত্র ভূমির মালিকানা নির্ধারণ করেনা।

(৩৪) বাংলাদেশ পরিবেশ সংরক্ষণ আইন, ১৯৯৫ (সংশোধিত ২০১০)-এ প্রদত্ত ক্ষমতাবলে উল্লিখিত শর্তসমূহ Enforce করা হবে।