

Environmental Monitoring Report

Project Number: Grant 0859-TAJ
July 2025

Road Network Sustainability Project (Additional Financing).
Semi-Annual Environmental Monitoring Report for
January to June 2025.

Prepared by the Project Implementation Unit of Road Rehabilitation for the Ministry of Transport
and the Asian Development Bank.

CURRENCY EQUIVALENTS

Currency unit	–	
1.00	=	
\$1.00	=	

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank	LSMI	licensed soil erosion institute
BOD ₅	5-day biochemical oxygen demand	MOE	Ministry of Environment
CO ₂	Carbon dioxide	NH ₃ -N	Ammonia nitrogen
COD _{cr}	Chemical oxygen demand	NO ₂	Nitrate
CSC	Construction supervision company	O&M	Operation and maintenance
dB	decibels	OPF	Operators of project facilities
DEIA	Draft environmental impact assessment	pH	potential of hydrogen; used to specify the acidity or basicity of a solution
DO	Dissolved oxygen	PIU	Project implementation unit
EA	Executing Agency	PM ₁₀	Particulate matter with diameter <10 μ
EIA	Environmental impact assessment	PM _{2.5}	Particulate matter with diameter <2.5 μ
EIR	Environmental impact report	PMO	Project management office
EIT	Environmental impact table	PPMS	Project performance management system
EM	Environmental monitoring	PPTA	Project preparatory technical assistance
EMA	Environmental monitoring agency	RP	Resettlement plan
EMP	Environmental Management Plan	SEMSP	Site Environmental Management and Supervision Plan
EMR	Environmental Management Report	SO ₂	Sulfate
EMS	Environmental monitoring station	SPS	Safeguard Policy Statement (of ADB)
EPB	Environmental protection bureau	SRT	Sludge retention time
FSR	Feasibility study report	SS	Suspended solids
FYP	Five Year Plan	SWM	Solid Waste Management facility
GDP	Gross domestic product	TN	Total Nitrogen
GHG	Greenhouse gas	TP	Total Phosphorus
GRM	Grievance redress mechanism	TSP	Total suspended particulates
IA	Implementing agency	WHO	World Health Organization
IEE	Initial environmental examination	WRB	Water resources bureau
LAeq	Equivalent continuous A-weighted sound pressure level, in decibels	WTP	Water treatment plant
Leq	Equivalent continuous sound pressure level, in decibels	WWTP	Wastewater treatment plant
LIEC	Loan implementation environment consultant		

NOTES

- (i) The fiscal year of the Government of Tajikistan ends on first April.
- (ii) In this report, "\$" refers to United States dollars.

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SUMMARY PROJECT INFORMATION

GENERAL INFORMATION	
Project title:	Road Network Sustainability Project
Date of project effectiveness:	1 st May 2023.
Executing agency:	The Ministry of Transport (MoT)
Implementing agency:	PIURR
PMO (name of agency):	N/A
PMO Environment Officer (name, email):	N/A
Loan implementation consultant / firm:	N/A
LIEC:	N/A
Construction supervision company(ies):	SMEC Intl. Pty. Ltd.
Contractor(s):	China State Construction Company Nanjing Communication Engineering Company Limited (NJCE). CJSC Zavodi Asphalt Beton) (ZAB).
ADB web link to EMP:	
Domestic web link to EMP:	

ENVIRONMENTAL SAFEGUARD MONITORING	
ADB environment safeguard category:	B
Environmental report prepared as per ADB requirements for this category:	Initial Environmental Examination.
Domestic safeguard report:	N/A.
Period covered by this report:	01.01.2025 to 30.06.2025.
# EMRs to date including this report:	5
Agency/person responsible for internal* environmental monitoring:	PIU, CSC
Agency/person responsible for external* environment monitoring:	Contractors: China State Construction Company Nanjing Communication Engineering Company Limited (NJCE). CJSC Zavodi Asphalt Beton) (ZAB).
Agency/person responsible for compliance* environment monitoring:	PIU
Agency/person responsible for independent compliance* monitoring:	N/A.
Overall status of environmental safeguards:	In April 2025, ADB conducted a site visit in collaboration with PIU, the consultant, and the contractor. The mission resulted in the preparation of a CAP implementation report, the final version of which is attached to this report in Appendix No.4.

ADB = Asian Development Bank, EMP = environmental management plan, EMR = environment monitoring report, LIEC = loan implementation environment consultant, PMO = project management office.

*See Section III.3 for definitions of internal, external, compliance, and independent compliance monitoring.

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EXECUTIVE SUMMARY

1. This report is the fifth submission of the Semi-Annual Environmental Monitoring Reports for the Sustainable Road Network Development Project implemented with additional financing. This report covers only the additional financing for the project (OCB/CW-01/2022) to rehabilitate existing Bokhtar- Okmazor road section, which involves two Lots, namely, Lot-1 the 9.72 km Bokhtar-Levakant road and Lot-2, the 30.28 km Levakant -Okmazor section. The objective of the project is to enhance road safety and maintenance in order to support the development of local communities by linking major economic centers. The Asian Development Bank (ADB) and the Government of Tajikistan finance the Project. The Ministry of Transport (MoT) is the Executive Agency (EA).

The initial environmental examination (IEE) report was submitted by the PIURR to the State Ecological Expertise (SEE) (Committee for environmental protection under the Government of Tajikistan). The “environmental appraisal/approval” was obtained from SEE on 16th November 2020 (Registration No. 1537-15) for Bokhtar - Okmazor Road section. Resolutions of SEE were shared with the local environmental protection authorities.

The Environmental Management Plan (EMP) recommended in the IEE report was based for monitoring compliance to the recommended environmental management requirements by the contractors. The status of compliance to the EMP is discussed in Table 18 of Appendix - 1 and no significant violation of the requirements specified in EMP was observed.

2. Project Implementation Progress.

1. The contract for the rehabilitation of the section of the Lot-1, Bokhtar - Levakant road section from km 0+000 to km 9+72 was awarded to the China State Construction Company Nanjing Communication Engineering Company Limited (NJCE) and by end of the contract period on 21st October 2024, they completed almost all works, except some finishing works of the underpass. However, by end December 2024 all work of the Lot-1 (Bokhtar to Levakant), was complete. The contract for the rehabilitation of Lot-2, the Levakant - Okmazor from 9.72 km to 40+00 km was awarded to Limited Liability Company- CJSC Zavodi Asphalt Beton (ZAB) and by end October 2024 they had completed only 82.4% of the work though they were scheduled to complete all work by 21st October 2024. Therefore, the Contractor of Lot -2 (Levakant – Okmazor) has requested an extension of time (197 days) to complete the balance work. The physical progress of major civil works by both contractors is given in the Appendix-6.

2. The information in this SAEMR is based on monthly progress reports, which recorded the progress of work, and the quarterly environmental monitoring reports submitted by the Contractors Nanjing and ZAB. As well, conclusions of Contractors’ Environmental Specialists and Construction Supervision Consultant (CSC) were considered. In addition, the documentations of projects’ environmental specialist supervised environmental monitoring carried out by the contractors were referred to. Also, the relevant documents related to design and social concerns were also analyzed. The Contractors’ quarterly environmental reports included monitoring data and laboratory analysis of selected parameters specified in the EMP and IEE report, national requirements necessitated by SEE and covenants of grant agreement

were used as recommended practices to judge the compliance during project implementation. Detail environmental monitoring data is shown in Appendix-2.

3. Progress in Implementing the EMP / ESMS. During this reporting period following activities were conducted:

Prevention of Possible destruction of bird nesting sites and their offspring, The surveys were conducted during the nesting and winter periods using the classical route method. According to the initial environmental assessment (IEA) prepared by ADB (2022) for the road corridor, 186 of the nearly 400 bird species found in Tajikistan are found in the project area. The study focused on all available species, but particular attention was paid to indicator bird species identified as valuable ornithological resources in the context of Lot 1 and Lot 2 studies during the early stages of the Bokhtar-Okmazor road section (km 0+000 - km 40+000) project. During the construction phase, physical impacts on habitats are limited to approximately 5m on either side of the road from the centre line. Birds and other wildlife can often be found within a few metres of the disturbed areas. There are no long-term physical impacts on habitats outside the road corridor. Impacts are short-term and appear to be largely reversible, with the exception of roadside features and adjacent drainage systems.

-
- Tree losses that cannot be prevented, Though 2 963 existing trees were relocated, yet 5 000 trees were planted at roadsides.
- Potential damage to local irrigation system, Following the grievance from the Irrigation department of Bokhtar to the Ministry of Transport, the water supply was ensured for a large harvest area beside the project road at approximately Km 4+000 to 5+000.
- Establishment of grievance redress mechanism (GRM) by Resettlement Specialist to ensure that PAPs have information on the procedure to submit a complaint, in case they have one. Several grievances were filed either in the Grievance Register or through a letter to the Ministry of Transport. Out of them one major complaint was to repair the approach road to the query in Navzameen village, Gulistan. All the major and minor grievances have been considered.

Implement the spoils management plan prepared as part of the SSEMP. Prevent dumping materials on slopes. Only approved disposal sites are suitable for excess spoil material. The CSC / PIU RR have closely monitored this issue and ensure that excess material is disposed of at approved waste disposal sites. CSC monitors this issue and no other cases of dumping of material on slopes have been identified.



ПК 76+50 Отвал для хранения асфальт с левой стороны дороги. PK 76+50 Asphalt storage dump on the left side of the road.

-
- Maintain construction equipment to good standards and avoid, as much as possible, idling engines. Idling heavy equipment is not affordable. The Operators, Supervisors are environmentally friendly.
- Implement a traffic management plan that will set idling access along the project road will be maintained safely during construction Traffic Management Plan was submitted by the Contractor which covers control of Idling Engines of Heavy or light equipment.

4. **Compliance with loan covenants**

The contract cost including the variation orders of the two lots in the additional financing are not exceeding the project cost and comply with loan covenant.

5. **Public consultation and status of Grievance Redress Mechanism (GRM)**

A grievance redress commission (GRC) including representatives at central and local levels, nominated by local authority and “jamoats”, has been established for both road sections. Information boards and complaint boxes have been installed along both roads. There were no complaints, with respect to environmental issues, recorded from the local population in the reporting period.

6. **Training and capacity building activities**

Regular safety training courses were organized. Workers and engineers were issued with protective equipment and overalls in a timely manner. No workers were hospitalized in medical institutions and no fatal injuries were recorded during the reporting period. Weekly safety and health briefings were conducted for workers.

I. INTRODUCTION

1. Purpose of report

7. The purpose of this environmental monitoring report (EMR) is to describe and assess progress for implementation of the environmental management plan (EMP) for the Road Network Sustainability project, for the reporting period 01.01.2025 to 30.06.2025. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS)¹ of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

8. This is the fifth EMR for the project. It covers part of the construction phase of the project. The report describes: (ii) implementation of mitigation measures; (iii) monitoring activities; (iv) public consultations (including grievance redress); (v) training and capacity building; (vi) expenditures for EMP implementation (including mitigation, monitoring, and training); (vii) reporting; and (viii) an overall assessment of key achievements, challenges, issues, corrective actions, and lessons learned, during the reporting period.

2. Project outcome, outputs and subcomponents

9. The Bokhtar - Okmazor road has regional importance in the south-eastern region of Tajikistan as it passes through mountainous terrain that experiences extreme weather conditions, e.g. heavy precipitation, mudflows, snowfalls. This road has progressively deteriorated in the past and at present it is in highly dilapidated condition. As such, the villages along the project road are disconnected from access to medical and educational facilities, state institutions, banks, and markets during winter and autumn months adverse weather conditions. Therefore, rehabilitation of the road was urgently needed.

10. The road passes through the territory of Bokhtar and Dangara districts of Khatlon region, where it serves a population of more than 283,000 people. The road provides transport links for the population of Dangara and Vose districts, supply of agricultural products and industrial raw materials to the cities of Dushanbe, Kulyab, Bokhtar and Khorog. Moreover, in future, the project road will ensure the supply of goods to neighboring countries since it connects Dushanbe - Kulyab - Khorog - Kulma with the national road Dangara - Vose - Kulyab as the shortest route. The Project Road section is part of the Central Asia Regional Economic Cooperation (CAREC) transport corridor, as shown in Fig.1. Therefore, part of a significant transport connection through the People's Republic of China, Afghanistan and further south to Pakistan. The project road is shown in Fig.2.

¹ ADB. 2009. Safeguard Policy Statement. Manila.

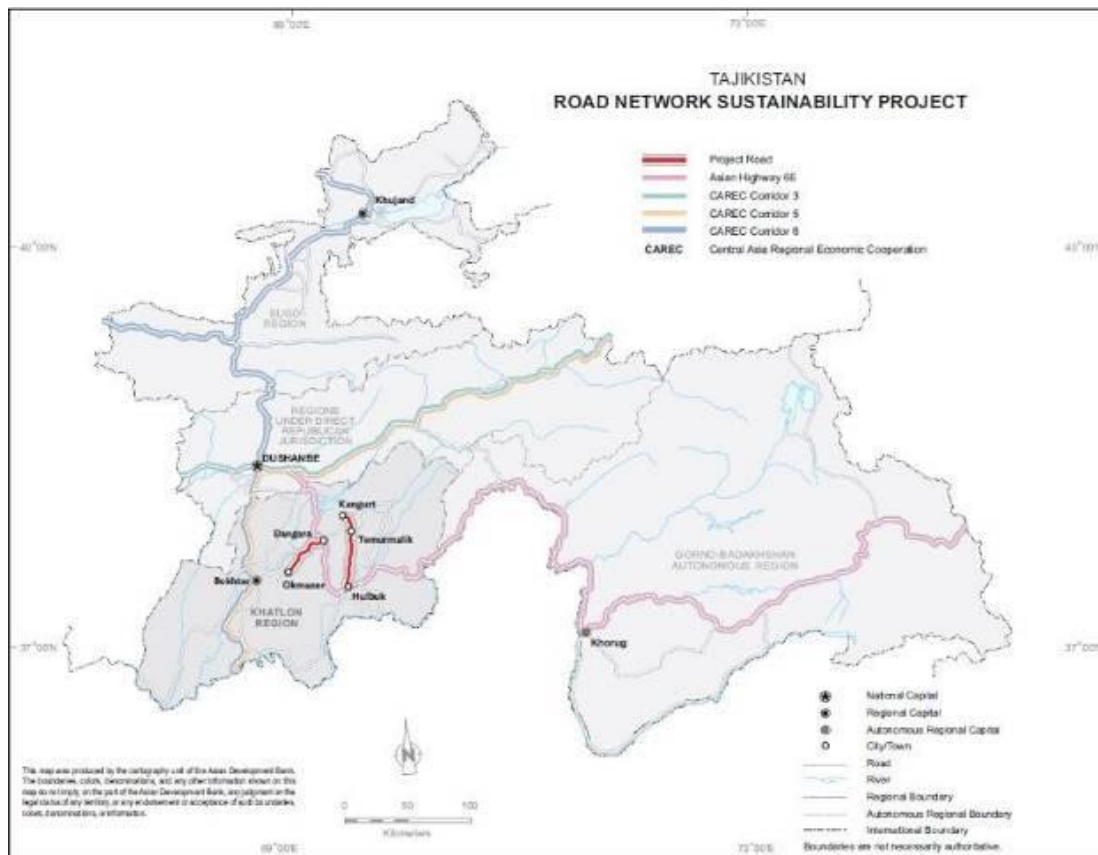


Figure 1: The Central Asia Regional Economic Cooperation Corridors.



Figure 2: Map of the location of the Bokhtar-Okmazor project road

The project road has been rehabilitated along the existing alignment. The existing road falls into technical road 'category- III' and consists of one carriageway with two traffic lanes with widths of 3.50 m, respectively 3.00 m, in each lane. Section 1 starts at km 0+000 in Hoji Sharif Market and ends at km 9.72 at the Levakant turn. This section 1 has been upgraded to 'category – I', a highway of citywide significance. Section 2 comprises the remaining 30.28 km until Okmazor village and this section 2 has been rehabilitated to 2 lanes and will remain 'category – II'.

11. Traffic volumes indicate that the existing road category is not adequate from km 0 to km 9.72 for the anticipated future traffic volumes and improvement/upgrading of the road category to category- I was therefore designed. From km 9.72 to km 40, the technical category- III is

adequate, and improvements of the alignment are envisaged where the geometrical parameters of the existing road deviate substantially from the minimum desired parameters for technical category III. The road sections from Bokhtar to Levakant and Levakant to Okmazor are shown in Fig. 3.

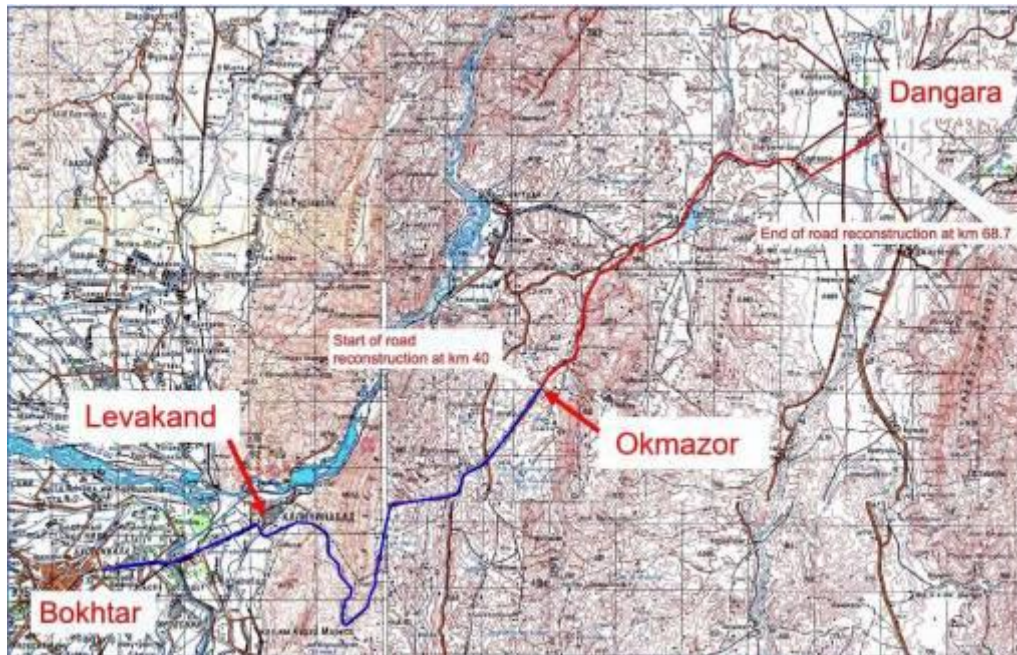


Figure 3: Map of the Project Road

12. The Bokhtar-Okmazor road section is running partly through hilly terrain and the road alignment consist of small curves and steep gradients in arid country with steppe like vegetation. The relief is characterized by smooth low-lying mountains. As already shown, the Bokhtar-Okmazor road is divided into two different design sections, viz. Section 1 (0 -9.72 km) will be upgraded to category - I, a highway of citywide significance; Section 2 (9.72 km to 40 Km) only needs to be rehabilitated as no upgrade is required based on the traffic forecast.
13. The typical cross section parameters are shown in the figures below. The fig. 4 and 5 shows the cross section of Lot -2 (9.72 km to 40 Km) whereas Fig. 6 shows that of Lot-1 (from 0 Km to 9.72km).

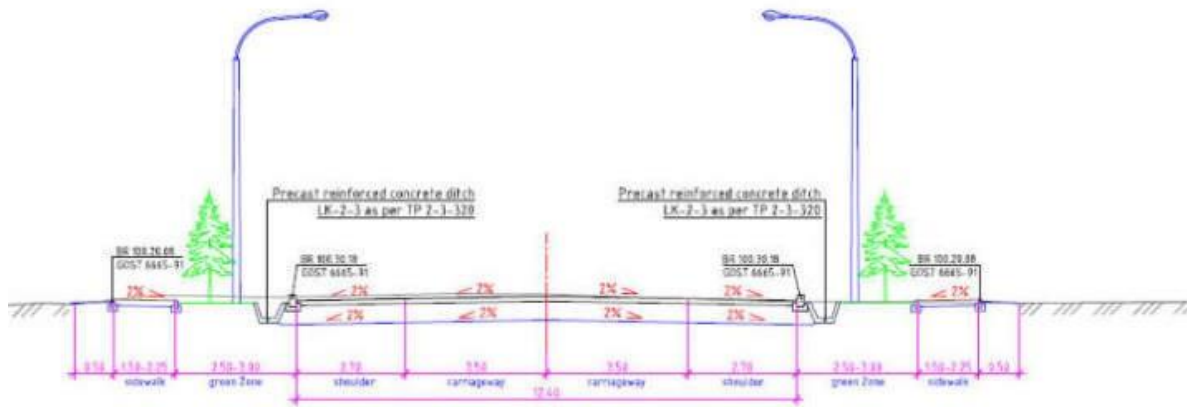
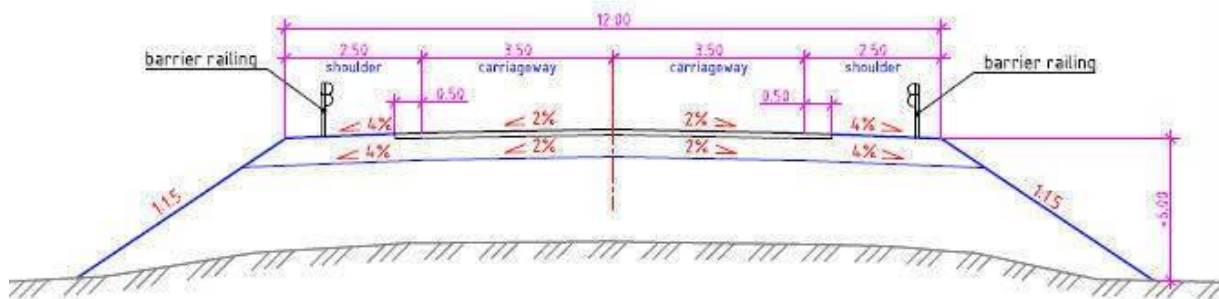
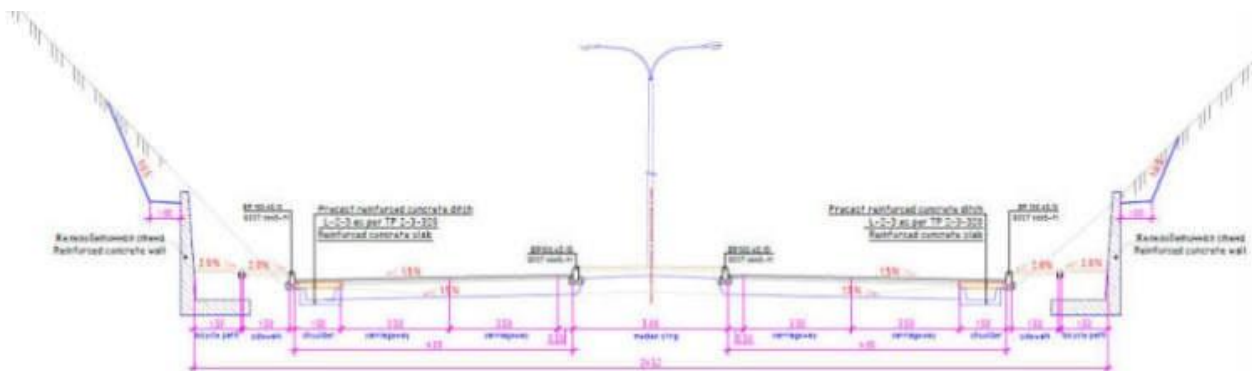


Figure 4: Typical Cross Section in settlement Area (2 Lane, category-III)



Typical Cross Section in Rural Area (2 Lane, category-III)



Typical cross section km 0 - km 9.72 urban area (4-lanes. Category I)

14. In settled areas, the implementation of sidewalks, street lightening and green strips for improvement of road safety are considered in the design.

15. Cross-section parameters are related to traffic flows and will vary with the requirements of vehicular traffic. The road cross-section incorporates all elements between the road boundaries including carriageways, shoulders, verges, including cutting or embankment slopes. The cross-section elements serve several purposes and have a significant impact on construction costs, road operation and safety. The cross section in combination with the alignment will determine the earthwork quantities. Lane and shoulder width greatly impact traffic operations and safety. Therefore, the road width would be kept to a minimum so as to reduce the costs of construction and maintenance whilst being sufficient to carry traffic loading efficiently and safely.
16. According to the intended classification of the road, the following design speeds are used for the Bokhtar-Okmazor Project

Road (see Table 1).

Table 1: Estimated speeds by terrain and road categories

Road section	Estimated speed in km/h		
	Level Terrain	Hilly terrain	Mountain landscape
km 0+000 - 40+00	100	80	50

Bridges and Culverts

17. The Bokhtar- Levakant project includes the construction of three bridges and also two box culverts with a cross-section of 6.0x2.5 m to replace the existing bridge. The bridges most significant in terms of potential environmental impacts are the ones crossing natural watercourses. However, no natural water course is crossed by the Project Road. All surface waters crossed are irrigation canals.

Table 2: Bridges of the Bokhtar – Okmazor Road Section

Bridge №	Bridge location, km	Nearest settlement	Crossing obstacle	Bridge length, m	Span arrangement, m	Total Width, m	Bridge Area, m ²	Design Solution
Br-1	2+340	village Sadvinkhoz	existing channel	6.5	1x6	43.5	242	New Bridge
Br-2	4+000	village Sadvinkhoz	existing channel	33.5	1x33	34.9	1,048	New Bridge
Br-3	7+585	village Shpalzavod	existing channel	6.5	1x6	42.2	235	New Bridge
Br-4	8+195	village Kirpichzavod	existing channel	6.5	1x6	40.3	224	New Bridge
Br-5	10+147	village. Sarband	existing channel	16.59	1x15	14.4	216	New bridge
Total - 5 bridges				69.59			1,965	

18. The project road has been reconstructed in the year 2000 and the road surface has worn out seriously damaging the road. It has deteriorated over the years and is currently in bad condition with numerous shortcomings and damages. Due to the existing poor technical condition of the road, transport is getting unreliable and expensive. The asphalt concrete pavement has been destroyed. The base, consisting of coarse-grained soil, does not comply with GOST. In some places, the thickness of the base is 0.05 m only. There is no functioning drainage and numerous physical and geological processes are destroying the remaining intact roadbed. In

some places, during heavy rainfall, the road is flooded disconnecting the villages along the Project Road from access to medical and educational facilities, state institutions, banks, and markets.

19. This project road has major role in supply of agricultural products and industrial raw materials to the cities. Further, it connects the international road Dushanbe - Kulyab - Khorog - Kulma with the national road Dangara - Vose - Kulyab as the shortest route. Therefore, part of a significant transport connection through the People's Republic of China, Afghanistan and further south to Pakistan and it is part of the Central Asia Regional Economic Cooperation (CAREC) transport corridor. Therefore, rehabilitation of the Bokhtar – Okmazor road is a priority project.
20. According to the Project Administration Manual (Dec 2023), the proposed additional financing is aligned with the same impacts as the ongoing project, namely: (i) economic growth promoted (Tajikistan National Development Strategy), and (ii) safe and competitive connectivity established across the CAREC region (CAREC Transport Strategy 2030). Also, the project will have the same outcome: safety and reliability of the road networks enhanced in southern Tajikistan. Thus, the overall aggregate impact and outcome of the project remains unchanged from the those of the ongoing RNSP project.

3. Project implementation progress

21. The project became effective on 1st May 2023. As of 30th Jun,'25, physical progress by the project was estimated by the project management office (PMO) to be 100% for Lot 1 and 91.19% for Lot 2. Implementation progress for subcomponents is summarized in Table 1.

Table 1: Project implementation progress as of 30.06.2025.

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of CSC	Implementation Description
I. on track						
1	Contract CW-01:Bokhtar-Levakant Road Rehabilitation (OCB/CW-01/2022)	Completion	1 st May 2023	China State Construction Company Nanjing Communication Engineering Company Limited (NJCE)	SMEC Intl. Pty. Ltd.	100%
2	Contract CW-01:Levakant-Okmazor Road Rehabilitation (OCB/CW-01/2022)	Construction	1 st May 2023	CJSC Zavodi Asphalt Beton) (ZAB)	SMEC Intl. Pty. Ltd.	92.25%

CSC = construction supervision company.

22. The project is classified as Category-B for the environment in accordance with ADB's SPS (2009). The status of EMP implementation is discussed in Table 18 of Annex-2. All awarded contracts included EMPs cleared by ADB and conditions of applicable national IEE clearance.
23. In Lot 1, during the reporting period, the completion of bridge No.2 at Km 14+870 is ongoing. The construction of underground drainage pipes, dismantling of certain infrastructure within the construction areas, and reinstallation of water supply and sewage lines were completed in Lot 1. Work on the underpass and sidewalks, including the cycle path, was also completed. By the end of October 2024, all civil works, including road furniture and markings, were completed in Lot 1 (Bokhtar – Levakant section). In Lot 2, during the reporting period, major construction works continued from the previous quarter. These included earthworks (both soil and rock excavation), concrete paving, notching, embankment and slope development, road leveling and compaction, laying of the base course, crushed stone base, granular sub-base, pavement asphalt concreting (bottom and top layers, and binding course), sidewalks, installation of shoulders and side drains, and bridge construction, among other activities. Moreover, in Lot-2 earth work encountered with excavation of rock at a large scale, which was time consuming than anticipated all works as well were behind schedule. However, by end of December 2024, Road pavement was almost complete and remaining work involved shoulder formation, construction of curbs, road furniture, installation of the permanent barriers and road signs and etc.
24. Regarding the tree planting, replacement of died seedlings was carried out with regular watering, establishing seedlings all along both sides within RoW of the Lot -1 or Bokhtar – Levakant section covering the entire stretch. Planted trees accounted for 6,246 in Lot – 1 road section and about 400 trees in Lot -2.

25. In Lot 1, the potential sources of pollution included the concrete mixing plant at km 9+200, the gravel crusher and screening plant at km 9+100 (with facilities for storing crushed gravel), and the asphalt plant within the same premises. Warehouses for storing materials and areas for storing bitumen were in the construction camp at Levakant. Several quarries for gravel were also operated in the Vakhsh River floodplain. All these facilities operated with the required permits from the relevant authorities and PIURR, and operations were terminated by the end of October 2024.
26. The contractor of Lot-2 has no asphalt plant because the contractor brought asphalt from his registered production plant outside. Within the base camp at km13+500, the concrete batching plant, gravel crusher and screening plant material storage, etc., were located. Though they extracted gravel material from authorized quarries, they largely purchased gravel material from a registered supplier operating in the Vakhsh river floodplain. A quarry was operated in the mountain area for granular material requirements of both Lot 1 and Lot -2.
27. During the reporting period, contractors have taken measures to reduce dust and emission in construction sites by: use of proper equipment; timely repair and maintenance of construction machinery and equipment; dust suppression by watering, etc. Measures taken to minimize noise and vibration and associated protection from on-site health hazards to workers included use of soundproofing equipment by workers (headphones, earplugs); limitation of working hours; use of vibration-damping personal protective equipment (boots, seats, mats, mittens), etc. No adverse impacts of noise were reported by people in the surrounding areas. However, whenever violation of such requirements was likely, the monitoring team interfered to remedy the situation.
28. The project activities during the reporting period are shown in photos of Annex-3 to depict how the actual practices were carried out during the reporting period. Neither excess emissions of harmful substances nor public nuisance due to noise, dust, etc., were recorded in association with such operations according to the monitoring results. As well, there has been no complaints from the communities or individuals about such public nuisances.

B. Changes in Project Design

29. No changes in project design were made in the reporting period, except for rock excavations exceeding the original estimates. This was necessitated by the need to remove the rocks that were laying close to the road on excavated roadsides posing safety threats if not removed.

C. Changes in Agreed Construction Methods

30. No changes to agreed construction methods were required in the reporting period.

II. SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

31. The project environmental management plan (EMP) is the primary reference document for the government and ADB for all environment-related mitigation, monitoring, reporting, and training activities for the project. Timely and effective implementation of the EMP is a key condition of the loan agreement between the government and ADB. The EMP is being implemented over 4 years, comprising 2 years of construction and 2 years of operation. The content of the EMP includes institutional roles and responsibilities for EMP as prepared as part of the initial environmental examination in implementation; mitigation measures for environmental safeguard risks; environmental monitoring and reporting; training and capacity building; grievance redress mechanism (GRM); public consultation; cost estimates; and other information e.g. terms of reference for key positions.

32. **Project institutional arrangements (Section of the EMP).** This section of the EMP describes the roles and responsibilities of relevant agencies for EMP implementation. For this project, the principal person responsible for EMP coordination is the PMO Environment Officer (Ms. Monisa Salimova), acting on behalf of the PMO. On-site implementation of the EMP is by the implementing agencies, contractors, and construction supervision companies (CSCs). Guidance and supervision to the PMO Environment Officer is given by the Loan Implementation Environment Consultant (LIEC)

33. The conditions given by the SEE at the time of approval and the present status of implementation of such requirements is shown in Table 3.

Table 3: State Environmental Expertise conditions and implementation status

no	SEE Condition	Implementation status
Bokhtar- Levakant- Okmazor Project Road		
1	Requirements of construction rules and norms, strict observance of road construction, ecological norms and the legislation of the Republic of Tajikistan in the field of environment protection should be followed during the project implementation;	Done, implementation was monitored
2	The contractor should appoint the person responsible for carrying out control;	Done, Environmental Engineer and HS Engineers appointed by Contractors
3	The contractor develops an action plan for environmental protection, which is agreed with the local environmental authorities;	Done, SSEMP developed by Contractors and approved by the CSC and PIURR
4	In order to protect the atmosphere and prevent dust, the work area should be regularly sprayed;	Done, implementation monitored. The atmospheric air protection and dust suppression plan was developed and is being implemented by the Contractors.

no	SEE Condition	Implementation status
5	During construction work, the requirements of construction rules and regulations should be followed and take the necessary measures;	Done, implementation monitored. There were few accidents reported during the monitoring period in Lot-2 and action taken as per contract stipulations to inform relevant authorities and take action.
6	Trees that interfere with the construction process should be removed only in coordination with the authorized state body in the field of environment protection;	Done, permits for the felling of trees has been obtained from the local Department of Environmental Protection.
7	The planting of seedlings should be conducted in accordance with the design and agro-technical rules;	Done, implementation monitored.
8	Technical construction works to be carried out in accordance with the requirements of environmental norms and minimum impact on the environment;	Done, implementation monitored.
9	In accordance with the established procedure to implement departmental control over compliance with the requirements of measures in the field of environmental protection;	Done, implementation monitored.
10	To dispose of solid household waste in the official landfill in accordance with the established procedure;	Done, the contractors have been granted permits for the disposal of the waste in local government landfill site. Waste management plans were developed by the contractors.
11	Construction waste generated during and after construction works should be sorted and disposed of in s official dump in coordination with the authorized state body in the field of environmental protection;	Done, the contractors have been granted permits for the temporary storage and disposal of the spoil in the official dump site. Waste management plan developed by the contractor.
12	In the event of departure from the territory of construction facilities, equipment and vehicles should be washed in accordance with the rules and their cleanliness should be ensured;	Done, implementation monitored
13	During locating an asphalt plant and processing of inert materials in accordance with the requirements of the legislation in the field of environmental protection and sanitation, it is necessary to prepare the report on environmental impact assessment should be submitted to the State Environmental Expertise of the Committee for Environmental Protection under the Government of the Republic of Tajikistan for obtaining of conclusion.	Done, the location of asphalt plant has been agreed upon with local authorities and environmental protection department. Conclusion of SEE obtained.
14	To implement normative and legal acts, state standards, sanitary, safety and environmental standards during the construction of drainage system;	Done, implementation monitored.

no	SEE Condition	Implementation status
15	To carry out technological work in accordance with the requirements of environmental impact;	Done, implementation monitored.
16	A copy of this report should be submitted to local environmental authorities.	Done, copy of the conclusion of SEE provided to local environmental protection authorities

34. The Project Implementation Unit for Road Rehabilitation (PIURR) set up by Resolution of the Government of Tajikistan for management of the contract implementation has mobilized Environmental Specialists respectively for Lot -1 and Lot -2 of the Bokhtar- Okmazor road, in January 2022.
35. The PIU is supported by the Construction Supervision Consultant (CSC) - SMEC Ltd. The contract with SMEC Intl. Pty Ltd was concluded on 8 October 2021 for a period of 36 months including DNP (Defects Notification Period) for all packages of Road Network Sustainability Project (RNSP).
36. The project activities with respect to the contract awards, summary of work progress, contract management, environmental staff, etc., are given in the following two tables (Table 4 and 5). The Project Organization Structure and environmental team are shown in Fig. 7.

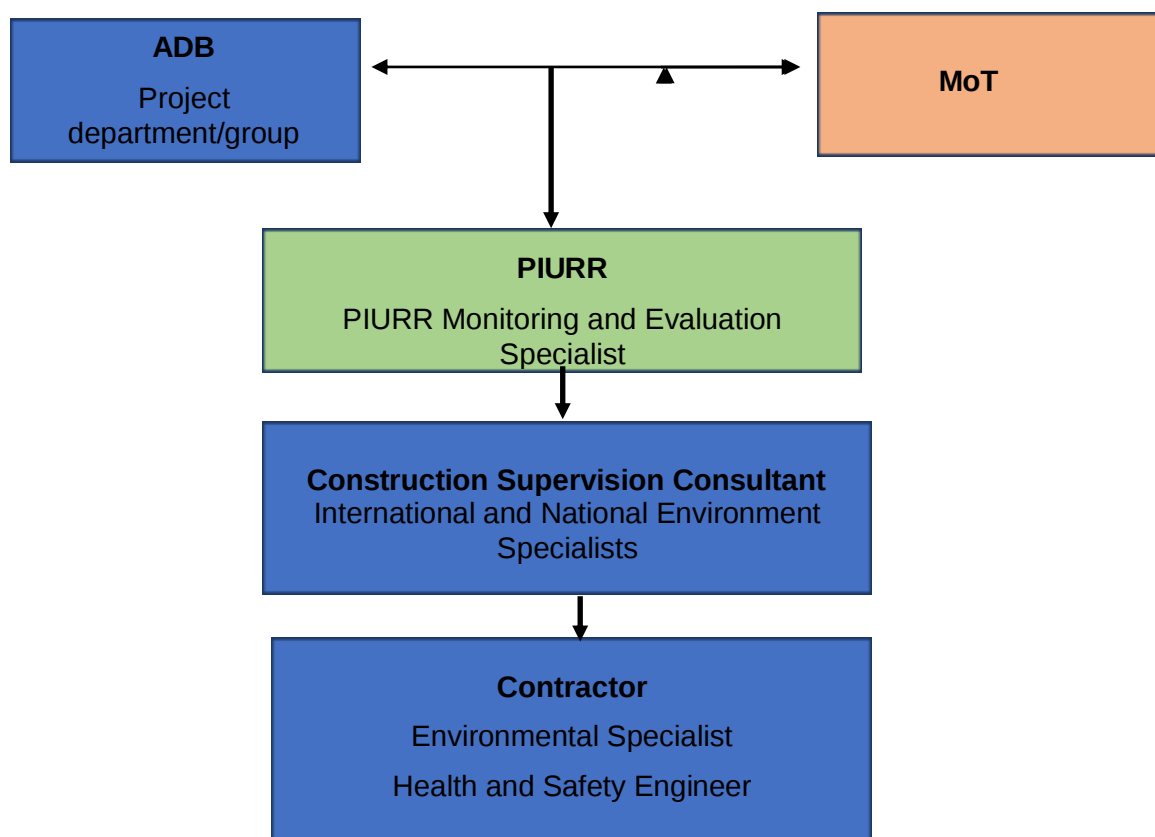


Figure 5: Project Environmental Organization Chart

Table 4: Summary of Civil Work Contracts and Works' Progress

Package Name	Scope	Contractor	Start Date as per ToR	Date of approval			Environmental staff		Civil works (terms of Contract)		Work Progress by End October 2024	
				SSEMP	COVID-19 HSMP	ERP	Senior Environmental Specialist	Occupational Health and Safety Officer	Start	End*	Time Period Elapsed	Work Progress
Lot 1	Bokhtar - Levakant road section (9.72 km.)	Nanjing Communications Engineering Co. Ltd.	1 st May 2023	March 2023	May 2023	March 2023	Mr Wipula Elkaduwa	Muhiddin Yusupov	1 st May 2023	6 th May 2025	100 %	100 %
Lot 2	Levakant - Okmazor road section (30.28 km.)	CJSC " Zavod Asfaltu Beton"	1 st May 2023	March 2023	May 2023	March 2023	Mr Wipula Elkaduwa	Muhiddin Yusupov	1 st May 2023	6 th May 2025	100 %	92.25 %

COVID-19 HSMP = COVID-19 Health and Safety Management Plan, ERP = Emergency Response Plan, SSEMP = Site-Specific Environmental Management Plan

*Lot- 1 contractor completed all work by 6th May 2025.

*Lot-2 contractor has requested an extension of 344 days to complete balance work

Table 5: Summary of Environmental Personnel

Environmental Personnel (Lot - 1 Bokhtar -Levakant and LOT- 2 Levakant-Okmazor)	Allocated p / m	Assignment date	Experts Full Name
International Environmental Specialist (IES) of CSC	8 P/M	Feb. 2024	Mr Wipula Elkaduwa *
International Road Safety specialist of CSC	8 P/M	Feb. 2024	Stylianios Efstathidis**
National Environmental Specialist of CSC (both Sections)	Continuous till end of project	June 2023	Egamberdi Rustamov
Environmental Specialist under PIU RR (Lot-1)	5.17 P/M	Feb. 2025	Ms Monisa Salimova
Environmental Specialist under PIU RR (Lot-2)	5.17 P/M	Feb. 2025	Ms Monisa Salimova
Traffic/ Road Safety Specialist (Lot-1) CsC		2 nd Sep 2022	Abdugaffor Jumabaev
Traffic/ Road Safety Specialist (Lot-1) PIU RR	6 P/M	28 August 2023	Muhiddin Yusupov
Environmental Specialist of the Contractor (Lot-1)	Continuous till end of project	May 2023	Ismoil Khudoyorov
Health and Safety engineer under the Contractor Lot-1	Continuous till end of project	28 August 2023	Jang Di Pia
Environmental Specialist of the Contractor (Lot-2)	Continuous till end of project	April 2022	Mr. Tabarov Qobil
Health and Safety engineer under the Contractor Lot -2)	Continuous till end of project	April 2022	Mr. Khalifaev Muboriz

*Replaced by W. K.B. Elkaduwa in February 2024

** replaced by Stylianios Efstathiadias in March 2024

37. Project readiness assessment (Section of the EMP). This is the first key step prior to the start of project civil works, to ensure that preparations for EMP implementation have been completed.

Potential impacts and mitigation (Section 3 of the EMP). This section of the EMP summarizes the potential environmental impacts and mitigation measures for the different phases of the project: detailed design and pre-construction phase; construction phase; and operations phase. Table 18 in the EMP summarizes the environmental risks and mitigation measures, and agencies responsible for implementation and supervision of these measures. For this project, the key potential impacts and/or issues of concern are:

Prevention of possible destruction of bird nesting sites and their offspring, Tree losses that cannot be prevented, Potential damage to local irrigation system, Establishment of grievance redress mechanism (GRM) by Resettlement Specialist to ensure that PAPs have information on the procedure to submit a complaint, in case they have one. Implement the spoils management plan prepared as part of the SSEMP. Maintain construction equipment to good standards and avoid, as much as possible, idling engines. Implement a traffic management plan that will set out how access along the project road will be maintained safely during construction.

38. **Training (Section of the EMP).** This section of the EMP describes the training program for environmental safeguards, including the recipients and frequency of training.

39. **Consultation and participation plan (Section of the EMP).** This section of the EMP identifies the mechanisms by which consultations will be accomplished (e.g., through workshops, questionnaires, etc.), the frequency of consultations, topics, and target audiences.

40. **Costs (Section of the EMP).** This section of the EMP describes the estimated costs for EMP implementation over years. The cost estimates in the EMP include the costs for the mitigation measures, training, and monitoring.

41. **Reporting (Section of the EMP).** This section of the EMP describes the reporting requirements for the project, including the responsible agencies and reporting frequency.

III. ENVIRONMENTAL SAFEGUARD ACTIVITIES

A. General Description of Environmental Safeguard Activities

42. Activities carried out by the Environmental Specialists of CSC, PIURR and contractors. during the monitoring period, are briefed in Table 6 below.

Table 6: Environmental Safeguards Activities

Environmental Safeguard Activities
The international environmental expert of Supervision Consultant (SMEC) - Site visit/ audits to the Bokhtar- Levakant - Okmazor Road Section - Preparing SAEM reports and Environment Completion Reports
The national environmental Specialists of Supervision Consultant and PIURR - Site visit to the roads to Bokhtar- Okmazor road section check on the progress of the works. - Review the checklist for environmental monitoring. The checklist is attached at the end of the report. - Development of a work plan for the consultant - Meeting with a local resident on safety and issues relating to construction works - Review of the Contractor's documentation including Environmental Monitoring Reports. - Prepare Semi Annual Environment Monitoring Report (SAEMR),
The Environmental Specialists of the Contractors - Obtaining relevant permits - Conducting meetings with the public and informing them about the work - Day-to-day involvement in resolving environmental issues during construction. - Organization of instrumental monitoring of project sites and facilities with laboratory testing in accordance with SSEMP and supervision consultant's instructions. - Preparation of monthly and quarterly environmental monitoring reports.

B. Site Audits and Issues

43. Site inspections were conducted frequently, both routine and random. The inspections generally addressed environmental, health and safety issues. The overall objective of the inspections was to ensure good environmental practice in project operations and enable to establish good governance and efficient environmental management of day-to-day activities.

Site inspections and audits in the reporting period, the issues identified, and action taken are given in Table 7.

44. During the monitoring period, in Lot -1, the physical works of the project were very limited due to the near completion of the project. Therefore, no much environmental issues were identified. Issues identified during the monitoring period and remedial status as shown in tables 7 and 8.

Table 7: Site visits conducted during the Monitoring Period

Date of visit	Auditor	Purpose of Audit	Summary of Findings
16 Jan 2025	National Envl. Specialists of CSC`	Check the construction activities of Lot-2.	Construction of Shoulders at Km 40+000. Permanent Road signs were being installed at Km 39+000.
11 Feb 2025	National Envl. Specialists of CSC	Check the compliance to EMP Recommendations by the contractor of Lot-2 (Levakant - Okmazor)	Workers without adequate H&S measures.
21 Feb 2025	National Envl. Specialists of CSC	Check the compliance to EMP Recommendations by the contractor of Lot-2 (Levakant - Okmazor)	Poor waste management
4 Mar 2025	National Envl. Specialists of CSC	Check the compliance to EMP Recommendations by the contractor of Lot-2 (Levakant - Okmazor)	Disorganized building materials of the Lot 2 facility. Localized pollution by oil.
12 Mar 2025	National Envl. Specialists of CSC	Check the compliance to EMP Recommendations by the contractor of Lot-1 Bokhtar - (Levakant)	Uncovered manholes in sidewalk
28 Mar 2025	National Envl. Specialists of CSC	Check the compliance to EMP Recommendations by the contractor of 2 (Levakant - Okmazor)	Uncontrolled dust; Illegal dumping of excess excavated material; illegal quarrying
4 Apr 2025	National Envl. Specialists of CSC	Check the construction standards in Lot-2	Excavation of rock at Km 18+760
15 Apr 2025	National Envl. Specialists of CSC	Observe the completed civil work of Lot -1	The trees planted on both sides of the road in project lot 2 have dried up without water and project lot 1 from the beginning of the road.
15 Apr 2025	National Envl. Specialists of CSC	Visit to identify the defects in completed work	Removed asphalt where there was segregation.
5 May 2025	National Envl. Specialists of CSC	Audit practices of on-going activities	Inadequate safety precautions by the construction staff

Table 8: Issues identified during the monitoring period

Issue	Action to be Taken	Responsibility	Action Taken
Lot - 1: Bokhtar –Levakant road section			
Localized contamination of the soil with lubricating oils at the asphalt concrete plant	Prompt clearing of the sites of the concrete plant and the asphalt plant of soil contaminated with fuel oil	Contractor	Completed all requirements and attended to clearing
Some construction waste and debris and scrap material not removed from the construction camp site	Need to dispose of all such waste before scheduled completion date	Contractor	Completed clearing work
Uncovered manholes in the sidewalk	Immediate attention to cover them temporarily till permeant cover is placed	Contractor	Attended to required action
Only the cypress and pines species are planted by contractors despite recommendation of different species for compensatory planting within the RoW. According to IEE recommendations, species to be planted are pines, cypresses, mulberry, pistachio, walnuts and plums for Bokhtar – Okmazor road section	Contractors prefer this species of cypresses and pines because they are native hardy plants their seedlings are readily available and need little aftercare, and no damaged by grazing or browsing animals.	Contractor	Plants are already established along both sides of the road. Also, the practicability of growing other species is questionable due to limited space between the road and sidewalk for planting.
Lot - 2: Levakant- Okmazor road section			
Localized contamination of soil by lubricants and bitumen at the construction camp and plants	Prompt clearing of the sites of the concrete plant and the asphalt plant of soil contaminated with oil	Contractor	Attended to clearing the affected sites
Some Construction waste laying in the camp sites	Maintain the sanitary and hygienic state of the environment in the camp	Contractor	Agreed to follow in future
Construction workers do not wear appropriate PPE/ Construction kits	The Contractor must conduct environmental H&S training for workers regularly on monthly and weekly covering safe construction practices, including the use of equipment	Contractor	Agreed to follow in future
Uncontrolled dust in concrete plants, crushing plants, camp site and in construction sites where retaining walls are being erected and road work ongoing	Priority dust control by spraying water in plant sites and areas near residential area of Levakant end while work is in progress.	Contractor	Followed the watering schedule but it was inadequate during sunny days
Unauthorized dumping of excavated soil and rock material into side slopes in some locations (Localized in few cases)	Disposal of excess excavated earth and rock into authorized sites	Contractor	Agreed to adhere as far as possible now but to clear them on completion of work
Small scale borrowing of material from unauthorized areas along the road side	Use only legal/authorized borrow areas	Contractor	Agreed to purchase all material from licensed suppliers
Unstable deep cut slopes on roadsides which may collapse with rains	Trim the cut slopes to stable angles or bench out at least in	Contractor/ PIU/ CSC	Action to be taken by PIU and CSC Engineers-

Issue	Action to be Taken	Responsibility	Action Taken
	identified critical locations to minimize fixture risk/hazards		Guidance given in the attached Addendum
The removed old asphalt is still laying in some few roadside heaps	Collection of removed asphalt for reuse in local roads by Road Department	Road Department	Beyond the Contractor's responsibility as already handed over to the Road Department as per the contract condition
Damage to the access Road from km10 to the quarry in the mountain used by both contractors	This access road runs through settlements of village Gulistan and need repair on completion of project activities	Contractors of both Lot-1 and 2	Both contractors agreed to repair the access road on completion of operations



Soil erosion on the construction road Lot 2



End of object lot-1 and beginning of road object lot-2



Dried trees at Lot 2



Camp object lot-1 and lot-2



Undecent construction waste in the camp both objects



Stop, piranha fencing Lot -1.



Place of construction of the road object lot-2

In April 2025, ADB conducted a site visit in collaboration with PIU, the consultant, and the contractor. The mission resulted in the preparation of a CAP implementation report, the final version of which is attached to this report in Appendix_No.4.

C. Unanticipated Environmental Impacts or Risks

45. During the reporting period, unanticipated environmental impacts or risks were identified at Km 18+760. Rock-fall at Km 18+760- 18+960 closed the road. An Inspection report has been added in Appendix No.3

IV. ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

A. Summary of Monitoring Outcomes

46. The monitoring of the project implementation activities is progressing well and follows the requirements of EMP. The PIURR and CSC have made efforts based on the findings of the monitoring to guide the Contractor's environmental staff and ensured that the project is implemented in a manner that is compliant with the environmental requirements of the project.
47. Based on the results of monitoring, the status of compliance with related covenants on environmental safeguards in the Project's Grant Agreement signed between Republic of Tajikistan and ADB on 25 December 2020² is summarized in Table 15 below.

Table 9: Grant Agreement and Compliance Status

Schedule	Paragraph	Covenant	Compliance Status
3	3	Environment The Recipient through MoT, shall not award any Works contract which involves environmental impacts until; (a) the relevant environmental authority of the Recipient has granted the final approval of the IEE; (b) the Recipient through MoT, has incorporated the relevant provisions from the EMP into the Works contract.	Complied (a) IEE approved by Environmental authorities of Tajikistan. The "environmental appraisal /approval" was obtained from SEE on 16 November 2020 (Registration No. 1537-15) for Bokhtar -Okmazor Road section. Resolutions of SEE were shared with the Regional environmental protection departments. (b) provisions of EMPs were included to the works contract.
3	5	The Recipient, through MoT 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 Recipient relating to environment, health and safety, (b) the Environmental Safeguards; and	Complied MoT ensures that preparation and design comply with Environmental Safeguards and H&S requirements and applicable laws and regulations of Tajikistan. MoT/PIURR has appointed Environmental Safeguards Specialists to ensure compliance during implementation.

² ADB. Grant Agreement (Special operations) for Road Network Sustainability Project (December 25, 2020): <https://www.adb.org/sites/default/files/project-documents/54005/54005-001-grj-en.pdf>

Schedule	Paragraph	Covenant	Compliance Status
		(c) all measures and requirements set forth in the IEE, the EMP and any corrective or preventative actions set forth In the Safeguards Monitoring Report.	EMP/EIA implementation is monitored and reported in SAEMR
3	9	Human and Financial Resources to Implement Safeguards Requirements The Recipient, through MoT, shall make available necessary budgetary and human resources to fully implement the EMP and the LARP	<u>Complied</u> a National Environmental Specialist hired by PIURR; national and International Environment Specialists by CSC; a Also, Social specialists hired for preparation and implementation of EARP
3	10	Safeguards - Related Provisions in Bidding Documents and Works Contracts The Recipient, through MoT, shall ensure that all bidding documents and contracts for Works contain provisions that require contractors to (a) comply with the measures relevant to the contractor set forth in the IEE the EMP and the LARP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set out in a Safeguards Monitoring Report: (b) make available a budget for all such environmental and social measures, (c) provide the Recipient, through MOT, with a written notice on any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE the EMP or the LARP (d) adequately record the condition of roads agricultural land and other infrastructure prior to starting to transport materials and construction (e) reinstate pathways, other local infrastructure and agricultural land to at least their pre-project condition upon the completion of construction (f) prepare and finalize a site-specific environmental management plan which shall be submitted to and approved by the Recipient prior to the commencement of any Works.	<u>Complied</u> IEE and EMPs are included to the works bidding documents. SEMP developed by Contractor and approved by the CSC / PIURR. Implementation of EMP/IEE and LARP are being monitored and adequate compensation is ensured through GRM resolutions to the satisfaction of affected parties. Impacts on existing infrastructure (agricultural lands and roads) is minimized and any damages are attended to bring back to original condition
3	11(a)	Safeguards Monitoring and Reporting The Recipient, through MoT, shall (a) submit semi-annual Safeguards Monitoring Reports to ADB, and disclose	<u>Complied</u> (a) SAEMRs from previous reporting periods have been disclosed

Schedule	Paragraph	Covenant	Compliance Status
		relevant information from such reports to affected persons promptly upon submission; (b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP, or the LARP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed time-bound corrective action plan (c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the LARP promptly after becoming aware of the breach.	on ADB website in English. ³ Information from SAEMRs is translated into Russian ⁴ and disclosed on project website. ⁵ (b) During the project implementation period, no actual or potential breach of compliance with the measures and requirements set forth in the EMP or the LARP has been observed.
3	12	Prohibited List of Investment The Recipient shall ensure that no proceeds of the Grant are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS	<u>Complied</u> MoT ensures that no proceeds of the Grant are used to finance any activity included in the list of prohibited investment
3	13	Illegal trafficking The Recipient shall undertake adequate measures to detect and prevent trafficking of humans, wildlife, endangered species, and illegal substances on the Project roads	<u>Complied</u> Public security authorities and MoT/PIURR with support of CSC, continuously monitor and prevent illegal trafficking.
3	14	Labor Standards, Health and Safety The Recipient shall ensure that the core labor standards and the Recipient's applicable laws and regulations are complied with during Project implementation The Recipient, through MoT, shall include specific provisions in the bidding documents and contracts financed by ADB under the Project requiring that the contractors, among other things (a) comply with the Recipient's applicable labor law and regulations and incorporate applicable workplace occupational safety norms, (b) do not use child labor, (c) do not discriminate against workers in respect of employment and occupation, (d) do not use forced labor.	<u>Complied</u> Bidding documents included labor codes and applicable national laws and regulations to be complied by the contractors. MoT ensures and monitors during project implementation compliance with Labor Standards, Health and Safety requirements and applicable laws and regulations of Tajikistan. MoT/PIURR has appointed the Environmental and Social Safeguards Specialist and d with CSC ensure compliance. Contractors hired medical staff which conduct training for workers.

³ <https://www.adb.org/projects/54005-001/main>

⁴ The report will be disclosed in Russian language because all affected people understand Russian.

⁵ <https://mintrans.tj/storage/tender/files/iw1INwfvhyQOBgvqp0scsJxyq3JyTRgMqfg4nLm5.pdf>

Schedule	Paragraph	Covenant	Compliance Status
		(e) allow freedom of association and effectively recognize the right to collective bargaining. (f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	
3	15	The recipient shall strictly monitor compliance with the requirements set forth in paragraph 14 above and provide ADB with regular reports.	<u>Complied</u> SAEMRs include Health and Safety monitoring results, which are provided to ADB and disclosed in Russian on the project's website ⁶ . Social safeguards monitoring reports are also being prepared and disclosed.

MoT – Ministry of Transport; IEE – Initial Environmental Examination Report; EMP = Environmental Management Plan; LARP = Land Acquisition and Resettlement Plan; SAEMR= Semiannual Environmental Monitoring Report; IES = International Environmental Specialist; NES= National Environment Specialist

⁶ <https://mintrans.tj/storage/tender/files/npjHJMRI5CRcUujkU5QHPTU4c9w2sK8WbBTSa1Eu.pdf>

B. Overview of Monitoring of Environmental Monitoring Plan

Environmental monitoring is governed by the approved Environmental Monitoring Plan (EMoP) of the, IEE Report, environmental standards and other environmental commitments. During the period from July to December 2024, the analytical laboratory of the Committee for Environmental Protection conducted analyses on water samples, air quality, and noise for the Bokhtar – Levakant (Lot 1) and Levakant – Okmazor (Lot 2) road sections. The results are described in the following sections.

1. Water quality monitoring

48. The contractor of Lot-1 (Bokhtar-Levakant) has carried out monthly monitoring of water quality through the Central Laboratory of Analytical Control of the CEP. Monitoring was carried out every month. Water sampling points used for monitoring by the Contractor (Nanjing Communications Engineering Co. Ltd) are listed below. All four water courses involved in the project area were monitored for water quality, both upstream and downstream of the road crossing. The locations are listed below:

1	WQ1	Drinking water from camp No. 1, km 9+200
2	WQ2	Vakhsh Canal km 4+100 500 m above.
3	WQ3	Vakhsh Canal km 4+100 500 m below.
4	WQ4	Channel km 7+600. 500 m above.
5	WQ5	Channel km 7+600. 500 m below.
6	WQ6	Channel km 8+200. 500 m above.
7	WQ7	Channel km 8+200. 500 m below.
8	WQ8	Channel km 9+720. 500 m above.
9	WQ9	Channel km 9+720. 500 m below.
10	WQ10	Irrigation Channel km 2+800.

49. Water Quality Monitoring Results for the Bokhtar- Levakant Section (Lot-1), for the reporting period from July – December 2024 is given in table 9 below together with the Tajikistan National Standards of permissible maximum concentration (PMC).

50. Contractor for Lot-2, ZAB also carried out quarterly water quality monitoring in 3 locations. Compared to lot-1 in urban areas, Lot-2 has only one perennial water course of an irrigation canal as well very limited settlements along the remote road to be sensitive to short-term impacts of construction. As such, the number of water quality measurement locations were also limited. The results of water quality monitoring of Lot -2 are given in Table 10.

51. In lot-1, Bokhtar – Levakant section, the results of the water quality measurements together with the National standards values have been presented in the quarterly reports submitted by the Contractors. According to Contractor's reports, the results revealed that during the first and second quarter of 2025, monitored water samples have not exceeded the levels of suspended solids, Dissolved Solids (mineralized), pH, biological oxygen Demand (BOD₅), Chemical Oxygen Demand (COD and Petroleum products compared to National standards for Maximum Permissible Concentrations (MPC) for drinking water. However, the Total Suspended Solids (TSS) has exceeded drinking water quality in WQ10 sample (but within the standard value for fish) progressively from February 2025 till May 2025, most probably due to the construction activities of the bridge No-2 but it has become normal in June 2025 on completion of the piling work. This is an irrigation canal and increased TSS may not have pose any threat. It is particularly because despite the increase in TSS in one location, Dissolved Oxygen level has been above the desirable level in all samples throughout the period of monitoring in all locations. The Coliform Count has exceeded the value for drinking water in most of the samples except the water source for the contractor's camp. This is because all the irrigation canals flow through urban area with many households. Livestock and poultry farms, from where fecal contaminations (by human and animals) is likely.

52. In lot-2, Levakant - Okmazor section, the water quality measurements together with the National standards values have been presented in the quarterly reports submitted by the Contractor. According to Contractor's reports, the results revealed that during the 1st quarter of 2025, monitored water samples have not exceeded the levels of any of the monitored parameters, except that of coliform index, compared to the national standards while dissolved oxygen was above the desired optimum.
53. However, the coliform index has not exceeded the value for drinking water in the camp water supply. Even in the canal, Coliform index has shown above drinking standards but within the fishery standards. This may be due to livestock and poultry farms in the settlements discharging effluents into the canal. Therefore, the monitoring results indicate that there no discernable adverse impacts of construction activities on the water quality.

2. Air quality monitoring

54. The contractor of Lot-1 (Bokhtar- Levakant) is carrying out monthly monitoring for air quality with support of a hired certified laboratory. Air quality in the project is being monitored according to 8 indicators given below:

- Carbon monoxide (CO)
- Carbon Dioxide (CO₂)
- Nitrous Oxide (NO)
- Nitrogen Dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Total Suspended Particles (TSP)
- Total suspended Particular Matter with particle diameter less than 10 Micron (PM₁₀)
- Total suspended Particular Matter with diameter less than 2.5 Micron (PM_{2.5})

55. The monitoring has been conducted with the measurements by Gas Analyzer GANK-4a during the working day while taking a reading every hour. Then the readings were summarized, and average air quality levels were calculated for each pollutant during the period.
56. For the Bokhtar- Levakant section, air quality measurement was done at the 9 identified locations recommended in the IEE and the locations are as follows.

1	AQ1	Camp No. 1, Levakant, km 9+200.
2	AQ2	Concrete plant km 9+200.
3	AQ3	Km 9+720
4	AQ4	Gate of the village council Gulistan km 6+900.
5	AQ5	Km 6+100.
6	AQ6	Km 4+400.
7	AQ7	Km 3+800.
8	AQ8	Km 1+440.
9	AQ9	Near the Khoji Sharif bazaar km 00+250

57. The results of the first and second quarter of 2025 ambient air quality monitoring are shown, compared to tolerance limits established in Tajikistan as Maximum Permissible Concentration (MPC) in Table 11. The results of the quarterly ambient air quality monitoring carried out in the Lot-2 (Levakant – Okmazor Road Section) for 7 locations are shown, with comparison to tolerance limits established in Tajikistan as Maximum Permissible Concentration (MPC), in Table 12.
58. The results of the first and second quarter of 2025 air quality monitoring for Bokhtar- Levakant section, shown in Table 11, reveals that compared to tolerance limits established in Tajikistan (Maximum Permissible Concentration (MPC), the values obtained for different pollutants from the air quality measurements have not exceeded the guideline values. Regular spraying of water with a weekly schedule, particularly around sensitive receptors, use of machinery and vehicles of good condition with good maintenance to reduce emissions, proper maintenance of asphalt plant, crushing plant and

concrete yards, etc., have enabled the contractor to minimize any potential pollution of the atmosphere.

Similarly, Lot-2 air quality monitoring results show the non-exceedance of national standards of PMC, indicating no any adverse impacts of project activities on the atmosphere.

3. Noise monitoring

59. The noise level was measured using a Testo 815 noise meter, owned by the Centre for Analytical Control and Analysis of the Committee for Environmental Protection under the Government of the Republic of Tajikistan. The meter was calibrated in accordance with the manufacturer's specifications.
60. Regarding noise, standards of Tajikistan in accordance with sanitary standards SN 2.2.4/2.1.8.562-96 (provided by the sanitary and epidemiological surveillance service of the Ministry of Health of the Republic of Tajikistan) is as follows were used as the threshold limits
 - 55-45 dB(A) (max) - Residential area
 - 75-75 dB(A) (max) – Commercial zone
 - 80-80 dB(A) (max) – Industrial zone
 - 40-50 dB(A) (max) – Hospitals
 - 55-45 d B(A) (max) – Schools, library
61. The noise monitoring results of the 1st and 2nd quarter of 2025, in the Bokhtar- Levakant section, is shown in the following tables 13. The national standard value is given for each location depending on the type of entities located around the measuring point and their sensitivity, as specified in the national standards for various categories. Similarly, the noise monitoring results of third quarter of 2024, in the Lot-2, Levakant – Okmazor section, is shown in the Table 14.
62. The noise level around influence of the Bokhtar - Levakant project (Lot-1) during the reporting period has not exceed permissible standards for respective category of sensitive receptors, as indicated by actual monitoring results given above Table 13. Further, during the reporting period, no complaints were received regarding the noise impacts of noise from residents of nearby settlements. The situation is the same for Lot-2, Levakant – Okmazor road section as shown in Table 14.

C. Flora and fauna monitoring

63. The Bokhtar - Okmazor road is in arid country with steppe like vegetation. Land use alongside the project road is rural and the terrain is mountainous, except for the first section of the road (viz Lot- 1 from Bokhtar to Levakant), which is an urban area in a level terrain (see Fig.8).
64. Although a wide variety of animals and birds are represented in the country, in general, the biodiversity of fauna in the area of the planned project is quite low. Relatively few species and numbers are present. The surrounding area of road from Levakant to Okmazor is predominantly grazing fields with steppe type vegetation with an annual rainfall of about 100 – 150mm and the temperature varying from minus 20°C to +50°C. The Major part of the steppe type vegetation has no trees but some patches were with scattered trees of pistachio as shown in the photos given below.

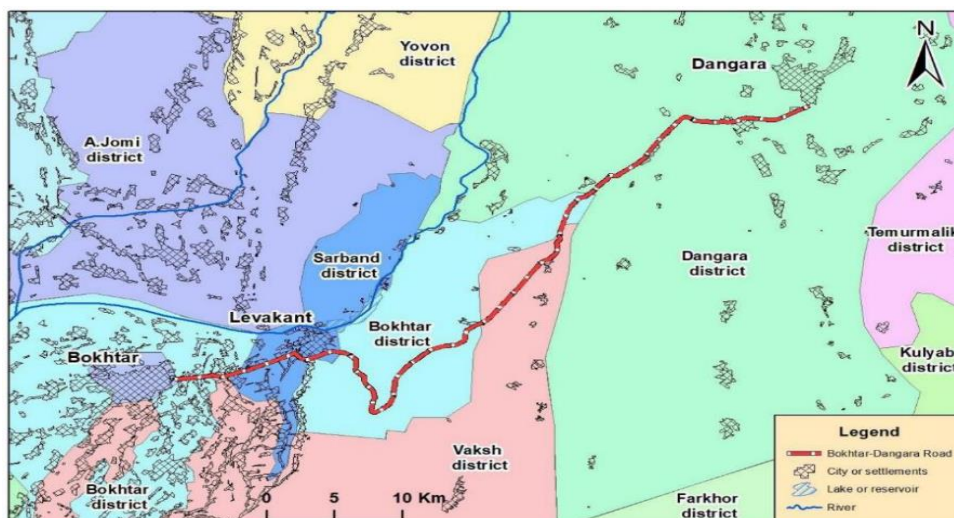


Figure 6: Urban and settlement areas Alongside the Project Road

65. Before commencement of civil works, a survey conducted in the project influential area revealed that there were no bird nesting sites in traversing cliffs that would be impacted by excavation of slopes for road widening. Further, the Contractors monitored and prevented poaching in the area of influence of the Project. Therefore, throughout the construction period, no significant negative impact on the state of flora and fauna in the area of influence of the project has been recorded as well. poaching and illegal hunting of wild animals and birds has not been recorded. However, for the expansion of the road carriage, trees have been removed with the authorization of the relevant department. Also, some highly localized impacts on small scale have occurred due to dumping of excessive excavated material into side slopes of the road damaging the existing vegetation in Lot-2.
66. According to BOQ, in Lot-1, number of existing trees relocated is 1,258 and number of trees felled/removed is 1,705. Therefore, required new planting is 3,410 at the ratio of 1:2 compensatory planting for removed trees. According to BOQ, in Lot - 2, number trees felled/removed is 115. Therefore, required new planting is 230 at the ratio of 1:2 compensatory planting for removed trees.
67. In lot-1 about 6,246 seedlings have already been planted whereas 400 seedlings have been established in Lot-2. Tree planting was mainly in Lot-1 (Bokhtar – Levakant section) because

In Lot-2 (Levakant – Okmazor section) there were a very limited number of trees removed and tree planting has been unable in many parts of the road so far as shoulder development works are still in progress. However, there is scope for more tree planting during the one-year defects liability period (DLP).

68. In Lot-1 during the summer of 2024 quarter, out of the planted seedlings, those trees died during the summer have been replaced and watering of them has been continued. The planted seedlings cover the entire stretch of the lot-1 on both roadsides in-between the road and sidewalk.
69. In the surrounding area of the Lot-1 Road section, abundant water supply from river diversions (for agriculture and domestic use) and established trees, etc., have enhanced the groundwater availability and micro-climate conducive for establishment and survival of trees inhabited by people. In the case of Lot-2, except for the road section close to the Levakant, where already trees have been planted, the suitability of the rest of the road section in remote arid areas (with harsh weather) for tree growth and survival is questionable unless meticulous care is ensured. Except for some scattered pistachio trees in very limited patches in the landscape, no trees are visible in the rest of the area around the road covered only by steppe type vegetation. However, at least in the few settlement areas, it is worth establishing some suitable species of trees.



Flora and fauna conditions on the road.

D. Waste management

70. The Contractors have liaised with Local Administration for disposal of domestic and construction waste. The solid waste management meets the requirements on collection point for household waste. Municipal solid waste generated at the site, in particular in areas where work camps are located, is temporarily collected in specially designated storage areas and removed on a regular basis. Municipal and household waste are sent once a week to the official landfill of the city of Levakant. Transportation is carried out by a truck equipped with folding sides.
71. Excavated earth for road expansion were reused for embankment filling but the material of unsuitable quality and other spoil material were temporary stored in areas recommended by local authorities and finally disposed at the dumping areas authorized by the municipalities. In Lot-1 all such temporary stored spoil material has already disposed to authorized landfill

sites. However, in Lot-2 temporary storage of excess material is being disposed at the authorized dumping sites located along the road side.

72. Basic sanitary and environmental standards were observed in construction camps. Wastewater mainly coming from toilets, kitchens, baths, laundries and dormitories were directed into a sewer pipe in the camp and eventually collected into a wastewater treatment system, which have filtration and sedimentation functions. The wastewater treatment system was disinfected daily to ensure that water flowing out of the camp does not pollute the environment.
73. Solid waste management involved storage in a specially designated place with a hard, impermeable coating; and timely removal of that stored solid waste by responsible services (local authorities). Hazardous waste management involved storage of hazardous waste in a specially designated place with a hard, impermeable coating and also, all such containers were kept away from water sources and clearly marked until disposal or reuse.
74. The camp has washrooms, showers, and toilets. Daily cleaning is carried out in the premises and the territory of the camps by maintenance personnel. The camp is staffed with security personnel who prevent unauthorized persons from entering the camp territory and keep records of visitors. There have been no comments from environmental authorities or the sanitary-epidemiological service about any shortfalls in operation and maintenance of the facilities.

1. Public consultations and grievance redress mechanism

75. This section describes the public consultations undertaken during the reporting period and implementation of the project grievance redress mechanism (GRM). Documentation for the consultations and/or GRM (e.g. lists of participants in stakeholder workshops) is in Appendix 4.

E. Grievance Redress Mechanism and Complaints

76. A grievance redress commission (GRC) including representatives at central and local levels, nominated by local authority and jamoats, has been established for both road sections. Information boards and complaint boxes have been installed along both roads. There were no complaints, with respect to environmental issues, recorded from the local population in the reporting period. Both contractors have relevant complaint forms in place for workers to apply. HSE specialists of both contractors also have complaints logbooks. Employee representatives have been selected who register employee complaints and bring them to the attention of management and monitor the causes of complaints. However, no complaints have been received from workers or other stakeholders in the reporting period.

F. Training, Health and Safety

77. During the reporting period, the Contractors carried out activities in accordance with the approved Road Safety Management Plans of the SSEMP and adequate health and safety measures were in place.

78. To ensure health protection at the site, both Lot 1 and Lot 2, had operational medical centres at the Contractors' base camps with certified medical workers. The two medical stations were equipped with all necessary medicines and also with medical supplies to organize and provide first aid. Further, the health centres provided contraceptives free of charge for those who requested. Also, close contact had been established with the government health authorities of Levakant town.

79. The Contractors took all measures to protect health, including protection from sexually transmitted diseases (STDs) and HIV/AIDS, as well as COVID-19. Also, during the reporting period, regular safety and health training was conducted for workers.

80. The Contractors have taken reasonable measures to reduce dust during construction works by spraying water. Warning signs have been installed since the start of construction works. Road signs were updated where it was necessary. All vehicles and machinery were maintained in satisfactory working condition at all times. Pollutant emission levels were in compliance with applicable environmental control laws. Maintenance and re-fuelling of vehicles were carried out in such a way that no fuel and lubricant leaks were detected.

81. Refilling of fuels and lubricants was strictly controlled and regulated by formal procedures. Pallets are used at refuelling sites. The areas under the fuel tanks are concreted, and fences and covers have been installed. Since the work is not carried out at one specific site, fuel was delivered to sites by truck delivery. Appropriate fire safety measures have been taken.

Regular safety training courses were organized. Workers and engineers were issued with protective equipment and overalls in a timely manner. No workers were hospitalized in medical institutions and no fatal injuries were recorded during the reporting period. Weekly safety and health briefings were conducted for workers.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

82. Scheduled date of project completion for both Lot -1 (i.e. Bokhtar – Levakant Project Road) and Lot -2 (i.e. Levakant – Okmazor Project Road) was 21st October 2024. During the reporting period the construction contracts for the Bokhtar- Levakant Road was completed, and this section was ceremonially declared open by the Hon President of Tajikistan. Nevertheless, the Levakant- Okmazor Project Road was still in progress and by the end of October only 92.25% of the work was complete and therefore a time extension of 197 days was requested by the contractor.
83. The contractors of both projects had their approved Site-Specific Environmental Management Plans (SSEMPs), which allowed them to follow good practices of construction work. In order to ensure compliance with environmental safeguards, all parties involved in the projects (Staff of Contractors, PIURR and CSC) established an environmental management team. This team was responsible for overseeing and managing the environmental aspects of the construction projects. They worked together to ensure that all necessary measures were taken to protect the environment and minimize any negative impacts.
84. As part of the monitoring process, various issues were identified during this reporting period in the two road sections. The Bokhtar- Levakant Road experienced few issues that needed attention as the project activities were nearing completion. The Levakant - Okmazor Road had issues mainly related to excavation and disposal of excess material of earth and rocks. These issues were documented providing a comprehensive overview of the problems encountered during this period and action was taken by the parties responsible to resolve them. Further, safety issues which were identified during the ADB mission and site visit and documented for implementation. A detail on those issues, actions and their status have been demonstrated within Corrective Action Plan attached in Addendum 1.
85. The environmental management team worked diligently to address the issues and take appropriate actions to mitigate any adverse effects. They collaborated with the contractors and other stakeholders to find suitable solutions and ensure that the construction activities remained in line with environmental regulations.

Recommendations

86. The general objectives of planting trees along roadsides are to stabilize soils and reduce air quality impacts of vehicle emissions, dust and also to attenuate noise while providing shade. However, in order to have an effective impact from trees, a multi canopy structure by admixture of trees which develop canopies at different levels from the ground are needed. Nevertheless, roadside planting by this project in a line within the RoW could meet some of the above objectives but that would play an important role in the city and settlement areas. Multi-canopy plantings are common in-home gardens adjoining the road section in Bokhtar city and some settlements.
87. Only the cypresses and pines species have been planted by contractors despite recommendation of different species for compensatory planting within the RoW. Contractors prefer this species of cypresses and pines because they are native hardy plants, their seedlings are readily available and need little aftercare and not damaged by grazing or

browsing animals. According to IEE recommendations, species to be planted are species that require more moisture such as poplar (*Populus alba*), willow (*Salix alba*), maple (*Acer spec.*) and ash (*Fraxinus spec.*) where irrigation canals run parallel to the road in Lot-1. Only native species to be planted from local genetic stocks pines.

88. Different species have a vast potential in Lot-1 due to manmade environment, particularly with availability of groundwater. In fact, in the road along Bokhtar-Levakant all types of fruit trees have been established by residents along their boundaries and within the home-gardens. Whereas in Levakant -Okmazor road section, in the steppe type grasslands only small settlements or scattered houses are found at a substantial distance from the RoW of the road, except in the road reach close to Levakant city. In the steppe grasslands, Pistachio is a widely found tree in the landscape and its potential to survive is obvious if establish and maintained carefully at early stages. Also, in the Levakant- Okmazor section various trees have been established in some locations where shops are operated close to the road and in some home-gardens.

89. Despite the large number of tree planting in Lot-1, many planted seedlings started to die during the summer 2024 though the contractor claims that watering was carried out in every night. As a result, the contractor replanted to fill the vacant dead plants and started to water regularly from September. Now the seedlings cover the both sides of the Bokhtar - Levakant road section and attention will be required till they are fully established. Therefore, after the contractor's responsible period of DLP, responsibility of maintaining trees should be vested in the Roped Exploration Department or other responsible authority to ensure the sustainability of trees in this urban section of the road.

90. In the Levakant – Okmazor road section, tree planting and their maintenance must be attended at least along the settlement areas such as that in Levakant end. The contractor is still busy with road work and he must be convinced to attend to this requirement on completion of work and during the DLP.

APPENDIX NO.1

STATUS OF EMP IMPLEMENTATION

Table 10: Status of EMP Implementation

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
DETAILED DESIGN PHASE – PRE-CONSTRUCTION PHASE			
Pre-works documentation and establishment of more recent baseline environmental conditions	Possible obsolete information not capturing site-specific baseline and pre- works conditions	1. As part of preparation of SEMP, undertake documentation, photographs (with GPS coordinates), environmental sampling and analyses (through in-house or third party authorized laboratory).	Complied by Contractor through a hired laboratory with CSC and PIURR Supervision
Road alignment within ecologically sensitive areas	Possible destruction of bird nesting sites and their offspring. Possibly affected bird species are the bee eater(Merops piaster), the European roller (Coracias garrulus), starlings (lane or Indian starling) and birds of the weaver family, e.g., the Indian sparrow.	2. At sections where the Project Road rehabilitation is traversing alongside cliffs, mainly formed by loess sediments which are suitable nesting sites for various birds such as the European roller (Coracias Garrulus), the bee-eater (Merops piaster) or the Indian starling (Common Myna Acridotheres tristis) the design investigated the possibility of widening the cross section to the opposite site and by doing this avoiding any impacts. 3. In addition, prior to construction, a fast-track ecological survey will be conducted for purpose of (i) identification of nesting sites at cliffs in the construction corridor, and (ii) identification of additional mitigation and monitoring measures to minimize impacts on less mobile bird species. 4. In case nesting sites are identified, then construction schedule will consider nesting season in order to avoid bird losses.	Complied: A survey was conducted before commencing construction work but no bird nets were identified within the project influential area
		5. Required tree felling and site clearance activities which involves the remove of vegetation will be outside nesting season (preferably between October and February).	No necessity arose as there were no any discernable bird nesting sites
Road alignment in areas of tree plantations.	Tree losses that cannot be prevented. Main species are poplars, willows, birch trees, pistachio trees, walnut trees buckthorn, and saxaul.	6. Any tree losses are to be compensated for by new plantations at a ratio of 1:2. This means that 1,820 x 2 (3,640) trees are to be newly planted for compensation. 7. Species to be planted are pines, cypresses, mulberries, pistachio, walnuts and planes. 8. From the bridge at km 2+340 to km 2+900 an irrigation channel is running alongside the road allowing the planting of species that require more moisture such as poplar (Populus alba), willow	Complied: Tree planting by the Contractor is in progress and by now in Lot-1, about 1,500 trees and in Lot-2, about 400 trees have been newly planted. See Annex-2 table 20 & 21 for actual number of trees removed.

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Based on the conducted surveys 1820 trees need to be felled.	(Salix alba), maple (Acer spec.) and ash (Fraxinus spec.). Only native species will be planted from local genetic stocks. 9. Planting will be conducted after technical works have been completed. Planting time will be restricted to spring (March till April) and/or autumn (September till October). Trees to be planted will have the following parameters: 1.5 – 2 m height, age 5 – 6 years. 10. Locations for tree plantings are within the existing RoW at the locations where tree losses occur. 11. Distance in between individual trees will be 6 – 8 m. 12. In addition, 1,202 trees in section 1 (Bokhtar-Levakant) will be relocated.	Lot-1 entire road stretch within the RoW has been planted
Embankment filling of the tree stem area	Tree losses due to embankment fill.	13. A maximum fill up of the tree stem area of 30 cm can be accepted. Fill up material in the tree stem area has to be organic soil. 14. A filling up of more than 30 cm will damage the tree. In this case cutting can't be prevented and a new tree is to be planted as a compensation measure at the respective location within the existing RoW.	Complied by Contractor with PIURR and CSC supervision
	Potential damaging of trees lying very close to the road (less than 2m).	15. Implementation of a temporary vegetation protection fence during construction activities.	Complied by Contractor
Road alignment traversing towns and villages	Potential loss of building structures and assets. (Tree losses, masonry retaining wall, private yards, building structures).	16. The chosen alignment and cross section will aim on reducing the loss of building structures as far as technically feasible. 17. Loss of structures that cannot be prevented will be compensated according to the LARP. 18. Crossing facilities within settlements consisting of zebra- crossings, traffic lights and ramps for disabled people will be provided.	Complied during the detailed design by contractor in collaboration with PIURR
Bridge/Culvert Rehabilitation	Potential damage to local irrigation system if new culverts should not be sufficiently dimensioned or in case that not all existing culverts should be rehabilitated in the course of the road rehabilitation.	19. In the course of the road rehabilitation, all existing culverts will be replaced. All culverts are sufficiently dimensioned in order to prevent any damages or blockages to the existing local irrigation systems.	Complied during detailed design with collaboration of PIURR

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Potential water erosion processes at bridge and river embankments.	20.Design of erosion protection measures at lower parts of bridge embankments. Erosion protection is achieved by using natural stones which can in addition be embedded in concrete. Prefabricated concrete protection plates prevent erosion processes at the lower and lateral parts of bridge and river embankments. Detailed design of the respective protection measures is drafted in the technical design documentation for the respective bridges.	Complied by incorporating concrete plated to prevent erosion
	Compensation claims	21. Access to Information/ Public Relations 22. Convene a public consultation meeting (including the Contractor) prior to the contractor's mobilization to provide basic project information and construction scheduling, establish and explain the grievance redress mechanism including proactive arrangements for keeping the public informed of road reconstruction activities.	Complied by PIURR with support of CSC's team for creation of public awareness
Complaints/grievances	Compensation claims	23.Establishment of grievance redress mechanism (GRM) by Resettlement Specialist to ensure that PAPs have information on the procedure to submit a complaint, in case they have one.	Complied by establishing GRM and complaints regarding LARP are being resolved through this GRM
Within settlements disproportionate of poor people. Poor and encroachment on poorpeople's assets.	Loss of wealth and property of poor people. Poor and vulnerable households might be affected.	24.Resettlement Specialist will issue LARP covering assessment of loss and compensation procedure.	LARP is implemented and. If actual loss exceeds the estimated, additional payments are paid through GRM resolutions
CONSTRUCTION PHASE			
Impacts due to site clearance activities	Loss of topsoil.	25. Implement the spoils management plan prepared as part of the SSEMP. 26. Removing of topsoil occurring within site clearing corridor. Topsoil will be removed and stored for reuse. 27. Long-term stockpiles of topsoil will immediately be protected to prevent erosion or loss of fertility. 28. For erosion protection it will be sown with a fast-growing vegetation, e. g. grass	Compiled by Contractor but as the widening is within the existing RoW, no much top soil is encountered; any excavated top soil is used for landscaping and tree planting; any heaps of top soil re watered to prevent wind erosion until they are used.

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
Break up of old pavement layers and asphalt	A significant amount of spoil will be generated which will be reused as much as possible for the subbase for the new pavement	29. Document the condition of houses close to the road. Photographs of all residential houses nearby the road will be taken as a protection for possible complaints regarding damages in house walls etc. This is part of the contract. 30. Special construction techniques will be applied in areas where buildings and structures are located directly near the road. Such actions may include, alternative construction methods such as: (i) decrease of vibration emission from the particular equipment item; (ii) substitution of the particular equipment item at such location by other equipment capable of variable vibration control; (iii) use of smaller equipment; (iv) compaction without vibration rollers; (v) decreasing the thickness of material layers below the maximum thickness permissible under the specification; (vi) building wave barriers (trench or ditch) where appropriate; (vii) change the pavement type for example from flexible to rigid pavement, (viii) any other method of Contractor's choice that may be used while ensuring compliance with the specification for the material that is being compacted. 31. Recycled material will be used to the largest extent feasible to reduce the volume of spoils that needs to be disposed of. 32. Special recycling techniques will be used in the rehabilitation of the new pavement layers. 33. Implement the waste management plan prepared as part of the SSEMP.	Complied as all removed asphalt concrete is handed over to the Road Exploration Department for reuse in Local roads according to the Government order; excavated earth is reused for embankment filling except for low quality material; approved waste management plan by contractor through SSEMP is implemented with the permission of local authorities
Impacts due to Earthworks	Selected disposal sites for cut-material. Potential disfigurement of landscape. Potential wind and water erosion.	34. Compact and evenly distribute the surplus material by layers where possible, to minimize piling and impacts to landscape. 35. The stockpiles will be sawn with fast growing grass to avoid erosion by the root system. 36. During dry and windy periods, water will be spread on the disposed material to avoid dusting.	Complied: Any material of low quality and spoil are temporarily stored in locations approved by local authorities and spray water to prevent wind erosion; finally, disposed into local governments' authorized dumping areas with permits from CEP and evenly distributed as layers

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Loss of topsoil Water erosion	37. Implement the spoils management plan which provides detailing measures to be undertaken to minimize effects of wind and water erosion on stockpiles, measures to minimize loss of fertility of topsoil, timeframes, haul routes and disposal sites. 38. Topsoil will be removed and reused to cover areas where excess materials will be dumped and on road embankments. 39. As erosion protection measure at riverbanks, natural stone fillings will be used as additional measures if required.	Complied but limited top soil results from RoW excavation and they are used for landscaping and tree planting
	Siltation of surface waters and/or impact on soils due to improper disposal of excess materials	40. Excavated material will be reused as far as technically feasible. In addition, the reclaimed asphalt pavement will be recycled for the construction of new pavement as far as technically feasible. Thus, potential impacts due to the need for disposal of excess material will be kept to a minimum. 41. Extracted soil material that cannot be reused is approximately 1,136,312 m ³ and needs to be disposed at the areas shown in Annex 6.	Complied as removed asphalt is reused on local roads; excavated soil is recused in embankment filling and spoil is taken to local authorities authorized dumping areas
	Competition for water resources	42. Conduct consultation with local authorities to identify sources of water (for spraying and other construction requirements) that will not compete with the local population.	Complied by conducting an analysis before selecting sources in consultation with environmental specialists of CEP
	Air pollution due to exhaust emission from the operation of construction machinery	43. Maintain construction equipment to good standard and avoid, as much as possible, idling of engines. 44. Banning of the use of machinery or equipment that cause excessive pollution (e.g., visible smoke).	Complied and no air pollution or noise pollution due to construction was discernable in monitoring
	Disturbance of adjacent settlements due to elevated noise levels	45. Restrict work between 7:00 am and 6:00 pm within 500m of the settlements. 46. A limit of 70 dBA will be set in the vicinity of the construction site and strictly followed. 47. Noise control at source (using less noisier equipment, mufflers, dampeners, enclosures, proper maintenance of equipment, providing training to operators, etc.), noise control at path (using natural structures with screening properties and acoustic barriers).	Complied: No violation of national standards by noise levels was detected in construction sites
	Soil compaction due to operation of heavy equipment	48. Confine operation of heavy equipment within the corridor that is absolutely necessary for the road construction to avoid soil compaction and encroachment into agricultural used land close to the road.	complied by the contractor

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
Reconstruction of pavement inclusive widening of existing road	Dislocation In consultation with environmental specialists of CEP conducted an analysis before selecting sources or involuntary resettlement of people (Within settlements, encroachment into private and residential land).	49. Implement LARP covering assessment of loss and compensation procedure	Complied: LARP is in place and compensation payments for actual loss and resolution of issues through GRM is in progress with PIURR supervision
	Loss of businesses and income of people operating their business within the existing RoW	50. Implement LARP covering assessment of loss and compensation procedure. 51. Inform all residents and businesses about the nature and duration of work well in advance so that they can make necessary preparations. 52. Limit dust by removing waste and soil quickly; by covering and watering stockpiles, and covering soil with tarpaulins when carried on trucks 53. Increase the workforce and use appropriate equipment to complete the work in minimum time in the important areas. 54. Avoid construction work in sensitive times like festivals near religious places. 55. Contractors (and sub-contractors) need to be informed that they are not allowed to hunt/poach in the project area of influence.	Complied: Awareness was created about LARP by PIURR and CSC Social Specialists prior to commencement of civil work; additional payments for actual loss through GRM resolution was done; monitoring results show no violation of national standards of water quality, air quality and noise level in critical area and near sensitive receptors; no complaints by communities about public nuisance due to construction activities we reported;
	Damage to infrastructure, supply cuts of infrastructure services such as water supply pipes and other facilities, wastewater discharge facilities, electricity lines etc.	56. Measures will be ensured in engineering designing to avoid any disturbance to the existing infrastructure. 57. Prior to construction start the respective service agencies will be informed about the construction work. 58. Coordinate with respective agencies and provide prior information to the public in case of any required disruption in services during construction 59. Consult with the affected people using project implementation. 60. Make the project contractors aware of any significant issues resulting from loss of electricity. 61. Inform people in advance of any power cuts and the duration of the cut will be made clear in order that they can plan around the lack of power.	Complied by Contractor with supervision of PIURR with support of CSC; also, prior awareness among public about work activities were created; contractors coordinated with relevant service provided before any replacement and replaced damaged facilities; access roads will be rehabilitated on completion of work
	Possible damage to properties and community facilities. Construction sites.	62. Immediately repair and/or compensate for any damage caused by construction works and activities to existing communities and their property and facilities 63. Maintain access roads used for transport of construction materials and other construction related activities are maintained to ensure that they remain in at least in their pre- project condition for the duration of the project.	

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Noise exceeding applicable noise standards. Vibrations may result in damage to local infrastructure, including private property and local (haulage) roads.	64. Limit the use of heavy machinery to the existing RoW especially in the vicinity of agricultural land. 65. maintenance of construction equipment in good condition and avoiding, as much as possible, idling of engines. 66. banning of the use of machinery or equipment that cause excessive pollution (e.g., visible smoke). 67. Utilize construction machinery with low emission levels. 68. limiting construction work to 7:00 am – 6:00 pm within 500 m of settlements, and by limiting hauling traffic through settlements. 69. Within the traversed 13 villages applicable noise standards will be complied with as far as technically feasible by means of noise measurements as indicated in the EMoP and in case of exceed of standards, ascribe of time restrictions for construction activities between 7:00 am and 6:00 pm. 70. Noise control at source (using less noisier equipment, mufflers, dampeners, enclosures, proper maintenance of equipment, providing training to operators, etc), noise control at path (using natural structures with screening properties and acoustic barriers). 71. For potential damages to local infrastructure, including private property and local (haulage) roads, compensation procedures will have to be established prior to the beginning of construction and approved by the CSC. 72. Put in place grievance redress procedures to facilitate communication between the contractor and potentially affected people. In addition, haul routes and construction site access roads should be discussed and jointly approved between the contractor and local officials to minimize the risk of conflicts.	Complied by Contractor and noise levels were within national standards during construction according to monitoring results; no complaints regarding noise were reported; compensations were paid through GRM resolutions for few cases of unavoidable damages caused by vibration in buildings adjacent to RoW.

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Construction activities close to building structures, particularly within villages. Aggregate extraction. Haulage of aggregates and construction equipment.	73. Advise the community members on road safety with the key messages reinforced with communities throughout construction. 74. Place clear signs at construction sites including borrow pits, in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials and excavation and raising awareness on safety issues. 75. Heavy machinery will not be used after day light and all such equipment will be returned to its overnight storage area/position before night. 76. All sites including storage areas will be made secure, prohibiting access by members of the public by fencing when appropriate. 77. Install barriers to keep pedestrians away from hazardous areas such as constructions sites and excavation sites. 78. Install signage at the periphery of the construction site advising road users that construction is in progress. 79. Strictly impose speed limits on construction vehicles along residential areas and where other sensitive receptors such as schools, medical places and other populated areas located. 80. Provide security personnel in hazardous areas to restrict public access. 81. If necessary, provide safe passageways for pedestrians crossing the construction site and for people whose access has been disrupted due to construction works.	Complied by Contractors according to traffic management plan and health and safety plan of the SSEMP; No incidences of casualties among community members due to construction activities were reported
Operation of borrow areas and quarries	Potential disfigurement of landscape, vegetation losses and damage to access roads Increased dust emission	91. Refrain from storing material near surface waters to prevent siltation or obstruction of water ways. This refers particularly to the floodplains of Vakhsh river, Surkhob river (реки Сурхоб) and Tairsu river. 92. Wet the unpaved routes which go next to settlements to suppress dust pollution when hauling material from borrow pits and provide covers for the load of all hauling vehicles to prevent	Complied by Contractor; SSEMP prepared and approved by PIURR; Contractor obtained license for quarry operation; required quarrying was limited as excavated material from road expansion were re-used; quarry sites were in already quarrying areas.

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Siltation and obstruction of surface waters	dust pollution. Also wetting the aggregate load reduces potential dust emissions. 84. Implement air quality management plan, including transportation and post-closure rehabilitation of borrow sites. 85. The hauling traffic should be carried out only between 7:00 am and 6:00 pm. 86. Used machinery needs to be in good technical condition and properly maintained, so that no leakages of oil or any other pollutants occur. 87. Before starting material extraction, the contractor will obtain the environmental permit from the CEP which may also include provisions for landscaping measures after finalization of the extraction activities. 88. Before starting extraction activities, it needs to be confirmed that there is a valid license for the quarrying activities issued by the responsible authorities/agencies. 89. Implement material management plan which indicates the location of the proposed extraction site as well as rehabilitation measures and implementation schedule for the borrow areas and access roads. The plan needs to address the sensitive issues of avoidance of transportation through residential areas as far as technically feasible and closure rehabilitation.	
	Loss of valuable ecological structures if the selected disposal sites are not carefully selected.	90. No agricultural area or river floodplain will be selected as disposal site. Minimum distance to any watercourses must be at least 100 m. 91. Disposal sites will be preferably on barren land without any wooden vegetation.	Complied by disposal only at areas (dumping sites) authorized by the local authorities far away from water courses
Operation of Asphalt Plant and Aggregate Crushers	Increased dust emission and noise emission	92. Careful site selection of aggregate crusher in order not to interfere with any sensitive receptor. Distance to next settlement and residential houses at least 1,000 m downwind. Site selection for aggregate crusher has to be approved by PIURR.	Com plied: Aggregate crusher and Asphalt plant installed outside settlements with permission from relevant authorities; fire protection equipment and PPE provided in sufficient quantity and equipment to handle spill were kept in place. No pollution indicated in the EMoP monitoring results for these industrial sites No asphalt plant in Lot-2 as they obtain apparat from a registered supplier
	Odor emission and safety risks	93. Asphalt plants will be 1,000 m downwind from any settlements and residential houses. 94. Provide spill and fire protection equipment and submit an emergency response plan (in case of spills, accidents, fires and the like) to the authority in responsibility prior to operation of the plant. 95. Secure official approval for installation and operation of asphalt plants from MoT.	

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Water pollution due to spilled bitumen	96. Receive all relevant permissions prior to commencing operation of the asphalt plant. 97. Obtain the CSC's approval on the site selection for the asphalt plant and aggregate crusher. 98. Bitumen will not be allowed to enter either running or dry streambeds nor will it be disposed of in ditches or small waste disposal sites prepared by the contractor. 99. Storage areas should be lined with impermeable layer to mitigate impacts of potential spills. As a minimum, these areas must be designed so, that any spills can be immediately contained and cleaned up. 100. Bitumen storage and mixing areas must be protected against spills and all contaminated soil must be properly handled according to legal environmental requirements. Such storage areas must be contained so that any spills can be immediately contained and cleaned up. 101. Provide spill and fire protection equipment. 102. Implement an emergency response plan (in case of spills, accidents, fires and the like) prepared as part of the SSEMP prior to operation of the plant. 103. Asphalt plants will not be located close to plantations and productive land. 104. Bitumen storage and mixing areas will be protected against spills. 105. All contaminated soil will be properly handled according to legal environmental requirements. Such storage areas will be contained so that any spills can be immediately contained and cleaned up. 106. Contaminated storm water and process wastewater should be captured and recycled by a system with the following specifications:	complied to all required conditions of SSEMP by the Contractor with the supervision and support of PIURR and CSC; no pollution of waterbodies or by emissions were discernable ion water quality / air quality monitoring

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
		a. The system's storage capacity must be sufficient to store the runoff from the bunded areas generated by 20 mm of rain. b. Water captured by the bunds should be diverted to a collection pit and then pumped to a storage tank for recycling. c. An outlet (overflow drain) in the bund, 1 m upstream of the collection pit, should divert excess rainwater from the bunded area when the pit fills due to heavy rain (more than 20 mm of rain over 24 hours). d. Collection pits should contain a sloping sludge interceptor, to separate water and sediments. The sloping surface enables easy removal of sludge and sediments. e. Wastewater should be pumped from the collection pit to a recycling tank. The pit should have a primary pump triggered by a float switch and a backup pump which automatically activates if the primary fails. f. Wastewater stored in the recycling tank needs to be reused at the earliest possible opportunity. This will restore the system's storage capacity, ready to deal with wastewater generated by the next rainfall event. Uses for recycling tank water include concrete batching, spraying over stockpiles for dust control and washing out agitators.	
Bridge and Culvert Reconstruction Works	Possible alteration of surface water hydrology resulting in increased sediment by increased soil erosion at construction site	107. Store the material at a safe distance from nearby surface waters. 108. Provide long term stockpiles a grass cover. 109. Implementation of settlement ponds at locations where construction site comes close to natural watercourses to retain sediments and mitigate possible impacts on water hydrology. 110. Implement the waste management plan which considers sensitive receptors (rivers and their floodplains). 111. Conduct regular maintenance of the construction equipment to prevent oil leaks. 112. Chemicals and oil will be stored in secure locations, impermeable, and bound area far away from surface waters.	Complied by Contractor and monitored by PIURR; waste management plan of the SSEMP was implemented; settlement ponds were installed and all other relevant activities of the SSEMP were adhered to; water quality monitoring indicated no impacts on water bodies.

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
		113. When carrying out corrosion treatment, the contractor needs to present a method statement on this. 114. The bridge reconstruction debris will be removed in an environmentally safe manner. 115. Prepare a method statement or plan for the execution of bridge construction works including measures that will be undertaken to address adverse environmental impacts such as erosion of river embankment and siltation of watercourses that may result from such activities. 116. Storage of any hazardous construction material will be on sealed surfaces only to prevent leakages into the groundwater.	
Establishment and operation of contractor's yard	Potentials oil and water pollution	117. Implement the Construction camp management plan prepared as part of the SSEMP in reference to World Bank Group's Workers' Accommodation: Processes and Standards. The plan will indicate: • Site location, surface area required and layout of the work camp. The layout plan will also contain details of the proposed measures to address adverse environmental impacts resulting from its installation. • Sewage management plan for provision of sanitary latrines and proper sewage collection and disposal system to prevent pollution of watercourses; • Waste management plan covering provision of garbage tons, regular collection and disposal in a hygienic manner, as well as proposed disposal sites for various types of wastes (e.g., domestic waste, used tires, etc.) consistent with appropriate regulations; • Description and layout of equipment maintenance areas and lubricant and fuel storage facilities including distance from water sources and irrigation facilities. Storage facilities for fuels and chemicals will be located away from watercourses. Such facilities will be bounded and provided with impermeable lining to contain spillage and prevent soil and water contamination. 118. Prior to the commencement of works the site installations will be inspected for approval. 119. The selected site will not be on top of ground water area or near surface waters.	Complied: SSEMP and sub-plans (worker's camp management plan, waste and material management plan, etc.) prepared and approved by PIURR. Prior to commencement of mobilization; the location of camps has been inspected and necessary permits were obtained; Water disposal was in agreement with local authorities for domestic waste disposal; all facilities were managed according to the approved SSEMP with emergency plans; During operations, all the EHS conditioned were monitored and any deficiencies were attended immediately
	Competition for water resources	Prior to establishment of the work camps; 120. Indicate proper sources of drinking and construction water which won't compete with local needs. 121. Conduct consultations with local authorities to identify sources of water that will not compete with the local population.	Complied by conducting an analysis before selecting sources in consultation with environmental specialists of CEP

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Health and safety risks to workers and adjacent communities	122. Implement the waste management plan prepared as part of the SSEMP. 123. Provide sanitary latrines and garbage bins at construction site. 124. Periodically clear the sanitary latrines and garbage bins. 125. Do not allow open burning of waste i. For health and safety protection of workers and adjacent communities, the following will be provided: ii. adequate health care facilities (including first aid facilities) within construction sites; iii. training of all construction workers in basic sanitation and health care issues, general health and safety matters, and on the specific hazards of their work; iv. personal protective equipment for workers, such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection in accordance with legal legislation; v. clean drinking water to all workers; vi. adequate protection to the general public, including safety barriers and marking of hazardous areas; vii. safe access across the construction site to people whose settlements and access are temporarily severed by road construction; viii. adequate drainage throughout the camps so that stagnant water bodies and puddles do not form; ix. sanitary latrines and garbage bins in construction site, which will be periodically cleared by the contractors to prevent outbreak of diseases. Where feasible the contractor will arrange the temporary integration of waste collection work sites into existing waste collection systems and disposal facilities of nearby communities	Complied: Medical point established with professionals; Training on health and safety conducted regularly; All workers were provided with PPE. Trainings on use of PPE conducted regularly; Clean drinking water provided; The contractor put up warning signs at each excavation site and at sites where work was in progress; The contractor checked the installed signs and replaced /reinstalled them in critical locations; Waste management plan of the SEMP was implemented with collaboration of local authorities

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Worker's health and soil / water pollution in and around equipment maintenance and fuel storage areas	126. The contractor will hire a qualified HSO who will provide safety training to the staff according to the requirements of the individual workplace. Prior to the commencement of works, the work site personnel will be instructed about safety rules for the handling and storage of hazardous substances (fuel, oil, lubricants, bitumen, paint etc.) and also the cleaning of the equipment. In preparation of this the contractor will establish a short list of materials to be used (by quality and quantity) and provide a rough concept explaining the training / briefing that will be provided for the construction personnel. 127. Locate storage facilities for fuels and chemicals away from watercourses. 128. Management and storage of fuel, waste oil, hazardous waste will be planned in accordance with the IFC EHS General Guidelines on Hazardous Materials Management. This includes the use of appropriate secondary containment structures capable of containing the larger of 110 percent of the largest tank or 25% percent of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 litres. 129. Store and dispose waste/used oil consistent with environmental legal requirements.	Complied: A Health and safety officer was hired; training on health and safety were conducted for all workers before commencing the project every working day before starting works in toolbox talk format; and also, regular training; awareness creation on communicable diseases in collaboration with health relevant health authorities; The storage facilities for fuel and chemicals were located in safe designated area of the camp away from water courses. There were no any watercourses near the construction camp
	Road construction projects bear a high potential risk to affect local communities and the health and well-being of those that live in or near to the temporary work camps by supporting the spread of STD and HIV/AIDS. In addition, the transport	130. Providing information to workers, encouraging changes in individual's personal behavior and encouraging the use of preventive measures. The goal of the information is to reduce the risk of HIV / STD transmission among construction workers, camp support staff and local communities. 131. To avoid risk of spread of the corona virus the FIDIC guidance memorandum "FIDIC COVID-19: On-site working and project team organization" will be adhered to construction site. 132. Implement the COVID-19 Health and Safety Management Plan and emergency response plan prepared in accordance with the relevant government regulations and guidelines on	Complied by Contractor with awareness creation and training with the support of local health authorities
	sector itself actually helps the epidemic, as infrastructure and associated transport services give people and infections mobility. Possible risks on construction sites also arise regarding the possible spread of the corona virus.	COVID-19 prevention and control or, where relevant, with international good practice guidelines 133. If a suspected incidence of COVID-19 is reported of any member of the project team during implementation of the project-related activity (including consultation and public participation), the activity will stop immediately for a review of the adequacy of the safety system of work and a corrective action will be implemented to address any identified gaps in the safety system of work prior to recommencement of the activities. All such incidence will be reported to ADB immediately for review.	Complied by the Contractor

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
	Social conflict between the workers and local people	134. Arrange the facilities, services, and water supply of the work camp so that it will not compete on the same resources with nearby communities. 135. Employ, to the largest extent feasible, people from the local communities to the workforce. Local communities will also be preferred, to largest extent feasible, when employing people for the tree planting works, drainage cleaning, and other suitable tasks.	Complied by the contractor
Traffic impairment	Traffic impairment	136. Submit the traffic management plan to local traffic authorities prior to mobilization. The plan will include action plan to mitigate impacts from transport of hazardous and toxic materials to the traffic emergency response plan for the operation phase of the road. 137. Provide information to the public about the scope and schedule of construction activities and expected disruptions and access restrictions 138. Allow for adequate traffic flow around construction areas. 139. Provide adequate signalization, appropriate lighting, well - designed traffic safety signs, barriers and flag persons for traffic control.	Complied: Traffic management plan was agreed with Department of the State Automobile Inspection of the Ministry of Internal Affairs of the Republic of Tajikistan and implemented; Awareness creation among communities and required action to prevent inconvenience to public were attended.
	Potential Impact on Community Health and Safety	140. Implement a traffic management plan that will set out how access along the project road will be maintained safely during construction. 141. Provide clear signs to guide road users and advise them on changes to road priorities in order to make their journey as smooth as possible and to ensure road safety as unanticipated changes e.g., change of lane, will be avoided. 142. Ensure access in areas to be closed temporarily by providing temporary/alternative access. 143. Provide adequate training to the workers on traffic control prior to commencing operations.	Complied by Contractor adhering to the approved Traffic Management Plan, and public consultation prior to construction
Archaeological chance finds	Potential damage to archaeological artefacts due to construction activities, particularly earthworks	144. In the event of the unexpected discovery of archaeological objects during construction operations, the contractor will immediately inform the CSC who will notify the Institute of Archaeology / Ministry of Culture and PIURR for further instructions. In this case the construction works at the localized site would be stopped until Institute of Archaeology give clearance for the continuation of the operations. 145. Works will resume only after appropriate measures have been taken as requested by the Institute of Ministry of Culture and confirmation has been received that works may continue.	Complied: No any unexpected discovery of archaeological objects during construction was reported

Activity / Location	Potential Impact	Mitigation measures	Status of Compliance
Closure of construction sites	Potential impacts to landscape aesthetics occur if the camp site construction associated facilities such as borrow areas are not properly cleaned and restored in the course of construction closure. Possible impacts which may arise are the disfigurement of landscape due to improper disposal of surplus material. Spoil of waste (construction debris, metallic scrap, etc.) if not properly disposed of	146. After completion of construction works the contractor will execute all works necessary to restore the sites to their original state (removal and proper disposal of all materials, wastes, installations, surface modelling if necessary, spreading and levelling of stored topsoil). 147. After completion of construction and rehabilitation works, and after the use of borrow pits, the landscape will be restored to a standard that is of equal quality to its original condition. Rehabilitation measures may not be necessary for borrow areas still in operation after road works have finished.	Civil Work still in progress in Lot-2 but disposal of excess of earth material and spoil is carried out according to SSEMP

APPENDIX No.2 Environmental Monitoring Data

Table 11: Results of Water Quality Monitoring for Lot-1 in 1st quarter, 2025.

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
Location	WQ1 (Camp Water supply) Km 9+200	25 Jan 25	0.8	6.8	110	0.3	0.5	6.8	0	<3
		26 Feb 25	0.8	6.8	105	0.4	0.6	6.6	0	<3
		21 Mar 25	0.9	6.7	110	0.3	0.5	6.5	0	<3
	WQ2 (Vakhsh Channel 500 m U/S) Km 4+100									
		25 Jan 25	12.4	7.2	140	1.3	3.2	6.4	0	14
		26 Feb 25	12.2	7.1	140	1.3	3.4	6.6	0	16
	WQ3 ((Vakhsh Channel 500 m d/S) Km 4+100	21 Mar 25	11.9	7.2	140	1.2	3.3	6.6	0	18
		25 Jan 25	12.3	7.2	140	1.4	3.3	6.3	0	15
		26 Feb 25	12.2	7.1	140	1.3	3.5	6.6	0	17
	WQ4 (Channel 500 m U/S) Km7+600	21 Mar 25	11.8	7.2	140	1.2	3.4	6.5	0	20
		25 Jan 25	13.5	7.1	135	1.2	3.0	6.5	0	18
		26 Feb 25	12.8	7.0	140	1.1	3.3	6.4	0	20
	WQ5 (Channel 500 m d/s) Km7+600	21 Mar 25	12.2	7.1	140	1.2	3.4	6.3	0	22
		25 Jan 25	13.3	7.1	135	1.3	3.0	6.5	0	18
		26 Feb 25	12.7	7.0	140	1.1	3.3	6.4	0	21
	WQ6 (Channel 500 m U/S) Km 8+200	21 Mar 25	12.2	7.1	140	1.2	3.3	6.3	0	22
		25 Jan 25	14.6	7.2	140	1.4	4.1	6.3	0	19
		26 Feb 25	13.3	7.1	135	1.3	3.9	6.2	0	22

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
		21 Mar 25	12.8	7.2	130	1.3	3.5	6.3	0	20
	WQ7 (Channel 500 m d/S) Km 8+200									
		25 Jan 25	14.5	7.2	140	1.4	4.0	6.3	0	20
		26 Feb 25	13.2	7.1	135	1.3	3.8	6.2	0	22
		21 Mar 25	12.6	7.2	140	1.2	4.4	6.4	0	21
	WQ8 (Channel 500 m U/S) Km9+720									
		25 Jan 25	12.6	7.1	135	1.2	4.4	6.4	0	16
		26 Feb 25	12.2	7.0	130	1.3	4.2	6.6	0	18
		21 Mar 25	11.7	7.0	135	1.2	4.3	6.5	0	19
	WQ9 (Channel 500m d/S) Km 9+720									
		25 Jan 25	12.6	7.1	135	1.2	4.4	6.4	0	17
		26 Feb 25	12.3	7.0	130	1.3	4.2	6.6	0	18
		21 Mar 25	11.7	7.0	135	1.2	4.2	6.5	0	19
	WQ10 (Soi km2+800)									
		25 Jan 25	26.2	7.3	175	1.5	5.4	5.4	0.0002	32
		26 Feb 25	27.1	7.2	170	1.4	5.8	5.5	0.00021	36
		21 Mar 25	24.5	7.3	170	1.5	5.6	5.5	0.0002	441

Table 10: Results of Water Quality Monitoring for Lot-1 in 2nd quarter, 2025.

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
Location	WQ1 (Camp Water supply) Km 9+200	23 Apr 25	0.9	6.7	110	0.4	0.4	6.8	0	>3
		03 May 25	0.8	6.8	110	0.4	0.5	6.9	0	>3
	WQ2 (Vakhsh Channel 500 m U/S) Km 4+100									
		23 Apr 25	14.7	7.1	150	1.5	4.6	6.2	0	18
		03 May 25	13.9	7.1	130	1.6	4.4	6.1	0	20
	WQ3 (Vakhsh Channel 500 m d/S) Km 4+100									
		23 Apr 25	14.8	7.2	140	1.5	4.5	6.2	0	18
		03 May 25	13.7	7.1	130	1.6	4.4	6.1	0	20
	WQ4 (Channel 500 m U/S) Km7+600									
		23 Apr 25	13.7	6.9	140	1.4	3.7	6.4	0	22
		03 May 25	12.5	7.2	135	1.5	3.9	6.2	0	25
	WQ5 (Channel 500 m d/s) Km7+600									
		23 Apr 25	13.8	7.0	140	1.5	3.7	6.5	0	23
		03 May 25	12.6	7.2	135	1.5	4.0	6.2	0	25
	WQ6 (Channel 500 m U/S) Km 8+200									
		23 Apr 25	17.2	7.4	150	1.6	4.9	6.0	0	21
		03 May 25	15.1	7.1	140	1.4	4.2	6.3	0	24
	WQ7									
		23 Apr 25	17.1	7.4	150	1.6	4.9	6.1	0	22

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
	(Channel 500 m d/S) Km 8+200	03 May 25	15.2	7.1	140	1.5	4.2	6.3	0	25
	WQ8 (Channel 500 m U/S) Km9+720									
		23 Apr 25	15.6	7.2	140	1.5	4.6	6.2	0	19
		03 May 25	13.9	7.1	135	1.6	4.9	6.0	0	23
	WQ9 (Channel 500m d/S) Km 9+720									
		23 Apr 25	15.4	7.2	140	1.5	4.6	6.2	0	20
		03 May 25	13.9	7.0	135	1.6	4.9	6.0	0	23
	WQ10 (Soi km2+800)									
		23 Apr 25	28.6	7.5	170	1.8	7.2	5.1	0.0002	46
		03 May 25	27.6	7.4	170	1.6	6.8	5.4	0.00021	42

Table 12: Results of Water Quality Monitoring for Lot-2 in 1st and 2nd quarter, 2025.

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
Location	WQ1 (Camp Water supply)									
		1 st Quarter 2025	1.1	6.9	110	0.4	1.1	7.2	0	>3

Parameter			Suspended solids, mg/l	PH	Mineralization, mg/l	BOD ₅ , mg/l	COD mg/l	Dissolved oxygen, mg/l	Petroleum products, mg/l	Coli-index, pcs/l
Tajikistan standard	Fishery standard		75	6,5-8,8	1000	3		at least 4,0	0,05	1000
	Drinking water		25	6,5-8,8	1000	3	30	at least 4,0	0,05	3
		2 nd Quarter 2025	1.2	6.7	100	0.3	0.9	5.7	0	>3
	WQ2 Diversion channel km 10+060 500 m above									
		1 st Quarter 2025	5.2	7.0	130	1.3	4.2	6.2	0	24
		2 nd Quarter 2025	4.3	7.2	140	1.1	3.9	6.7	0	28
	WQ3 Diversion channel km 10+060 500 m below	1 st Quarter 2025								
		2 nd Quarter 2025	5.2	7.0	130	1.3	4.2	6.2	0	24
		1 st Quarter 2025	4.4	7.2	140	1.1	3.9	6.7	0	28

Table 132: Results of Air Quality Monitoring for Lot-1 in 1st quarter, 2025

Parameter		CO	CO ₂	NO	NO ₂	SO ₂	TSP	PM ₁₀	PM _{2.5}
MPC (mg/m ³)		5	3900	0.4	0.085	0.5	0.15	0.16	0.3
AQ1 (Levakant Base Camp km9+200)	25 Jan 25	0.263	320	0.0028	0.0019	0.0015	0.0096	0.0112	0.0115
	26 Feb 25	0.241	313	0.0025	0.0021	0.0016	0.10092	0.0114	0.0119
	21 Mar 25	0.254	328	0.0030	0.0023	0.0018	0.0101	0.0114	0.0120
AQ2 (Concrete Plant/ crushing plant km9+200)	25 Jan 25	0.430	411	0.0036	0.0024	0.018	0.0097	0.0114	0.0118
	26 Feb 25	0.421	438	0.0032	0.0025	0.020	0.0096	0.0112	0.0116
	21 Mar 25	0.428	432	0.0031	0.0024	0.019	0.0102	0.0129	0.0117
AQ3 (km 9+720)	25 Jan 25	0.482	584	0.0034	0.0027	0.0021	0.0111	0.0118	0.0121
	26 Feb 25	0.474	568	0.0032	0.0025	0.0019	0.0115	0.0119	0.0123
	21 Mar 25	0.504	571	0.0030	0.0024	0.0021	0.0113	0.0118	0.0122
AQ4 (Gate of Village Council Gulistan km6+900)	25 Jan 25	0.491	537	0.0031	0.0024	0.0023	0.0104	0.0113	0.0117
	26 Feb 25	0.460	514	0.0028	0.0022	0.0020	0.0108	0.0116	0.0120
	21 Mar 25	0.509	546	0.0034	0.0027	0.0019	0.0112	0.119	0.0125
AQ5 (km6+100)	25 Jan 25	0.581	640	0.0035	0.0031	0.0023	0.0114	0.0118	0.0124
	26 Feb 25	0.540	627	0.0034	0.0027	0.0024	0.0116	0.0120	0.0126
	21 Mar 25	0.576	639	0.0032	0.0024	0.0021	0.0118	0.0122	0.0128
AQ6 (km4+400)	25 Jan 25	0.545	483	0.0028	0.0023	0.0017	0.0116	0.0121	0.0124
	26 Feb 25	0.571	458	0.0025	0.0021	0.0019	0.0115	0.0119	0.0123

Parameter		CO	CO ₂	NO	NO ₂	SO ₂	TSP	PM ₁₀	PM _{2.5}
MPC (mg/m ³)		5	3900	0.4	0.085	0.5	0.15	0.16	0.3
	21 Mar 25	0.566	476	0.0031	0.0026	0.0022	0.0118	0.0125	0.0129
AQ7 (km3+800)	25 Jan 25	0.534	538	0.0025	0.0020	0.0022	0.0118	0.0124	0.0127
	26 Feb 25	0.538	541	0.0028	0.0023	0.0019	0.114	0.0119	0.0125
	21 Mar 25	0.557	536	0.0030	0.0025	0.0020	0.0117	0.0122	0.0128
AQ8 Km1+440)	25 Jan 25	0.615	528	0.0028	0.0023	0.0019	0.0114	0.0118	0.0124
	26 Feb 25	0.558	531	0.0029	0.0024	0.0020	0.117	0.0123	0.0127
	21 Mar 25	0.576	543	0.0031	0.0028	0.0022	0.0119	0.0124	0.0129
AQ9 (Hoji Sharif Bazar km00+250)	25 Jan 25	0.628	574	0.0031	0.0026	0.0023	0.0125	0.0130	0.0136
	26 Feb 25	0.613	562	0.0035	0.0030	0.0026	0.0117	0.0124	0.0129
	21 Mar 25	0.622	638	0.0039	0.0035	0.0023	0.0126	0.0131	0.0137

Table 143: Results of Air Quality Monitoring for Lot -1 in 2nd quarter, 2025.

Parameter		CO	CO ₂	NO	NO ₂	SO ₂	TSP	PM ₁₀	PM _{2.5}
MPC (mg/m ³)		5	3900	0.4	0.085	0.5	0.15	0.16	0.3
AQ1 (Levakant Base Camp km9+200)	23 Apr 25	0.258	308	0.0027	0.0021	0.0014	0.0106	0.0117	0.0122
	03 May 25	0.246	302	0.0024	0.0018	0.0015	0.0102	0.0116	0.0121
AQ2 (Concrete Plant/ crushing plant km9+200)	23 Apr 25	0.467	453	0.0036	0.0024	0.0018	0.0097	0.0114	0.0118
	03 May 25	0.421	438	0.0032	0.0025	0.0020	0.0096	0.0112	0.0116
AQ3	23 Apr 25	0.511	753	0.0042	0.0035	0.0020	0.0119	0.0125	0.0132

Parameter		CO	CO ₂	NO	NO ₂	SO ₂	TSP	PM ₁₀	PM _{2.5}
MPC (mg/m ³)		5	3900	0.4	0.085	0.5	0.15	0.16	0.3
(km 9+20)	03 May 25	0.520	680	0.0038	0.0029	0.0019	0.0122	0.0128	0.0136
AQ4 (Gate of Village Council Gulistan km6+900)	23 Apr 25	0.543	607	0.0034	0.0026	0.0020	0.0117	0.0125	0.0130
	03 May 25	0.512	579	0.0032	0.0023	0.0021	0.0120	0.0128	0.0134
AQ5 (km6+100)	23 Apr 25	0.562	635	0.0038	0.0032	0.0019	0.0116	0.0124	0.0129
	03 May 25	0.526	608	0.0031	0.0025	0.0020	0.0123	0.0131	0.0139
AQ6 (km4+400)	23 Apr 25	0.527	591	0.0033	0.0025	0.0020	0.0119	0.0127	0.0134
	03 May 25	0.548	611	0.0036	0.0027	0.0016	0.0125	0.0132	0.0140
AQ7 (km3+800)	23 Apr 25	0.549	567	0.0035	0.0027	0.0024	0.0120	0.0128	0.0133
	03 May 25	0.565	619	0.0039	0.0030	0.0023	0.0124	0.0133	0.0141
AQ8 (Km1+440)	23 Apr 25	0.574	601	0.0031	0.0025	0.0018	0.0119	0.0126	0.0130
	03 May 25	0.583	624	0.0037	0.0027	0.0023	0.125	0.0134	0.0141
AQ9 (Hoji Sharif Bazar km00+250)	23 Apr 25	0.633	714	0.0034	0.0029	0.0021	0.0127	0.0135	0.0142
	03 May 25	0.613	728	0.0038	0.0032	0.0024	0.129	0.0138	0.0146

Table 15: Results of Air Quality Monitoring for Lot -2 in 1st and 2nd quarter, 2025.

Parameter		CO	CO ₂	NO	NO ₂	SO ₂	TSP	PM ₁₀	PM _{2.5}
MPC (mg/m ³)		5	3900	0.4	0.085	0.5	0.15	0.16	0.3
AQ1 Contractor's camp.	1 st Quarter 2025	0.640	579	0.0043	0.0035	0.0021	0.0118	0.0124	0.0130
	2 nd Quarter 2025	0.430	478	0.0041	0.0032	0.0019	0.0121	0.0127	0.0134
AQ2 km 9+722.	1 st Quarter 2025	0.750	711	0.0045	0.0032	0.0023	0.0120	0.0127	0.0135
	2 nd Quarter 2025	0.621	594	0.0047	0.0035	0.0021	0.0123	0.0129	0.0137
AQ3 km11+600.	1 st Quarter 2025	0.641	684	0.0037	0.0028	0.0019	0.0125	0.0131	0.0138
	2 nd Quarter 2025	0.539	586	0.0042	0.0034	0.0023	0.0123	0.0129	0.0135
AQ4 km12+400.	1 st Quarter 2025	0.644	702	0.0035	0.0028	0.0022	0.0130	0.0135	0.0142
	2 nd Quarter 2025	0.637	582	0.0038	0.0032	0.0020	0.0126	0.0131	0.0140
AQ5 Village Ergash	1 st Quarter 2025	0.542	643	0.0031	0.0024	0.0023	0.0126	0.0133	0.0139
	2 nd Quarter 2025	0.426	531	0.0035	0.0027	0.0016	0.0121	0.0128	0.0135
AQ6 km39+400.	1 st Quarter 2025	0.533	584	0.0029	0.0022	0.0020	0.0124	0.0131	0.0137
	2 nd Quarter 2025	0.507	572	0.0031	0.0025	0.0015	0.0123	0.0132	0.0139
AQ7 Crushing plant	1 st Quarter 2025	0.627	742	0.0041	0.0034	0.0025	0.0128	0.0137	0.0149
	2 nd Quarter 2025	0.481	526	0.0031	0.0024	0.0018	0.0122	0.0130	0.0138k

Leq = Equivalent continuous sound pressure level, in decibels

Table 165: Results of Noise Monitoring of 1st quarter, 2025 for Lot -1

	Location	National Standard	13 th Jan 25		25 th Jan 25		12 th Feb 25	
		Max (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))
AN1	Camp No. 1, Levakant, km 9+200.	55	43.2	36.1	42.2	35.6	43.1	37.9
AN2	Concrete plant km 9+200.	80	48.9	41.7	44.8	39.1	48.5	41.9
AN3	Km 9+720	75	63.5	52.6	67.7	59.0	62.8	53.9
AN4	Gate of the village council Gulistan km 6+900.	75	64.8	55.9	62.6	54.7	65.1	54.8
AN5	Km 6+100.	75	61.2	53.0	59.7	52.4	63.5	53.6
AN6	Km 4+400.	75	65.7	55.4	63.1	57.5	64.2	52.2
AN7	Km 3+800.	75	64.6	57.1	64.5	56.9	67.8	58.4
AN8	Km 1+440.	75	62.7	56.1	65.8	54.3	63.7	54.6
AN9	Near the Khochi Sharif bazaar km 00+250	75	69.9	60.5	69.2	61.7	70.6	63.8

	Location	National Standard	13 th Jan 25		25 th Jan 25		12 th Feb 25	
		Max (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))
	Location	National Standard	26 th Feb 25		10 th Mar 25		21 st Mar 25	
		Max (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))
AN1	Camp No. 1, Levakant, km 9+200.	55	41.8	34.3	42.1	35.7	40.6	33.7
AN2	Concrete plant km 9+200.	80	51.6	44.5	48.6	40.1	45.3	37.9
AN3	Km 9+720	75	65.2	54.2	63.8	54.0	63.5	55.2
AN4	Gate of the village council Gulistan km 6+900.	75	63.7	56.9	66.2	58.5	65.0	56.6
AN5	Km 6+100.	75	62.0	51.8	63.6	54.9	63.5	52.1
AN6	Km 4+400.	75	68.2	59.6	62.4	53.2	66.9	58.0
AN7	Km 3+800.	75	62.8	53.5	66.0	57.6	62.6	53.5
AN8	Km 1+440.	75	67.2	59.1	65.7	56.1	65.0	57.8
AN9	Near the Khochi Sharif bazaar km 00+250	75	70.3	62.5	68.2	59.4	67.8	58.3

Table 176 Results of Noise Monitoring of 2nd quarter, 2025 for Lot -1

	Location	National Standard	12 th Apr 25		23 th Apr 25		03 rd May 25	
		Max (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))
AN1	Camp No. 1, Levakant, km 9+200.	55	38.4	32.0	38.6	31.3	37.6	32.1

	Location	National Standard	12 th Apr 25		23 th Apr 25		03 rd May 25	
		Max (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))	Max (dB(A))	Min (dB(A))
AN2	Concrete plant km 9+200.	80	43.2	36.7	42.8	35.9	41.5	33.5
AN3	Km 9+720	75	61.7	51.8	64.6	55.1	63.7	54.8
AN4	Gate of the village council Gulistan km 6+900.	75	63.0	54.5	63.4	53.8	66.3	55.4
AN5	Km 6+100.	75	63.3	53.2	61.3	62.6	64.7	53.2
AN6	Km 4+400.	75	66.8	55.4	66.7	58.6	67.0	58.4
AN7	Km 3+800.	75	62.7	50.1	65.4	57.2	64.2	54.9
AN8	Km 1+440.	75	64.3	54.8	64.9	56.8	62.6	52.7
AN9	Near the Khochi Sharif bazaar km 00+250	75	66.7	58.5	68.7	60.9	68.4	59.3

Table 187: Results of Noise Monitoring 1st quarter, 2025 of Lot -2

No.	Location	National standards (residential and industrial).		Monitoring Data 3 rd Quarter 2024	
				Max	min
AN1	Contractor's camp	55	45	47.9	39.6
AN2	Km 9+722	75	75	65.3	54.1
AN3	Km 11+600	75	75	62.0	53.9
AN4	Km 12+400.	75	75	60.7	51.5
AN5	Village Ergash near school	75	75	63.5	54.8
AN6	Km 39+400	75	75	60.6	52.4
AN7	Crushing plant.	80	80	74.2	65.7

Table 198: Results of Noise Monitoring 2nd quarter, 2025of Lot -2

No.	Location	National standards (residential and industrial).		Date of monitoring , 27.12 .202 4.	
				Mach	min
AN1	Contractor's camp,	55	45	44.8	37.2
AN2	Km 9+722	75	75	61.9	53.7
AN3	Km 11+600	75	75	58.3	50.4
AN4	Km 12+400.	75	75	61.2	53.7
AN5	Village Ergash near school	75	75	59.8	52.5
AN6	Km 39+400	75	75	56.4	47.9
AN7	Crushing plant.	80	80	54.1	43.6

APPENDIX 3 - INCIDENT REPORT

INCIDENT REPORT

Project Number: Grant 0859-TAJ
April 2025

Road Network Sustainability Project (Additional Financing).

	CLIENT: PROJECT IMPLEMENTATION UNIT OF ROAD REHABILITATION
	CONSULTANT: SMEC INTERNATIONAL PTY. LTD.
	SUB-CONSULTANT: BARS CONSULTING
	CONTRACTOR: ZAVODI ASPHALTU BETON "ZAB"

I. Introduction

1.1. Purpose of the Report

The purpose of the Incident Report is to analyze the cause of rockfall. The report covers the details of the incident based on the available information collected by the Client, Engineer, and the Contractor. During the implementation of the Project for the rehabilitation of the Bokhtar-Levakant-Okmazor Road section, this is the first incident that has taken place within the Project boundaries, namely Lot-2, from PK 186+40 to PK 187+40.

1.2. Incident Overview

On 31.03.2025 on the construction area at the site of works there was a slope failure of rock excavation at PK 186+40 - PK 187+40 because of which 7 people were injured to various degrees and were hospitalized in the Central City Hospital of Levakant city. In order to investigate this emergency case, a Commission was supposed to be established from among the participants of the construction requirements of the GCC, as well as structures of various supervisory bodies and agencies of the Republic of Tajikistan were involved to check compliance with the Labour Law. However, for the urgency of evacuation and cleaning the debris for opening traffic movement, the team members were limited to the Client, Supervision Consultant and Contractor. The Contractor submitted a written notification on the third day, but prior to that, on the day of the incident, the Contractor, Engineer and Employer verbally, via mobile phone, addressed the local authorities about the situation and appropriate measures were taken to prevent reoccurrence of rubble, which were subsequently implemented.

Responsible team for incident are:

1. Umed Mahmadnakibov – PIU Project Manager;
2. Aynidin Karimov – representative of BARS DTL;
3. Hukmatov Toir – Head of ZAB.

If necessary, in the future, the legal assessment will be issued by the investigative authorities of the Republic of Tajikistan after completion of all operational-search activities, interviewing of witnesses and consideration of the case on the basis of the Criminal Procedure Code in accordance with the established procedure. Based on this, if necessary, a Governmental Commission for accident investigation may be established and the aspects leading to the accident will be assessed. It shall consider:

Firstly, if necessary, the investigation of the accident leading to the injury should be evaluated by the qualified members of the commission and labor inspectors. In our opinion, the said incident cannot be treated as an industrial accident or not be subject to an industrial accident report.

Secondly, the decision on qualification and registration of this incident as an industrial accident is taken by the Government commission established by the Government, considering the information obtained during its investigation. The members of the commissions that conduct accident investigations in accordance with the established procedure are personally responsible

for the objectivity of the conclusions and decisions made by them based on the results of the accident investigation. In our case, according to the GCC requirements, the injuries were sustained by third parties using the facility and the establishment of the Government Commission is beyond our competence.

Thirdly, if, in the course of supervisory and control activities, members of the Government Commission and labour inspectors determine the circumstances and materials of the accident investigation, and, if necessary, an additional investigation of the accident is conducted (if necessary, with the participation of the injured person or his/her proxy, officials of other state supervision and control bodies, and representatives of the insurer). Based on the results of the additional investigation, the labour inspector draws up an accident investigation report in the prescribed form and issues a corresponding instruction, which is binding on the employer (its representative). In our case, there is no need for additional investigation, unless otherwise proposed by law enforcement agencies and other authorities.

Fourthly, the responsibility for timely and proper investigation, registration, recording and accounting of industrial accidents, as well as implementation of measures to eliminate the causes of industrial accidents, according to the GCC is assigned to the Contractor with timely submission of necessary information to the Engineer and the Employer. In our case, we make the prescribed form and provide necessary additional information, if necessary, as third parties or beneficiaries are affected.

In this case, the Engineer preliminarily defined the situation as force majeure and involved geological experts to assess the situation (report provided). GCC 8.12: Resumption of Work, requires the Contractor to re-inspect the Facilities, Equipment and Materials affected by this situation. The Contractor has already received an appropriate letter of instruction from the Engineer to address any deficiencies in non-compliance with the conditions of the health and safety regulations, to ensure that the temporary scheme is safe for road traffic and to ensure that the circumstances of the cause of the tragedy are identified. In general, the joint opinion of the Engineer, the geologist involved and the designer should be taken into account that in order to prevent a reoccurrence of the collapse at this site. In the opinion of the geologist it is not desirable even to clean up the existing left slope of the landslide and if necessary to shift the axis of the route to the right by 10-12 metres, but in the opinion of the designer this is also associated with the risk of a new rockslide in the spoil zones, as there used to be deep gorges and depressions on the right side. The Engineer notes that under the terms of the Contract, all risks of debris removal on the slopes are borne by the Contractor.

In light of this we remind that at the landslide site it was recommended to make the slopes of the excavation walls (landslide site), the wall frills should be made as vertical as possible (according to the proposed design 1:0,5) and not to make the device of protective shelves to reduce the area of the slope from atmospheric precipitation, because at this site the rocks consist of heterogeneous soils at an angle of 20-60 degrees, which partially led to the landslide of fractured rocks. After completion of the rockslide site cleaning and shaping works, it is necessary to re-organize the works on observation of the excavation slope and backfilling of the roadbed during the warranty period (4-6 months) to restore the asphalt concrete pavement of the destroyed section of the road.

Figure 7 Slope Slide at km 186+40 to 187+40 /









Figure 8 Victims evacuation by Emergency Staff



1.1.2 News of the Incident on social media

The incident was captured and published by many social media reporters giving the same level of information. There are few of those social media links provided below to review the incident properly. The Engineer has overviewed the news and hereby confirms there are no contradictory information regarding the incident. For more details please, visit the below provided links:

AVESTA INFORMATION AGENCY

<https://avesta.tj/2025/04/01/na-avtodoroge-levakant-dangara-proizoshel-kamnepad-postradavshie-gospitalizirovany/>

Asiaplus.tj

<https://asiaplustj.info/en/node/347303>

Arbat Media

<https://arbatmedia.kz/evraziya/kamnepad-v-tadzikistane-zavalil-dve-masiny-sem-celovek-postradali-56767>

1.3 Scope of the Site Visit

The Construction Supervision Consultant (CSC) Engineers along with Project Manager (PM) from PIU RR visited the spot-on 31 March 2025, and organized on-site meeting with the Construction Contractor (CC). The Contractor has been guided and instructed to take the following measures:

- 1) To arrange medical screening for the incident casualties.

- 2) To clear up the fallen rocks and debris from the carriage way,
- 3) Install necessary road warning signs from two sides of the damaged section,
- 4) Restore the road section for vehicles passing through.

II. Details of the Incident

2.1. Incident Description:

A severe rock slid occurred at PK 186+40 to 187+40 of Levakant-Dangara road on 31st March 2025 at appx. 14:30 hrs., a rockfall occurred on the right side of the mountain ridge, because of which Mercedes-Benz and Opel Zafira cars were damaged technically.

The passengers of the Mercedes-Benz were not taken to hospital for examination due to minor injuries.

Two vehicles, a blue Opel Zafira with registration number 4667SS03 driven by Abduiev Murodali Yusupovich, and a white Mercedes-Benz with registration number 4559 RS01 driven by Maqsudov Fayzidding Huseynovich, were damaged in the incident.

The six passengers of the Opel Zafira were injured and admitted to hospital; however, the driver was not injured.

There were not injured people in the Mercedes, thus no medical care was required.

The driver of the Opel Zafira, Yusupov Murod, feels well. Passenger Kholova Mamlakat received serious injuries and was hospitalized in the intensive care unit of Levakant City Hospital.

Passengers Abdulloeva Khaticha, Tokhirova Kurbanbi, Alododova Barfimoh, Tokhirova Gulbarg and Zokirova Munira feel well and are under the medical care of doctors of Levakant City Hospital. The above-mentioned citizens are residents of the city of Nurek.

According to the chief doctor of the central hospital of Levakant city Emomov H.S. on March 31, 2025 at 15:00 by ambulance 6 victims were brought to the receiving department of the hospital.

From the history it was established that as a result of falling of stones from the mountain on the road Levakant-Dangara two cars were damaged. Names of the injured persons:

1. Kholova Mamlakat, 1957, Norak, Gafilabad village, diagnosis: Open craniocerebral trauma. Moderate infantile cerebral palsy. Wounds on the scalp on both sides and in the left frontal area with bleeding. Anemia of moderate to severe degree. In the intensive care unit. Condition of average severity, no deterioration of hemodynamics.
2. Abdulloeva Khatica, born in 1954, Nurek city, Energetik village. Diagnosis: Soft tissue edema in the area of the skull base on both sides and at the back of the head. Surgical department.
3. Tohirova Gurbanbi, Nurak city, Nurafshonshokh village. Diagnosis: Soft tissue edema and soreness of the chest and right knee joint. Surgical department.
4. Aladodova Barfimo, born in 1964, Nurek city, Sulaimon Niyoz village. Diagnosis: Edema and soreness of soft tissues of the chest and neck. Surgical department
5. Tokhirova Gulbarg, born in 1959, Nurak town, Nurafshonshokh village. Diagnosis: Edema and soreness of soft tissues of the chest and neck. Surgical department.
6. Zakirova Munira, born in 1988, Nurek city. Diagnosis: Hemorrhage in the left frontal region. Soft tissue edema and chest pain. Surgical department.

As of April 4, 2025, 5 patients were discharged home. Only 1 patient, Kholova Mamlakat, was discharged from the hospital on April 9, 2025 after undergoing treatment and improving her condition and was undergoing out-patient treatment at home. This is evidenced by an excerpt from the medical history issued by the Levakant Central Hospital dated April 9, 2025.

An unfortunate event⁷ occurred during public holidays where the Contractor staff was in day off and only the mechanical engineer was on duty. The staff reacted promptly to the situation and reached the accident area contacting the hospital emergency staff for evacuation of victims from the disaster zone. The victims were taken to hospital by ambulance⁸ personnel and admitted for further treatment. The Contractor has taken responsibility of all expenditures to the victims and had a direct contact with victims.

The conditions of occurrence of soil types are presented in the engineering-geological section constructed on the longitudinal profile and on the transverse profiles. At the design stage the selection of engineering-geological elements was carried out based on the results of analysis of spatial variability of partial indicators of soil properties determined by laboratory and field methods, considering data on geological structure, lithological features of soils, their origin and age. Subsequently there were some corrections noted in the geotechnical report.

2.2 Chronological/historical order of incident:

⁷ See figure 1

⁸ See figure 2

During the inspection of the road on 5th December 2024, the Engineer observed slope sliding and rock separation in the section from PK 186+40 to 187+40 on the left side of the road. The danger of slope sliding and rock fall could be possible in the rainy days or winter period, therefore the Engineer instructed the Contractor to maintain the Rock fall road sign continuously, increase equipment and manpower to clear and remove fallen rocks and loose materials from the road surface in order to keep the carriageway open for traffic movement. This information refers to letter No. SMEC.5019023.L-O.OCB.CW-01.2022- No. 305 dt. 05.12.2024 with attached photos of cracks appeared before Rock fall.

After each case of precipitation, seasonal temperature changes, the risk of destruction of the active road in the works section PK 185+80 - PK 187+40, PK 188+80 - PK 189+40 and PK 192+60 - PK 193+60 increases. According to our observations, during the precipitation period of 15-16 December 2024, the slopes of the excavations started to collapse again, rocks fell on the active road in this section, which might lead to even more unpredictable consequences after the ground collapse. According to the requirements of the Contract, the Contractor, irrespective of other obligations, is obliged first to ensure the traffic safety of the road in operation. It should be borne in mind that it is practically impossible to close the existing Bokhtar - Dangara road on this road section.

Due to the high risk of collapse of the road section, the Engineer recommended:

- increase the manpower, accelerate the excavation slope edging works on these sections with the involvement of additional earthmoving equipment and timely provision of fuel and lubricants to complete the works.
- in case of delay or impossibility to complete the above works an alternative bypass temporary road at these sites with submission of the road bypass scheme was asked to submit to the Engineer and coordination with the Traffic Police Department of the Republic of Tajikistan in accordance with Section 1301.18 of Part 2 of the Specifications.
- This information refers to letter No. SMEC.5019023.L-O.OCB.CW-01.2022- No. 308 dt. 18.12.2024.

2.3 Care of the impacted persons.

The PIURR Project Manager, CSC and Contractor's representatives who were on site were immediately involved in providing assistance to all the above-mentioned affected persons. Thus, in addition to medical examination and medical assistance by doctors, the project representatives provided them with material assistance.

- 2.4 Possibility of a bypass scheme:

The section of Km 18 is at a high profile and there is no existing local road around, which could be connected to the main road to facilitate a diversion road. However, during the road blockage the vehicles also availed the diversion road between Sangtuda and Levakant Road.





III. Site Visit Observations

3.1 Site Condition:

The Engineer had visited the site of Lot 2 on 1st, 3rd, 9th, 18th, 23rd, 25th, and 29th April 2025 was in touch with the Supervision Consultant staff permanently present at site. Daily Work Progress reports are sent to the Client, Engineer, which confirm the fact that the maximum amount of fallen rock and debris has been cleared from the damaged section of the road and taken to the dumping area, which allows two-way traffic movement. The flag men are controlling the traffic continuously during the clearance of the remaining debris from the road. The Contractor has mobilized the number of the equipment to the damaged section and currently 2 Excavators, 1 hydraulic hammer and 2 Loaders, 4 Dump trucks are operating.





3.2 Site safety arrangements

Regarding site safety arrangements, it should be noted that a water sprinkler is continuously watering the damaged section to suppress dust during the work. Road safety warning signs have been installed on both sides of the road, two flagmen are controlling the traffic, safety tapes have been placed in the affected area to warn drivers to take a safer direction, and the workers have been consulted on safety measures.











IV. Findings and Analysis

4.1 Compliance Check

As per requirement of the contract, the Contractor has submitted the SS EMP (and regularly submits the quarterly EMR. Safety training was provided at site by the Intl.. Refer to SS EMP Chapter 2.5 Environmental Values, Sensitive Receptors and Risk Assessment.

The Contractor complies with environmental standards considering Management of physical Environment by conducting chemical analysis of water, instrumental measurements of atmospheric air, noise levels and vibration,. These results are regularly reflected in the quarterly environmental reports. Besides that, the Contractor always suppresses the dust in the earthwork sections by water sprinklers to reduce the risk of poor visibility and potential road accidents. The contractor reports the dumping of the construction waste and substandard soil into the designated area.

The workers and Engineers were provided with protective equipment and special clothing in timely manner. The Contractor has established close contact with Health Authorities of the Levakant city to facilitate the treatment of any injured workers.

4.2 Root Cause Analysis

During the course of their construction supervision duties, the Engineer's representatives, while inspecting the work sites and their adjacent areas, identified that there was a rock outburst on the left side of the road at PK 186+40 to 187+40. This incident was assessed by the Engineer as a potential risk of rock fall. In this regard, to avoid damage to workers and other road users, the Engineer informed the Contractor that the risk of slope sliding and ground circulation could occur in the coming rainy days. Therefore, the Contractor has been instructed to be ready with the

necessary equipment and manpower to clean and remove fallen rocks and preserve the roadway for vehicle traffic.

Several factors influences on the rockfall as mentioned below:

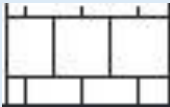
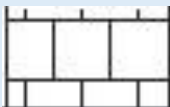
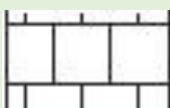
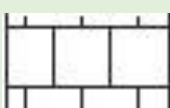
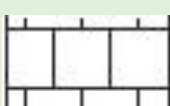
i) Environmental Factors:

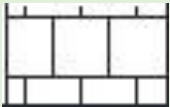
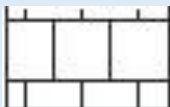
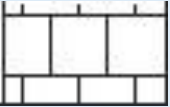
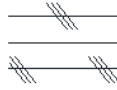
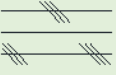
During the geotechnical investigations for project design, cracks of substantial size were identified on the mountain slopes, including at km 18+200 – 21+540, which were caused by ongoing seismic shocks from earthquakes.

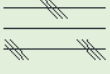
Thus, the initial reason for the rockfall at km 18+640 - 18+740 was the widening of existing cracks and plastered calibrated limestone that were recorded during the study period during detailed design.

Since the cracks were filled with wind-borne sediment products from among clay and sand fractions, they were gradually filled with water during rainy seasons of precipitation and due to swelling and expansion of the clay soils, as well as due to localized seismic shocks during an earthquake, resulted in a sudden collapse.

The conditions of occurrence of soil types are presented in the engineering-geological section constructed on the longitudinal profile and on the transverse profiles. At the design stage the selection of engineering-geological elements was carried out based on the results of analysis of spatial variability of partial indicators of soil properties determined by laboratory and field methods, taking into account data on geological structure, lithological features of soils, their origin and age. Subsequently there were some corrections noted in the geotechnical report. There are 18 Engineering-geological elements along the road route. Below is the description of normative and calculated characteristics of soils of the identified engineering-geological elements presented in the Contractor's geotechnical report:

PROJECT ПО ПРОЕКТУ	134+00	134+40	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6			
PROJECT ПО ПРОЕКТУ	135+40	141+00	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6			
REVISION ПЕРЕСМОТР.	135+40	140+00	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6		LHS / Лев.сторона	
REVISION ПЕРЕСМОТР.	141+30	141+40	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6		LHS / Лев.сторона	
REVISION ПЕРЕСМОТР.	138+80	140+40	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6		RHS / Прав.сторо на	

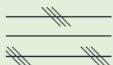
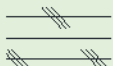
REVISION ПЕРЕСМОТР.	141+20	141+30	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6		RHS / Прав.сторона	
PROJECT ПО ПРОЕКТУ	182+00	215+40	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6			
PROJECT ПО ПРОЕКТУ	235+40	238+00	16в	Gypsum-covered limestone, cracks filled with clay soil R-7 B.V-6 Известняк загипсованный, щели заполненный глинистым грунтом Р-7 Б.В-6			
PROJECT ПО ПРОЕКТУ	226+60	235+00	1а 16	Siltstone, light green in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит светло-зелёного цвета, низкой прочности, комковатый, размыкаемые Е-4, Р-4, Б.В.-4			
REVISION ПЕРЕСМОТР.	144+20	145+40	1а 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	

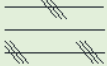
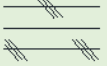
REVISION ПЕРЕСМОТР.	144+30	147+20	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алеврит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS / Прав.сторон а	
REVISION ПЕРЕСМОТР.	149+20	150+20	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алеврит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS / Прав.сторон а	Up to slope / До откоса
REVISION ПЕРЕСМОТР.	149+20	149+30	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алеврит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	All / Все части
REVISION ПЕРЕСМОТР.	149+60	149+70	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алеврит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	All / Все части
REVISION ПЕРЕСМОТР.	150+80	151+80	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алеврит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	Top 4m is soil / Верх 4м грунт

REVISION ПЕРЕСМОТР.	181+00	215+40	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS/LHS	Both side / Обе стороны
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ii)

REVISION ПЕРЕСМОТР.	179+40	181+00	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS / Прав.сторона	
REVISION ПЕРЕСМОТР.	180+60	184+80	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS / Прав.сторона	
REVISION ПЕРЕСМОТР.	217+20	217+30	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	Up to slope До откоса
REVISION ПЕРЕСМОТР.	221+80	222+80	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4		RHS / Прав.сторона	Top 1m is soil

REVISION ПЕРЕСМОТР.	222+80	224+00	1a 16	Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	Верх 1м грунт
				Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.			All / Все части
				Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.			Both side / Обе стороны
				Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.			Top 10m is soil Верх 10м грунт
REVISION ПЕРЕСМОТР.	233+10	234+60	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	Bottom 3m is hard / Нижняя часть

REVISION ПЕРЕСМОТР.	279+20	285+60	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	3м твёрдая
							All / Все части
REVISION ПЕРЕСМОТР.	280+40	281+20	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS / Прав.сторона	All / Все части
REVISION ПЕРЕСМОТР.	284+60	285+60	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		RHS/LHS	All / Все части
REVISION ПЕРЕСМОТР.	286+40	289+00	1a 16	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.		LHS / Лев.сторона	Top 10m is soil Верх 10м грунт

REVISION ПЕРЕСМОТР.	286+40	290+80	1a 1б	Siltstone, dark brown reddish in color, low strength, lumpy, unlockable E-4, R-4, B.V.-4 Алевролит темно-буро-красноватого цвета, малопрочный, комковатый, открываемый Е-4, Р-4, Б.В.-4.			Top 3m is soil Верх 3м грунт
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Drilling and blasting operations should be carried out in ledges, from top to bottom. The height of the ledge is determined by the design contour of the excavation, the terrain and the technical characteristics of earthmoving machines. Drilling and blasting operations should ensure the necessary crushing of the blasted rock mass, which makes it possible to organize high-performance work of earthmoving machines and mechanisms, obtaining recesses of design dimensions with minimal amounts of planning and other additional work, as well as with minimal disruption of slopes and bulkheads along the bottom and sides of the recesses.

Despite all the above circumstances and justifications, on 03/31/2025, a rock slope collapse was noted at PK 186+40 - PK 187+40, which led to injury to individual users of this project and material damage.

Further, the Engineer acted in accordance with the provisions of the Contract GCC Sub-Clause 8.12 Resumption of Work, and issued appropriate instructions on removing the blockage and ensuring road safety following GCC Sub-clause 4.8.

ii) Contractor's Responsibility and Liability:

Following GCC 4.1 Contractor's General Obligations, the Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction.

The Contractor shall provide a comprehensive SSEMP covering the following aspects:

Dust management, Air quality, Water quality, Noise and vibration management, Emergency response plan, waste management plan etc. as mentioned in the Employer's Special Requirements.

iii) General Worksite Safety Compliance:

As per GCC Sub-Clause 4.8 Safety Procedures, the Contractor shall comply with all applicable safety regulations.

Visual engineering-geological survey of Bokhtar - Dangara road section between PK 189 - 194 was performed by A.S.Akhmedov, Engineer-Hydrogeologist of Engineering Geology Department of in the presence of B.Kodirov, Project Manager, RNSP, Sub-Consultant BARS.

The road route runs along the western slope of the Tabakchi Ridge.

The geological structure of the territory includes rocks of Palaeogene-Neogene age represented by gypsums, limestones, dolomites, marls, clays. The rocks fall westwards at angles from 26-45° to 60-80°, i.e. parallel to the slope surface.

Most of the rocks are fractured, fragmented and highly weathered. Some rocks (limestones, dolomites, marls) are massive, slightly fractured.

Rockfall occurred on 31 March 2025 at PK 189-190 at approximately 16pm and on 31 March 2025 at PK 192-194 at approximately 14:30pm from the upper slope of the road.

The landslides temporarily blocked the road in two sections. No human casualties were noted.

The cause of rockfall accidents was the disturbance of stability of the rocks composing the slope due to:

- Large steepness of the rock fall towards the road from the upper slope;
- Cracking, fragmentation and weathering of the rocks composing the slope;
- Seismic shocks during earthquakes (up to 30,000 and more cases per year are recorded);
- Vibrations from motor transport, especially heavy vehicles;
- Moistening of rocks during rains and snowmelt and subsequent sliding down of different rocks among themselves.

4.4 Potential Impact

The incident did not impact workers as there was no workers at the site due to public holiday but affected road users, who were traumatized, prompting immediate support measures and a thorough review of existing safety protocols. This event also increased the recognition of the need for heightened alertness and enhanced preparedness for future natural disasters, leading to the implementation of more frequent safety drills, improved early warning systems, and a renewed focus on risk assessment and mitigation strategies along this vulnerable road section.

The Contractor has been instructed to excavate the rock material with a berm of 7m, which is outside the initial drawings, to provide a safe space between the traffic and the rock slope.

This rockfall incident has significantly impacted the original contract volume and construction period. Although excavation in this section was nearing completion, the rockfall now necessitates additional time for further excavation and overall Project completion.

Moreover, a Performance Based Maintenance Contract (PBMC) might also be required for four years after the completion of the Defect Notification Period (DNP).

4.5 Mitigation Measures:

The Contractor has completed the clearance of debris, installed temporary fencing, reflective tape and road signs and started installation of the permanent hard barriers.

Currently, the Contractor has started to fence off the areas where road works are in progress installing temporary traffic cones to ensure road safety and traffic restriction signs until the works are completed on each road section.

4.6 Lessons Learned

Considering the recent rockfall incident, the following key lessons have been learned, necessitating a greater focus on these critical factors:

- a) Vulnerability of the Road Section:** The incident highlights the inherent geological instability and vulnerability of this particular section of the Bokhtar-Levakant-Okmazor Road to natural events like rockfall. This underscores the need for proactive and continuous monitoring and mitigation efforts in such terrain.
- b) Potential for Improved Early Warning Systems:** The incident prompts a consideration of whether more advanced early warning systems could be implemented in the future for this and similar high-risk sections. This could involve geological monitoring, weather forecasting integration, or other technological solutions.
- c) Importance of Berm Design and Placement:** The instruction to excavate a 7m berm (outside initial drawings) underscores the critical role of appropriately designed and positioned berms in providing a safe buffer zone between traffic and rock slopes. This needs careful consideration in future designs.

V. Recommendations

5.1 Corrective Actions

A. Short-Term Actions (Immediate - within 1-4 weeks):

- Clearance of the fallen rocks and debris from the carriageway,
- Installation of Road safety warning signs,
- Psychological support to the workers
- Suppressing the dust on the damaged section for clear visibility

B) Mid-Term Actions (Within 1-6 months):

- Slope stabilization measures,

C) Long-Term Actions (Beyond 6 months and ongoing):

- Consideration for PBMC after DNP is over,

5. Initial brief Action Plan: short, mid and long-term actions (detailed and extended Action Plan to be included in the revised incident report)				
#	Required Actions	Target Dates	Responsible	Implementation status
Short-term/immediate				
1	To keep the installed advisory signages warning drivers not to enter the area due to potential danger.	Constantly	MOT/PIURR	The warning signs have been installed in place and the damaged section is being controlled by flag men. 
2	The warning signs shall be relocated closer to the road, to be more visible for the road users (ref. photos on pages 14 -16 in the Attachment 1. The warning signs is a white colored rectangle with an approximate L * W size of 2 m * 1.5 m located on the	ASAP	MOT/PIURR	The sign location has been adjusted to improve visibility.

	right side of the road/pedestrian area).			See below latest Photo: 
3	Sufficient lighting shall be used in the incident section to ensure adequate visibility for the road users during nighttime.	Constantly	Contractor CSC	As the significant part of the cleaning works have been completed, no works are being executed during the nighttime in the incident section.
4	To ensure that the area where the cleaning works are performed is properly separated from the road section open for traffic, and adequate mitigation measures implemented to intercept falling of the rocks to the road surface.	Constantly	Contractor CSC	During the cleaning works, the traffic was properly separated from the working area using safety tape, and traffic controllers were present to manage and monitor the affected section, ensuring the safety of both workers and road users.
5	To ensure that flagmen are present 24 hours at both ends of the road section to control traffic.	Constantly	Contractor CSC	No works are being executed during the nighttime in the incident section.
6	Not to perform works during nighttime.	Constantly	Contractor CSC	No works are being executed during the nighttime in the incident section.
7	To ensure that all other applicable requirements are followed as per:	Constantly	Contractor CSC	Described in detail in Chapter 4.1 Compliance Check.

	(i) IEE, Section B, Sub-section 9, paras 306–311 and EMP Clauses 136–143, and (ii) Clause 6.7 of the Particular Conditions of Contract CW-01/Lot 2.			
8	To continue cleaning of the road section from rocks and inform all parties once cleaning works are completed.	ASAP	Contractor	The road section has been cleaned from rocks, and the excavation of rock material is ongoing in this section.
9	To share photos and videos from the incident site with ADB on a daily basis.	Constantly	PIURR	The daily reports covering 15 days activities prior to incident and 15 days after the incident have been submitted to PIU RR.
Mid-term				
1	To share with ADB the medical report of Ms. Kholova Mamlakat	11 April 2025	PIURR	There is handwritten confirmation by Ms. Kholova Mamlakat regarding no-objection submitted to PIU RR.
2	To share with ADB the report of the independent Governmental Investigation Committee with results of: (i) independent root cause analysis on the incident site, (ii) assessment of the entire project road and all its slopes in terms of potential risks of rockfalls/landslides, (iii) findings and recommendations to mitigate the risks of future	15 April 2025	PIURR	

	possible rockfalls/landslides.			
3	To share with ADB: (i) approved Contractor's SS EMP. (ii) Health and Safety Management Plan (H&SMP). (iii) Traffic Management Plan (TMP). (iv) Emergency response plan (ERP). (v) traffic emergency response plan (TERP).	15 April 2025	PIURR CSC	SSEMP – submitted to PIU RR H&SMP – submitted to PIU RR TMP – submitted to PIU RR ERP – submitted to PIU RR TERP – submitted to PIU RR
4	To share with ADB the revised incident report as per comments dated 5 April 2025, and with: (i) The medical reports of Ms. Kholova Mamlakat and other victims in English language. (ii) The evidence (photos, receipts, etc.) proving that treatment of the victims and repair of the damaged	15 April 2025	PIURR CSC	The medical reports of the affected people have been submitted to PIU RR. Chapter 4.1 has been edited accordingly. The verbally stated conclusions were based on the submitted Quarterly Environmental reports submitted by the Contractor.

	vehicles have been fully covered by the Contractor. (iii) Additional clarifications on verbally stated conclusions on Contractor's compliance with safeguards requirements before the incident date, and adherence to safety protocols during and after the incident date.			
Long-term				
1	To conduct comprehensive Occupational Health and Safety (OHS) training for PIURR and Contractor's staff. Include results in the next SA EMR for the reporting period January-June 2025.	Before 30 April 2025	CSC	The RS training for PIURR and Contractor staff was carried out by the International Road Safety Expert and the Presentation, and the list of participants will be included in the upcoming SA EMR Jan-Jun'25.
2	To update the relevant project documentation based on the lessons learned.	To be confirmed	PIURR CSC	
3	To make design changes and increase the number of warning signs if deemed necessary as per conclusions in the report of the Governmental Investigation Committee	To be confirmed	PIURR CSC	According to the Project, the slope of rock excavation was 1:0.2 which was followed by the Contractor during Rock excavation. After the incident the design has been revised to slope of 1:0.5 to reduce the rockfall.

	and conclusions in the incident report.			
4	To increase the number of warning signs	To be confirmed	PIURR CSC	Since the start of the construction works, more than 100 road and warning signs and 2 advertising banners have been installed.

VI. Conclusion

6.1 Summary of Key Findings: Brief summary of the main findings and their implications.

The rockfall incident on the Bokhtar-Levakant-Okmazor Road, Lot-2, PK 186+40 to 187+40, was likely triggered by natural causes, highlighting the inherent geological instability of this road section. Key findings from the initial assessment indicate:

- **Vulnerability of the section:** The incident underscores the significant vulnerability of this specific terrain to rockfall events, necessitating a shift towards more proactive and continuous monitoring and mitigation strategies.
- **Managing Traffic Disruption:** Immediate road closure and traffic management effectively prevented further harm to road users. After the incident of Rock fall, the road was fully blocked with huge rocks. The traffic management team did not allow the vehicles approaching both ends to take any risk to pass the rockfall area. The debris was cleaned from the road till 04:30am of 1st April 2025 to open one way traffic movement regulated by flagmen from both ends.
- **Requirement for Additional Mitigation:** The need for a 7m berm, beyond the original design, emphasizes the reconsideration of initial plans in addressing the site's geological challenges.
- **Potential for Enhanced Early Warning:** The event raises the possibility of implementing advanced early warning systems to provide timely alerts for future potential rockfall.
- **Impact on Project Timeline and Cost:** The incident has inevitably impacted the original contract volume and construction period, requiring additional excavation and time for project completion.

In conclusion, it should be noted that the rockfall incident at this location is considered Force Majeure according to GCC Clause 19.1, Definition of Force Majeure, which outlines the

Consequences of Force Majeure, entitling the Contractor to an Extension of Time for any such delay and cost incurred, subject to Sub-Clause 20.1 [Contractor's Claims].

The Contractor has been instructed to submit their claim for the removal of debris to open the traffic, cost of repairing the two damaged vehicles, treatment cost of the victims of

Rockfall and any other cost incurred. The Engineer will proceed in accordance with the Sub-Clause 3.5 [Determinations] and submit a Variation Order to the Client for further recommendation and approval from the ADB.

Appendix No. 4. Corrective Action Plan

GRANT No. 0859–TAJ: LOT–2 Road Network Sustainability Project – Additional Financing
Contract CW–01: Bokhtar–Okmazor Road Rehabilitation (Lot 2: Levakant–Okmazor, Km 9.72 to Km 40.00)
Subject: Corrective Action Report on Non-Compliance Observed by ADB During Site Visit on 17 June 2025

Background:

During the site visit conducted by the Asian Development Bank (ADB) on 17 June 2025, several non-compliance issues were identified on the project site, specifically related to:

- Absence of temporary fencing around hazardous areas,
- Lack of appropriate road signs to inform and guide site traffic and public,
- Insufficient presence of traffic regulators to manage vehicle and pedestrian movement, and
- Inadequate use of personal protective equipment (PPE) by workers at the site
- A worker has filed a complaint regarding the lack of drinking water at construction sites and non-payment of wages.

Corrective	Actions	Taken:
Following these observations, the Project Implementation Unit for Roads Rehabilitation (PIU RR) management team acted promptly to rectify the issues as follows:		

1. Temporary Fencing:

Temporary fencing was installed around all hazardous and restricted areas to prevent unauthorized access and ensure safety for workers and the public.

2. Road Signs:

Appropriate Road signage was procured and erected at key points along the project corridor to provide clear guidance for traffic management and enhance safety awareness.

3. Traffic Regulators:

Qualified traffic regulators were mobilized and assigned at critical locations to effectively manage vehicle movement and pedestrian safety during construction activities.

4. Personal Protective Equipment (PPE):

Strict enforcement of PPE use was reinstated, with regular safety briefings conducted to ensure all site personnel comply with safety standards. Adequate PPE supplies were made available on site.

5. Drinking water and salary:

The Contractor is now providing drinking water at the construction sites, including both still and mineral water options. Additionally, the issue of unpaid wages has been addressed, and salaries have been paid. This was confirmed during a site visit conducted by ADB representatives on July 14, 2025. During an interview with a local worker, it was also confirmed that wages have been issued.

We would also like to note that the contractor has currently cleared sufficient space, and the roadway in the affected collapse areas is now adequately widened, eliminating the need for additional lighting at night.

Evidence of Implementation:

To demonstrate compliance and effective implementation of corrective actions, photographic evidence has been collected on different days post-observation. These photos clearly show:

- Installed fencing and barricades,
- Placement of road signs,
- Traffic controllers actively managing site traffic, and
- Site workers properly equipped with PPE,
- Drinking water on the construction site.

(Dates are indicated on the photos attached to this report.)

Dust Control Measures











The flagman is on site











Installation of the temporary road signs







Performing works to eliminate collapse



Personal Protective Equipment



Drinking Water on Construction Sites



APPENDIX NO.5 PHOTOS OF PROJECT ACTIVITIES FROM JULY TO DECEMBER 2024

Bokhtar- Levakant Section (Lot - 1)



Monitoring of Water quality and Noise level



Watering to control dust and Monitoring Air Quality

Asphalt paving of the road km 9+720 08/23/2024.



SAFETY BRIEFINGS AND SAFETY MEASURES



APPENDIX NO.6 PHYSICAL PROGRESS OF CONSTRUCTION ACTIVITIES

Table 20: Civil Works' Progress of Lot- 1
Bokhtar – Levakant km0+000 to 9.72

No.	Item Description	Unit	Project Quantity	Performed Quantity during September 30, 2024	Total Performed Quantity	Performed percentage
1	Culverts	pcs	2	0	2	100%
2	Bridges	pcs	3	0.2	3	100%
3	Retaining walls	pcs \m	550	0	425	90%
4	Earthworks on the main road					
5	Embankment cut to fill	m3	75896	0	75896	100%
6	Excavation in the cut to waste	m3	39290	0	39290	100%
7	Earthworks on exits and junctions					
8	Embankment cut to fill, Grade II soil	m3	158	0	79	85%
9	Excavation in the dump cut to waste, Grade II soil	m3	6623	0	3311.5	800%
10	Pavement on the main road					
11	The bottom layer of the base	m3	65 862	446	65862	100%
12	Crushed stone base	m3	56241,44	1283	56241,44	100%
13	Asphalt base course 100 mm thick	m2	234898	82773	234898	100%
14	Bottom layer of asphalt concrete pavement 70mm thick	m2	240059	1232	240059	100%

No.	Item Description	Unit	Project Quantity	Performed Quantity during September 30, 2024	Total Performed Quantity	Performed percentage
15	Top layer of asphalt concrete pavement 50mm thick	m2	240059	0	0	45%
16	Pavement on the intersections and exits					
17	Granular sub-base	m3	5889.1	0	2609	45%
23	Bottom layer of asphalt concrete pavement 60mm thick	m2	15783	0	1358	9%
24	Top layer of asphalt concrete pavement 60mm thick	m2	5771	0	300	15%
25	Top layer of asphalt concrete pavement 40mm thick	m2	15783	0	0	15%
26	Sidewalks					
27	Granular sub-base layer 200 mm thick	m3	3333.84	0	0	15%
28	120mm thick base of SGM (Sand Granular Mixture)	3	49977.12	0	0	15%
29	Asphalt concrete pavement 40 mm thick	m2	63646	0	0	0%
30	Curb stonesBR100.20.8	m	32,750.00	0	12050	37%
31	Curb stonesBR100.30.15	m	7,158.00	0	0	0%
32	Curb stonesBR100.30.18	m	17,227.00	1086	11451	66%
33	Curb stonesBR100.45.18	m	19,102.00	252	17586	92%
34	Curb stonesBR100.60.20	m	619.00	0	619	100%
35	Open Drainage Channel/Chutes on Main Road LK-1-3	each	3932	136	3838	98%
36	Open Drainage Channel/Chutes on Main Road LK-2-3	each	1004	31	809	90%
37	Removal and installation of sewerage lines, including all incidental works and materials as shown on the drawings	m	5,534.00	0	3050	60%
38	Removal of telephone lines, including all incidental works and materials as shown on the drawings	m	6830	0	6830	100%
39	Installation of fiber optic cable, including all incidental works and materials as shown on the drawings	m	8487	0	83487	100%

No.	Item Description	Unit	Project Quantity	Performed Quantity during September 30, 2024	Total Performed Quantity	Performed percentage
40	Removal and installation of water supply lines, including all incidental works and materials as shown on the drawings	m	7,128.00	0	6828	96%
41	Removal and installation of gas supply lines, including all incidental works and materials as shown on the drawings	m	6,714.00	0	6714	100%
42	Relocation of gas supply lines at road crossings, including all incidental works and materials as shown on the drawings	each	11.00	0	11	100%

Note: Approximate percentage of physical progress is determined by using varied weightage. Considering the above-mentioned major items, the physical progress is **95.13%**.

Table 21: Civil Works' Progress of Lot- 2

Levakant - Okmazor km 9.72-40+000

No. item BOQ	Name of the works	Unit of measurement	Scope of work (according to the design)	Execution of works		
				For the month of September 2024	From the very beginning of construction	Percentage of completion (%)
1	2	3	4	5	6	7
1	Preparatory work (mobilization)	lump sum	1		0,9	90%
2	Removing trees adjacent to the road	pcs	115		115	100%
3	Removing the old asphalt	m ³	30808		30808	100%
4	Embankment	m ³	148648	3036	121377	82%
5	Excavation works (cut to waste)	m ³	1135214	1050	1028236	91%
6	Rock works	m ³	616441	52396	526560	85%
7	leveling work	m ²	196 247	9298	183382	93%
8	Subbase C3 80MM	m ³	128785,18	6456	123162	96%
9	Base C5 40MM	m ⁴	137488,54	12712	124226	90,4%

No. item BOQ	Name of the works	Unit of measurement	Scope of work (according to the design)	Execution of works		
				For the month of September 2024	From the very beginning of construction	Percentage of completion (%)
10	Binder course h=7cv	m ²	284766	7000	215609	75,7%
11	Curb stones 100x30x18	m	4855	1000	1861	38%
Construction of new rectangular culverts						
12	<i>Cross channel 1.0 x 1.0</i>	m	125,17		104,32	83%
Construction of new rectangular culverts 6,00 X 2,50 дп ПК334+32						
13	Casting of concrete 10 cm	m ³	31,2		13,6	44%
14	Casting of concrete slab	m ³	138,6		68	49%
15	Casting of concrete walls	m ³	105		46	44%
16	Concrete laying of the top plate	m ³	150,15		70	47%
17	Casting of inlet and outlet	m ³	71,6		0	0%
Construction of round culverts						
18	<i>culvert Ø1000</i>	m ³	7,43		0	0%
19	<i>culvert Ø1500</i>	m ³	6,48		3,24	50%
Reinforcement concrete trays					0	
20	type Л 2-3	pcs	42		0	0%
	type ЛК2-3	pcs	929		818	88%
21	Cast in site ditch (0,2m ³ concrete thickness 0,08m) 14553m ³	m	57000		4056	7%
Reinforcement concrete slabs					0	

No. item BOQ	Name of the works	Unit of measurement	Scope of work (according to the design)	Execution of works		
				For the month of September 2024	From the very beginning of construction	Percentage of completion (%)
22	type ПП2	pcs	49		0	0%
	type ПП2a	pcs	4		0	0%
bridge №5			pcs			
23	<i>pile</i>	pcs	8		8	100%
24	<i>Foundation, pile cap</i>	m ³	37		37	100%
25	<i>Cabinet wall</i>	m ³	14,38		14,38	100%
26	<i>Installation of the beams 33 m emp</i>	pcs	7			0%
Green zone						
27	Planting trees	pcs	6000		310	5%
Relocation of utility lines:					0	
28	Overhead power lines 10кВ вв 04кВ	m	1253		0	0%
29	Overhead power lines 10кВ вв 04кВ	m	244		0	0%
30	Overhead communication lines	m	21846		18855	86%
31	Air communication line d-160mm	m	1789		0	0%
Note: Approximate percentage of physical progress is determined by using varied weightage. Considering the above-mentioned major items, the physical progress is 92.25% .						