

Environmental Monitoring Report

7th Semi-annual Report
January 2021

KGZ: Central Asia Regional Economic Cooperation Corridor 3 (Bishkek -Osh Road) Improvement Project, Phase 4

Prepared by Joint Venture Temelsu International Engineering Services Inc., E.Gen Consultants Ltd., and Dosh Upodosh Ltd. in association with Kyrgyz TREC International, Ltd. for the Ministry of Transport and Roads of the Kyrgyz Republic and the Asian Development Bank.

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Table of Contents

Abbreviations	8
1. INTRODUCTION	9
1.1 Preamble	9
1.2 Headline Information	9
2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES	13
2.1 Project Description	13
2.1.1 Location of the project site and design	13
2.2 Project Contracts and Management	14
2.2.1 Scope of work	16
2.2.2 Main Organizations Involved in the Project	17
2.3 Project activities during the current reporting period	18
2.3.1 Road Construction Works	20
2.3.2 Borrow-pits	25
2.3.3 The area of plant site	27
2.3.4 Workers camp at the villages of Sokuluk and Belovodskoe	31
2.3.5 Construction waste	31
2.3.6 Tree management	32
2.3.7 Works in the winter period of 2020	34
2.3.8 7.4 km road section (km 8.5 - 15.9)	34
2.3.9 Information about personnel	35
2.4 Description of any project changes	35
2.5 Changes to project design and construction method	36
3. ENVIRONMENTAL SAFEGUARD ACTIVITIES	37
3.1 General description of environmental safeguard activities	37
3.1.1 Road construction works	37
3.1.3 Borrow-pits	41
3.1.4 Production sites	44
3.1.4 Tree management	46
3.1.5 Construction waste	48
3.1.6 Workers camp	50
3.2 Site audits	52
3.3 Issues tracking (based on list of non-compliance)	58
3.3.1 Overview and description of issues tracking during the current period	62

Issues tracking	62
4. RESULTS OF ENVIRONMENTAL MONITORING	64
4.1 Overview of Monitoring Conducted During Current Period	64
4.2 Trends	74
4.3 Grievances of local residents	74
4.4 Summary of project outcome	78
4.5 Materials / Resources utilization	78
4.6 Waste management	78
4.6.1 Construction waste	78
4.6.2 Waste at the area of the asphalt plant	80
4.6.3 Household waste	81
4.7 Health and safety	81
4.7.1 Workers health and safety	81
Community health and safety	84
4.8 Trainings	85
5. FUNCTIONING OF THE CEMWP	87
5.1 CEMWP review	87
6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT	88
6.1 Good practice	88
6.2 Opportunities for improvement	88
7. SUMMARY AND RECOMENDATIONS	88
7.1 Summary	88
7.2 Recommendations	89
Annex 1. PBMC Component	91

LIST OF FIGURES:

Figure 1 Administrative districts of project road	10
Figure 2 Kara-Balta-Tunel road section.....	11
Figure 3 Bishkek-Kara-Balta road section, of the Bishkek-Osh Road (Source: Hagler Bailly, Pakistan, 2016)	12
Figure 4 Removal of old asphalt and unsuitable soil	21
Figure 5 Asphalt laying.....	21
Figure 6 Sampling works for asphalt quality control	22
Figure 7 Construction of roadside culvert chutes and junctions at the streets adjacent to the road	22
Figure 8 Installation and strengthening of New Jersey type parapets.....	23
Figure 9 Construction of sidewalks on the project road	24
Figure 10 Construction of an underground passage in the village of Belovodskoye	24

Figure 11 Construction and rehabilitation of underground passages	25
Figure 12 Construction of bus stops.....	25
Figure 13 Water-sprinkling of the road to avoid dusting.....	25
Figure 14 Development of Saz borrow pit	27
Figure 15 Development of Ak-Suu 2 borrow pit.....	27
Figure 16 Production of reinforced concrete structures	28
Figure 17 Stone crushing plant	29
Figure 18 Concrete Mixing Plant	29
Figure 19 Loading asphalt mixture into dump trucks and unloading it into asphalt pavers	29
Figure 20 Barrels of bitumen on a specially prepared site	30
Figure 21 Workers ' accommodation camp on the territory of the production site	30
Figure 22 Fire shield equipment on the area of the camp.....	31
Figure 23 Dining area and kitchen area	31
Figure 24 Dumping old asphalt on designated sites for further use	32
Figure 25 Storage of unsuitable soil for further use	32
Figure 26 Tree cutting in the village of Belovodskoye.....	33
Figure 27 Watering of seedlings.....	33
Figure 28 Planting of seedlings in November 2020	34
Figure 29 Work in the winter of 2020.....	34
Figure 30 Increased dust formation at construction sites.....	38
Figure 31 Water sprinkling on road construction sites	38
Figure 32 Installation of culvert chutes	39
Figure 33 Violation of safety precautions during installation of culvert chutes	39
Figure 34 Cleaning of parapets from accumulated soil.....	40
Figure 35 Asphalt and plant waste on the road shoulders formed during the strengthening of the parapet	40
Figure 36 Cleaning of stops from asphalt scraps.....	41
Figure 37 Construction of a retaining wall at km 26+500	41
Figure 38 Violation of safety precautions during work at height.....	41
Figure 39 Jelamysh borrow pit before the start of development	42
Figure 40 Jelamysh borrow pit at present time	42
Figure 41 Kara Balta borrow pit at present time	43
Figure 42 Rehabilitation works at the Ak-Suu 2 borrow-pit	44
Figure 43 Impermeable protective coating around chemical containers	44
Figure 44 Barrels with bitumen on a special site	45
Figure 45 Washing of concrete mixers. Watering the territory of the production site with washing water.....	45
Figure 46 Violations of safety precautions when working with the crane. Lack of personal protective equipment.....	46
Figure 47 Lack of personal protective equipment for workers at the site for the production of reinforced concrete products when lifting and moving cargo	46
Figure 48 Seedlings before the start of regular watering	47
Figure 49 Seedlings after watering.....	47
Figure 50 Planting of seedlings in November 2020.	48
Figure 51 Plastic bags left after planting and piled up in a heap and cleaning of these bags.....	48
Figure 52 Seedlings eaten by pets and broken seedlings	48
Figure 53 Dumping of old asphalt on a dedicated area for further use	49

Figure 54 Storage of unsuitable soil for further use	50
Figure 55 Asphalt waste on the road.....	50
Figure 56 Storage of empty bitumen barrels and lids	50
Figure 57 Top slab on the drain pit.....	51
Figure 58 Quarantine of newly arrived workers in the camp of workers ' residence on the area of the production site.....	51
Figure 59 Summary of noncompliance issues	63
Figure 60 Sampling point of water from the Sokuluk river (above and below the bridge 27,700 km)	65
Figure 61 Sampling of water from the Sokuluk river	65
Figure 62 Sampling point of air in the village of Romanovka, 24,140 km.....	66
Figure 63 Sampling point of air in the village of Sokuluk, 26,560 km	67
Figure 64 Sampling point of air in the village of Belovodskoe, 41,220 km	67
Figure 65 Taking samples of atmospheric air	68
Figure 66 Place of measurement of the noise and vibration level in the village of Gavrilovka (21,510 km control point)	70
Figure 67 Noise and vibration level measurements in the center of the village of Belovodskoye, (42,800 km).....	70
Figure 68 Noise level measurements in areas with a noise-reducing asphalt layer	72
Figure 69 Measurement of the noise and vibration level in the city of Karabalta (61,020 km end of the section)	72
Figure 70 Noise and vibration measurements	74
Figure 71 Reinforced concrete waste on the road	79
Figure 72 Storage of old asphalt in dumps	80
Figure 73 Storage of unusable soil in dumps	80
Figure 74 Empty bitumen barrels	81
Figure 75 Briefing logs	82
Figure 76 Conducting on-the-site training.....	83
Figure 77 Violations of safety precautions when moving loads with a crane and working at height	84
Figure 78 Adults and schoolchildren use underground passages.....	85
Figure 79 Conducting safety training for Chinese and local workers	86

LIST OF TABLES:

Table 1 Road sections where the construction work started in 2017	14
Table 2 Road sections where the construction work started in 2018	14
Table 3 Project Contracts and Management	14
Table 4 List of Consultant's staff	15
Table 5 Main Organizations involved in the project Environmental Safeguards	18
Table 6 Work Progress	18
Table 7 Characteristics of borrow pits	26
Table 8 Monitoring of construction sites in July 2020	52
Table 9 Monitoring of construction sites in August 2020.....	52
Table 10 Monitoring of construction sites in September 2020	53
Table 11 Monitoring of construction sites in October 2020	54
Table 12 Monitoring of construction sites in November 2020	56

Table 13 Monitoring of construction sites in December 2020	57
Table 14 Report on non-compliance with environmental requirements (July-December 2020).	58
Table 15 Summary of problem monitoring activities in the current period.....	62
Table 16 Surface water quality measurement protocol.....	64
Table 17 Air quality measurement protocol	65
Table 18 Name of measuring instruments and information on state verification	68
Table 19 Noise measurement protocol.....	68
Table 20 Protocol for measuring the noise level in areas with a noise-reducing asphalt layer ..	71
Table 21 Vibration measurement protocol.....	72
Table 22 Summary of Requests and Complaints for the 2nd half of 2020	75

Abbreviations

ADB	-	Asian Development Bank
CAREC	-	Organization of Central Asian Regional Economic Cooperation
CSC	-	Construction Supervision Consultant
EMP	-	Environmental Management Plan
IPIG	-	Investment Project Implementation Group
km	-	kilometer
KR	-	Kyrgyz Republic
MPC	-	Maximum permissible concentration
MPL	-	Maximum permissible level
MoTR	-	Ministry of Transport and Roads of the Kyrgyz Republic
MoF	-	Ministry of Finance of the Kyrgyz Republic
SAEPF	-	State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic
SIETS	-	State Inspectorate for Environmental and Technical Safety under the Government of the Kyrgyz Republic
DDPTSSSES	-	Department of Disease Prevention and State Sanitary-Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic
TS	-	Technical Specification
CEMWP	-	Construction Environmental Management Work Plan
AP	-	Asphalt Plant
SCP	-	Stone crushing plant
CBP	-	Concrete batch plant

1. INTRODUCTION

1.1 Preamble

1. Roads are essential for the Kyrgyz Republic, in this regard, the Government of the Kyrgyz Republic appealed to the Asian Development Bank (ADB) to assist in funding for the implementation of CAREC Corridor 3 Improvement Project (Bishkek-Osh road), Phase 4.

2. The report is the seventh semi-annual environmental monitoring report covering the period from July to December 2020, under the ongoing CAREC Transport Corridor 3 Improvement Project (Bishkek-Osh road), Phase 4. The monitoring report contains environmental issues, mitigation and monitoring measures taken by the Contractor and monitored by the national environmental specialist (Tatyana Volkova) of the construction supervision consultant Temelsu. Road rehabilitation works included: reconstruction of six bridges, replacement of culvert pipes, construction of underground passages, taken out of old asphalt, preparation of new road lanes in the eastern and western directions, construction of sidewalks and culvert chutes, tree planting, and operation of asphalt and concrete plants, and stone-crushing plant for the processing of inert materials.

3. The report contains information on work progress and changes related to the prevention of environmental impacts. The results are based on numerous site visits, conducted by a Consultant's national environmental specialist from July to December 2020, wherein the focus was on monitoring of compliance with the environmental and safety requirements during the road construction, construction of bridges and culvert pipes, seedling planting, and traffic management.

1.2 Headline Information

4. The Bishkek-Osh road represents about one fourth of international road network in the Kyrgyz Republic, and links the country to Kazakhstan in the north, Uzbekistan and Tajikistan in the south, and the People's Republic of China in the southeast. The road crosses four of the seven regions of the country and serves about 2 million people. It is the only direct surface link between the southern and northern parts of the country making it crucial for maintaining the country's social, political, and economic integrity. The Bishkek-Osh road is part of the Central Asia Regional Economic Cooperation (CAREC) Corridor 3, which runs from the west and south Siberian region of the Russian Federation through Kazakhstan, Kyrgyz Republic, Tajikistan, Afghanistan, and Uzbekistan to the Middle East and South Asia.

5. The CAREC Corridor 3 Improvement project (Bishkek-Osh road), Phase 4, (Bishkek-Kara-Balta section, 45.1 km long) aims to improve connectivity and market access in the Kyrgyz Republic. The project's benefits will be efficient movement of freight and passenger traffic along the Bishkek-Osh road, improved safety for both road users and pedestrians, as well as mitigation the environmental impact of the road in terms of noise impact from passing traffic by upgrading of asphalt pavement.

6. In 2016 during bidding process China Railway No.5 company was selected for implementation of project component 1. On March 28, 2017, Civil Works Contract was signed between the Ministry of Transport and Roads of the Kyrgyz Republic and China Railway No.5 for civil works. The overall contract price is 70,239,899.29 USD. In the course of extensive contract negotiations, the work group managed to change the fixed escalation coefficient for higher from 0.15 up to 0.51 – thus, minimizing potential of price escalation. Dated April 3, 2017, consultant issued a notice for construction to start. The construction works commenced 3 April 2017.

Revision of Bishkek-Kara-Balta Road Rehabilitation Project

7. Initially the road project length was planned for 52,5 km length. Feasibility Study (FS) was completed by the Consultant Kocks Consult as part of ADB Technical Assistance, the purpose of which was to identify economic soundness of the Project. Feasibility Study set out approximated cost of the Project based on the preliminary topographic survey at a scale of 1:2,000 and geotechnical studies conducted. Following the FS, ADB made a decision to allocate 100 M USD, 65M USD out of which is loan money and 35M USD - grant. Co-financing by the Government of the Kyrgyz Republic is 20.8M USD. Out of this, the Project provides 92.06M USD for civil works. The detailed design preparation carried by the Consultant Eptisa, the detailed topographic survey (at scale of 1:1,000) was conducted including additional geotechnical and other surveys which allow specifying engineering costs of the Project. Based on the results on the detailed designing, the Civil Works cost is about 115.1M USD. Thus, there was a lack/deficit of funds in the amount of 23.06M USD. In this connection, the Ministry of the Transport and the Roads of the Kyrgyz Republic decided to revise the design within the available funds for the Civil Works.

8. As a result, through agreement with ADB, it was decided to shorten the project road by 7.4 km and to deem the road start at 15.9 km instead of 8,5 km on Bishkek-Osh road. Thus, the overall length of the project road is now 45.1 km under the contract and so the shortening of the above-mentioned section was adopted prior to putting out the tender on the Civil Works.

9. In addition, it is also worth noting that cost of the contract executed between the Ministry of Transport and Roads of the Kyrgyz Republic and General Contractor China Railway No.5 amounts to 70.24M USD, i.e. there should be spare of funds up to 22M USD. In 2019, the saved funds were planned to use for construction of remaining road section (8.5 km – 15.9km). International competitive bidding would be conducted in accordance with ADB's Single-Stage Two – Envelope bidding procedure. The bidding process has been started on July 17, 2019. However, in 2020 the bidding process was canceled. Further, by the method of direct contract award, the contract was awarded to China Railway No. 5. Notification on Commencement of Works was issued on November 19, 2020.

10. On May 31, 2020, the contract with the consulting company Eptisa was completed. Following the bidding process, Temelsu International Engineering Services INC.(Turkey); Desh Upodesh Ltd. (Bangladesh) and e.Gen Consultants Ltd. (Bangladesh) new Joint Venture consulting companies were selected. New Consultant started to work on May 11, 2020.

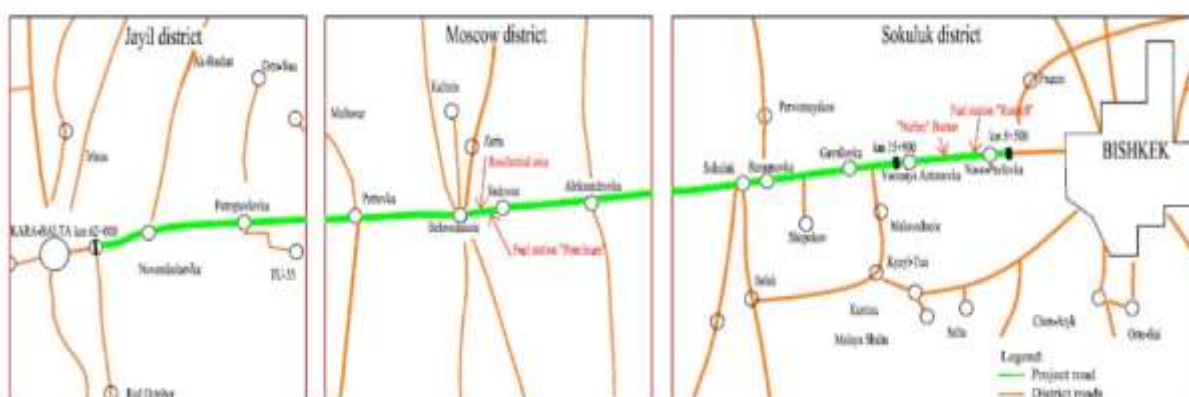


Figure 1 Administrative districts of project road

Component 2:

11. Another part of above said road rehabilitation of road project, the next section is considered as pilot project under PBMC on maintaining the Kara-Balta road up till Too-Ashu tunnel (61 km – 129 km).

12. During 3 years, it is expected to ensure continuous traffic flow along the road, all-year-round proper maintenance, and routine repairs shall have to be implemented. While performing maintenance operations, the road pavement will be repaired, and, for safety purposes, road signs will be replaced, culverts will be maintained, roadside vegetation monitored, bridges fixed, slopes stabilized, and road surface properly dealt with per various weather conditions and seasons. Total budget of the Component allocated is 6 M USD. For the component the contractor LLC Mostdorstroi was selected after evaluation process.



Figure 2 Kara-Balta-Tunnel road section



Figure 3 Bishkek-Kara-Balta road section, of the Bishkek-Osh Road (Source: Hagler Bailly, Pakistan, 2016)

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

2.1.1 Location of the project site and design

13. The project will improve connectivity between north and south in the Kyrgyz Republic. The project output will be efficient movement of freight and passenger traffic along the Bishkek-Osh road. According to the classification of the ADB Safeguard Policy Statement, the project classified as Category B. Improvement of the Bishkek-Osh road section (Bishkek-Kara-Balta section) will connect important, but densely populated areas, what will ultimately provide better access to services, goods and markets; improve regional connectivity and increase road safety for all road users in general.

14. The project provides for the rehabilitation of 45.1 km of the Bishkek-Osh road. The project site is located between Bishkek and Kara-Balta cities and between 15.9 km and 61 km of the Bishkek-Osh road. At km 61, at the roundabout, the Bishkek-Osh road turns to south, and marks the end of the project.

15. The terrain across the site can be classified as a foothill plain with a height of 750-800 m above sea level and steadily gaining altitude southward toward the Tian Shan mountain range.

16. The road reconstruction should meet the laws and legislation of the Kyrgyz Republic. This reconstruction will bring the geometric parameters of the road to the required category, becoming a 4-lane highway for the entire length to Kara Balta, increasing the radii of curvatures in the vertical and horizontal alignment.

17. In order to improve drainage systems, the work includes the reconstruction and replacement of most of the degraded culvert system, and the addition of new cross-drainage structures. Existing bridges are being totally replaced. And it will be constructed more than 64 km of sidewalks and six underground pedestrian passages.

18. Environmental impact resulting from the rehabilitation of the Bishkek-Osh road is short-term and local, since most of the construction work is carried out along the existing right-of-way. The project includes number of related activities, such as the development of borrow-pits, operation of the asphalt plant, crushing and screening plant, construction of work camps and warehouses of the contractor, etc.

19. The environmental impact includes:

- (i).noise impact, as well as vibration, which is particularly important within localities near the Project road and in the areas where sensitive recipients are located, such as schools, hospitals, mosques, etc.
- (ii).Impact to the air;
- (iii).Impact to water courses and rivers;
- (iv).Impact resulting from sourcing of aggregates in borrow-pits;
- (v).Impact on soil and vegetation, including tree stands near the Project road, due to site clearing work;
- (vi).Impact resulting after bridge rehabilitation works;
- (vii).Impact of asphalt production plants and aggregates crushing plants;
- (viii).Impact of workers camps.

20. Due to the serious resettlement issues and the need to address them before commencement of construction period, such a sequence of construction works was planned, where the works primarily covered those areas where there are no or there are minor resettlement issues.

Table 1 Road sections where the construction work started in 2017

Section No.	Start of the section, km	End of the section, km	Length of the section, km
1	15.900	21.300	5.400
2	35.500	40.580	5.080
3	45,600	51,600	6.000
4	54.200	59.350	5.150

Table 2 Road sections where the construction work started in 2018

Section No.	Start of the section, km	End of the section, km	Length of the section, km
5	21+300	35+500	14+200
6	40+580	45+600	5+020
7	51+600	54+200	2+600
8	59+350	60+926	1+576

21. According to the Terms of Reference, the road pavement will be designed for an initial design life of 10 years with structural overlay options for 15 and 20 years of design life.

2.2 Project Contracts and Management

Table 3 Project Contracts and Management

Project	Central Asia Regional Corridor 3 (Bishkek-Osh Road) Improvement Project Phase 4
Contractor	China Railway No.5 for Component 1 implementation
Road section:	15.9 km – 61 km, the overall length is 45.1
Donor:	Asian Development Bank.
Contract Sign Date:	28/03/2017
Executive Agency	Ministry of Transport and Roads of the Kyrgyz Republic
Notice to Commence	03/04/2017
Completion Date	April 02, 2020.
Time for Completion – Days	2 years 4 month
Extension of Time – Days	-
Defect Liability Period – Days	365
Contract Amount	USD 70,239,899.29
Minimum Amount of Interim Payment USD (3%)	USD 2,107,196.97
Total Amount of Advance Payment	Maximum 20% of the Accepted Contract Amount less Provisional Sums
Amount of Performance Security	%20 of Accepted Contract Price

Amount of Third-Party Insurance	500,000 USD per occurrence with the number of occurrence unlimited
Periods for submission of insurance	14 days
a) evidence of Insurance	14 days
b) relevant policies	14 days
Delay damages for the Works	0.05% of the Accepted Contract Amount for each lot, which is in delay, per day in USD
Maximum amount of delay damages	10% of the Accepted Contract Amount
Repayment Amortization of Advance payment	10%
Limit of Retention Money	10% of Accepted Contract Amount
Percentage of Retention	5% of Value of Works certified for Payment

Table 4 List of Consultant's staff

INTERNATIONAL STAFF	
male	
Resident Engineer-Team Leader	Mahmut Nedim Altay
Pavement and Materials Engineer	Mohammad Arifur Rahman
Contract Specialist	Ali Yagci
Social Development and Resettlement Specialist	Md. Nurul Hoque
Environment Specialist	Dr. Md. Mohsin Almajji
PBM Engineer	Seyfettin Akinci
NATIONAL STAFF	
male	
Highway Engineer/Deputy Team Leader	Shekeev Omurbek
Social Development and Resettlement Specialist	Dolgov Yirii
Road Safety Specialist	Begaliev Soolot
Materials Engineer	Alymkulov Ulanbek
Quality Assurance Engineer	Mamyrkulov Sabyrbek
Structural Engineer	Turdubaev Shekirbek
Inspector	Choibekov Bazarbek
Surveyor	Bokonbaev Turatbek
Surveyor	Sagynbaev Damir
Surveyor	Baiguchukov Manas
Quantity engineer	Alymkulov Zhoodar
Quantity engineer	Abylbekov Abai
laboratory assistant	Zholdoshev Ruslan
laboratory assistant	Minazarov Dyikan
laboratory assistant	Abdykapparov Damir
Estimator – quantity engineer	Kozevnikova Setlana
Translator	Glinov Vyacheslav
Office manager	Kalil uulu Suiun
female	
Environmental Specialist	Tatiana Volkova

2.2.1 Scope of work

22. Project design meets standards of Technical Category 1-b (main urban arteries) with the following geometrical attributes:

- Number of lanes – 4 and 6
- Lane width – 3,5 - 3,75m;
- Carriageway width – 2x7,5;
- Shoulder width – 3,75m
- Carriageway shoulder breakpoint stabilization – 0,75m
- Axle design weight – 11,5 tones.

23. Over the entire project site, the two layers of the asphalt-concrete pavement (14 cm thick) will be placed, the upper one is 5 cm and the lower one is 9 cm thick, with underlying black crushed stone course (9 cm thick).

24. The RoW (Right of Way) width is 50 - 60 meters. The design provides for construction and repairing works for the following service facilities and the communications as well as work scope.

Pavement Construction Quantities:

- Wearing course 5cm thick – 46,692m³;
- The same in junctions 5cm thick – 4,169m³;
- Binder course 9cm thick – 84,046m³;
- The same on junctions 9cm thick – 7,505m³;
- Asphalt treated base course 9cm thick – 86,906m³;
- Base 15cm thick – 157,257m³;
- Sub-base 28cm thick – 448,920m³;
- Asphalt-concrete course on sidewalks 4cm – 9,754m³;

In addition, it also includes:

- Bridge repairs with widening – 6 units;
- Minor engineering structures – 548 units;
- For water diversion, reinforced-concrete chutes – 77661 linear meters;
- Intersections and junctions – 477 units;
- The design provides for parking lots next to market places – 4 units;
- Auto pavilions – 114 units;
- Sidewalks – 81 285 meters;

Road Safety Features:

The Project provides for repair of 4 existing pedestrian underground crossings and construction of 6 new pedestrian underground crossings;

- Marker posts – 515 units;
- Metallic foot-walk guard rails – 3980 linear m;
- Parapet guard rails – 1158 units;
- Median railings – 14 887 units;
- Retaining walls – 3669 linear m;
- Street lights – at 26 intersections.

Reconstruction of the Utilities

- VL-10kV – 43 poles
- VL-0,4kV – 166 poles
- Communication lines – 507 posts

- Lighting poles – 2190
- Gas casings – 650 linear m

Vegetation Planting

25. Almost throughout the entire length of the project road there are trees planted in both sides, most of which will be cut down in course of the road rehabilitation. In total, 5363 trees will be cut down. As compensation, planting of hardwood seedlings will be required instead of cut down trees. As of 31.12.2020, 12.1% of the planned number of seedlings were planted on the road.

Land Acquisition and Resettlement Plan

26. The project site passes through densely populated areas. The project provides for the demolition of commercial services, pavilions, billboards, service stations, gas stations, fences and houses that will be affected by the project, in the sections of road widening and sections of construction of new sidewalks. A Resettlement Plan was drawn up, based on which compensation was paid to 106 affected persons, including owners and users of land, business owners, tenants and employees.

2.2.2 Main Organizations Involved in the Project

27. Relevant organizations involved in the project are:

- Ministry of Finance of the Kyrgyz Republic (MOF)
- Ministry of Transport and Roads of the Kyrgyz Republic (MoTR)
- The Implementing agency; and its Investment Projects Implementation Group (IPIG)
- State Agency for Environmental Protection and Forestry (SAEPF)
- State Inspectorate for Environmental and Technical Safety (SIETP)
- Department of Disease Prevention and State Sanitary and Epidemiological Surveillance under the Ministry of Health (DDPSSSES)
- *MoTR* is responsible for the development of the transport sector, and is the Executing Agency (EA) of the project. MoTR has overall responsibility for the planning, designing, implementation and monitoring of the project. IPIG, works under the MoTR and implements the tasks assigned by MoTR.
- *The Ministry of Finance of the Kyrgyz Republic* is the authorized state body responsible for coordinating actions with ADB and other donors on external assistance issues.
- *The State Agency for Environmental Protection and Forestry* is responsible for the state policy in the environment sector and coordinating the actions of other state bodies on these issues. Its functions as follow:
 - environmental policy development and implementation;
 - state ecological expertise (Environmental Impact Assessment);
 - issuance of environmental licenses
 - ecological monitoring;
 - provision of environmental information services
- *The State Inspectorate for Environmental and Technical Safety works in accordance with the Law "On the procedure for conducting inspections of entrepreneurship entities", and carries out supervision procedure on compliance with:*

- I. environmental legislation, established rules, limits and norms of environmental management, standards of emissions and discharges of pollutants and waste disposal in the environment;
 - II. industrial safety requirements during construction, expansion, reconstruction, technical re-equipment, operation, conservation and liquidation of hazardous production facilities;
 - III. the requirements of land legislation;
 - IV. safety requirements for operation of equipment and facilities for the storage and distribution of petroleum products and gases, cranes;
 - I. Requirements of safe operation rules in construction, installation and maintenance of electrical networks and electrical equipment.
- Department of Disease Prevention and State Sanitary and Epidemiological Surveillance supervises the sanitary and epidemiological welfare of the population, the safety of goods, products, environmental objects and conditions, and the prevention of harmful impact of environmental factors on human health.

Table 5 Main Organizations involved in the project Environmentals Safeguards

No	Organization Name	Role in project	Responsible person for the environmental safeguards	Contacts
1	ADB	Environment Specialist	Ninette R.Pajarillaga	npajarillaga@adb.org
2	ADB's Kyrgyz Republic Resident Mission (KYRM)	Environment Consultant	Sultan Bakirov	Sbakirov.consultant@adb.org
3	IPIG under MoTR	Environment Specialist	Asylbek Abdygulov	asylbeka@piumotc.kg
4	Temelsu	Consultant's Environmental Specialist	Tatiana Volkova	volkova_ti55@mail.ru
5	The limited liability company "China Railway Engineering Group No. 5»	Contractor's Env. Specialist	Narynbek Myrsaliev	narynbek_m@mail.ru
6	LLC Kyrgyz branch of "Kaganat Group"	Subcontractor, work on installing chutes;	Narynbek Myrsaliev	narynbek_m@mail.ru

2.3 Project activities during the current reporting period

Table 6 Work Progress

No	Bill 3 (Earth Works)	Unit	Scope per design	Actually completed	% of completion
1	Clearing and grubbing	ha	76	63	83%
2	Cutting and grubbing of trees	pcs	3348	3348	100%

3	Excavation and disposal of suitable material from existing road to reuse as fill material	m3	201 530	188 575,00	94%
4	Formation of embankment using common soil from borrow pits	m3	67511	33882	50%
5	Excavation and dispose of unsuitable soil to a spoil area	m3	103 129	82480	80%
6	Scarifying of existing asphalt concrete pavement	m3	84340	83058	98%
№	Bill 4 (Drainage Works)	Unit	Scope per design	Actually completed	% of completion
1	Pipe culverts, d= 1.5 m	pcs.	53	52	98%
2	Culverts with opening 0.8x0.8 m	pcs.	100	98,5	98,5%
3	Culverts with opening 0.5x0.5 m	pcs.	392	237	60,5%
4	Box culverts - 2.0x2.0 m	pcs.	1	1	100%
5	Provision and mounting of reinforced concrete chutes B-3.	pcs.	21600	9303	43%
№	Bill 5 (Pavement Works)	Unit	Scope per design	Actually completed	% of completion
1	Sub-base – 28cm	m3	448 920	439 030	98%
2	Base course - 15cm	m3	157 257	143 910	92%
3	Black crushed stone – 9cm (asphalt treated base)	m3	86 906	79 731	92%
4	Binder course – 9cm	m3	84 046	77 725	92%
5	Wearing course - 5cm	m3	46 692	27133,5	58%
№	Bill 6 (Bridges)	Unit	Length per design	Actually completed	% of completion
1	The bridge over the Jelamysh r. 18.3 km	rm	25,1	24,1	96%
2	Jantay channel 24.4 km	rm	35,5	32,7	92%
3	The bridge over the Sokuluk r. 27.7 km	rm	35,2	33,7	96%
4	Krepostnoy channel 40.7km	rm	35,5	33,8	95%
5	The bridge over the AkSuu r. 44km	rm	29,2	27,4	94%
6	The bridge over the AkSuu r (mudflow channel) 44.6km	rm	20,1	19,7	98%
№	Bill 9 (Miscellaneous Works)	Unit	Scope per design	Actually completed	% of completion
1	Underground passage KM30+481	m	25		45%
2	Underground passage KM32+194	m	25		45%
3	Underground passage KM33+091	m	24,5		90%

4	Underground passage KM37+520	m	24,5		90%
5	Underground passage KM42+797	m	25,5		30%
6	Underground passage KM55+410	m	27,9		90%
7	Underground passage KM57+415	m	24,5		90%
8	Underground passage KM59+640	m	24,5		90%
9	Installation of parapet OP-1	pcs	14 887	12 345	83%
10	Reconstruction of 10 kV + 04 kV power line poles	pcs	209	304	145%
11	Reconstruction of communication line poles	pcs	507	391	77%
12	Sidewalk	pcs	94 885	7245	7,64%
13	Relocation of the cable communication line	m		8500	
14	Relocation of waterpipe line	m		1250	

2.3.1 Road Construction Works

28. Construction work included:

- earthworks - removal and dispose of excess unsuitable soil, rolling and compaction of roadside slopes. As directed by ADB, soil compaction works were carried out without vibration;
- works on paving, laying the subbase, asphalt;
- installation of parapets (small concrete barriers / dividing fences) and reinforced concrete chutes;
- construction of underground passages;
- construction of bridges and culverts

29. Road construction works included the removal and taken over of old asphalt and unsuitable soil, the grading and compaction of the carriageway, and preparation for asphalt laying. The work was carried out at sections in the villages of Belovodskoe, Aleksandrovka, Sadovoe, Sokuluk, Gavrilovka, Romanovka, Shopokov city, and Novo-Nikolaevka village. In the reporting period, the total volume of asphalt removed during construction works was 12,693 m³.





Figure 4 Removal of old asphalt and unsuitable soil



Figure 5 Asphalt laying

30. At the direction of ADB (letter dated May 23, 2018) soil compaction works were carried out without vibration at all road sections, with the exception of 15.9 - 19.8 km section where there are no settlements. Compliance with this requirement was constantly monitored by the Consultant's inspectors, Construction Supervision Consultant, Consultant Environmental Specialist. Vibration control is also carried out by laboratory monitoring. The laboratory monitoring results are attached in table 21, page 72.

31. Material quality checks were carried out in the laboratory and onsite to verify compliance with technical specifications. The laboratory tests were carried out for concrete, unbound materials and asphalt treated base materials which will be used for the pavement layers. At the site, the contractor conducted density and moisture tests to verify the compaction ratio. Asphalt concrete was collected during paving to test compressive strength at various temperatures, the content of bitumen and granulometry.

32. Inspectors monitored the performance of site trials on materials of wearing course, asphalt treated base and subgrade.



Figure 6 Sampling works for asphalt quality control

33. The subcontractor works on installation of roadside culvert chutes. Work continues on the construction of junctions at the streets adjacent to the road.



Figure 7 Construction of roadside culvert chutes and junctions at the streets adjacent to the road

34. During the reporting period, work was carried out on installation and strengthening of “New Jersey” type parapets on the road. Welding works and works on concreting ditches on the passages between parapets was carried out. The soil accumulated near the parapets was cleaned and removed.



Figure 8 Installation and strengthening of New Jersey type parapets

35. Work was carried out on the construction of sidewalks, which included installation of curbs, preparation for asphaltting and paving the sidewalks.



Figure 9 Construction of sidewalks on the project road

36. In the center of the Belovodskoe village (km 42-800m), underground passing was constructed.



Figure 10 Construction of an underground passage in the village of Belovodskoye

37. Currently, the construction of five underground passages is almost completed. Adults and children are currently crossing the road through some underground passages, and temporary lighting has been installed for this purpose. Considering that during the construction of underground pedestrian passages, a close occurrence of the underground water level was noted, the Consultant constantly monitors for detection of flooding, in order to be able to eliminate it in a timely manner.





Figure 11 Construction and rehabilitation of underground passages

38. Construction of bus stops continued.



Figure 12 Construction of bus stops

39. To avoid dusting, all sections where intensive construction work was carried out were water-sprinkled according to an agreed schedule. No complaints from the local residents for dust formation were registered.



Figure 13 Water-sprinkling of the road to avoid dusting.

2.3.2 Borrow-pits

40. Originally, 6 areas were allocated for borrow-pits at the project road (Bishkek – Kara-Balta section, km 15.9 – km 61). The Contractor has obtained all necessary permits for the borrow-pits

mining from local authorities, the State Committee for Industry, and the State Agency for Environmental Protection and Forestry (SAEPF). Table 7 provides main information about borrow-pits.

Table 7 Characteristics of borrow pits

No. of borrow-pit	Stocks (m ³)	Area (ha)	Distance from the road (km)
No.1 «Jelamysh»	242 093	10,77	11
No.2 «Sokuluk -1»	185 000	9,02	3,3
No.3 «Sokuluk -2»	185 000	9,7	7,7
No.4 «Ak-Suu -1»	210 000	11,89	2,5
No.5 «Ak-Suu -2»	850 000	68,19	8,6
No.6 «Kara-Balta»	275 323	73,70	3,5
No.7 «SAZ»	197 600	5,2	14.5

41. Sokuluk-1, Sokuluk-2, Ak-Suu-1, Ak-Suu-2, and Kara- Balta borrow-pits are belonging to self-reclamated category, since they are located in floodplains of rivers that are subject to mudslides.

42. During the conclusion of agreement with Krupskoy ayil okmotu, on the territory of which Sokuluk-1 and Sokuluk-2 borrow-pits are located, it turned out that when allocating areas for these borrow-pits, the borrow-pit area was overlapped with the area of neighboring adjacent borrow-pit, and therefore mining of Sokuluk-1 borrow-pit was refused, and the area of Sokuluk-2 borrow-pit was reduced to 1.73 ha.

43. After testing the material quality of Sokuluk-2 borrow-pit by Quality Assurance engineer and Materials engineer, it was found that the material contains a large amount of humus and it cannot be used for the construction of the roadbed, in this regard, the mining of Sokuluk-2 borrow-pit was suspended.

44. For mining, a Saz borrow-pit was proposed, located on the area of the Sazskiy ayil of the Sokuluk district.

45. During the reporting period, sourcing of inert materials was carried out at the Saz and Ak-Suu 2 borrow-pits.

46. **Saz borrow-pit.** To date, a large amount of inert materials has been accumulated at the borrow-pit; it is being transported for the road construction to the area of Sokuluk district.



Figure 14 Development of Saz borrow pit

47. **Ak-Suu 2 borrow-pit.** To date, a large amount of inert material has been accumulated at the borrow-pit, it was transported for the road construction to the area of Moskovsky district, as well as to the area of the production site for crushing and stocking.



Figure 15 Development of Ak-Suu 2 borrow pit

2.3.3 The area of plant site

48. The production site is located at the territory of Sokuluk ayil okmoty, close to Ak-Torpok village. The area belongs to the industrial and communal zone. Total land area - 10 hectares.

49. The following buildings and structures are located in the site: console control building, stone-crushing plant (SCP), asphalt-bitumen plant (asphalt plant), concrete batch plant (CBP), silos - bin for cement, workers camp, office, eating room, car parking; parking for trucks; storage for fill materials - crushed stone and sand; transformer substation, platform for the installation of garbage containers, concrete cesspit for sewage.

Concrete Batch Plant

50. The concrete batch plant site is intended for the manufacture of reinforced concrete products. The technological process for the manufacture of reinforced concrete structures, includes the preparation of a concrete mixture and its transportation to the object under construction, its supply, distribution, laying and compaction in the structure, curing of concrete.

51. Various reinforced concrete products are manufactured for usage on the road (concrete rings, chutes, curbs, New Jersey type fences, etc.).



Figure 16 Production of reinforced concrete structures

Stone-crushing plant

52. At the production site for the plant’s placement, works are carried out on crushing sand and gravel raw materials and preparing material reserves. Water sprinkling should be done during the crushing, which reduces the emission of inorganic dust by 70%. Sieving is carried out with washing - on vibrocribble screens, transportation is carried out by belt conveyors.

53. Raw materials for production of crushed stone and sand is delivered to the stone-crushing plant from Ak-Suu 2 borrow-pit by dump trucks. Crushing of raw material is carried out in crush lines of crushers. Water sprinkling should be done during the crushing, which reduces the emission of inorganic dust by 70%. Sieving is carried out with washing - on vibrocribble screens, transportation is carried out by belt conveyors.



Figure 17 Stone crushing plant

Concrete mixing plant

54. The concrete mix is prepared at a concrete mixing plant and delivered in finished form for the construction. Concrete production involves mixing cement, sand, gravel and water in the right proportions. Transportation of concrete mix from the place of preparation to the place of unloading or directly to the concreting unit is carried out by road.



Figure 18 Concrete Mixing Plant

55. Washing of concrete mixers is carried out on a specially designated area. The flushing water is discharged into a special three-section sump. Further, the flushing water, after settling, is used for water-sprinkling the area of the production site.

Asphalt-bitumen plant

56. The asphalt mixture is prepared in forced mixing asphalt mixers with periodic action and preliminary drying, heating and dosing of mineral materials. The finished asphalt mixture is loaded into dump trucks and transported to road sections.



Figure 19 Loading asphalt mixture into dump trucks and unloading it into asphalt pavers

57. To prepare the asphalt mixture, a large number of barrels with bitumen were delivered to the production site, which were partially placed on a specially prepared area. A large number of barrels were placed on the ground covered with waterproofing material. No bitumen leaks were recorded during the reporting period. Soil contamination with bitumen was not observed during the reporting period.



Figure 20 Barrels of bitumen on a specially prepared site

Camps for workers residence

58. Due to the proximity to the main gas pipeline, in 2018 the relevant services have repeatedly issued orders to relocate the residential sector outside the sanitary protection zone. Once the land plot owner's (Emergency Control Ministry) permission was obtained, in 2019 the residential area was relocated to a safe distance and placed on the east side of the industrial zone in accordance with safety requirements and hygiene standards.



Figure 21 Workers ' accommodation camp on the territory of the production site

59. The worker's camp accommodates 50 people. Each room is designed to accommodate two workers. The camp has a kitchen room, equipped place for eating, shower rooms, washbasins, toilets.

60. In the new camp sewage water is discharged into an existing septic tank by pipelines.

61. After a verbal warning concerning the need for a fire shield equipment, 2 shields were installed in the camp.



Figure 22 Fire shield equipment on the area of the camp



Figure 23 Dining area and kitchen area

62. Water supply at the production site is carried out from an existing well on the basis of the Agreement No.38 “On the provision of the well for temporary use” dated October 10, 2017. The well was restored to supply the plant with water. The contractor laid a pipeline to the plant. Currently there are no problems with water on the territory of the production site.

2.3.4 Workers camp at the villages of Sokuluk and Belovodskoe

63. At the worker camps in the villages of Sokuluk and Belovodsk, household waste and sewage from septic tanks are disposed in a timely manner, and all protective measures for sanitary hygiene are observed. On the territory of the camps, all necessary maintenance measures are observed. Periodic checks are carried out on compliance with environmental requirements. However, both in Sokuluk and in Belovodsk, during the repair and other works, waste is accumulated which are not always taken out in time, as a result it creates a mess. On the part of the Consultant, additional instructions were given about the need to clean work places every day after the completion of work.

2.3.5 Construction waste

64. During the road construction works, waste is accumulated from old reinforced concrete products, removed asphalt, and old unsuitable soil. Previously, old asphalt was placed on village roads without crushing. It was necessary to crush it up with a bulldozer and level it with a grader after placing. Due to these difficulties, as well as taking into account the dissatisfaction of local authorities and residents, in the reporting period the old asphalt removed in coordination with local administrations, and is transported and placed in dumps at the specified sites. Old asphalt was not taken out to rural roads. There were no complaints from the local residents regarding the disposal of removed asphalt.



Figure 24 Dumping old asphalt on designated sites for further use

65. Soil unsuitable for road construction is also taken to sites allocated by local authorities.



Figure 25 Storage of unsuitable soil for further use

66. There is also a place for roadside soil – a vast ravine near the road.

2.3.6 Tree management

67. During the reporting period, single cut down of trees was carried out in agreement with the services for the relocation of electrical and telephone poles in the village of Belovodskoe. These trees are not additional and are included in the previously determined number of trees falling under forced cut down, but due to the presence of electrical networks near them, cut down was not possible. Permits for their cut down were obtained at the beginning of 2019. All trunks and roots were taken to places designated by local authorities.



Figure 26 Tree cutting in the village of Belovodskoye

68. Seedlings planted in autumn 2019 and spring 2020 (600 pieces) have taken root well and are in satisfactory condition. During the reporting period, given the hot period of the year, regular and abundant watering of the seedlings was needed. A letter was sent to the contractor about the need to perform regular watering every 3 days.



Figure 27 Watering of seedlings

69. An additional 615 seedlings were planted in October and November 2020.



Figure 28 Planting of seedlings in November 2020

2.3.7 Works in the winter period of 2020

70. In the winter period of 2020, the Contractor carried out road maintenance work, including snow cleaning, winter slipperiness control, and ice control. These works were aimed at ensuring the smooth and safe passage of vehicles.



Figure 29 Work in the winter of 2020

2.3.8 7.4 km road section (km 8.5 - 15.9)

71. The environmental impact as a result of the rehabilitation of the Bishkek-Osh road section (km 8.5 - 15.9) will be short-term and local, since most of the construction work is carried out along the existing right of way. The project includes a number of related activities, such as borrow-pit development, operation of the asphalt plant and crushing plant, operation of the contractor's work camps and warehouses, etc.

72. Resettlement issues will be resolved before the start of the construction period.

73. Due to the fact that the Project provides for the rehabilitation of the existing road, and considering the fact that there are no specially protected natural areas within the Project's impact zone, the resulting environmental impact is mainly limited to the construction phase. In 2018, additional field survey work was carried out to clarify the information received earlier. Also, in 2018, laboratory monitoring of environmental components was carried out on this road section. Based on the initial environmental examination (IEE) of the project for the rehabilitation of the Bishkek-Osh road section (km 8.5 - km 61) and the new data obtained from additional field surveys and the results of laboratory monitoring of environmental components, a Supplementary IEE was prepared for the km 8.5 - 15.9 project road section of Bishkek - Osh road.

74. The Contractor has developed an Environmental Management Construction Work Plan (CEMWP), after approval of which, in December 2020, a permit was obtained to carry out work on this section of the road. In winter, it is planned to cut down trees. According to preliminary estimates, more than 1000 trees are subject to cut down.

75. Laboratory monitoring of background levels of environmental components on the project road section was carried out in the period 2013 - 2018. Considering that at present, due to the increase in traffic intensity, the background levels of the environmental components have changed, therefore, in the spring of 2021, with the improvement of weather conditions, before the start of construction work, it is necessary to conduct laboratory monitoring of the background levels of environmental components in sensitive areas of project road section.

2.3.9 Information about personnel

76. During contract negotiations with the Contractor on the personnel structure for the Bishkek-Kara-Balta road rehabilitation project, an agreement was reached according to which:

- the composition of management and engineering personnel:
 - 60% - foreign personnel,
 - 40% - local personnel;
- the composition of the workers:
 - 20% - foreign personnel,
 - 80% - local personnel.

77. Given the situation with Covid-19 they were arrived in Kyrgyzstan later. The number of Contractor's personnel from July to December (excluding subcontractors' personnel) was 503 people, of which:

- 449 local personnel,
- 54 foreign personnel.

2.4 Description of any project changes

78. Initially, 6 areas were allocated for borrow-pits on the project road. In particular, Sokuluk-1 and Sokuluk-2 borrow-pits were intended for mining during work on the territory of the Sokuluk district. The contractor has obtained all the necessary permits for the development of these borrow-pits from local authorities: The State Committee for industry, energy and subsoil use and The State Agency for environmental protection and forestry.

79. However, during the conclusion of agreement with Krupskoy ayil okmotu, on the territory of which Sokuluk-1 and Sokuluk-2 borrow-pits are located, it turned out that when allocating areas for these borrow-pits, the borrow-pit area was overlapped with the area of neighboring adjacent borrow-pit, and therefore development of the Sokuluk-1 borrow-pit was refused, and the area of the Sokuluk-2 borrow-pit was reduced to 1.73 ha.

80. After testing the quality of the material of the Sokuluk-2 borrow-pit by the Quality Assurance engineer and Materials engineer, it was found that the material contains a large amount of humus and it cannot be used for the construction of the roadbed, in this regard, the development of the Sokuluk-2 borrow-pit was suspended. For construction works it was necessary to find a new borrow-pit.

81. Saz borrow-pit was proposed, located on the territory of the Sazskiy ail okrug of the Sokuluk district, and the development of which was carried out during the work on the territory of the Sokuluk district.

2.5 Changes to project design and construction method

82. In 2017, earth works at section 3 in the village of Petrovka were suspended by the ADB until the winter season, due to complaints of the local residents - 17 homeowners at Tsentralnaya Street for vibration coming from construction equipment when compacting materials using vibration, in particular, from rollers.

83. IPIG and EPTISA have found that the most effective and least costly solution was to exclude compaction with vibration at all road sections where there are residential houses.

84. EPTISA's consultant (materials engineer) conducted a study to verify the possibility of compaction without vibration. The study was conducted on fill materials, unbound materials and binders.

85. The study has shown that it is possible to compact available materials without vibration using a reasonable number of passes.

86. It was decided not to use vibration in the future during the compaction of materials. Soil compaction works as directed by the ADB (letter dated 23.05.2018) were carried out without vibration at all road sections, except for section km 15.9-19.8 km where there are no settlements. These changes in the accepted construction methods resulted in an increase in the cost of the work performed.

87. During the reporting period, earthworks on the road sections were carried out without the use of vibration. Supervision over the fulfillment of this requirement was constantly carried out by the inspectors of the Consultant, construction supervision consultant, environmental specialist of the Consultant. Vibration control is also carried out by laboratory monitoring.

88. In 2019, the Consultant developed a mix design of wearing course that meets the requirements of local standards and the British standard. This mix design also includes the noise reduction requirements recommended in the "Noise Modeling report. During the reporting period, the laying of wearing course using a mix design has been started.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General description of environmental safeguard activities

89. Based on the results of the reporting period January – June 2020, a corrective action plan was drawn up for two non-compliances with environmental requirements.

1. To conduct a reclamation work on the used borrow-pits, to hand-over reclaimed land to the Commission.
2. Non-compliance with safety precautions by workers during road construction.

90. At the time of report preparation for the period July – December 2020, these non-compliances were not eliminated by the Contractor.

91. The Contractor plans to conduct reclamation work on the used borrow-pits in the winter-spring period of 2021.

92. Non-compliance with safety precautions by the workers continues, despite repeated conversations of the safety specialist with the workers.

93. During the reporting period, regular visual monitoring on compliance with environmental requirements in course of construction works at all road sections was carried out by national environmental specialists of construction supervision consultant Temelsu as well as the environmental specialist of the Investment Project Implementation Group (IPIG) under the MoTR KR, as well as the Contractor's environmental specialist.

94. The current epidemiological situation with COVID-19 affected to the conduction of visual monitoring by the consultant. Due to the current situation, site visits were restricted in July, August and December. Since the introduction of quarantine by the Government of the Kyrgyz Republic in March 2020, Contractor had taken additional measures based on the recommendations of the COVID-19 Republican Headquarters, and approved Contractor's Action Plan for the precaution and preventing the spread of COVID-19, in particular the requirements of the compulsory wearing of masks by experts of the consultant and the contractor, the availability of sanitizer, measurement with contact thermometer upon entering body temperature of employees by responsible person and a survey of workers health before start working, mandatory removal from the workplace of persons with high body temperature and symptoms of an infectious disease.

95. Given the epidemiological situation in the country connected with COVID-19 spreading, specialists and workers from China arrive to the Kyrgyzstan in August, therefore previously planned road construction works were carried out not in full according to the results as end of 2020. International consultants could arrive to the Kyrgyzstan only since September.

3.1.1 Road construction works

96. In previous periods dust generation has the main impact on the environment during the earthworks. In the reporting period, single cases of dust generation were noted, about which the Contractor was immediately warned. At the construction sites water-sprinkling of the road including the shoulders was carried out from 7 am to 8 pm without a lunch break. The contractor has drawn up a schedule for water sprinkling with an interval between watering 30 minutes. Considering the small scope of work on the road and the fact that several watering machines worked on the construction sites, which water the road in time, dust generation was rarely observed at the construction sites. No complaints for dust formation were received from the local residents or local government authorities during the reporting period.

97. Construction work carried out by the contractor continued despite the “acute” situation in the Kyrgyz Republic with COVID-19. However, if we consider the pace of construction compared to the construction season in 2019, there was a strong slowdown in construction work due to the absence of the contractor's foreign engineering personnel on the site due to the closure of borders and the suspension of international passenger flights between China and Kyrgyzstan.

98. Consultant’s international personnel was unable to arrive to the construction site due to “complicated” epidemiological situation in the country. Team Leader – Resident Engineer worked remotely and could arrive to the site only by the end of August. Consultant’s local personnel was also provided with necessary means (protective masks, sanitizers in the office, regular cleaning and disinfection of office premises). Based on the recommendations of the COVID-19 Republican Headquarters, the consultant recommended, if possible, limit meetings with a large presence of people. And whenever possible, the discussion is conducted "on-line" or via e-mail.



Figure 30 Increased dust formation at construction sites

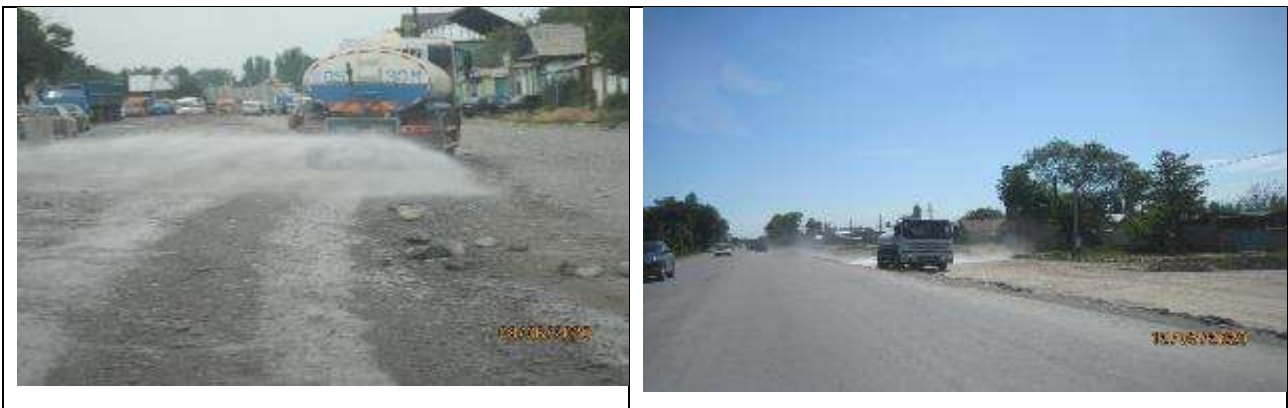


Figure 31 Water sprinkling on road construction sites

99. At previously constructed road sections installation of culvert chutes was carried out.



Figure 32 Installation of culvert chutes



Figure 33 Violation of safety precautions during installation of culvert chutes

100. During the work on the installation of culvert chutes, the facts of safety violations were noted (the absence of helmets) when moving load by cranes. The contractor was notified on the need for constant monitoring of safety measures and explanatory work among workers.

101. During the reporting period, work was carried out on the installation and strengthening of parapets.

102. In course of monitoring, it was found that on the road shoulders, where work was carried out to strengthen the parapets, there were not removed soil waste, laid in the form of small piles. Under the impact of atmospheric precipitation, the waste was washed away and polluted the surrounding

area. A letter was sent to the contractor with an indication of the time frame for eliminating this violation.



Figure 34 Cleaning of parapets from accumulated soil



Figure 35 Asphalt and plant waste on the road shoulders formed during the strengthening of the parapet

103. In due time, the soil waste was collected from the road shoulders and removed.

104. Further, the soil accumulated near the parapets was cleaned and removed in a timely manner.

105. During the reporting period, bus stops were constructed. At the same time, a large number of asphalt scraps were formed. The contractor was repeatedly warned about the need for timely removal of waste from the road.



Figure 36 Cleaning of stops from asphalt scraps

106. Retaining wall was constructed at km 26+500.



Figure 37 Construction of a retaining wall at km 26+500



Figure 38 Violation of safety precautions during work at height

107. During the construction of retaining wall at km 26+500, there were cases of safety violations. There were no special means for working at height - ladders. The workers worked without helmets. The contractor was notified on the need for constant monitoring of safety measures and explanatory work among workers.

3.1.3 Borrow-pits

108. To date, development of Jelamysh, Ak-Suu 1 and Kara-Balta borrow-pits was completed.

109. According to the regulation on reclamation of lands disturbed in the process of subsoil use, it is necessary to conduct the handover of reclaimed lands. This handover is performed by the Commission for the handover of reclaimed lands, appointed by the local state administration, on the territory of which these lands are located.

110. In 2020 reclamation works at the borrow-pits has not been started. Contractor explains that considering COVID-19 situation in the Kyrgyz Republic, initial reclamation plan was disrupted, reclamation works are planned to start in winter period of 2021.

111. To date, the situation at the borrow-pits as follows;

112. **Jelamysh borrow-pit.** At present, gullies and steep slopes on Jelamysh borrow-pit can pose a danger to the population and pets.



Figure 39 Jelamysh borrow pit before the start of development



Figure 40 Jelamysh borrow pit at present time

113. Currently, a borrow-pit reclamation plan has been drawn up and agreed. It is necessary to start work on the borrow-pit reclamation, according to this Plan.

114. Reclamation of disturbed land plots is aimed for environment protection; therefore, it is an environment safeguard measure and include two stages: technical and biological reclamation.

115. The propose of technical reclamation is brought the land plots to the state suitable for further biological reclamation and include following measures;

- grading of area;
- removal of waste, materials, as well as all pollutants;

– return of previously removed top soil; return of the previously removed soil and top layer;
116. Biological reclamation is the final stage and is conducted to reduce and prevent consequences of man-made violations.

117. The biological stage includes a set of agrotechnical and phytomeliorative measures aimed at improving soil properties for the purpose of restoring the natural fertility of soils.

118. **Ak-Suu 1 borrow-pit.** During the period of floods at the Ak-Suu river, the borrow-pit was restored. Reclamation is not required if unauthorized development is not carried out.

119. **Kara-Balta borrow-pit.** During the period of floods at the Kara-Balta river, the borrow-pit was partially restored. But the main area of the borrow pit is subject to reclamation, which includes grading all the irregularities in the area of the development.



Figure 41 Kara Balta borrow pit at present time

120. In the course of the monitoring it was found that unauthorized persons are working on the borrow pit area allotted to the Contractor, which leads to disruption of the borrow pit surface, forming deep cuts.

121. In 2020 development of Ak-Suu 2 and Saz borrow-pits continued.

122. **Ak-Suu 2.** A large amount of inert materials has accumulated at the borrow-pit, materials are taken out for road construction in the area of Moskovskiy district, as well as to the production site for crushing and stocking.

123. Borrow-pit is located in the riverbed of the AK-Suu river and covers a large area. It is necessary to carry out reclamation work on the worked-out area of the borrow-pit.

124. At the borrow-pit, reclamation work started, which includes grading all irregularities in the area of the excavations carried out, but given the lack of construction equipment, the bulldozer was sent for road construction.



Figure 42 Rehabilitation works at the Ak-Suu 2 borrow-pit

125. **Saz borrow-pit.** Currently, a large amount of inert materials has been accumulated at the borrow-pit, and it is being transported for the road construction on the territory of Sokuluk district.

3.1.4 Production sites

126. During the monitoring carried out in the reporting period, no specific violations were identified. Considering that the territory of the plant is located in the bed of the Ak-Suu river on a pebble foundation, which is characterized by a high filtration coefficient. To avoid soil contamination in the area of the production site with bitumen and other chemical reagents that can get into the underground aquifer, the contractor has been given clear instructions on the need to immediately clear areas of bitumen and other chemicals spills. This issue is constantly monitored by the Consultant.

127. During the plant operation, all the soil around the tanks with chemical substances should be protected from leaks and spills of hazardous materials by an impermeable protective coating.

128. The contractor was recommended to protect the soil around the tanks with chemical substances from leaks and spills of hazardous materials with an impermeable protective coating. These recommendations were taken into account and implemented by the Contractor.



Figure 43 Impermeable protective coating around chemical containers

129. Barrels with bitumen are placed on a special concrete platform, part of the barrels are placed behind the platform on the ground, covered with a special anti-filtration coating - a special plastic film.



Figure 44 Barrels with bitumen on a special site

130. The concrete mix is prepared at a concrete mixing plant and delivered to the construction site in finished form. Transportation of the concrete mix from the place of preparation to the place of unloading or directly to the concreting section is carried out by concrete mixers.

131. Washing of concrete mixers is performed on a specially designated site. Wash water is discharged into a special three-section sump. Then the wash water, after settling, is used for watering the area of the working site.



Figure 45 Washing of concrete mixers. Watering the territory of the production site with washing water

132. Despite regular training conducted by the Contractor's safety specialist, violations/non-compliance with safety precautions were observed at the site for manufacturing of concrete products when lifting and moving weight suspended with a travelling crane hook. The issue of compliance and observance of safety precautions will be monitored by the Consultant on an ongoing basis. During the July the Contractor's safety specialist conducted additional lectures for the staff.



Figure 46 Violations of safety precautions when working with the crane. Lack of personal protective equipment



Figure 47 Lack of personal protective equipment for workers at the site for the production of reinforced concrete products when lifting and moving cargo

3.1.4 Tree management

133. It was planned to start planting of seedlings instead of cut down trees in the autumn 2018, but, given that no culverts and sidewalks were completed at any construction site, no seedlings were planted. The contractor was repeatedly warned about the need to start planting seedlings.

134. Eptisa's environmental specialist together with the Contractor's environmental specialist are examined seedlings in several nurseries located in the Chuy region. The most high-quality and suitable seedlings were seedlings of the Peasant Farm "Pitomnik Zherdevyh". Contractor was repeatedly informed orally and in writing about the need to start planting seedlings in the near future. The first 600 seedlings were planted at the village of Petrovka (section 3) in autumn 2019 and spring 2020.

135. Seedlings planted in autumn and spring, in the amount of 600 pieces, with the hot weather, were needed in systematic regular watering. The first year after replanting is critical for seedlings, this is due to severe trauma to the root system, the destruction of its active suction part. It is very important during the formation of active roots, as well as the growth of foliage and shoots, to regularly water the seedlings.

136. To provide the seedlings with the sufficient moisture, a letter was sent to the contractor about the need to make regular watering every 3 days. Despite constant reminders, the seedlings were not watered regularly. Given the hot weather, some of the seedlings began to dry out. The consultant carried out a preliminary calculation of the survival rate of seedlings, which was 95%. Given that the planting of seedlings is not completed, the numbers on the survival rate of seedlings will change and the final percentage of survival will be summed up in spring 2021. The contractor was given an additional explanation that, in accordance with the terms of the current contract, all dried seedlings will be restored at the expense of the contractor.



Figure 48 Seedlings before the start of regular watering



Figure 49 Seedlings after watering

137. An additional 615 seedlings were planted in October and November 2020.

In the spring of 2021, it is planned to plant 1200 - 1500 seedlings on the prepared sites. The rest of the seedlings are planned to be planted in the autumn-spring period 2021 - 2022.



Figure 50 Planting of seedlings in November 2020.

138. When planting the last batch of seedlings, it was remained a large amount of soil removed and not used, formed during the preparation of pits for planting seedlings. Also, at section km 53 + 072, plastic bags in which the seedlings were packed were left uncleaned and collected in a heap.

139. A letter was sent to the contractor with the requirements to level the excess soil around the planted seedlings as soon as possible and remove the plastic bags in which the seedlings were packed.



Figure 51 Plastic bags left after planting and piled up in a heap and cleaning of these bags

140. The planted seedlings are threatened by domestic animals during grazing, as well as by unscrupulous local residents who break the seedlings for incomprehensible intentions. More than 10 birches were broken.



Figure 52 Seedlings eaten by pets and broken seedlings

3.1.5 Construction waste

141. During the road construction works, waste in the form of old reinforced concrete products, removed asphalt, and unsuitable soil is accumulated on the road. Removed old asphalt, in agreement with the local administration, is taken out and placed on the specified sites, village roads. Soil unsuitable for construction is also taken to sites allocated by local authorities. The issue of crushing old asphalt to the size of 20x20 remains unsolved. Earlier the old asphalt was placed on

village roads and then the contractor crushed it with a bulldozer and graded. However, this work did not always carry out in a timely manner, which lead to misunderstandings among local residents.

142. Given the fact that the quality of filling is not always satisfied with local residents, the administration of the villages of Alexandrovka and Sokuluk banned the transportation of old removed asphalt to fill the streets, and allocated area for storing unsuitable soil and removed asphalt to dumps for further use if necessary. On the part of the consultant, before storing unsuitable soil, the site was inspected for its "suitability", namely, the distance from water, the absence of a close occurrence of ground water or wetlands. According to the results of the inspection the allocated area for temporary storage of old asphalt and unsuitable soil met these requirements.



Figure 53 Dumping of old asphalt on a dedicated area for further use

143. The soil unsuitable for the road construction is also taken to the sites allocated by the local authorities.



Figure 54 Storage of unsuitable soil for further use

144. There is also a place allocated for roadside soil - a vast ravine close to the road

145. During the construction of bus stops and installation of parapets, asphalt waste is formed, which was not always taken out during the time. The contractor was warned about the need for its timely removal.



Figure 55 Asphalt waste on the road

146. To prepare the asphalt mixture, a large number of barrels with bitumen were delivered to the production site, the bitumen from which was used in November. A large number of empty barrels and metal lids were accumulated, which were removed from the production site in December.



Figure 56 Storage of empty bitumen barrels and lids

3.1.6 Workers camp

The situation in the workers' housing camps

147. In the residential camps of Sokuluk and Belovodskoye villages, household waste and sewage from septic tanks are removed in a timely manner, all protective measures for sanitary hygiene are observed. On the territory, all necessary maintenance measures are also observed. Compliance audits are periodically conducted. However, both in Sokuluk and in Belovodskoye, during repair and other work, waste is generated, which is not always taken out on time and creates a mess. It is necessary to clean workplaces every day after the end of work.

148. During monitoring on the camp area in the village of Belovodskoye, it was found that the top slab on the drain pit was destroyed. Considering that the pit was filled with sewage, this situation posed a threat to the life and health of the specialists living at the base. A letter was sent to the contractor indicating the timeframe for the elimination of this violation. The slab was replaced within the specified time frame.



Figure 57 Top slab on the drain pit

149. In August, new workers from China were arranged to live in the workers camp on the territory of the production site. Given the epidemiological situation in the country, newly arrived workers were quarantined.



Figure 58 Quarantine of newly arrived workers in the camp of workers' residence on the area of the production site.

150. In order to prevent the risks of disease, first-aid kits equipped with non-contact thermometers, sanitizers, and necessary medicines were organized in the camps where specialists and workers of the Contractor live.

The Contractor's personnel were provided with the necessary equipment: protective masks, sanitizers. Constant cleaning and disinfection of living premises was carried out.

Health and Safety Specialist conducted regular training to workers with a focus on COVID-19, including cough etiquette, hand hygiene and distancing measures.

There was mandatory isolation of persons with fever and signs of an infectious disease.

During the reporting period, no health and safety problems were recorded for the Contractor's specialists and workers.

3.2 Site audits

151. The current epidemiological situation with COVID-19 affected the implementation of visual monitoring by the consultant. Due to the current situation, site visits were restricted in July, August and December.

Table 8 Monitoring of construction sites in July 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	01.07	Volkova T. Myrsaliev N.	Monitoring of construction sites	Increased dust formation was observed at the stone crushing plant. A verbal warning was given to the Contractor about the need to remove construction waste. A warning was given to the Contractor.

Table 9 Monitoring of construction sites in August 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	11.08	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Meeting with the Contractor. Discussion of environmental issues.
2	13.08	Volkova T.	Monitoring of construction sites	Site visit to the production site, to the Ak-Suu2 borrow pit.
3	17.08	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	The problem of not removed waste from construction sites on the road. A verbal warning was given to the Contractor.
4	19.08	Volkova T.	Monitoring of construction sites	Site visit: monitoring of stone crushing plant, asphalt plant, batching plant.

5	21.08	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Dusting on the stone-crushing plant on the area of the asphalt plant. Meeting with the Contractor. Discussion of environmental issues.
6	24.08	Volkova T.	Monitoring of construction sites	On the road shoulders in the villages of Sadovoye and Belovodskoye, where work is being carried out to strengthen the parapets and asphaltting of stops, there are not taken out soil and asphalt waste, stacked in the form of small piles. A letter was sent to the Contractor.
7	26.08	Volkova T. Myrsaliev N.	Joint visit with the SAEPF Laboratory and the Contractor's ecologist	Laboratory monitoring. air and surface water samples were taken
8	28.08	Volkova T.	Monitoring of construction sites	Monitoring the disposal of old asphalt and unsuitable soil.

Table 10 Monitoring of construction sites in September 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	02.09	Volkova T. Myrsaliev N..	Monitoring of construction sites. Together with Contractor's environmental specialist	The problem of not removed waste from construction sites on the road. A verbal warning was given to the Contractor.
2	04.09	Volkova T.	Monitoring of construction sites	On the territory of the base in the village of Belovodskoye, it was found that the top slab on the drain pit was destroyed. Given the fact that the pit is filled with sewage water, this situation poses a threat to the life and health of specialists living on the base. A letter was sent to the Contractor about the detected violation.
3	07.09	Volkova T.	Monitoring of construction sites	Strong dust formation on the stone-crushing plant on the territory of the asphalt plant. Meeting with the Contractor. Discussion of environmental issues.
4	08.09	Volkova T. Myrsaliev N.	Monitoring of construction sites	Monitoring of construction sites. Together with the Contractor's ecologist

5	15.09	Volkova T. Myrsaliev N..	Monitoring of construction sites. Together with Contractor's environmental specialist	Site visit to the proposed sites of storage of old asphalt in the village of Romanovka
6	16.09	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	The problem of not removed waste from construction sites on the road. A letter was sent to the Contractor about the detected violation.
7	17.09	Volkova T.	Monitoring of construction sites	During the operation of the stone crushing plant, water sprinkling of raw materials was not carried out, and dusting was observed. The dust spread not only on the territory of the plant, but also beyond its borders, causing harm to the health of plant workers and the environment. A letter was sent to the Contractor about the detected violation.
8	22.09	Volkova T.	Monitoring of construction sites	Construction waste on the road has been removed.
9	24.09	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	The problem of not removed waste from construction sites on the road. A letter was sent to the Contractor about the detected violation.
10	28.09	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with an international environmental specialist	Monitoring of construction sites on the road.
11	29.09	Volkova T. Myrsaliev N.	Together with the Contractor's ecologist, visit the nurseries for the selection of seedlings	Visit to the nursery "Zherdev garden" in order to select seedlings for planting on the road in autumn
12	30.09	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with an international environmental specialist	Site visit to PBMC section. Kara-Balta-Suusamyrd Road (68.5 km)

Table 11 Monitoring of construction sites in October 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
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1	01.10	Volkova T. Myrsaliev N. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with contractor's environmental specialist and international environmental specialist	Site visit to PBMC section. Kara-Balta – Suusamyrdarya Road (68.5 km) Site visit to the Ak-Suu 2 borrow-pit. Violations in the development of the borrow-pit. A verbal warning was given to the Contractor.
2	02.10	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites	Monitoring of construction sites on the road. Departure to the Saz borrow pit
3	05.10	Volkova T. Myrsaliev N. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with contractor's environmental specialist and international environmental specialist	Monitoring of construction sites on the road. Meeting with the Contractor. Discussion of environmental issues
4	06.10	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with an international environmental specialist	Monitoring the state of previously constructed culvert pipes and chutes.
5	07.10	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with an international environmental specialist	Monitoring of bridge construction at Sokuluk River.
6	08.10	Volkova T. Myrsaliev N. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with contractor's environmental specialist and international environmental specialist	Visual monitoring the state of the Jelamysh borrow-pit. Verbal warning to the Contractor about the need to develop a plan for the reclamation of the borrow pit.
7	09.10	Volkova T. Dr. Md. Mohsin Almaji	Monitoring of construction sites together with an international environmental specialist	Meeting with the Contractor following the visit of an international environmental specialist. Discussion of environmental issues
8	12.10	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Selection of areas for the intended planting of seedlings.
9	19.10	Volkova T.	Monitoring of construction sites	300 seedlings were planted in the village of Petrovka.
10	22.10	Volkova T.	Monitoring of construction sites	In the areas where work was carried out on planting seedlings, it was remained a large amount of taken and not used soil, formed during the

				preparation of pits for planting seedlings. Also, in some areas, the plastic bags in which the seedlings were packed were not removed. A letter was sent to the Contractor
11	27.10	Volkova T.	Monitoring of construction sites	Visit to the production site: monitoring of stone crushing plant, asphalt plant, batching plant.
12	27.10	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Monitoring the construction of bridges at Ak-Suu and Sokuluk rivers. Riverbeds are not exempt from construction waste. A warning was issued to the Contractor.
13	29.10	Volkova T.	Monitoring of construction sites	Conducting laboratory monitoring. Monitoring of noise and vibration levels was conducted
14	30.10	Volkova T.	Monitoring of construction sites	Visual monitoring of all construction sites.

Table 12 Monitoring of construction sites in November 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	03.11	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Selection of areas for the intended planting of seedlings
2	05.11	Volkova T.	Monitoring of construction sites	Site visit of ADB and IPIG MoTR specialists to the objects under construction.
3	06.11	Volkova T.	Monitoring of construction sites	Planting of a new number of seedlings in the area of Jayil district (315 pieces) has been started
4	11.11	Volkova T.	Monitoring of construction sites	Visual monitoring of all construction sites.
5	12.11	Volkova T.	Monitoring of construction sites	Monitoring of all construction sites. The problem of construction waste on the road. The contractor has been warned.
6	13.11	Волкова Т. Dolgov Yi.	Site visit on complaints	Site visit for consideration of complaints at the city of Shopokov with an interdepartmental commission.
7	16.11	Volkova T.	Monitoring of construction sites.	In the areas where work was carried out on planting seedlings, it was remained a large amount of taken and

				not used soil, formed during the preparation of pits for planting seedlings. Also, in some areas, the plastic bags in which the seedlings were packed were not removed. A letter was sent to the Contractor.
8	19.11	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Monitoring the construction of road crossings. Safety violations were noted.
9	20.11	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Visit to the production site: monitoring of stone crushing plant, asphalt plant, batching plant.
10	24.11	Volkova T. Myrsaliev N.	Monitoring of construction sites. Together with Contractor's environmental specialist	Visual monitoring of all construction sites.
11	26.11	Volkova T.	Monitoring of construction sites	Site visit to the areas of planted seedlings. Checking the elimination of violations identified earlier.
12	27.11	Volkova T.	Monitoring of construction sites	Visual monitoring of all construction sites. Installation of culverts. Violation of safety regulations when installing chutes.
13	30.11	Volkova T.	Monitoring of construction sites	Visual monitoring of all construction sites.

Table 13 Monitoring of construction sites in December 2020

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	17.12	Volkova T.	Monitoring of construction sites	Monitoring of all construction sites. Collecting information for the semi-annual report
2	24.12	Volkova T.	Monitoring of construction sites	Monitoring of all construction sites. Conducting laboratory monitoring. Noise and vibration monitoring were carried out
3	29.12	Volkova T.	Monitoring of construction sites	Monitoring of all construction sites. Collecting information for the semi-annual report

3.3 Issues tracking (based on list of non-compliance)

Issues tracking (based on list of non-compliance)

During the reporting period, if environmental issues were identified, a warning was initially issued to the Contractor with a specified deadline. If the Contractor did not eliminate the identified environmental issue, a letter was sent. Basically, all problems were resolved in a timely manner.

Table 14 Report on non-compliance with environmental requirements (July-December 2020)

No	The issue of non-compliance, defined by the Consultant (e)	CEMWP Number and date of notification the Consultant	Applicable Guide on Best Practices (No.)	Specific issue and location	Actions taken by the Contractor (specify)	Results of Consultant Inspection	Status as of December 31, 2020
1	Waste disposal	CEMWP № 2.6.2. 0541BOC3 55/3350-00051 dd 26.08.20	Annex 5 Waste Management Plan	On the roadsides in the villages of Sadovoye, and Belovodskoye, in the places where work was carried out on strengthen parapets and asphaltting bus stops, there were not disposed of soil and asphalt waste, piled up in small heaps. Under the impact of atmospheric precipitation, earth waste is eroded and pollutes the surrounding area	The waste was removed in due time. Contractor's Letter CAREC - G0423 dated 01/09/2020	During the monitoring it was established that all soil and asphalt wastes were removed. Closed	<u>31.08.20</u> new waste in the specified area is not formed
2	Atmospheric air pollution	CEMWP № 2.2.1 0541BOC3 55/3350-00072 dd 17.09.2020	Annex 9 Air Quality Management Plan	During the operation of the stone crushing plant, watering of raw materials was not performed, and dusting was observed. The dust spread not only on the territory of the plant, but also beyond its borders, causing harm to the	Contractor's Letter CAREC – G0439 dd 21.09.2020 The contractor installed supercharge pumps to increase the volume of water	Closed	<u>30.09.2020</u> No dusting was observed

No	The issue of non-compliance, defined by the Consultant (e)	CEMWP Number and date of notification the Consultant	Applicable Guide on Best Practices (No.)	Specific issue and location	Actions taken by the Contractor (specify)	Results of Consultant Inspection	Status as of December 31, 2020
				health of plant workers and the environment.	supplied to the stone crushing plant for wetting the material		
3	<p>Compliance with safety requirements by the contractor's workers</p> <p>The problem of waste disposal</p>	<p>CEMWP 2.9.3 0541BOC3 55/3350-00058 dd 07.09.2020</p> <p>CEMWP № 2.6.2.</p>	<p>Annex 3 Plan for Safety, Health and Hygiene</p> <p>Annex 5 Waste Management Plan</p>	<p>On the territory of the base in the village of Belovodskoye, it was found that the top slab on the drain pit was destroyed. Given that pit is filled with sewage, this situation poses a threat to the life and health of specialists living on the base.</p> <p>On the roadsides, starting from 16 km, where work is being carried out to strengthen the parapets and laying asphalt at bus stops, there is not removed soil and asphalt waste</p>	<p>Contractor's Letter CAREC – G0430 dd 11.09.2020</p> <p>The slab was replaced in due time.</p> <p>Contractor's Letter</p> <p>The waste was removed on time.</p>	<p><u>Closed</u></p>	<p><u>30.09.20</u></p> <p>no new waste has been generated at the specified site</p>
4	The problem of planted seedlings	<p>CEMWP № 2.5.1 0541BOC3/55-3350-00125 dd 22.10.2020</p>	Annex 10 Tree Management Plan	In the areas where the planting of seedlings was carried out, a large amount of soil was remained and not used, which was formed during the preparation of pits for planting seedlings. Also, in some areas, plastic bags, in which the	<p>CAREC – G0502 dd 30.10.2020</p> <p>Excess soil formed during the preparation of pits for planting seedlings was leveled, plastic bags in which</p>	<u>Partially closed</u>	

No	The issue of non-compliance, defined by the Consultant (e)	CEMWP Number and date of notification the Consultant	Applicable Guide on Best Practices (No.)	Specific issue and location	Actions taken by the Contractor (specify)	Results of Consultant Inspection	Status as of December 31, 2020
				seedlings were packed, have not been removed In areas where seedlings were planted in the spring of 2020, weeds that have grown over the summer and dried up create a fire hazard, which poses a threat not only to seedlings, but also to the population.	the seedlings were Packed were collected. The contractor replied that it plans to clean up the weeds in the spring of 2021.		
5	Waste disposal issue	CEMWP № 2.6.2. 0541BOC3 55/3350-00134 dd 30.10.20	Annex 5 Waste Management Plan	On the road sides, where work is being carried out to strengthen the parapets and asphalt bus stops, there is non-removed earth and asphalt waste	CAREC – G0509 dd 03.11.2020 the waste was partially removed in due time.	Closed	30.11 2020 all soil and asphalt waste removed
6	Seedlings planting	CEMWP № 2.5.1 0541BOC3/55-3350-00154 dd 16.11.2020	Annex 10 Tree Management Plan	When planting of seedlings, it was remained a large amount of soil removed and not used, formed during the preparation of pits for planting seedlings. Also, the plastic bags in which the seedlings were packed were not removed	CAREC – G0523 dd 23.11.2020 The excess soil formed during the preparation of the pits for planting seedlings was not leveled, plastic bags in which the seedlings were packed were collected	Partially closed	30.11.2020 excess soil remained uncleaned and froze. It will be possible to level it in the spring when warm weather is established.

No	The issue of non-compliance, defined by the Consultant (e)	CEMWP Number and date of notification the Consultant	Applicable Guide on Best Practices (No.)	Specific issue and location	Actions taken by the Contractor (specify)	Results of Consultant Inspection	Status as of December 31, 2020
							The bags have been removed.
7	Waste disposal issue	CEMWP № 2.6.2. 0541BOC3 55/3350-00178 dd 24.12.20	Annex 5 Waste Management Plan	On the road there is not removed reinforced concrete waste generated during construction work. There are also a large number of metal barrels and lids on the territory of the production site	Will be implemented in 2021	<u>Partially closed</u>	Metal barrels and lids were removed. Reinforced concrete waste has not been removed

3.3.1 Overview and description of issues tracking during the current period

152. During the reporting period, Temelsu's national environmental specialist conducted regular monitoring of compliance with the requirements of the EMP and CEMWP during construction work on the Bishkek-Kara-Balta road section. The specialist visited the site more than 50 times. Given the epidemiological situation in the country, site visits were limited. Some of the visits were combined with the Contractor's environmental specialist. The CEMWP prepared by the contractor was used as a checklist.

153. Environmental specialists of IPIG MoTR conducted separate inspections focusing on specific issues, such as safety during construction work, local complaints, and seedling planting.

Issues tracking

154. During the reporting period, the main focus was on the following issues:

- Disposal of construction waste;
- The violation of safety precautions, occupational safety and health;
- Planting and caring for seedlings;
- Borrow-pit mining and management;
- Material's manufacturing plant (bitumen leakages);
- Disposal of old asphalt;
- Monitoring of environmental components.

Summary of issues tracking

155. During the reporting period, if environmental issues were identified, the Contractor was initially warned verbally, and if the issue was not resolved within the specified time frame, letters were sent, including the definition of mitigating measures that should be applied to solve the identified issue.

156. From July to December 2020, 11 non-compliance issues were recorded and 10 of them were resolved during the reporting period. During the same period (July - December) 2019, 21 non-compliance issues were recorded and 17 of them were resolved during the reporting period.

157. The problems noted in the non-compliance letters are mostly repeated in each reporting period. The contractor should consider the omissions in the management of these issues in the subsequent work.

Table 15 Summary of problem monitoring activities in the current period

Non-compliance	July – December 2020	Total
Total	10	10
Significant & Resolved	8	8
Unresolved	2	2
Pending	2	2
Chronic and unaddressed	0	0
Minor issues	2	2

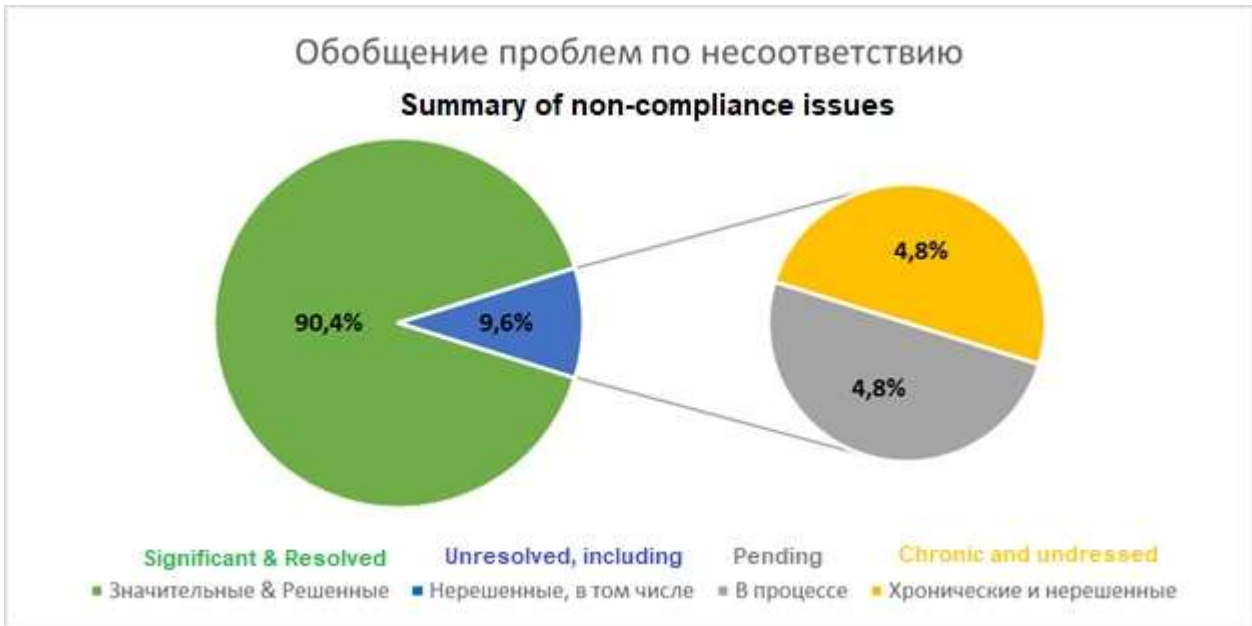


Figure 59 Summary of noncompliance issues

158. The number of non-compliance letters in 2020 was less compare to 2019. This is due to the fact that most of the identified non-compliances were discussed verbally with the Contractor. The implementation date was discussed, and if the violation was not resolved on time, a letter was sent. The reason for the large number of non-compliance issues is that, although a specific issue was resolved within a specified period, a similar non-compliance was repeated in the future, such as, for example, in relation to the management of production waste, safety violations during construction work.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted During Current Period

159. In 2019, the consultant transferred the environmental monitoring functions to the Contractor. To monitor environmental components such as atmospheric air quality, surface water quality, noise impact, vibration impact during the construction period at the Bishkek –Kara-Balta road section. In 2020, the Contractor sent requests and analyzed quotes for conducting laboratory tests to several laboratories.

160. Based on the analysis of the cost of laboratory studies and the Consultant's recommendations, the following laboratories were selected:

- **Air Quality:** Environmental Monitoring Department of SAEPF under the KRG;
- **Surface Water Quality:** Environmental Monitoring Department of SAEPF under the KRG;
- **Noise impact:** Private laboratory LLC «ProfiLab»;
- **Vibration impact:** Private laboratory LLC «ProfiLab».

161. After the conclusion of agreements, applications were submitted for the measurement of vibration, noise and water and air sampling at the construction equipment work sites.

162. Given the epidemiological situation in Kyrgyzstan, the laboratories were quarantined and did not work.

163. The laboratory of the Environmental Monitoring Department of the Chui-Bishkek Territorial Administration of the State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic did not work till August due to the worsening of the COVID-19 situation. In this regard, the air quality and surface water quality were not determined in the first half of 2020.

164. On August 26, 2020, water samples from the Sokuluk River – above and below the bridge, respectively - were taken by specialists of the SAEPF laboratory in the presence of the Contractor's and Consultant's environmental experts. There was no water in the Ak-Suu River at the time of sampling and during the summer.

Table 16 Surface water quality measurement protocol

Name of components	UoM	Analytical data by points		MPC		Normative Documents
		125	126	+	++	
Suspended substances	mg/l	19,60	5,6	Increase 0,25/0,75		ПНД Ф 14.1:2:3.110-97
Oil products	mg/l	0,002	0,003	0,05	0,3	ПНД Ф 14.1:2:4.128-98

- List of MPCs for public water use

- The list of MPCs for municipal drinking and cultural and household water use. -Hygienic standards of maximum permissible concentration of chemicals in water of water bodies for drinking and household water use.

165. According to the results of chemical analysis, the water in all selected points does not exceed the MPC for reservoirs of a cultural and household category for all determined ingredients.



Figure 60 Sampling point of water from the Sokuluk river (above and below the bridge 27,700 km)



Figure 61 Sampling of water from the Sokuluk river

166. On August 26, 2020, the specialists of the SAEPF laboratory in the presence of the Contractor's and Consultant's environmental experts also took samples to determine pollutants in the air. Air measurement was conducted at the sites of construction equipment work on the road.

167. Samples were taken in accordance with 1). RD 52.04.186-89 "Guidelines for the control of air pollution", 2). GOST 33007-2014 "Gas-cleaning and dust-collecting equipment. Methods for determining the dust content of gas streams. General technical requirements and control methods."

168. Analysis methods used: gas analyzers: 310A; K-100; H-320; Gamma-ET; Dust analyzer DUSTTRAK 8533. GN "MPC of pollutants in the atmospheric air of settlements".

Table 17 Air quality measurement protocol

Name of components	UoM	Analysis data by points								MPC Max. mg / m3
		Bishkek – Kara-Balta								
		48	Exceeding of	49	Exceeding	50	Exceeding	51	Exceeding of	

			MPC max.		of MPC max		of MPC max		MPC max.	
sulphur dioxide	mg / m3	0,013 ± 0,0033	-	0,007 ± 0,0018		0,012 ± 0,003		0,006 ± 0,0015		0,5
nitrogen dioxide	mg / m3	0,03 ± 0,0075	-	0,022 ± 0,0055		0,028 ± 0,007		0,019 ± 0,0048		0,085
carbon oxide	mg / m3	1,6 ± 0,32	-	0,4 ± 0,08		1,8 ± 0,36		0,7 ± 0,14		5,0
Amount of hydrocarbons	mg / m3	2,2 ± 0,44	-	2,0 ± 0,4		2,1 ± 0,42		1,5 ± 0,3		5,0
Suspended substances	mg / m3	0,242 ± 0,048	-	0,16 ± 0,032		0,496 ± 0,1		0,478 ± 0,096		0,5

169. **Conclusion:** According to the test results, no excess of the MPC was detected in the selected atmospheric air samples (48-51).



Figure 62 Sampling point of air in the village of Romanovka, 24,140 km



Figure 63 Sampling point of air in the village of Sokuluk, 26,560 km



Figure 64 Sampling point of air in the village of Belovodskoe, 41,220 km



Figure 65 Taking samples of atmospheric air

170. On October 29, 2020, a specialist of the Profilab operational laboratory, in the presence of the Consultant's and the Contractor's environmental experts measured the noise and vibration levels coming from vehicles and the Contractor's equipment at the Bishkek-Kara-Balta road.

Table 18 Name of measuring instruments and information on state verification

Measuring instrument name	Number	Verification certificate		Tested before
		Number	Date	
Ecophysica – 110A	AB 130044	1086	08.05.2020	08.05.2021

171. *Noise*. Regulatory documentation in accordance with which measurements were conducted: GOST 23337-2014. Noise. Methods for measuring noise in residential areas and in the premises of residential and public buildings.

172. Reference documentation for standards: Sanitary standards 2.2.4/2.1.8.562-96. Noise in the workplace, in the premises, in residential public buildings and on the territory of residential buildings.

Table 19 Noise measurement protocol

No.	Location. Mode of operation.	Sound level. (dBA)
	village Belovodsk, center, near the market 42 + 800 km, south side of the road. Latitude: 42° 50' 4"; Longitude: 74° 50' 5"	
1	Asphalt paver is operating	83 actual
		MPL 70
		Exceed 13 dBA
	village Belovodsk, center, next to the market 42 + 800 km north side of the road. Latitude: 42° 50' 4"; longitude: 74 ° 50' 5"	
2	Asphalt paver is operating	84 actual
		MPL 70
		Exceed 14 dBA
3	Asphalt paver is not operating, transport	83 actual
		MPL 70
		Exceed 13 dBA
	Karabalta town, roundabout, 61 + 020 km, north side of the road. Latitude: 42° 51' 24"; longitude: 74° 17' 4"	
4	Excavator is operating	77 actual
		MPL 70
		Exceed 7 dBA
5	Excavator is not operating	73 actual
		MPL 70
		Exceed 3 dBA
	the village of Gavrilovka, next to the kindergarten 21 + 510 km, north side of the road, 15 m from the road. Latitude: 42° 51' 54"; longitude: 72° 24' 1"	
6	Background level	77,5 actual
		MPL 70

		Exceed 7,5 dBA
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173. **Conclusion on the results of measurements:** At the time of the measurements, the background noise level at the measured points during the movement of vehicles near the road was 77 dBA. In the operating mode of the company's equipment, the noise level exceeds the sanitary standard from 7 dBA to 14 dBA, when the equipment is off, the noise level exceeds the sanitary standard from 3 dBA to 13 dBA.



Figure 66 Place of measurement of the noise and vibration level in the village of Gavrilovka (21,510 km control point)



Figure 67 Noise and vibration level measurements in the center of the village of Belovodskoye, (42,800 km)

174. On December 17, 2020, specialists of the operational laboratory "Profilab" in the presence of the Consultant and the Contractor environmentalist specialists carried out measurements of the noise level from passing vehicles on the Bishkek-Karabalta road in the places where the noise-reducing layer of asphalt was placed.

175. Compared to 2015 noise measurements, the 2020 levels are generally lower. Only in some areas has the noise level increased. It should be noted that one-time measurements were considered, both in 2015 and in 2020. At the same time, over the past 5 years, the traffic flow has increased, and also given that the measurements were carried out in the winter, when anti-ice

measures were taken on the road (sand spreading), it is necessary to measure the noise level on these sections of the road in the summer to get more accurate results.

Table 20 Protocol for measuring the noise level in areas with a noise-reducing asphalt layer

no	Location of noise level measurements	Sound level (dBA)		
		2015	2020	
1	Aleksandrovka village, 80m from the road near the school			
		61	75	Actual
		70	70	MPL
			5	Exceed
2	village Belovodskoe, st. Frunze 201, 10m from the road			
		80,5	74	Actual
		70	70	MPL
		10.5	4	Exceed
3	Petrovka village, Centralnaya st., 504			
		71	70	Actual
		70	70	MPL
		1		Exceed
4	Poltavka village, km 55 + 440 near the secondary school			
		75	72	Actual
		70	70	MPL
		5	2	Exceed
5	Petropavlovka village, 57 + 550 km near a residential building, next to a school			
		78	71	Actual
		70	70	MPL
		8	1	Exceed
6	the village of Novo-Nikolaevka 59 + 612 km from the road near the secondary school			
		71,3	73	Actual
		70	70	MPL
		1.3	3	Exceed



Figure 68 Noise level measurements in areas with a noise-reducing asphalt layer



Figure 69 Measurement of the noise and vibration level in the city of Karabalta (61,020 km end of the section)

176. *Vibration*. Normative documentation for measurement methods, in accordance with which the measurements were carried out: GOST 31191.1-2004 "Vibration. Measurement of general vibration and assessment of its impact on humans. Requirements for measurements at workplaces "

177. Reference documentation for standards: Sanitary norms 2.2.4./2.1.8.566-96. "Industrial vibration in residential and public buildings"

Table 21 Vibration measurement protocol

no.	Location. Mode of operation.	Type of vibration		Axis	Sound level (dBA)
		Transport	Transport - technological		
1	village Belovodsk, center, near the market 42 + 800 km, south side of the road. Latitude: 42°50'4"; Longitude: 74°50'5"				
	Asphalt paver is operating	+	+	X	96,5

				Y	90,3
				Z	86,4
2	village Belovodsk, center, next to the market 42 + 800 km north side of the road. Latitude: 42° 50' 4"; longitude: 74 ° 50' 5"				
	Asphalt paver is operating	+	+	X	98,8
				Y	95,9
				Z	87,9
3	Asphalt paver is not operating, transport	+		X	96,7
				Y	93,4
				Z	86,1
4	Karabalta town, roundabout, 61 + 020 km, north side of the road. Latitude: 42° 51' 24"; longitude: 74° 17' 4"				
	Excavator is operating	+	+	X	98,3
				Y	96,9
				Z	90,1
5	Excavator is not operating	+		X	96,6
				Y	93,9
				Z	86,7
6	village of Gavrilovka, next to the kindergarten 21 + 510 km, north side of the road, 15 m from the road. Latitude: 42°51'54"; longitude: 72°24'1"				
	Background level	+		X	94,6
				Y	93,6
				Z	83,3

178. **Conclusion on the results of measurements:** According to the results of instrumental measurements, the vibration level during the operation of the company's equipment ranges from 86.4 dBA to 98.8 dBA, and when the equipment is off, it ranges from 86.1 to 96.7 dBA. Background vibration is 94.6 dBA

Note: the vibration level except for residential and workplaces is not standardized.



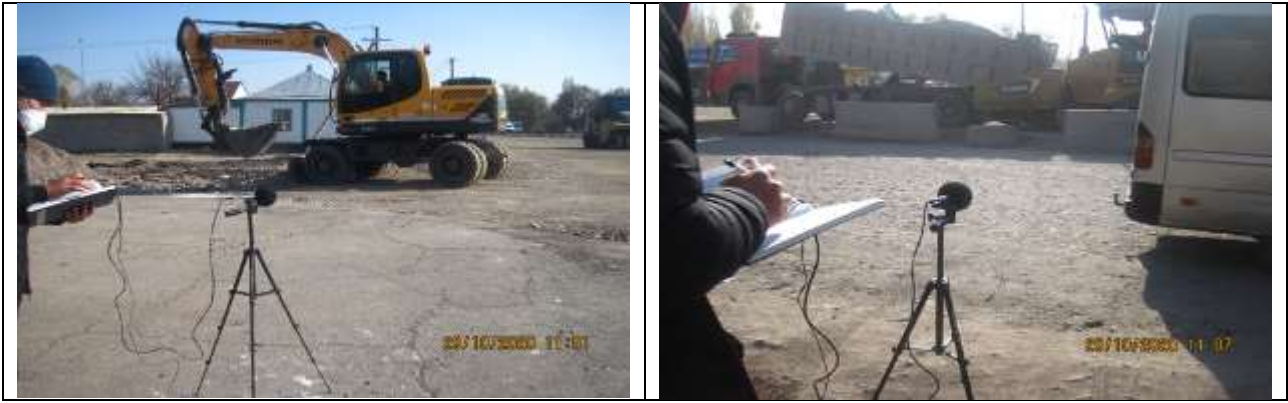


Figure 70 Noise and vibration measurements

179. In order to study the impact of noise on the local population and its mitigation measures, prior to the start of road construction work, a Noise Modeling was conducted according to the instructions of the ADB. One of the methods to reduce the negative impact of noise on the local community was noise-reducing asphalt. Currently, the project specialists have developed a mix design of noise-reducing asphalt for this project, which will be laid as wearing course in the roadbed.

4.2 Trends

180. During the construction period in 2021, it is planned to monitor the quality of atmospheric air, noise impact and, if necessary, vibration in the areas where construction work will take place. Construction work on the bridges has been completed, therefore monitoring of surface water quality is not necessary. In 2020, laying of wearing course using a mix design has been started, and to determine its effectiveness, it is necessary to conduct noise monitoring at these sections. It is also necessary to monitor background indicators of atmospheric air quality, noise and vibration before starting construction work at 7.4 km section.

4.3 Grievances of local residents

181. During the reporting period, 20 grievances and complaints were received. Most of the requests were related to the removal of parapets and the opening of additional entrances. There were also requests from local governments to assist in solving various issues. All complaints were duly registered in the GRM Log Book and were promptly addressed. There were no environmental complaints.

Table 22 Summary of Requests and Complaints for the 2nd half of 2020

No.	Date	Name/Address	Complaint	Result	Comments
1	17.07.2020	Residents of the village of Alexandrovka / Moskovsky district, Alexandrovsky ayil okmotu	Request for dismantling of the parapets and opening of junction for cars at the Lugovaya street	Denied on the grounds that there is an underground pedestrian passage near the specified location. The project provides for junctions at km29+924 on the left at a distance of 450 m and on the right at km30+735 at a distance of 330 m.	Information given, case closed 23.07.2020
2	21.07.2020	Residents of the village of Belovodskoye / Moskovsky district, Belovodskoye ayil okmotu	Request for the dismantling of the parapets and opening of junction for cars at the Lugovaya street, near Ostrov store.	Denied on the grounds that special breaks are arranged at km 44+120 on the left at a distance of 230 m and at km44+335 on the right at a distance of 120 m.	Information given, case closed 23.07.2020
3	21.07.2020	Sanzhar Ibraimov, owner of Arzu cafe, Aleksandrovka village / Moskovskiy district, Aleksandrovskiy ayil okmotu	Request to cover the chutes with reinforced concrete slabs for parking arrangement of Arzu cafe	Denied on the grounds that the project does not provide for Parking for all objects. Parking is possible at the expense of the owner of the cafe "Arzu"	Information given, case closed 23.07.2020
4	27.07.2020	Residents of the village Sadovoe / Moskovsky district, Sadovoe ayil okmotu	Request regarding the timing and quality of the installation of chutes in the village of Sadovoe	Work on the construction of the chutes is being carried out in accordance with the design	Information given on 27.07.2020. case closed in August 2020
5	13.08.2020	Association of Lawyers from the owner Bozkurt Ferudun Voенно-Antonovka, Frunze str., No. 67	Request for clarification of the boundaries of the project impact on the land plot	The response was provided that there are buildings, but the land plot is outside the project area	Information given, case closed 21.08.2020
6	18.08.2020	Residents Sokuluk village, 198, 200 Frunze st.	Request to relocate a designed bus stop	The response was provided that the bus stop will be relocated to 27 m. in the easterly direction at km 27+473 and the length of the bus stop will be reduced to 13 m.	Information given, case closed 27.08.2020
7	19.08.2020	Moskovsky District Court Alexandrovka 153a	Request for clarification of structures and project impact	A response was provided that there are retail outlets located at this address km 32+300, but the land plot is outside the project area	Information given, case closed 21.08.2020

No.	Date	Name/Address	Complaint	Result	Comments
8	24.09.2020	Moskovsky District State Administration	request to install temporary crosswalks and road signs near the school	Response - pedestrian crossing markings will be restored and road signs will be installed.	Information given, case closed 05.10.2020
9	05.10.2020	Aksuuyskiy alcohol plant, Sadovoe village	Request for removal of parapets and extension of the bridge	The response was provided that the expansion of the bridge is provided for by the project, and the removal of the parapets is impossible due to the safety reasons	Information given, case closed 21.10.2020
10	15.10.2020	Residents of Aleksandrovka village, st. Lugovaya	Request for removal of parapets at the intersection of Lugovaya street	The response was provided that the removal of parapets is impossible for safety reasons	Information given, case closed 06.11.2020
11	22.10.2020	Shabdanaliev D.T. Poltavka village	Request to relocate the designed bus stop	Response provided on the impossibility of relocation of the bus stop to 54 + 150 km	Information given, case closed 16.11.2020
12	22.10.2020	Sviridova L. and Ibragimov Z.M. residents of Sokuluk village	Request to install a drainage pipe	The answer was provided that the author of the project, LLC Ram Engineering Associates, will be involved and a decision will be made after appropriate study and consultation.	Information given, 02.11.2020
13	05.11.2020	Nozhkina N.A. Shopokov, st. Pushkin, 1	Complaint about cracks on the walls of the store and the lack of access roads to the store	Response provided that the complaint is unfounded	Information given, case closed 16.11.2020
14	05.11.2020	Imanbaeva B.T. Shopokov, st. Pushkin, 2	Complaint about cracks on the walls of the vulcanization building and lack of access roads to the vulcanization	Response provided that the complaint is unfounded	Information given, case closed 16.11.2020
15	30.11.2020	Sarieva V.K. village of Gavrilovka, st. Frunze, 124	Appeal about the absence of a junction to a residential building since July	Response provided that the complaint is unfounded	Information given, case closed 08.12.2020
16	10.12.2020	Sokuluk, Frunze street 203, Bedelbaeva A	Complaint about the inability to reconstruct an existing building due to the government's moratorium	Response is that it is possible to reconstruct an existing building. the necessary measures will be taken	Information given, case closed 17.12.2020
17	15.12.2020	Dokturbek Sydykov, Sokuluk village, Frunze street 58	Request to open the parapet for the entrance to the business object	The response was provided that the removal of parapets is impossible for safety reasons	Information given, case closed 25.12.2020
18	15.12.2020	residents of the village of Belovodskoye, Moskovsky district	Request to open the parapet for the entrance to the business object	Provided a response about the temporary opening of access	Information given, case closed 25.12.2020

No.	Date	Name/Address	Complaint	Result	Comments
19	16.12.2020	Administration of Zhibek Zholu market, Sokuluk village, Frunze street	Complaint about market access problems due to construction works	Response - complaint is unfounded	Information given, case closed 25.12.2020
20	16.12.2020	State Eco Tech Inspection	Complaint about poor quality construction work	Response - the necessary measures will be taken	Information given, case closed 25.12.2020

4.4 Summary of project outcome

182. When analyzing the results of the monitoring, it is necessary to consider that the project road section is located in a densely populated area with a large flow of vehicles. Therefore, when analyzing the environmental impact of construction work, it is necessary to consider background levels.

183. Having analyzed the data of the monitoring results, it can be noted that, given the data of the background levels, construction work does not have a significant impact on the environment.

184. The issue of arranging and conducting monitoring is the insufficient number of laboratories in the region. To conclude agreements for monitoring environmental components, the same state laboratories are offered, which carry out both private and state orders, with an insufficient number of personnel. In this regard, it is necessary to arrange in advance each visit to the site for sampling and sometimes wait several weeks. It was easier to work with the private laboratory of Profilab LLC, whose employees were available when necessary. During the reporting period, the laboratory twice conducted monitoring of noise and vibration at the project road section.

185. An agreement was signed with the laboratory of the Environmental Monitoring Department of the Chui-Bishkek Territorial Administration of the State Agency for Environmental Protection and Forestry under the Government of the Kyrgyz Republic to monitor the quality of atmospheric air and the quality of surface water, but due to the deterioration of the situation with COVID-19 in Kyrgyzstan, the laboratory began work only in August. For this reason, monitoring of air quality and surface water quality was not determined in the first half of 2020 and was conducted only in August.

4.5 Materials / Resources utilization

186. The utilization of electricity, water and any other materials were not included in the CEMWP for monitoring.

4.6 Waste management

187. During construction, a large amount of waste is generated, including both construction and household waste which are promptly removed and disposed of.

4.6.1 Construction waste

Reinforced concrete construction waste

188. Reinforced concrete construction waste is generated during the dismantling of bridges and culverts.

189. Initially, construction waste was promptly taken out to the designated RMU-9 sites for the storage of old reinforced concrete products. With the increase of construction work, the allocated sites could not store all the waste, and there was a problem with determining where to store reinforced concrete waste. In the spring of 2019, together with the local authorities, places were determined for the placement of old reinforced concrete products. Removed unsuitable soil can be taken out to these places.

190. During the reporting period, few amount of reinforced concrete waste was formed. In this regard, there were no problems with its disposal. The total volume of reinforced concrete waste formed amounted to 787.88 m³.



Figure 71 Reinforced concrete waste on the road

Old asphalt

191. With the start of construction work at the project road section, it was decided to use the removed old asphalt for backfilling rural streets and field roads. More than 200 secondary roads were initially proposed by local authorities to fill rural streets with old asphalt. The Contractor's specialists conducted preliminary analyses of all the proposed roads, considering their distance from the main road. Roads that did not meet these requirements were removed from the list.

192. With the start of road construction works, problems arose with crushing old asphalt to a size of 20x20 during excavation. Considering that in the villages there is no equipment for leveling large pieces of old asphalt, there was a problem of taking over of uncrushed old asphalt for backfilling rural streets proposed by local authorities. After discussing this problem, it was decided that the Contractor, when backfilling rural streets, will crush / break large pieces of old asphalt using a bulldozer and a grader, as well as carry out leveling works.

193. However, given the fact that the asphalt was taken out on the road in large pieces, some local administrations refused to take the removed asphalt to rural streets. The removed asphalt during the reporting period was mainly taken to dumps. For storage of the removed asphalt, areas were allocated in the villages of Romanovka and Sokuluk.

194. The total volume of asphalt removed in the reporting period during construction work amounted to 12693 m³.

195. For the storage of construction waste, areas were allocated in the villages of Romanovka and Sokuluk.

196. The contractor's specialist, Nursultan Alimbekov, is responsible for the disposal of old asphalt.



Figure 72 Storage of old asphalt in dumps

Unsuitable soil

197. Local ayil okmotu allocated areas for storing unusable soil. The total volume of unsuitable soil removed in the reporting period during construction work amounted to 1520.82 m3.



Figure 73 Storage of unusable soil in dumps

4.6.2 Waste at the area of the asphalt plant

198. Waste production is also generated during road construction. These are: used engine oil, old tires, empty bitumen barrels. According to the Contractor's information, the used oil is reused in the operation of certain types of equipment, the rest is handed over to a local company for its further processing or disposal, some of the barrels will be used for the needs of the Contractor, the rest will be scrapped.

199. During the production of asphalt, waste is generated on the area of the asphalt plant. Mainly, it is are empty barrels of used bitumen. Empty barrels are stored in the plant area. Currently, a large number of used barrels and metal lids have been accumulated, which must be disposed of. According to the Contractor, empty barrels that have not been dented during the usage are partially used for roads construction work, partially for the needs of the Contractor, and main part used for metal scrap.

200. To date, barrels are prepared for disposal.



Figure 74 Empty bitumen barrels

201. In the camp of Belovodskoe village, at the beginning of the year a large number of old car tires are stored. Contractor took measures for its removal and disposal. To date, the area of the camp was cleared from all waste.

4.6.3 Household waste

202. Household waste is mainly accumulated in the workers' camps. Both solid and liquid household waste is accumulated.

203. Solid household waste consists of paper and plastic packaging materials, cardboard, dry waste, plastics and glass containers, as well as food waste, the latter pre-collected in plastic bags. Liquid household waste is waste water from residential premises and kitchens.

204. Solid household waste is collected unsorted in garbage containers with a capacity of 1m³ and is taken out weekly by Sokuluk and Moscovskiy utility plants, with which service contracts have been concluded. During the reporting period 292 garbage bins were cleared from solid household waste, 290 m³ of solid waste was removed. Liquid household waste water accumulates in septic tanks, is pumped out to 3.5 m³ tankers owned by district waste transportation companies, and is taken to district wastewater treatment plants. During the reporting period, 110 tank loads of the sewage truck were made, 385 m³ of household waste water was removed.

4.7 Health and safety

4.7.1 Workers health and safety

205. In March 2019, Contractor hired an OHS specialist. During the reporting period this specialist regularly monitors the occupational health and deal with improving the working conditions of workers of the Chinese Railway Engineering Group Company No. 5 in the Kyrgyz Republic.

206. The company's workers were regularly trained, instructed, and checked for knowledge. Inspection visits were conducted on a regular basis. Identified violations were eliminated on the spot. The constant and timely provision of workers with workwear and protective equipment is monitored.

207. Based on inspection visits, recommendations are given for improving the safety of work on construction sites and areas.

208. Induction briefings for newly recruited staff are conducted regularly. In total, 507 workers were given introductory training. Also, briefings were conducted to 365 workers at workplaces. Repeated instruction is carried out every 3 months. To eliminate injuries, seminars were held at workplaces with workers. Within six months, no accidents were recorded with the participation of our workers at the production processes.

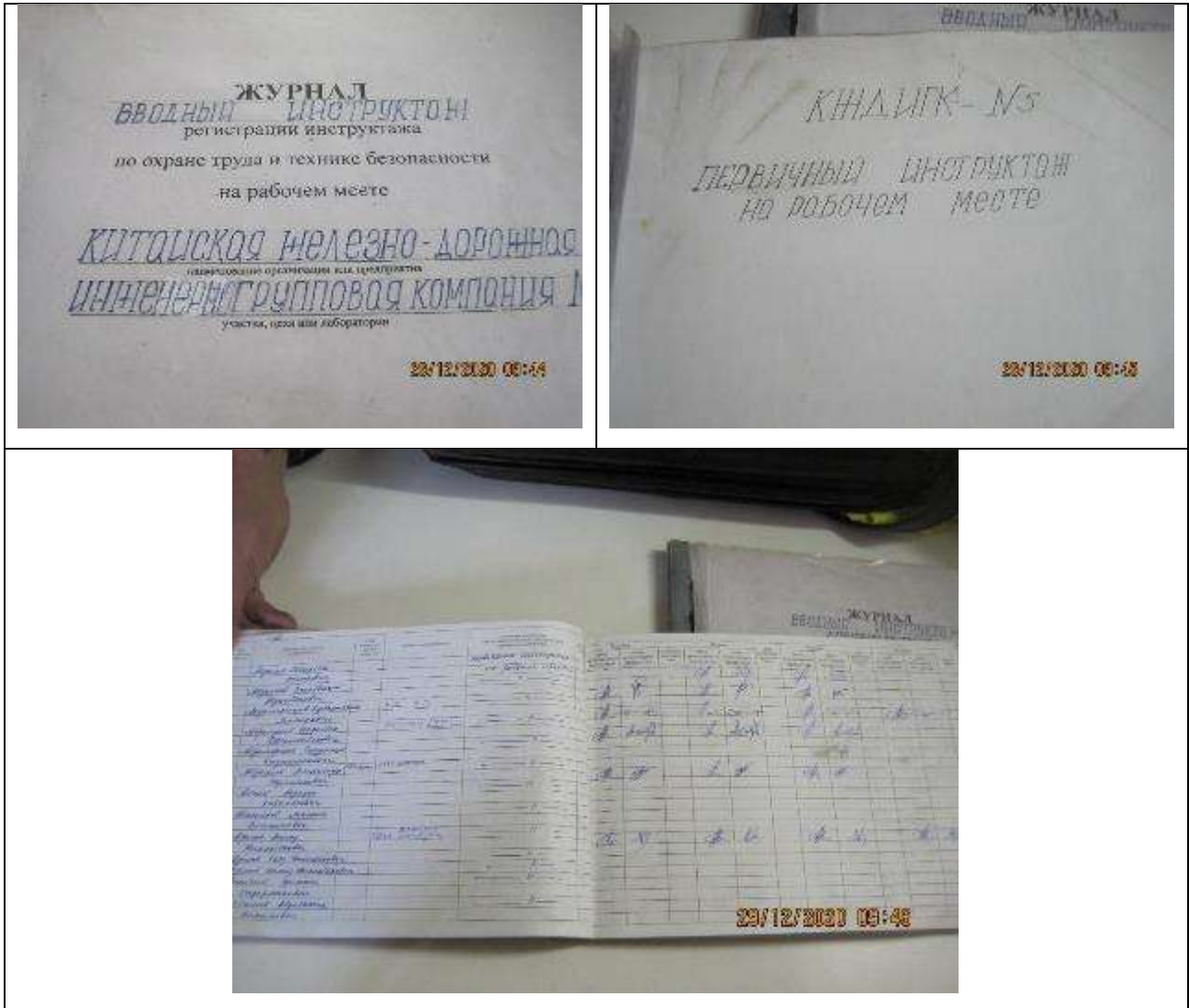


Figure 75 Briefing logs

209. During the reporting period, there were several joint visits of the Consultant’s local environmental specialist with the Contractor’s Safety Specialist. The briefing was carried out at the construction sites.



Figure 76 Conducting on-the-site training

210. To comply with safety precautions, workers were provided with respiratory protection equipment (masks). However, there are cases when workers show careless use of protective means, especially when wearing protective helmets. The contractor's safety specialist constantly monitors and talks with workers about the need to use them.

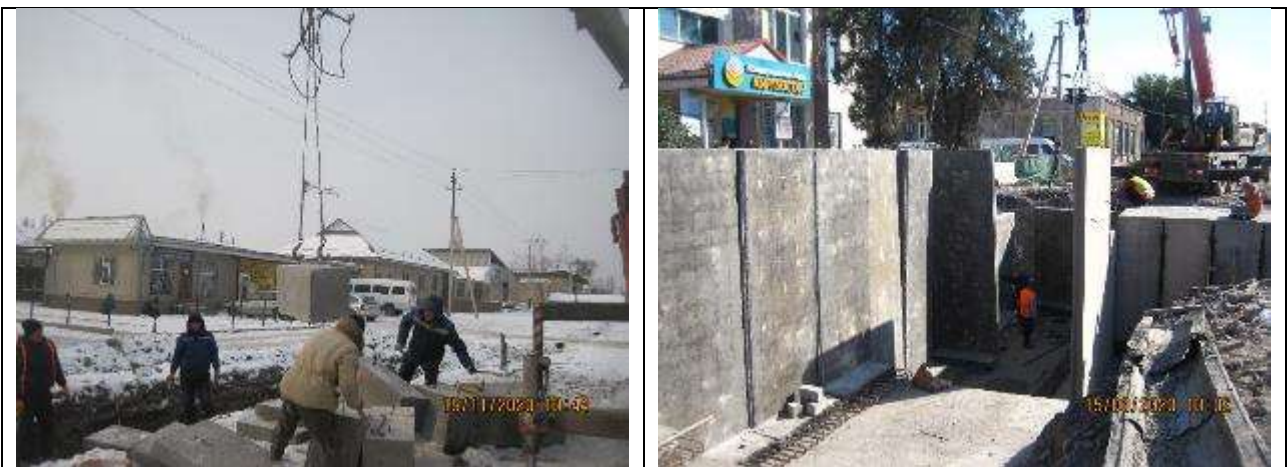




Figure 77 Violations of safety precautions when moving loads with a crane and working at height

211. However, despite regular training of workers, construction supervision consultant regularly notes safety violations, especially during works at height, bridge construction, placing culverts. Violations were also noted when moving load by a crane. The workers were without personal protective equipment in the area of operation of the crane. These violations were noted, both at the site of production of reinforced concrete structures, and during the construction of bridges and culverts. Verbal and written warnings were repeatedly issued to the Contractor, but violations continue.

212. The Contractor was recommended to regularly check the knowledge of workers on occupational health and safety requirements and, if necessary, to re-instruct them.

Community health and safety

213. The consultant's international personnel were unable to return to the project site on time due to the "difficult" epidemiological situation in the country. The team leader, a resident engineer, worked remotely and was able to come to the site only at the end of August. Based on the recommendations of the Republican Headquarters for COVID-19, the consultant recommended that meetings with a large presence of people be restricted as far as possible. Whenever possible, discussions were conducted online or by email.

Newly arrived specialists and Contractor workers were isolated for two weeks.

In order to prevent the risks of disease at the base in the village of Sokuluk an "inlet filter" was arranged:

- measurement by responsible persons at the entrance of the body temperature of employees with a non-contact thermometer;
- mandatory suspension from the workplace of persons with fever and signs of an infectious disease.
- interviewing employees about the presence or absence of respiratory symptoms in family members, checking employees (cough, fever, weakness, headache, etc.);

The local staff of the consultant and contractor is provided with the necessary means: protective masks, sanitizers. Constant cleaning and disinfection of the office premises was carried out.

Regular pre-shift training for workers was conducted by a safety and health specialist with a focus on COVID-19, including cough etiquette, hand hygiene and distancing measures.

During the reporting period, no health and safety problems were recorded for the Contractor's specialists and workers.

Ensuring of road safety at the project site:

214. The Consultant's road safety specialist monitors the Contractor's road safety on a regular basis. There are constant site visits, monitoring of the state of the carriageway, bypass roads, pedestrian crossings, underground passages etc. are carried out.

215. In addition, constant monitoring of the status of relevant road signs, road markings, and fences installed to fence work sites and oncoming traffic areas is carried out.

216. Consultant registries road accidents occurred at the project site only if the accident occurred due to the fault of the Contractor, namely insufficient implementation of road safety measures (lack of fences, signs, pits, etc.).

217. During the reporting period, no accidents occurred due to the fault of the contractor or construction work. The consultant constantly monitors the situation and sends a written notification to the contractor in case of noncompliance with a request for immediate elimination. In order to ensure the safety of pedestrians, especially schoolchildren, the project provides for the repair of 4 existing and construction of 6 new underground passages on the road. Underground pedestrian passages are the safest option for pedestrian traffic. Currently, the construction of five underground passages is almost completed. Adults and schoolchildren are currently crossing the road through underground passages.



Figure 78 Adults and schoolchildren use underground passages.

4.8 Trainings

218. Regular trainings were conducted to workers on the prevention of COVID-19, AIDS, STDs. On which the need to meet the requirements of the prevention plan and prevent the spread of these diseases was discussed.

219. All construction workers were trained in basic sanitation, medical care, occupational health and safety, and the specific risks of their work.



Figure 79 Conducting safety training for Chinese and local workers

5. FUNCTIONING OF THE CEMWP

5.1 CEMWP review

220. The Construction Environmental Management Work Plan (CEMWP) is a form prepared by the Contractor based on the EMP and designed to encourage the Contractor to read the EMP and rethink the requirements that need to be met. The EMP describes the various activities proposed under this Project that are designed to prevent, minimize, or compensate environmental impacts that occur as a result of the Project. The mitigation measures provided in the CEMWP are sufficient, effective and acceptable. The CSC has prepared 14 annexes to the CEMP that address all major specific potential environmental impacts.

221. The Contractor's Environmental Specialist - Myrsaliyev Narynbek, implements the construction mitigation measures. The Contractor's compliance with environmental requirements is supervised by Consultant's environmental specialist, Tatyana Volkova. If any violations are detected, Consultant notify the Contractor verbally or in writing on the need to eliminate this violation within the specified time frame.

222. During the reporting period, the main focus was on the following issues:

- Disposal of construction waste;
- Disposal of old asphalt;
- The violation of safety precautions, occupational safety and health requirements;
- Planting seedlings;
- Violations in the construction of bridges and culverts;
- Borrow-pit mining and management;
- Materials manufacturing plant (bitumen and chemical leakages);
- Monitoring of environmental components.

223. Currently, the main issue of CEMWP implementation remains planting seedlings instead of cut trees. Considering our climatic conditions, it is better to plant seedlings in the autumn, in October - November. But by the scheduled time, the Contractor had not completed construction of sidewalks and replacement of utilities on the site planned for planting seedlings. Only 615 seedlings were planted during the reporting period. Since the project road section passes through settlements where, given the road expansion, there is little area for planting new seedlings, and since construction work is planned to be completed in 2020, it is necessary to decide where and when the remaining seedlings will be planted. But to date, given the situation with COVID-19, construction work is not being carried out in full and the completion of construction has been postponed to 2021.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good practice

224. The mitigation measures provided in the CEMWP are sufficient, effective and acceptable.

6.2 Opportunities for improvement

225. The contractor should be more responsible for environmental issues. Without constant reminders, to remove construction waste in a timely manner, carry out water sprinkling in construction sites, as well as in borrow-pits and stone crushing plants, take more responsible attitude to the safety and health of workers. The contractor should also not forget about the responsibility for planting seedlings, instead of cut down trees and regular maintenance of them.

7. SUMMARY AND RECOMENDATIONS

7.1 Summary

226. The problem of crushing old asphalt to a size of 20x20 remained unresolved. During the reporting period, old asphalt was not removed for backfilling rural streets. Old asphalt and unusable soil were taken to dumps for the further use.

227. The contractor does not monitor the already constructed structures. Previously constructed side drains are overgrown with grass and covered with construction waste. According to the explanation of the contractor, the construction and installation of the side drains has not been completed; upon completion of the construction and installation of the side drains, it will be cleaned and, if necessary, additional levelling of the area will be carried out.

228. Several letters were sent to the contractor with instructions to begin reclamation of disturbed lands of the Jelamysh, Kara Balta, Ak-Suu1 borrow-pits and to hand them over to the commission. To date, the reclamation work has not started and planned for winter – spring period of 2021.

229. Dust control measures during the reporting period have been improved compared to previous reporting periods. This is probably due to the fact that there were fewer construction sites on the road compared to last year and watering machines managed to water construction sites in a timely manner.

230. Currently, planting seedlings instead of cut down trees remains a problem. The contractor underestimates the importance of this activity. To date 1200 seedlings have been planted, at the same time, the contractor has to speed up the work on planting seedlings in the spring of 2021 (approximately in March - April 2021).

231. The riverbed of the Sokuluk and Ak-Suu rivers, where the bridges are constructed on the northern side has been cleared of construction waste, and the southern side after completing the remaining bank protection works the Contractor will need to clear the riverbed of excess soil.

232. In the course of the supervision of construction works, non-observance of the Safety and Health Measures by the workers were noted. These include: work at height without personal protective equipment and appropriate equipment, work under the boom of a crane, lack of protective helmets, insufficient number of special shoes when welding and others.

233. Despite the fact that, starting from April 2019, the Contractor was warned about the transfer of responsibility for laboratory monitoring of environmental components to it, the Contractor's management is not fully aware of this issue. During 2020, the monitoring of environmental components was not carried out in full, since state laboratories were quarantined from March 23 due to the worsening situation with COVID-19 and did not work until the end of July. During the reporting period, monitoring was carried out for noise and vibration by the private laboratory "Profilab", for the quality of the atmospheric period and the quality of surface water by the laboratory of the State Agency for Environmental Protection and Forestry.

234. The problem of bitumen leaks at the plant has been almost eliminated. The contractor purchased bitumen in metal barrels, which are placed on an impermeable base. At the same time, it was noted that the disposal of empty barrels from used bitumen is delayed. Used tires, which were accumulated in large quantities at the base in Belovodsk, are disposed of.

7.2 Recommendations

235. Given the fact that during the construction period, the Contractor does not always eliminate the violations in the specified time, and the Consultant is unable to apply any measures other than the suspension of work, it is necessary to take into account this experience and "include" additional impact mechanisms in the preparation of the contractor's draft contract in future projects in order to have more effective "leverage" to influence the Contractor to take the necessary environmental measures without repeated warnings and prevent negative consequences in advance.

236. The Contractor's Health and Safety Specialist shall monitor all workplaces on a daily basis, especially on construction sites where underground passages, culverts, parapets and chutes are being constructed. Currently, the monitoring is carried out insufficiently since there is no vehicle available for the specialist. In 2021, the Contractor will need to conduct additional trainings on the non-spreading of COVID-19, HIV / AIDS for the newly hired workers.

237. Currently, on some sections of the road, work has been completed on the construction of culverts, it is necessary to accelerate the construction of sidewalks on these sections so that in the spring of 2021 it will be possible to plant seedlings.

238. The contractor needs to be more responsible in caring for the seedlings. In 2021, given that the number of seedlings has been increased and new ones are planned to be planted in the spring, it is necessary to assign a permanent watering machine to organize constant watering of the seedlings. Assign responsible persons for the care of the seedlings.

239. In 2021, it is necessary to reclaim the disturbed lands of the Jelamysh, Kara Balta, Ak-Suu 1 borrow-pits and hand them over to the Commission

240. The riverbeds of the Sokuluk and Ak-Suu rivers must be cleaned from excess soil.

241. Given that the laboratory monitoring of the background levels of environmental components at the project road section (km 8.5 -15.9) was conducted in the period 2013 - 2018 and at present, due to the increase in traffic intensity, the background levels of the environmental components have changed, therefore, in the spring of 2021, with the improvement of weather conditions, before the start of construction work, it is necessary to conduct laboratory monitoring of the background levels of environmental components in sensitive areas of this road section.

242. Also, it is necessary, in the summer, to conduct repeated monitoring at the road sections (km 15.9 - 61), where a noise-reducing asphalt layer have been laid in order to determine its effectiveness.

243. The Contractor's environmental specialist should regularly monitor the condition of planted seedlings, and the condition of constructed structures such as culverts and chutes. Also avoid filling the trunks of growing trees with unsuitable soil or old asphalt.

Annex 1. PBMC Component

Project Number: PBMC/BO/Phase 4/1
Grant: Credit 3056/grant 0366-KGZ:
Reporting period: July 2020 - December 2020

KYRGYZ REPUBLIC:
«REHABILITATION AND IMPROVEMENT OF THE CORRIDOR CENTRAL ASIAN REGIONAL DEVELOPMENT COOPERATION 3 (BISHKEK – OSH ROAD), PHASE 4, KARA-BALTA-SUUSAMYR (km. 61-129) »
(Funded by Asian Development Bank)

The Contractor: LLC «Mostdorstroy»

Content

INTRODUCTION.....	
1 Preamble.....	
2 Basic information.....	
3.PROJECT DESCRIPTION AND CURRENT ACTIVITIES.....	
3.1 Project Description.....	
3.2 Project Contracts and Management.....	
4.ENVIRONMENTAL ACTIVITY.....	
4.1 General description of environmental measures.....	
4.2 Environmental protective measures.....	
4.3 Emergency Procedures and Contingency Plan.....	
4.4 Traffic management plan.....	
4.5 Audit of Construction sites.....	
4.6 Unanticipated environmental impacts or risks.....	
5.RESULTS OF ENVIRONMENTAL MONITORING.....	
5.1 Review of the monitoring conducted during the current period.....	
5.2 Waste Management.....	
5.3 Health and Safety.....	
5.3.1 Health and safety of the local population.....	
5.3.2 Safety and labor protection of workers.....	

List of figures

Figure 1 Section of the Kara-Balta-Tunnel Road.....	
Figure 2 Winter road surface cleaning.....	
Figure 3 Sand bedding of the road.....	
Figure 4 Cleaning roads from rubbish and rockfalls.....	
Figure 5 Current pavement repair.....	
Figure 6 Culvert cleaning along parapets.....	
Figure 7 Garbage collection along the road.....	
Figure 8 Rockfall hazard.....	

List of tables

Table 1 The volume of basic construction work.....	
Table 2 Project Contracts and Management.....	
Table 3 Patching.....	
Table 4 Audit of Construction sites.....	

Abbreviations

ADB	- Asian Development Bank
SEMR	- Semi-annual Environmental Monitoring Report
ES	- Environmental Specialist
GKR	- Government of Kyrgyz Republic
MoTR KR	- Ministry of Transport and Roads of the Kyrgyz Republic
PBMC	- Performance-based Maintenance Contract
PC	- Public Consultations
PIC	- Project Implementation Center
PMC	- Project Management Center
SEE	- State Ecological Expertise
GCC	- General Contract Conditions
FEA	- Fast Environmental Assessment
SHW	- Solid Household Wastes
IPIG	- Investment Projects Implementation Group
CEMWP	- Construction Environmental Management Work Plan

Introduction

1 Preamble

- 1) This report presents a semi-annual review of environmental monitoring (SAEMR) for the rehabilitation and improvement of the Central Asian Regional Economic Cooperation Corridor 3 (Bishkek-Osh road), Phase 4, Performance-based maintenance contract, Kara-Balta-Suusamyр section (km. 61-129 km)
- 2) The purpose to sign a Contract is to ensure a physical condition of the roads that is acceptable to road users during the entire term of the contract.

2 Basic information

- 3) CAREC Corridor 3 Improvement project, Bishkek-Osh road: Kara-Balta-Suusamyр section, km 61- km 129, financed by a loan from the Asian Development Bank (ADB) Kyrgyz Republic (KR).
- 4) The road plays an important role in transport system of Kyrgyzstan, being only road that is open for transport movement during the all year, and which connects the northern part of the country with the capital Bishkek and southern part of country with the second largest city Osh. Therefore, good maintenance and operation of the road section to ensure the free flow of vehicles at any time of the year is crucial for the political and economic life of the Kyrgyz Republic.
- 5) The project road section is located mainly in the Chui intermountain valley, at the bottom of the mountains. The Kara-Balta-Suusamyр road determines the location in the latitudinal direction. The height of the project road varies from 800 m above sea level in Kara-Balta to 3,300 m in Suusamyр, at the entrance to the tunnel.
- 6) The project road is located in a high-risk seismic zone (9-point) and in combination with high soil erosion on steep slopes and extensive grooves per km. 97 - km.129 represents a constant environmental problem associated with the sliding of slopes due to landslides and earthquakes.
- 7) The project road is in a semi-arid zone, with a protracted cold season. Frosts in the mountainous region starts in October and hold on until the end of May. Annual precipitation along the project area is about 450 mm. In the mountainous area of the project site, the number of winter events (snowfall) is 60 days.
- 8) Land utilization in the impact zone of the Kara-Balta-Suusamyр road section, in particular, at the beginning of the project road section has an agricultural purpose. In the area of Kara-Balta, such crops as wheat, fodder and industrial crops, various types of vegetables, such as potatoes, bell peppers, carrots, watermelons, eggplant, and fruit plantations like apple and apricot are mainly cultivated.
- 9) In the mountainous region, human activity is limited to breeding horses and sheep. The landscape is changing closer to the steppes, the soil is covered with grass and low shrubs, such as saxaul. Chia is a common grass with whitish reeds like a reed, it is also a common type of grass.
- 10) The road corridor covered by the PBMC (Kara-Balta-Suusamyр) does not interfere with any watercourses, wetlands or other sensitive areas.

- 11) Sensitive zones - The project road section does not pass over, through or near any established sensitive ecological zones. The existing road passes through the village of Sosnovka, whose population is about 5,000 people. Since the road does not create a new traffic flow, new security measures are not provided, except to improve compliance with speed limits and ensure road sections. A speed limit of 40 km / h has been established inside the village, which should be observed even after the completion of road repairs.
- 12) In the Kara-Balta town, Sosnovka village and until the end of the project site, the existing road crosses the Kara-Balta river 22 times. Crossings across the river are carried out by bridges. According to the Decree of the Government of the Kyrgyz Republic dated September 7, 2009 No. 561 "On Fishery Development and Use of Natural and Artificial Reservoirs in the Kyrgyz Republic", the Kara-Balta River belongs to fishery reservoirs. In other words, there is fish in the river and, most likely, the river is a place for recreational fishing. This category of river is assigned a level of protection that prohibits the maintenance of the development of aggregates near the river, the construction of obstacles, dams or the movement of water vehicles that hinder the movement of fish. Therefore, no work is carried out near the Kara-Balta River, except for works on erosion protection to minimize sediment load in the river.
- 13) In the course of rehabilitation of roadside drain ditches, the diversion of surface water, in order to prevent the entry into the river, is carried out on a roadside area covered with grass, which makes it possible not to pollute the river, which is a habitat for fish.

3. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

3.1 Project description

- 14) Performance-based maintenance contract, the Kara-Balta-Suusamyр section till the Too-Ashuu tunnel (km 61 - km 129). CAREC 3 Transport Corridor Improvement Project (Bishkek-Osh Highway), Phase 4. Engineering and construction supervision from January to May 2020 was carried out by EPTISA Servicios De Ingeniería S.L./ Eptisa Muhendislik / RAM, from June 2020 by JV Temelsu International Engineering Services Inc.
- 15) To ensure the smooth passage of vehicles on this route as needed, year-round proper maintenance and minor repair works are carried out.
- 16) In the course of maintenance of the site, road pavement repair works are carried out, road safety is ensured, road signs are replaced, drainage structures are maintained, roadside plants are monitored, bridges are repaired, slopes are reinforced, winter maintenance is provided, and the road surface is maintained in different weather conditions.
- 17) The total budget for the implementation of this component is 296,914 350 KGS.
- 18) Outside the existing carriage way and shoulders, work is not carried out. New construction or modification of the plan is not envisaged.

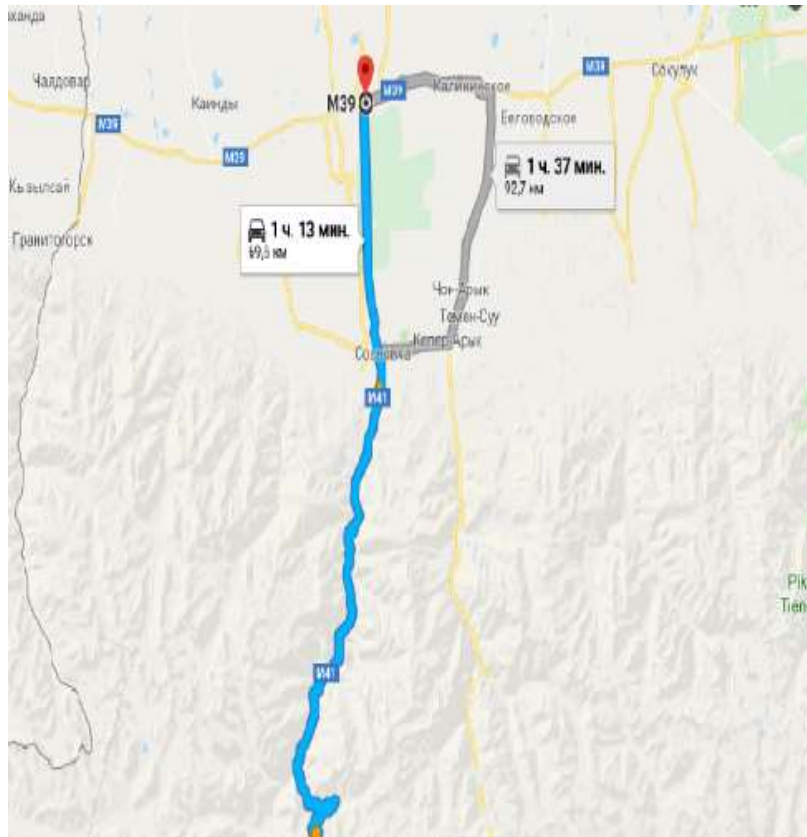


Figure-1. The Kara-Balta-Tunnel road section

19) The locations of workers and construction equipment are located in 2 places: the village of Sosnovka km 80/ number of workers 12 people and the Tunnel km. 118

20) Both on the 1st and 2nd bases the territory is rented from the Road Maintenance Unit №9 for the location of equipment and workers who will live in this territory, in rooms with the necessary conditions for living. In winter, preventive maintenance works are carried out to clean the roads from snow cover, as well as to fill the ice cover with sand and salt, the amount of material used is provided in the report on the fact.

Supply of materials for construction and repair works.

21) Asphalt and bitumen are supplied from the asphalt plant located in the Sokuluk district, Novopavlovka village, Vzletnaya rural settlement.

- Sand - "Bashkarasu" Borrow-pit, PE Japaraliev
- Concrete - Kara-Balta concrete plant

Table 1: Volume of main construction works

No	Name of works	Unit	Done
1	Patching and local repair	m ²	6000

2	Manual and mechanical removal of all rockfalls and unstable materials on or near the carriageway.	m ³	1000
3	Asphalt base 8 cm	m ²	19 286,22
4	Asphalt surface 5 cm	m ²	33 026,96
5	Thermoplastic white marking with reflective materials, standard width, full or jerky according to design	m ²	2 694,00
6	signal bollards CC1	units	920

3.2 Project Contracts and Management

3.2.1 Project Contracts and Management

Table 2 – Project Contracts and Management

Project	Project to improve the CAREC transport corridor 3 (Bishkek-Osh road), Phase 4 Result-based contract. Plot of Kara-Balta-Suusamyr (km.61-129,5)-CAREC/C3/P4/ICB/WC2 Component 2
Contractor	: LLC «Mostdorstroy»
Section:	: 61 km – 129,5 km, total length – 68,5 km
Donor :	Asian Development Bank
Contract date	18/12/2017
Executive body	: Ministry of Transport and Roads of the Kyrgyz Republic
Notification of the start of work	05/01/2018
Date of completion	: January,1 2021
Time for completion-days	: 36 months
Extension-days	: -
Warranty period - days	: 180 days
Contract amount	: Kyrgyz som 296,914 349.28
Total prepayment amount	: 10% of the accepted amount of the contract
Performance Guarantee Amount	: %15 of the accepted amount of the contract

Works included:

22) Road maintenance works throughout the road section include the following:

- Winter road maintenance (November-December): Preparation for winter service in accordance with the winter service plan, placement of supports and the preparation and

operation of winter service places; Winter patrols excessive snow cleaning. Snow clearing of the road surface using salt and placement of abrasive material and anti-icing liquid to achieve the required level of service during the winter season - 900 km.

- Cleaning the roadway and roadsides (by a grader, loader). 61-129 km in the winter season. The roadside was constantly cleared of snow, and grading of the carriageway was also carried out. -121-129 km.



Figure-2. Winter road surface cleaning

- Filling the road with sand (mechanical and manual) 61-129.5 km.



Figure-3. Sand bedding of the road

- Cleaning roads from rubbish and rockfalls. 81-129.5 km. Constantly patrolling the road, cleaning and cleaning the road from rockfalls and debris, current maintenance of pavement (patching, filling cracks, cleaning)





Figure-4. Cleaning roads from rubbish and rockfalls

Section 61 km-121 km.

Table - 3. Patching – 6000 m²

Patching		
Section	Waste material	Dump
63km-144,6km	Existing asphalt after felling.	Sosnovka village dump



Figure-5. Current pavement repair.

Cleaning and repair of drainage facilities - In total, there are 96 culverts on the site that facilitate the flow and drainage of water from one side of the road to the other, along a slope. Pipes are prefabricated concrete pipes that are cleaned by hand. All pipes are placed in earthen / soil ditches. The job consists of removing dirt and debris to ensure an unhindered flow of water. Cleaning culverts 61-129 km. Cleaning along parapets. Garbage cleaning 61-129.5 km.



Figure-6. Culvert cleaning along parapets



Figure-7. Garbage collection along the road

23) Vegetation control - On the road sections along the road corridor, there is no green spaces that interfere with the maintenance / service of the road or require their removal.

24) On flat roads between km 61 and km 85 (between Kara-Balta and Sosnovka) the road is on a small embankment about 0.5-1m high, next to agricultural land. There are dirt roads, berms and slopes covered with natural vegetation. Cause of the climate and types of mountain flora, vegetation, as a rule, does not grow above 30 cm, which does not require any intervention. In

places where grass height exceeds this value, grass is mowed by hand, by contractors or owners of adjacent fields. Such vegetation is usually used as animal feed. Herbicides are not used there.

25) Rehabilitation of bridges is not provided

4.Environmental Activity

4.1 General description of environmental measures

26) In accordance with clause 24 of the General Conditions of Contract (GCC), the Work Execution Program includes a Health and Safety Management Plan. The aim of the Health and Safety Management Plan is to create a responsible attitude towards occupational health and safety and compliance with existing regulations.

27) During the reporting period, regular visual monitoring of compliance with environmental requirements during construction work on all sections of the road was carried out by the local environmental specialist TEMELSU INTERNATIONAL ENGINEERING SERVICES INC, the environmental specialist of the Investment Project Implementation Group of the MoTR KR, by the environmental specialist of the Contractor.

4.2 Environmental safeguard measures

28) The EMP provides a description of the various measures proposed by the project, which are intended to prevent, mitigate or compensate for the negative environmental impacts that may arise as a result during realization of project. At the end of each month, a report is submitted according to the Construction Environmental Management Work Plan (CEMWP).

4.3 Emergency procedures and contingency plan

29) The work program includes emergency procedures and the Contingency Plan, which establishes the roles, activities and procedures for specific types of emergencies presented in contingency plans that close roads. Emergency procedures and the Emergency Action Plan are prepared by the Contractor and agreed with the Project Manager and other stakeholders. The Contractor presented the “Emergency Procedures and Contingency Plan”, which was approved by the consultant and the Contractor commenced work accordingly.

4.4Traffic management plan

30) The work program includes a traffic management plan. The traffic management plan determines the traffic management procedures at the work sites and during winter weather events. The traffic management plan was developed by the Contractor and agreed with the Project Manager. The traffic management plan is submitted by the contractor and approved.

31) Contractor's camp is located at 80 km. Kara-Balta – Suusamyrdarya road. In the camp there is a dining room, office, and sleeping places for Contractor's employees. The camp is provided with clean drinking water, sinks and trash cans are installed. Fire-fighting accessories are installed in the required places. Opposite the camp there is a parking for cars and equipment of the contractor. Storage areas are located at the back of the camp and there is enough storage space.

4.5 Audit of Construction sites

Table -4. Audit of Construction sites

№ p/p	Date	Full name of auditors	Audit's purpose	Summary of any important audit notes
1	24.07	B. Sydykbekova – the Contractor's environmental specialist, together with the project manager - Maksat uulu Iskeder.	Compliance with environmental standards.	It is noted, that road maintenance is respected. Cleaning of debris and rockfalls was carried out in the area 61-129.5 km
2	21.08	B. Sydykbekova – the Contractor's environmental specialist, together with the project manager - Maksat uulu Iskeder.	Compliance with environmental standards.	Debris and stones are being cleaned on the 61-129.5 km section
3	23.10	B. Sydykbekova – the Contractor's environmental specialist, together with the project manager - Maksat uulu Iskeder, Volkova T. ecologist Temelsu Dr. Md. Mohsin Almadji	Construction site monitoring together with international expert ecologist.	Monitoring of construction sites on the road.
4	18.12	B. Sydykbekova - the Contractor's environmental specialist, together with the project manager - Maksat uulu Iskeder	Compliance with environmental standards for winter road maintenance.	It is noted that the maintenance of the road is respected. Road filling was performed mechanically and manually (61-129km).

4.7 Unanticipated environmental impacts or risks

32) On the areas of km 86.9 - 88.7 and km 98, rockfalls occur due to heavy rains. Also in this area there are large rock pieces hanging over the road, representing the threat of spalling and falling onto the road, representing a danger to passing vehicles.



Figure-8. Rockfall hazard

5.Results of Environmental Monitoring

5.1 Review of the monitoring conducted during the current period

Instrumental monitoring of the environment

33) According to the IEE/EMP instrumental measurements of water, air and noise parameters are not provided. Environmental impact of pollutants is not expected.

Water quality monitoring

34) According to the IEE/EMP, instrumental measurements of water quality are not provided for this Project. The project has no impact on water bodies, as all works will be carried out at a sufficient distance from water sources.

Air quality monitoring

35) According to the IEE/EMP, instrumental measurements of air quality are not provided for this Project.

36) There were no significant dust emissions during the reporting period. Emissions from trucks during the transportation of bulk material were minimal, trucks traffic was limited (with the exception of transporting equipment to the site).

Noise and vibration monitoring

37) Regular monitoring of noise and vibration is not envisaged for this Project according to the IEE/EMP. However, workers wear ear protectors if necessary.

5.2 Waste Management

38) Removed old asphalt can be reused for unpaved shoulders or as an embankment for other rehabilitation works. It can also be used for backfilling of borrow-pits and covered with a layer of soil on top. Asphalt can be laid on adjacent roads as a surface layer or used as a material for

patching with compaction. The resulting solid household waste (SHW) in the construction camp is disposed of in ayil okmotu of Sosnovka village, according to the terms of the contract.

39) Cleaning and repair of drainage structures - There are 96 culverts on the site, which facilitate water drainage from one side of the road to the other, along a slope. Pipes are prefabricated concrete pipes were cleaned by hand. All cuvettes are earthen/ ground cuvettes. The job consists of removing dirt and debris and eventually leveling to ensure the unobstructed flow of water. If the culverts are not serviced, they can become clogged, leading to filling, flooding of the road surface, erosion and possibly road jams. Therefore, this work has a positive impact.

40) Repair works on bridges is mainly related to safety, i.e. restoration of safety barriers after accidents or collisions. Work in the river beds should be limited to clearing the watercourse from debris that, if released into the water stream, can lead to congestion, spillage and erosion. Concrete repair works are not included in the scope of work of a maintenance / maintenance contractor, however, they can sometimes be carried out after an emergency, if for example structures are damaged due to sudden floods or accidents.

5.3 Health and Safety

5.3.1 Health and Safety of local community

41) The traffic management plan has been agreed with the authorities of the Main Directorate for Road Safety of the Ministry of Internal Affairs of the Kyrgyz Republic. The recording will be kept at the construction camp office.

5.3.2 Occupational health and safety of workers

42) Workers are provided with all necessary equipment, as well as basic training on the use of protective clothing and personal protective equipment. Workers are provided with PPE such as: vests, hard hats, gloves, shoes. Safety Instruction held in the camp, there is a log of registration. There was no night work.

43) The camps are equipped with disinfectant sanitation and drinking water. The camp has a container for collecting MSW. Drawn up a contract for the export of solid wastes with local government. There are no hazardous materials on the territory of the construction camp.