

Semi-Annual Environmental Monitoring Report

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The Kyrgyz Republic.

Central Asian Regional Economic Cooperation Corridor 3 Improvement Project (Bishkek-Osh Road), Phase 4, Bishkek-Kara-Balta section (km 8.5 - km 61).

Prepared by: Project Implementation Unit of the Ministry of Transport and Communications of the Kyrgyz Republic and the Asian Development Bank.

Prepared for:

Ministry of Transport and Communications of the Kyrgyz Republic.

Endorsed by: [Full name and signature of Executive Agency employees]

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Abbreviations

ADB	-	Asian Development Bank
CAREC	-	Organization of Central Asian Regional Economic Cooperation
CSC	-	Construction Supervision Consultant
EMP	-	Environmental Management Plan
PIU	-	Project Implementation Unit
Km	-	kilometer
KR	-	Kyrgyz Republic
MPC	-	Maximum permissible concentration
MPL	-	Maximum permissible level
MoTC KR	-	Ministry of Transport and Communications of the Kyrgyz Republic
MoF KR	-	Ministry of Finance of the Kyrgyz Republic
MoNRETS	-	Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic
DDPTSES	-	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
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

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 (Bishkek-Osh Road) Improvement Project, Phase 4.
2. The report is the **fourteenth** semi-annual environmental monitoring report covering period from January to June 2024, under the ongoing CAREC Corridor 3 Improvement Project (Bishkek-Osh Road), Phase 4, and provides outcomes of the environmental monitoring undertaken by the MOTC PIU.
3. The road rehabilitation work included the reconstruction of six bridges, replacement of culverts, construction of underground crossings, removal of old asphalt, preparation of new road lanes in the eastern and western directions, construction of sidewalks, installation of culverts, planting of trees, as well as operation of an asphalt and concrete plant, and a stone crushing plant for processing inert materials.
4. The report contains information about the project site. The results are based on site visits conducted by the PIU's environmental specialist from January to June 2024, wherein the main focus was on monitoring over compliance with the environmental and safety requirements during the road construction the final stage, seedling planting, and traffic management.

1.2 Headline Information.

5. The Bishkek-Osh Road represents about one-fourth of the 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 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.
6. The CAREC Corridor 3 Improvement project (Bishkek-Osh Road), Phase 4, (Bishkek-Kara-Balta section, 52.5 km long) aims to improve the connectivity and market access in the Kyrgyz Republic. The project's output 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 of the road impact to the environment in terms of noise impact from passing traffic by upgrading asphalt pavement.
7. In 2016 during the bidding process, a China Railway No.5 company was selected for the implementation of project component 1. On March 28, 2017, a Civil Works Contract was signed between the Ministry of Transport and Roads of the Kyrgyz Republic and China Railway No.5. The total contract price is 70,239,899.29 USD. In the course of extensive contract negotiations, the working group managed to change the fixed escalation coefficient to an increase, i.e., from 0.15 up to 0.51 – thus, minimizing price escalation. On April 3, 2017, the Consultant issued a Notification for Commencement of Works. The construction works commenced on 3 April 2017.
8. The cost of the contract between the MoTR of the Kyrgyz Republic and General Contractor China Railway No.5 was 70 239 899,29 US Dollars, i.e., there was spare funds up to 22M USD.

In 2019, the saved funds were planned to use for construction of the remaining road section (8.5 km – 15.9km). By the method of direct contract award, the contract was awarded to China Railway No. 5. Notification for Commencement of Works was issued on November 19, 2020.

9. On May 31, 2020, a 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 company was selected. New Consultant started to work on May 11, 2020.

Revision of the Bishkek-Kara-Balta Road Rehabilitation Project.

10. Initially the road's designed length was 52,5 km length. Feasibility Study (FS) was prepared by the Consultant Kocks Consult as part of ADB Technical Assistance, the purpose of which was to identify the economic soundness of the Project. Feasibility Study set out approximated cost of the Project based on the preliminary topographic survey at a scale of 1:2000 and geotechnical studies conducted. Following the FS, ADB decided to allocate 100 M USD, 65M USD of which was a loan money and 35M USD - grant. Co-financing by the Government of the Kyrgyz Republic was 20.8M USD. Out of this, the Project provides 92.06M USD for civil works. The detailed design preparation was carried by Consultant Eptisa, and detailed topographic survey (at the scale of 1:1000) was conducted including additional geotechnical and other surveys which allow specifying engineering costs of the Project. Based on the results of the detailed design, the Civil Works cost was about 115.1M USD. Thus, there was a lack/deficit of funds in the amount of 23.06M USD. In this regard, the Ministry of the Transport and Roads of the Kyrgyz Republic decided to revise the design within the available funds for Civil Works.

11. As a result, through the agreement with ADB, it was decided to decrease the project road by 7.4 km and to deem the road starts at 15.9 km instead of 8.5 km on Bishkek-Osh Road. Thus, initially the overall length of the project road was 45.1 km. The decision about the reduction of the specified section was taken before the announcement of the tender for the procurement of Civil Works.

12. The cost of the contract between the MoTC of the Kyrgyz Republic and General Contractor China Railway No.5 was 70,24 US Dollars, i.e., there was spare funds up to 22M USD. In 2019, the saved funds were planned to use for construction of the remaining road section (8.5 km – 15.9km). 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.

13. In December 2022, all construction works on the project section were actually completed. On 15 February 2023, the Contractor was issued a certificate of completion of the works and from that moment the defect period began, which has expired on 15 February 2024. At the time of preparation of the report, the Contractor was continuing partial maintenance of the project section to prepare it for “handing over” to the Ministry of Transport and Communications of the Kyrgyz Republic.

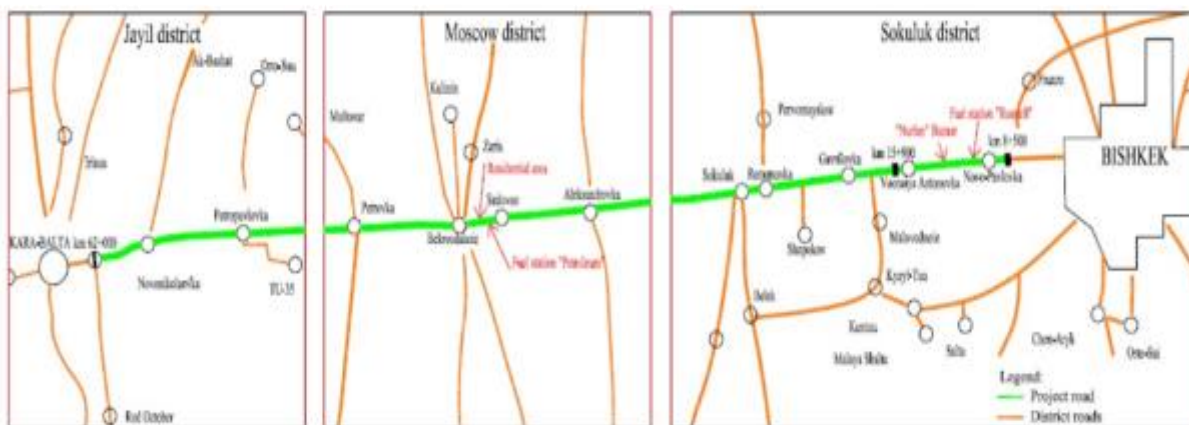


Figure 1 Administrative districts of project road



Figure 2 Bishkek Kara-Balta project road section from km 8.5 - km 61

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES.

2.1 Project Description.

2.1.1 Location of the project site and main design. 8.5 km - 61 km section of the Bishkek Kara-Balta project road.

14. The ongoing project will improve connectivity between north and south in the Kyrgyz Republic. The project's 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.

15. The project provides for the rehabilitation of 52.5 km of the Bishkek-Osh Road. The project site is located between Bishkek and Kara-Balta cities and between 8.5 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 site.

16. 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.

17. The road reconstruction should meet the laws and legislation of the Kyrgyz Republic. This rehabilitation 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.

18. In order to improve drainage systems, the work includes reconstruction and replacement of majority of degraded culvert system, and addition of new cross-drainage structures. Existing bridges were totally replaced, and it will be constructed more than 64 km of sidewalks and six underpasses.

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

20. The environmental impact included:

- noise impact, as well as vibration, which is particularly important within localities near the Project Road and in the areas where sensitive receptors are located, such as schools, hospitals, mosques, etc.
- Impact to the air;
- Impact to water courses and rivers;
- Impact resulting from sourcing of aggregates in borrow-pits;
- Impact on soil and vegetation, including tree stands near the project road, due to site clearing work;
- Impact resulting from bridge rehabilitation works;
- Impact of asphalt production plants and aggregates crushing plants;
- Impact of Contractor's workers camps.

21. According to the Technical specifications, the road pavement was designed for an initial design life of 10 years with structural overlay options for 15 and 20 years of designed operation life.

2.2 Project Contracts and Management.

Table 1. 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 8.5 km – 15.9 km, the overall length is 7.4
Donor:		Asian Development Bank.
Contract Sign Date		28/03/2017 – 45.1 km section 20/07/2020 – 7.4 km section
Executive Agency	:	Ministry Transport and Communications of the Kyrgyz Republic
Notice to Commence		03/04/2017– 45.1 km section 19/11/2020 – 7.4 km section
Completion Date	:	45.1 km section: 18 March, 2020; October 16, 2020 (VO 9); 16 July, 2021 (VO 11), 18 th November 2021 (VO 17) 7.4 km section: 19 November 2022
Time for Completion – Days	:	45.1 km section: 1080 days, 1292 days (VO 9); 1565 days (VO 11) 1690 days (VO 17); 7.4 km section: - 730 days
Extension of Time – Days	:	45.1 km section: 212 (VO 9) + 273 (VO 11) + New: 125 (VO 17); 7.4 km section: none
Defect Liability Period – Days	:	365
Contract Amount	:	45.1 km section: USD 73 675 821.86; 7.4 km section: USD 17 763 085,66
Minimum Amount of Interim Payment USD (2%Addendum N0.1 dated on 30.04.2020)	:	USD 1,404,797.99
Total Amount of Advance Payment	:	15% Percentage of the Accepted Contract Amount
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		28 days
a) evidence of Insurance		28 days
b) relevant policies		
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		22%
Limit of Retention Money		10% of Accepted Contract Amount
Percentage of Retention		5% of Value of Works certified for Payment

Table 2 List of Consultant's staff

Consultant's staff	
International staff	
male	
Highway Engineer/Team Leader	Kenan Kose
National staff	
male	
Quantity Surveyor	Turatbek Bokonbaev

2.2.1 Scope of work according to contract.

22. This section of the road was designed according to the standards of Technical Category 1-b (main urban arteries) with the following geometrical features:

- Number of lanes – 4 and 6
- Lane width – 3,5 - 3,75m;
- Carriageway width – 2x7,5;
- Shoulder width – 2.5m
- Carriageway shoulder breakpoint stabilization – 1.0m
- Axle design weight – 11,5 tones.

23. Along the entire project site, the two layers of the asphalt-concrete pavement (14 cm thick) laid, 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 Right of Way width is 50 - 60 meters. The design provides for construction and repair works in the following engineering structures and the communications as well as scope of the work.

Pavement Construction Quantities at 45.1 km section:

- 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 ditiches – 77661 linear meters;
- Intersections and junctions – 477 units;
- The design provides for parking areas next to market places – 4 units;
- Auto pavilions – 115 units;
- Sidewalks – 81 285 meters;

Road safety features:

The design provides for repair of 4 existing underpasses and construction of 6 new underpasses;

- Marker posts – 515 units;
- Metallic foot-walk guard rails – 3980 linear m;
- Parapet fencing – 1158 units;
- Median fencing – 14 887 units;
- Retaining walls – 3669 linear m;
- Traffic lights – at 20 intersections.

Reconstruction of the Utilities

- VL-10kV – 43 poles
- VL-0,4kV – 166 poles
- Communication lines – 507 poles
- Lighting poles – 2190 pcs
- Gas casings – 650 linear m.

Pavement Construction Quantities at 7.4 km section:

- Tree planting - 1000 Ea.
- Hard shoulder - 10,00 km.
- Concrete border stone/curb BR100.30.18 - 5,54 km.
- Bridge instead of D2X1.5m pipe culvert - 1,00 km.
- Longitudinal ditches - 11,9 km.
- Sidewalk
 - clearance and subbase course - 11,7 km,
 - curbstone - 11,7 km,
 - pavement - 11,7 km.
- Bus Stop - 20 Ea.
- Junction base - 83 Ea.
- Junction binder course - 83 Ea.
- Junction wearing course - 83 Ea.
- Junction shoulder – 83 Ea.
- Traffic lights
 - Pole foundation - 9 pcs.
 - Pole installation - 9 pcs.
 - Lamp installation - 9 pcs.
 - Cable connection - 9 km.
- Road Signs - 384 pcs.
- Road marking - 14,80 km.
- Lights reflecting element of parapet - 7,40 km.
- Protection concrete slope of pipe culvert - 8,00 Ea.

Vegetation Planting

25. At km15,9 – km61 section under forced cutting fell trees located in areas of roadbed widening, construction of sidewalks and drainage ditches. In total, 504 trees were cut down. As compensation measures, to restore the number of green spaces, planting of new seedlings was provided at ratio of 1:2 with 1000 seedlings planted.

26. Since there were no “free” places on the project site suitable for planting new seedlings, some of the seedlings were distributed to local government bodies, schools upon their request. The seedlings were planted in park areas and schools, on sections of the road that are located on their

territories, while further work on planting and caring for seedlings will be carried out by aiyl okmotu themselves.

Land Acquisition and Resettlement Plan.

27. The project site passes along densely populated areas. A Resettlement Plan was drawn up, based on which compensation was paid to 54 affected persons at 7.4 km section, including owners and users of land, business owners, tenants and employees.

28. The following organizations are involved in the project implementation:

- *Ministry of Finance of the Kyrgyz Republic (MoF)* - the authorized state body responsible for coordinating actions with the ADB and other donors on external assistance issues.
- *Ministry of Transport and Communications of the Kyrgyz Republic (MoTC)*, responsible for the development of the transport sector, and is the Executing Agency (EA) of the project. MoTC is bearing responsibility for the planning, design, implementation and monitoring of the project. PIU works under the MoTC and implements the tasks assigned by MoTC.
- *Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (MNRETS)*, – ensuring environmental safety, strengthening environmental protection measures and reducing climate risks, it is the leading environmental state agency responsible for the state's policy in this area and coordinating the actions of other state bodies in these matters. Its functions include:
 - development of environmental policy and its implementation;
 - conducting a state environmental expertise;
 - issuance of environmental licenses;
 - environmental monitoring;
 - provision of environmental information services.
- *Department of Disease Prevention and State Sanitary and Epidemiological Surveillance of the Ministry of Health of the Kyrgyz Republic* - 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 3. Main Organizations involved in the project and related to the environmental 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)	Consultant	Sultan Bakirov	Sbakirov.consultant@adb.org
3	PIU under MoTC KR	Executive Agency	Asylbek Abdygulov	asylbeka@piumotc.kg
4	Temelsu	Consultant	Tatiana Volkova	volkova ti55@mail.ru
5	The limited liability company "China Railway Engineering Group No. 5»	Contractor	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru

6	Subcontractor LLC «Ishmer»	Supply and construction of bus stops	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru
7	Subcontractor LLC «Ren Stad»	Installation of road signs	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru
8	Subcontractor LLC «Aiser Torg»	Installation of traffic lights	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru
9	LLC «Chuan Syang»	Application of road marking	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru
10	LLC «Vokko»	Installation of road signs	Uzbekov Kanatbek	kanatbek.uzbekov.88@mail.ru

29. At the end of December 2023, EHS specialists of the Contractor and Consultant were demobilized.

2.3 Project activities during the current reporting period.

Table 4 Work progress. KM 8,5 – KM 15,9 section

Section	Activity list		Unit	Total Quantity	Completed quantity	Completion %
Km 8+500 - Km 15+900	1	Remedy of identified defects. Replacement of the wearing course	km			100,00%
	2	Cleaning draining ditches	km	7,4	7,4	100,00%
	3	Cleaning culverts	km	2	2	100,00%
	4	Clearing parapets from accumulated soil	km	7,4	7,4	100,00%
	5	Cleaning bus stops	pcs.	20	20	100,00%
	6	Completion of reclamation and handing over of 2 quarries (Ak-Suu 2 and Belek)	pcs		2	100,00%

2.3.1 Remedy of identified defects and road maintenance

30. During the reporting period, the following works were carried out at **km 15.9 to km 61 section (45.1km)**:

- Removal of deformed asphalt and laying new asphalt where ruts had formed;
- cleaning of drainage ditches located along the road;
- cleaning of culverts;
- cleaning of bus bay area;

31. Regular visual monitoring over compliance with environmental legislation and requirements of CEMWP in road construction by environmental specialist of PIU was carried out throughout the reporting period.

32. The soil accumulated in the drainage ditches, in the middle of the road (along the installed dividing parapets), at the outlets of the culverts and at the bus bay area was cleaned and removed. This material was used for backfilling the internal farm roads.

33. The material has accumulated as a result of winter road maintenance. Inert material is used for backfilling in the winter period to avoid icy conditions on the project site.

34. Work was carried out to remove deformed asphalt and lay new asphalt where rutting was developed.



Figure 3 Milling and laying wearing course, removing rutting



Figure 4 Cleaning of culverts and parapets from accumulated soil

2.3.2 Borrow pits.

35. For the project road section km. 15.9 - 61 2 borrow pits “Belek”, “Ak-Suu 2” were used. These borrow pits were issued on the basis of a temporary permit issued by the State Committee for Industry, Energy and Subsoil Use. The borrow pits were developed by the Contractor after receiving the necessary permits from the State Agency for Environmental Protection and Forestry (SAEPF) and local authorities.

36. At the time of preparation of the report, the contractor had completed the necessary reclamation work at the Belek and Ak-Suu 2 borrow pits and handed them over in accordance with the act of the district commission. Table 5 gives main detail information about borrow pits at the time of preparation of report.

Table 5 Details of borrow pits at the time of preparation of the report

	No. of borrow pit	Km of turn to the borrow pit on the B-O Road	Approximate distance from the B-O Road to the borrow pit (km)	Volume, (m3)	Area (Ha)	Note
1	«Ak-Suu-2»	45+700	8,6	850 000	68,19	Reclaimed, handed over with a certificate 06.06.2024
2	«Belek»	Km 27+000	8	180000	10,31	Reclaimed, handed over with a certificate 11.07.2024

Copies of certificates are attached hereto.



Ak Suu2 borrow pit



Belek borrow pit

Figure 5. Ak-Suu 2 borrow pit and Belek borrow pit after reclamation

2.3.3 Plants.

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

38. The following buildings and structures are located on 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, a platform for the the placement of garbage containers, concrete cesspit pit for sewage.



Figure 6 Production site. Concrete mixing plant. Asphalt Bitumen Plant

39. The contractor carried out partial dismantling of structures at the plant. In December 2023, the Contractor entered into an additional agreement with the owner of the site (the owner of the site is the Ministry of Emergency Situations of the Kyrgyz Republic) to extend the lease and use further this site for the needs of the Contractor, outside the project activities.



Figure 7 Dismantling of equipment on the production site

40. In the *Sokuluk Residential Camp* there were offices of the Contractor and the Consultant, as well as the living quarters for the specialists. At the beginning of 2024, the Contractor dismantled and removed repair shops and warehouses. All other premises, as well as toilets, septic tanks, showers were handed over to the MOTC's subdivision (State Enterprise "Kyrgyzavtozhil" MOCT KR), from which the Contractor rented this territory for the duration of the project.

2.3.4 Tree management.

41. On 7.4 km road section (km 8.5 - 15.9), in total 504 trees were cut down in 2020 - 2021. Planting of seedlings on 7.4 km section have been started in the spring of 2023. In the autumn of 2023, 1000 seedlings were planted, of which 300 seedlings were planted along the project section and 700 seedlings were transferred to the local government for planting in the territory of existing park areas and school grounds. The village councils will be caring for and water the seedlings themselves.

2.3.5 Road maintenance in winter 2024.

42. In the winter period of the 4th quarter of 2023, the Contractor carried out road maintenance work.

43. The winter period of the year is the most difficult for road operation and traffic management.

44. Winter maintenance is a complex of measures that should ensure uninterrupted and safe movement of cars and includes the following:

- protection of road from snow drifts;
- clearing road from snow; control of winter slipperiness;
- control ice on the road.

45. These works are aimed to ensure uninterrupted and safe movement of vehicles.



Figure 8 Sand sprinkling on the road. Control of ice

2.4. Description of any project changes.

46. Initially, the length of the project section was 52.5 km (km8.5 – km61). Under an agreement with ADB, it was decided to shorten the project road by 7.4 km and establish the beginning of the project road at km 15.9 instead of km 8.5 of the Bishkek-Osh Road. Thus, the total length of the project road according to the contract was 45.1 km, the decision to reduce the above section was taken before the tender for civil works. The Detailed Design was prepared by the previous consultant. Due to finance savings, in July 2018 MOTC and ADB agreed to add back the road section from km 8.5 to km 15.9. In 2020, the contract was awarded to the contractor China Railway no.5 by direct

contract award method. An additional Supplementary Initial Environmental Examination (IEE) was conducted for this road section that has been disclosed at ADB website in November 2018. Notice for commencement of work on Section 2 was issued to the contractor on November 19, 2020.

47. Since at km 8.5 - km 15.9 section there is no place for installing street lighting poles on both sides of the road, the designer decided to instal street lighting poles along the central axis between the central blocks of the parapets. This decision ensured more safety than if poles would install on the road sides. The foundation of the poles is concrete with anchor bolts. This solution is safer in terms of road safety.

48. Taking into account the cramped conditions, in order to ensure road safety at km 8 + 500 - 10 + 900, the safety zone on the central axis of the road was reduced from 4 meters to 2.6.

49. The side safety zone has been reduced from 1 meter to 0.5 meters on both sides of the road between km 8+500 - km 10+900. On this section, on both sides of the road, it was decided to remove the shoulders and install curbstones.

50. On km 8 + 500 - km 10 + 900 section due to the lack of place for relocation of water supply pipe, which was under the carriageway, the water pipe was relocated under the drainage ditches after agreement with local authorities and design author.

2.5 Changes to project design and construction method.

51. 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.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES.

3.1 General description of environmental safeguard activities.

52. During the reporting period, regular visual monitoring over compliance with environmental requirements was carried out by the environmental specialist of the MoTC Projects Implementation Unit.

3.1.1 Works executed by the Contractor on the Project site.

53. The main impact on the environment during excavation work in the previous periods was increased dust formation. Since September 2022, after the completion of the asphalt-concrete pavement laying work, dust formation has ceased.

54. The following construction works were carried out on the road section from **km 8.5 to km 15.9** during the reporting period:

- cleaning of drainage ditches, stopping areas, culverts and parapets from earth waste accumulated after winter maintenance;
- replacement of wearing course areas where defects were previously identified;

55. During monitoring in April, earth waste was found on the roadsides, where works were carried out to clear gutters, parapets, culverts and bus stops. Collected earth waste, stored in small piles,

which the Contractor was unable to remove in a timely manner due to insufficient manpower. After discussing this issue with the Contractor, the earth waste was collected from the roadside and removed. Subsequently, the accumulated soil was cleaned and removed in a timely manner.



Figure 9 Cleaning and removal soil waste near parapets

56. In May, drainage ditches were cleaned of stones and debris.



Figure 10 Cleaning drainage ditches

3.1.2 Borrow pits.

57. The last remaining borrow pits Belek and Ak-Suu 2 were reclaimed. Both borrow pits were handed over with the certificate to the raion commissions as per the national legislation.



Figure 11 Belek borrow pit after reclamation



Figure 12 Ak Suu 2 borrow pit after reclamation

3.1.3 Activities on the area where plants are located.

58. After dismantling the equipment (crushing plant, etc.), the Contractor does not carry out any work. Considering that the contractor has entered into a new lease agreement with the owners of this site, Chins Railway No. 5 plans to use this site outside of our project.



Figure 13 Dismantling of equipment on the production site



Figure 14 Camp

59. *In the Sokuluk residential camp*, household waste and sewage from septic tanks are removed in a timely manner, all protective measures for sanitary hygiene are observed.

60. Sanitary and hygienic and anti-epidemic requirements for ensuring favorable living conditions in residential camps have been established in order to preserve the health of workers and contribute to optimizing their life activities.

3.2 Monitoring of the completed section.

61. During the reporting period, regular monitoring of road section was carried out. During the reporting period, 5 site visits to the project road were conducted.

Table 6 Monitoring of construction site in 2024

No.	Date	Auditors name	Propose of audit	Summary of any significant findings
1	05.02	Abdygulov A.	Visual monitoring of borrow pits "Ak-Suu 2", "Belek" Site visit to places for storage of unsuitable soil at 7.4 km section.	Meeting with the contractor to discuss the earliest possible completion of all reclamation works and handing over of borrow pits.

2	11.03	Abdygulov A	Monitoring of works carried out by the contractor: cleaning of drainage ditches, parapets.	Accumulation of unsuitable soil on the section at km 7.4. Meeting with the contractor to discuss timely removal of accumulated unsuitable soil.
3	01.04	Abdygulov A	Monitoring of works carried out by the contractor: cleaning of culverts and bus stops	The contractor has brought in more personnel to ensure the timely removal of unsuitable soil from the 7.4 km section.
4	11.05	Abdygulov A	Conducting visual monitoring of the project road section	During the visit to the section, no violations were found
5	05.06	Abdygulov A	Conducting visual monitoring of the project road section	During the visit to the section, no violations were found.

3.3 Issues

62. During the reporting period, one non-compliance was identified. When Contractor was cleaning drainage ditches, parapets, culverts and stopping areas, an accumulation of unsuitable soil was recorded. The unsuitable soil was stored in small piles. The main reason for untimely removal was the insufficient number of contractor personnel.

63. Unsuitable soil accumulates on the design section of the road after the winter period. It is during the winter period that inert material is used for backfilling when carrying out works to combat icy conditions. As a result, in the spring, the remains of the inert material used for backfilling turn into unsuitable soil that accumulates in trays, at the outlets of culverts, at stopping areas and at the base of parapets.

64. A meeting was held with the Contractor at the project site, where instructions were given to quickly increase the number of personnel and equipment for the timely removal of accumulated unsuitable soil. Within 3 days, the contractor increased the number of equipment and personnel. Subsequently, similar inconsistencies were not identified.

3.4 Trends

65. On February 15, 2024, the defects liability period ended, but the contractor continued maintaining the project section. At the time of preparing the report, the contractor is awaiting the official handing over of the project section to the Ministry of Transport and Communications of the Kyrgyz Republic; the contractor plans to complete the official handing over procedure by the end of July 2024.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted During the Reporting Period

66. Monitoring of environmental components, such as air quality, noise impact, vibration impact on the Bishkek-Kara-Balta Road section in the first half of 2024 was not carried out, since all construction works were completed.

67. The result of the visual monitoring shows a positive visible effect of the implemented project. Significant improvement in road safety for both vehicle drivers and pedestrians. Reduced noise due to improved road surfaces, virtually no dust.

68. During the reporting period, no appeals or complaints were received.

4.2 Summary of appeals and complaints

69. During the reporting period, the PUI environmental specialist continued visual monitoring of project site to ensure compliance with environmental legislation during construction work on the Bishkek-Karabalta road.

70. Based on the results of regular monitoring during this reporting period, it was noted that the Contractor tries to mitigate the impact on the environment as much as possible, promptly resolving

issues of timely disposal of construction waste, dust suppression, disposal of removed asphalt, which were the main pressing problems in previous periods.

5. FUNCTIONING OF THE CEMWP.

5.1 CEMWP review.

71. 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 CEMWP describes the various activities proposed under this Project and 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.

72. During the reporting period, one non-compliance was identified (accumulation of unsuitable soil) which was addressed in three days.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT.

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

74. One of the good practice examples is the installation of anti shock buffers on the carriageway in order to prevent traffic accidents and prevent loss of life, and road marking. 50 buffers were installed at 45.1 km section and 7 buffers at 7.4 km section.

75. The buffers are filled with sand, have a height of 80 cm, a diameter of 55 cm and a weight of 200 kg. The buffers were installed next to parapets on the carriageway, have a reflective film and are therefore visible from afar at night.

76. Installation of lighting in the middle of the project road section. This solution is safer in terms of road safety.

77. Taking into account the cramped conditions, to ensure road safety at km 8+500 –10+900, the safety zone on the central axis of the road was reduced from 4 meters to 2.6.

78. The lateral safety zone has been reduced from 1 meter to 0.5 meters on both sides of the road between km 8+500 – km 10+900. On this section, it was decided to remove the shoulders on both sides of the road and install curbstones.

7. SUMMARY AND RECOMMENDATIONS.

7.1 Summary.

79. Taking into account the experience of this project, concerning crushing old asphalt to the size of 20x20, fulfilling this requirement remained problematic. Taking this into account, in prospective projects it is necessary to use milling of old asphalt, which will also allow reusing old asphalt and

expanding its secondary use. In addition, milling will virtually eliminate the need to search for places for dumps and burial of old asphalt.

80. Apply new methods that will “force” the Contractor to increase its responsibility to safety requirements.

81. The bitumen from the metal barrels at the asphalt concrete plant was completely used. The empty barrels were removed from the industrial site. During the reporting period, bitumen was delivered by bitumen trucks from rented bitumen pits; barrels of bitumen were not delivered.

82. The stone crushing plant operated mainly with wet material, but there were cases of dusting.

7.2 Recommendations.

83. 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, such as imposition of penalties for non-compliances of environmental safeguards measures 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.

84. The contractor needs to be more responsible in watering and caring for seedlings. Letters were repeatedly sent to the Contractor about the need to allocate a watering machine, which would only be used to water the seedlings, but the seedlings were not watered regularly. As a result, some of the seedlings were dried.

85. Experience in tree planting, in terms of planting trees not along the road, but organizing concentrated green areas in conjunction with local government. This experience needs to be expanded, since this approach allows increasing the survival rate of planted seedlings.

Certificate of handing over and acceptance of reclaimed land of the Ak-Suu-2 borrow pit

Village Belovodskoye

June 06, 2024

The commission for handing over and acceptance of the reclaimed land of the Ak-Suu-2 borrow pit, appointed by the order of the Moscow District State Administration of the Chui Region No. 154/r dated 15.05.2024, consisting of:

- U.Sh. Sadaliev - First Deputy Head of the Moscow District State Administration, Chairman of the Commission;
- M.S. Kemelbaev - chief specialist of the department of industry, economics, agriculture and law enforcement of the Moscow district state administration, secretary of the commission;
- N.N. Baigazieva - Head of the Department of Industry, Economics, Agriculture and Law enforcement;
- S.I. Nazarov - Director of the Moscow branch of the State Agency for Land Resources, Cadastre, Geodesy and Cartography under the Cabinet of Ministers of the Kyrgyz Republic;
- D.B. Biymyrsaeva - acting head of the Moscow District Department of Agrarian Development;
- I.D. Kenzhaliev - Senior Inspector of the Chui-Bishkek Interregional Department of the Land and Water Supervision Service under the Ministry of Agriculture of the Kyrgyz Republic;
- D.B. Sagaev - Head of the Moscow District Water Management Department;
- B.A. Sharshenaliev - head of the Emergency Situations Department of the Moscow district;
- D.M. Aknazarov - head of Ak-Suu aiyl okmotu;
- K.I. Ibraev - representative of the Ministry of Transport and Communications of the Kyrgyz Republic;
- U.T. Shurubekov - chief inspector of the ChROMNRETS of the Kyrgyz Republic;
- Zhang Liang - director of the KR Office of China Engineering Group Co. No.5.

The commission has drawn up this certificate on the following.

An inspection of the works performed in accordance with the terms of technical reclamation at the borrow pit was carried out and the following was established:

1. Clearing the surface of the reclaimed land area from boulders;
2. The quarry benches were brought to a safe condition;
3. Rough planning of the surface of the sites after removal of waste from their territory;
4. Cleaning planning of reclaimed surfaces.

Biological reclamation was not carried out due to natural conditions (due to the low productivity of the land, the absence of a fertile layer and the impossibility of carrying out earthing and the impact of surface watercourses and floods, the quarry area alienated for mining operations, located in the floodplain of the Ak-Suu River, is self-regenerating).

China Engineering Group Company No. 5 transfers the reclaimed land of the Ak-Suu-2 quarry with an area of 37.01 hectares, transferred by temporary permit of the State Committee for Industry,

Energy and Soil Use of the Kyrgyz Republic No. 03-6/6788 dated 01.06.2017 for the development of sand and gravel mixture, to Aksuy ayil okmotu.

Chairman of the Commission:

U.Sh. Sadaliev signature

Members of the Commission:

N.N. Baigazieva signature

S.I. Nazarov signature

D.B. Biymyrsaeva signature

I.D. Kenzhaliev signature

D.B. Sagaev signature

B.A. Sharshenaliev signature

D.M. Aknazarov signature

K.I. Ibraev signature

U.T. Shurubekov signature

Zhang Liang signature

Secretary of the commission

M.S. Kemelbaev signature

Sokuluk village

July 11, 2027

Certificate of handing over and acceptance of reclaimed land of the Belek borrow pit

The commission for the acceptance and transfer of reclaimed land from the Belek borrow pit, appointed by order of the Sokuluk district state administration of the Chui region No. 208-P dated June 10, 2024, consisting of:

Adiev K.A. - First Deputy Head of the Sokuluk District State Administration, Chairman of the Commission;

Dzhanibekov A.M., Head of the Department of Economics, Industry and Agricultural Development, Secretary of the Commission;

Bazarkulova Zh.E. - Director of the Sokuluk branch of the State Institution "Cadastre" under the State Agency for Land Resources under the KR Government;

Mayrykov S. - Senior Inspector of the Chui Regional Administration of the Ministry of Natural Resources, Ecology and Technical Supervision (subject to agreement);

Isakov D.Yu. - Head of the Emergency Situations Department for the Sokuluk District;

Zhang Liang - director of the KR Office of China Engineering Group Co. No.5.

Sadykov B.Sh. - Head of the Department of Agricultural Development of Sokuluk District;

Bozov M.K. - Head of Sokuluk District Department of Water Management and Land Reclamation;

Edigeev Zh.K. - head of Sokuluk ayil okmotu;

The commission drew up this certificate on the following:

An inspection of the works performed in accordance with the conditions for technical reclamation of the borrow pit was carried out and it was established:

1. Clearing the surface of the reclaimed land area from boulders;
2. Flattening of slopes;
3. Creation of a reclamation horizon;
4. Rough layered planning;
5. Rough planning of the surface of the sites after removal of boulder waste from their territory;
6. Final planning of reclaimed surfaces.

Biological reclamation was not carried out due to natural conditions (due to low productivity of the land, lack of fertile soil and impossibility of carrying out earthing and the impact of surface watercourses and floods, the area of the borrow pit alienated for mining operations).

China Engineering Group Company No. 5 hands over the reclaimed land of the Belek borrow pit with an area of 3.79 hectares, transferred by temporary permit of the State Committee for Industry, Energy and Subsoil Use of the Kyrgyz Republic No. 03.-6/6709 dated 03.06.2021 for the development of sand and gravel mixture, to Sokuluk ayil okmotu.

Chairman of the Commission

Adiev K.A. signature

Members of the Commission:

Bazarkulova Zh.E. signature

Mayrykov S. signature

Isakov D.Yu. signature

Zhang Liang signature

Sadykov B.Sh. signature

Bozov M.K. signature

Edigeev Zh.K. signature

Secretary of the Commission:

Dzhanibekov A.M. signature