

SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT

Project Number: 49042-005

Grant 0569 TAJ

Reporting period: January-June 2020

Republic of Tajikistan: CENTRAL ASIA ECONOMIC COOPERATION CORRIDORS 2, 5, and 6 (DUSHANBE – KURGONTEPPA) ROAD PROJECT - Additional Financing

Prepared by Kocks Consult GmbH; Germany for the Ministry of Transport of the Republic of Tajikistan and the Asian Development Bank

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July 2020



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(January – June 2020)

GRANT 0569 – TAJ: CENTRAL ASIA ECONOMIC
COOPERATION CORRIDORS 2, 5, and 6 (DUSHANBE –
KURGONTEPPA) ROAD PROJECT - ADDITIONAL
FINANCING

Ministry of Transport of the Republic of Tajikistan



Financed by: Asian Development Bank

Endorsed by: Project Implementation Unit for Road Rehabilitation

July 2020

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
BOD	Biological Oxygen Demand
BoQ	Bill of Quantities
CAREC	Central Asian Regional Economic Cooperation
CAP	Corrective Actions Plan
CEMP	Construction Environment Management Plan
CEP	Committee for Environmental Protection
CIS	Commonwealth of Independent States
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CSC	Construction Supervision Consultant
EA	Environmental Assessment
ECA	Europe and Central Asia
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
ES	Environmental Specialist
FIDIC	The International Federation of Consulting Engineers
FinnOC	Finnish Overseas Consultants Ltd.
GoT	Government of Tajikistan
GRM	Grievance Redress Mechanism
HIV	Human immunodeficiency viruses
HSE	Health, Safety and Environment
IEE	Initial Environmental Examination
km ²	Square kilometer
kWh	Kilowatt hour
LHS	Left Hand Side
m	meter
MoT	Ministry of Transport
MPC	Maximum Permissible Concentration
MSL	mean sea level
NO	Nitrogen Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
NCN	Non-Conformance Notification
OFC	Optic Fibre Cable
PIU	Project Implementation Unit
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PPTA	Project Preparatory Technical Assistance
RHS	Right Hand Side
RoT	Republic of Tajikistan
RoW	Right of Way
SAEMR	Semi-Annual Environmental Monitoring Report
SEE	State Ecological Expertise
SSEMP	Site Specific Environmental Management Plan
SEMR	Semi-Annual Monitoring Review
SNiP	Building Code
SO ₂	Sulfur Dioxide
SPS	Safeguard Policy Statement
STD	Sexually Transmitted Diseases
ToR	Terms of Reference
TSP	Total Suspended Particles

I. INTRODUCTION

1.1 Preamble

1. This is a Semi-Annual Environmental Monitoring Report (SAEMR) for Central Asia Economic Cooperation Corridors (CAREC) 2, 5, and 6 (Dushanbe –Kurgonteppa) Road Project – Additional Financing (Phase 2). The report covers the monitoring period from January to June 2020. The Construction Supervision Consultant of the project is Kocks Consult GmbH (hereafter CSC) and the contractor is Sinohydro Tajikistan Corporation Limited (hereafter Contractor).
2. This report provides a review of how the environmental measures, needed to prevent and/or mitigate negative environmental effects associated with the development project, have been carried out by the contractor during the monitoring period. The report also provides a summary of the currently outstanding major and minor environmental issues that need to be addressed, and suggestions for mitigation measures.
3. This report is the fourth SAEMR for the project. The next monitoring period will be from July to December 2020.

1.2 Headline Information

4. The Project includes upgrade of the existent two lanes road to the four lanes highway designed under the modern standards. The Phase 2 (second phase) covers approximately 39.6 km of road section from Chashmasoron to the south, including the construction of the 330m bridge over Vahsh river.
5. The Department of the state ecological expertise of the Committee for Environmental Protection (CEP) issued a positive conclusion for the Project implementation on December 2016 (N920-15, 16.12.2016). The document covers the whole length of the Project including phase I and II and provides “No objection” to the Project implementation provided, that the mitigation measures stipulated will be observed.
6. The construction activities that have been carried out during the monitoring period have included: (i) demolition and removal of old asphalt and structures; (ii) clearing and grubbing; (iii) stripping and storing of topsoil; (iv) excavation for structural foundation and road widening; (v) relocating of electrical and communication lines; (vi) placing and compaction of embankment layers; (vii) placing of geogrid and geotextile layers (viii) laying and compaction of sub-base; (ix) laying of aggregate base course; (x) laying and compaction of asphalt base course; (xi) construction of retaining wall; (xii) construction of bridges and culverts; (xiii) backfilling of structures,
7. Several issues related to the environmental management of the project were identified during the monitoring period, with regards to the compliance of the project with the ADB Safeguard policy and Tajikistan Law on Environment. The issues were related to: (i) excessive dusting; (ii) waste management; (iii) air pollution; (iv) improper storage of

topsoil; (v) erosion and siltation of surrounding areas; (vi) unauthorized dumping of unsuitable material; (vii) improper storage of bitumen.

8. During the monitoring period, the national Environmental Specialist of CSC carried out regular monitoring visits, discussed the identified issues with the contractor, and presented correction measures that need to be taken into account in the implementation of the project. The International Environmental Specialist of CSC is in constant communication with the local partner and reviewed the submitted Project documents relating to Environmental Management and providing valuable input to the Project Environmental Monitoring.

II. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

9. The Asian Development Bank (ADB) has provided funds to the Government of Tajikistan (GoT) in order to improve portions of the Central Asian Regional Economic Cooperation (CAREC) Corridors 2, 5, and 6 b Rehabilitation and Improvement of Dushanbe-Kurgonteppa Road, km37+475 – km73+050 upgrading the 82 km Dushanbe–Kurgonteppa road, for which ADB has funded two projects (Phase 1 and Phase 2). The Table 1 shows the basic project information.

Table 1: Basic Project Data

Project Name	Grant 0569- CAREC Corridors 2,5 and 6 (Dushanbe – Kurgonteppa) Road Project – Additional Financing
Contract Name	Rehabilitation and Improvement of Dushanbe- Kurgonteppa Road, km. 37+475 – km. 73+050
Employer (Executive Agency)	Ministry of Transport of Tajikistan
Contractor	Sinohydro Tajikistan Corporation Limited
Construction Supervision Consultant (Engineer)	Kocks Consult GmbH, in association with FinnOC, and State Unitary Enterprise "Research, Design and Survey Institute
Date of Award of Contract	26th of July 2018
Commencement Date	8 th of October 2018
Contract Period	36 months (1,095 days)
Contract Completion Date	7 th of October 2021

10. The road section from Dushanbe to Chashmasoron is implemented under the Phase 1 of the Project. The Phase 2 (second phase) covers approximately 39.6 km of road section from Chashmasoron to the south. The Construction Supervising Consultant (CSC) of the project is Kocks Consult GmbH and the contractor is Sinohydro Tajikistan Corporation Limited.

11. The project area is in a flat and hilly terrain ranging in altitude from 400 to 600 m. Regarding its surface morphology it can broadly be divided from North to South into a mountainous section which starts at km. 33 and ends at km.40, and generally flat section from Km 40+000 to 70+030 with short rolling parts at Km 59+000 and 69+000. The Project alignment is following the existing road alignment, which reduces the potential impacts of the construction works.
12. Ecologically significant components are the Vakhs, Dahanakiik and Aksu rivers and tree rows that are stretching over many parts of the Project road. Among the planted species are pines, mulberry, juniper, wild cherry and different species of hawthorn. Where drainage or irrigation channels are running parallel to the Project road deciduous trees such as elms, planes, poplars and willows dominate.
13. The land use alongside the Project road can be divided into three broad main categories comprising urban environment and settlements, agricultural land and grassland (steppe) which for most of its part is used as seasonal pastures. Most prominent agricultural crops are apples, grapes, cherries, apricots, pistachio and cotton. The cultivated lands are the mainly irrigated except for small rain fed wheat fields in the beginning of the Project road.
14. In addition to the ecologically sensitive features, there are also socially sensitive receptors, namely residential areas, schools and hospitals along the road section.
15. The Project Road crosses the areas of Khuroson and Jomi districts of Khatlon region of the Republic of Tajikistan (RT). The following map provides a general overview of the Project road location:

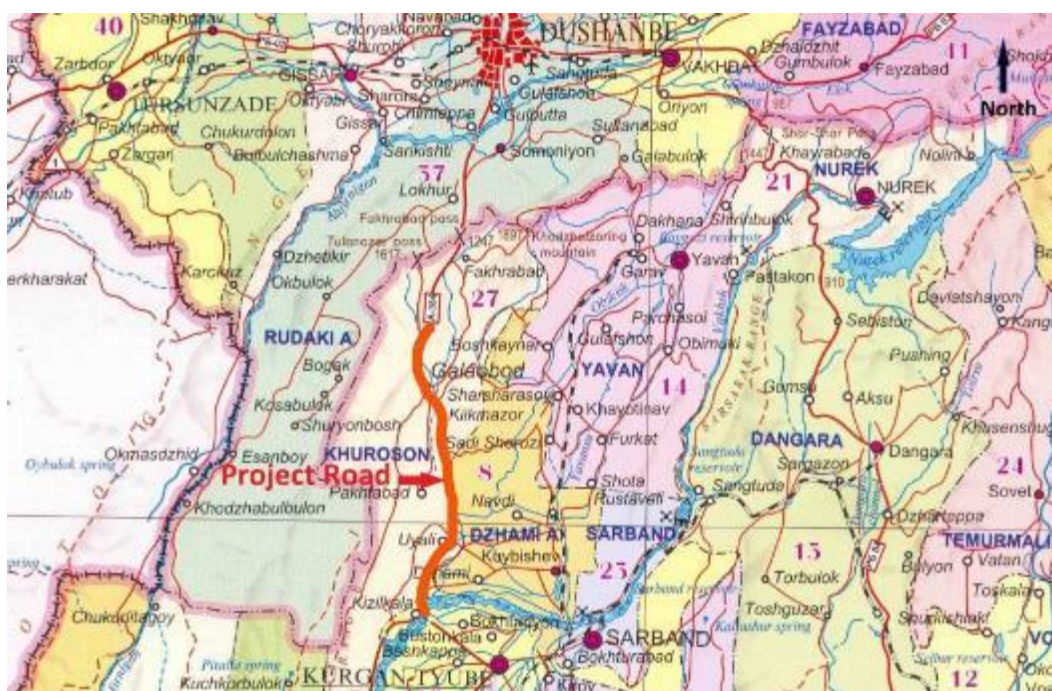


Figure 1: Project Road location map

16. The benefit of the proposed project will be improved connectivity and access to markets. The outcome of the project will be efficient movement of freight and passenger traffic along the Dushanbe – Kurgonteppa road. After implementation of both phases the project outputs will be: (i) 83.6 km of reconstructed road from Dushanbe to Kurgonteppa, (ii) strengthened road asset management system, and (iii) improved road safety.
17. The Project Road will be improved to Category I standard as a dual carriageway asphalt concrete paved road, in accordance with the Asian Highway Classification and Design Standards, 1993. The Works include a complete removal of the existing bituminous pavement layers and a partial removal of the granular pavement material. These materials are planned to be recycled and used, to the maximum extent practicable, for the construction of the new road. The bridge works include rehabilitation of existing and construction of new bridges and underpasses including the 330m bridge over Vaksh river. The Table 2 below shows a list of the main structures to be built under the Project.

Table 2: The main Project road structures

No	Structure	Location	Description
1	Bridge 6	Km 33+732	New underpass
2	Bridge 6A	Km 34+290	New bridge
3	Bridge 7	Km 36+625	Ravine crossing
4	Bridge 7A	Km 40+360	Pedestrian crossing
5	Structure 7CH7b	Km 40+950	Pedestrian underpass
6	Bridge 8	Km 41+653	New underpass
7	Bridge 9	Km 45+055	Mudflow crossing
8	Bridge 10	Km 46+720	Channel crossing
9	Bridge 10a	Km 50+710	New underpass
10	Bridge 11	Km 60+888	Crossing of Aksu river
11	Structure CH 11b	Km 61+960	Pedestrian underpass
12	Bridge12	Km 66+140	New Collector crossing
13	Bridge 13	Km 67+310	New Collector crossing
14	Bridge 14	Km 72+860	Rehabilitation of bridge over Vahsh
15	Bridge 14a	Km 72+860	New bridge over Vahsh

18. The road will be widened from two to four lanes, with a provision of 3.5m wide shoulders on both sides. A new, two-lane carriageway will be constructed parallel to the existing one, either on the western or eastern side of the existing road. A median

between the opposite directional carriageways will be provided at some sections of the road corridor, except in a few populated and mountainous areas.

19. The Project is classified as B for environmental impacts, in line with the ADB (SPS, 2009). The results of Initial Environmental Examination (IEE) confirm that the implementation of the Project is not anticipated to result in significant environmental impacts that could not be prevented or whose results could not be mitigated to an acceptable level in accordance with the norms of the Republic of Tajikistan or International Standards. No sensitive habitat, natural protected area or valuable environmental structure is expected to be significantly impacted, during the construction activities or after completion of work.
20. Most of the project corridor is flat and rolling. The highest point of the phase 2 is the starting point with true altitude of 850m above MSL from which it is almost continuously descending with several ascending sections. In terms of physical and biological environment, there are only few environmentally significant features located along the Project road.

2.2 Project Contracts and Management

21. ADB and GoT signed the Memorandum of Understanding about the project on September 14, 2017. The document included general setting for the project implementation, including environmental management and monitoring requirements. The project owner is the Ministry of Transport of Tajikistan (MoT) acting through its Project Implementation Unit (PIU). The Project Implementation Unit (PIU) is responsible for overseeing the implementation on behalf of the MoT.
22. MoT Contracted the Kocks Consult GmbH; Germany in cooperation with FinnOC, and State Unitary Enterprise "Research, Design and Survey Institute" Tajikistan in August, 2018 as CSC for the project implementation. Duties of CSC include preparation of all documents, which are required according to the ToR including preparation of SAEMR.
23. The basic information of the Contract with CSC as follows:

Table 3: Basic Consultancy Contract Information

Consultant Name	Kocks Consult GmbH; Germany in cooperation with FinnOC, and State Unitary Enterprise "Research, Design and Survey Institute"
Date of Contract signed	August 17, 2018
Commencement Date	August 28, 2018
Contract Period	1095 days (36 month)

24. During the process of development and implementation of this Project, Contractor and Employer have concluded a Contract with an objective that all specialists are qualified; Professional Contractor should provide to Employer with high quality of the construction, and as per Technical Proposals perform all necessary works in high

level. CSC and Employer have necessary education and experience in order to objectively assess the requirements of the project. Works are implemented as per regulations of ADB, FIDIC, SnIP and regulation norms of the Republic of Tajikistan (RoT) as well as, in accordance with Special Contract Conditions and Technical Specifications, which are set by the Employer. Quality Control is an integral part of the CSC work and their professional responsibility enabled maintain up to standards.

25. The agencies involved directly in the implementation of the project include: (i) Sinohydro Tajikistan Corporation Limited, the Contractor; (ii) Kocks Consult GmbH, the Construction Supervision Consultant (CSC); and (iii) Project Implementation Unit (PIU) under the Ministry of Transport.
26. The responsible persons for the environmental management and monitoring of the project are as follows:
 - a) PIU: Deputy Director- Mr. Eraj Mirzoev; Environmental Specialist Mrs. Guldavlat Ahmadbekova; Safety Specialist;- Mr. Safarmat Yormatov;
 - b) Supervising Engineer: International Environmental Specialist Mr. Toni Paju and National Environmental Specialist Mr. Igor Ziderer; and
 - c) The Contractor: International Health and Safety Specialist Mr. Lin Yong and National Environmental Consultant Mr. Bashid Suriev.
27. Mrs. Guldavlat Ahmadbekova is responsible for the environmental management and monitoring from PIU's side. Mr. Toni Paju is responsible for carrying out intermittent monitoring, and providing training to the local counterparts and personnel who are involved in the day-to-day activities for environmental monitoring. Mr. Igor Ziderer is responsible for regular monitoring of the project compliance from the supervising engineer's side. Mr. Lin Yong is responsible for health and safety compliance and Mr. Bashid Suriev is responsible for the environmental monitoring and reporting from the contractor's side. The organizational diagram for the environmental monitoring in the project is presented below.

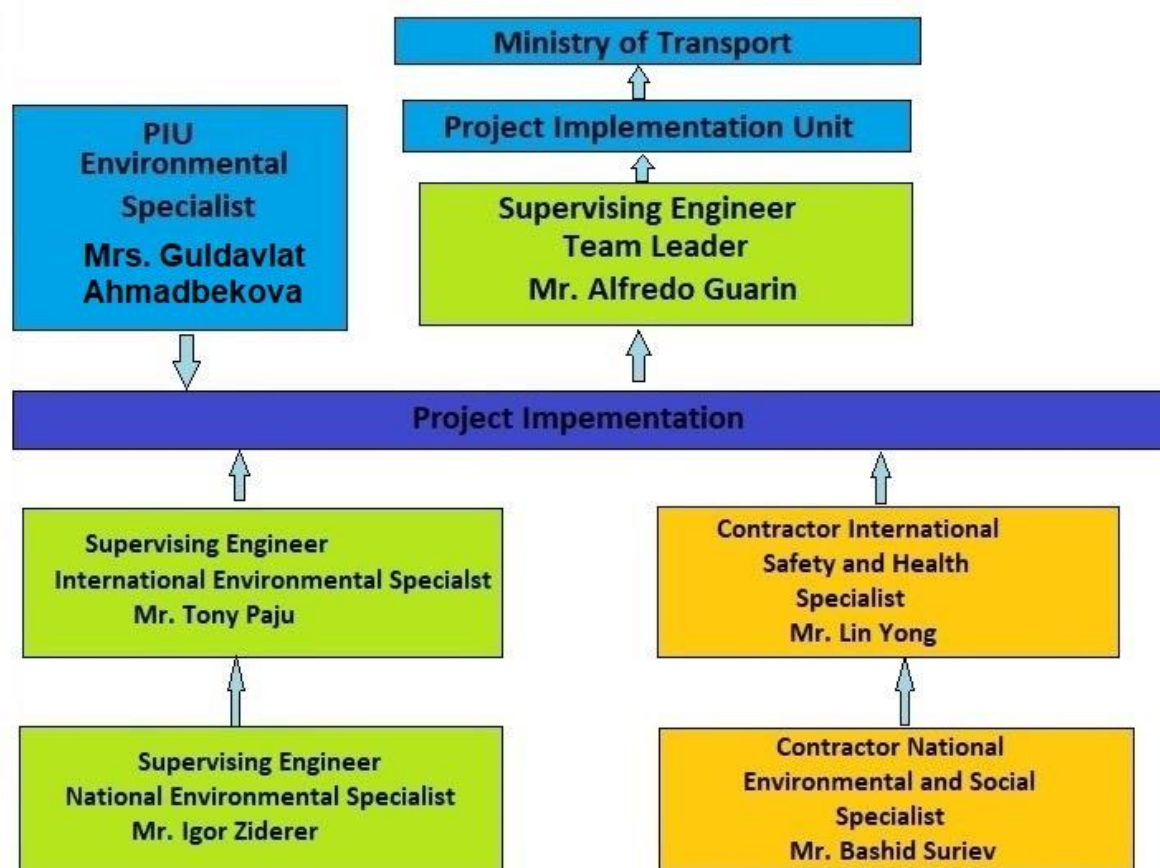


Figure 2: The environmental management organizational diagram of the project

28. The contractor undertaken many types of works with local companies/sub-contractors. These works include relocation of utilities, construction of permanent office and accommodation for CSC and other services. The Table 4 below shows the list of the main Project sub-contractors involved in the Project during monitoring period.

Table 4: The main subcontractors of the Project and their responsibilities

No	Name of sub-contractors	Scope of Works
1	CHSP Tajikalokasohtmon	Relocation of Communication Lines, Optic Fiber Cables (OFC)
2	CHDMM Mizoiyor B	Relocation of Electric Power Lines

29. The contractor buys the majority of the food from local producers and markets. Some of the food stuff is imported from China (e.g. spices), if they are not available locally.
30. Weekly meetings conducted by PIU/CSC and the contractor during the monitoring period mandatory included into the agenda the environmental issues. Environmental issues were discussed and documented into the Minutes of Meetings.
31. The contractor signed the official agreement with the relevant organization of Khuroson district for collection of the waste from the camp. The Contractor pays for the collection of the waste, and the waste is collected on a regular basis.

32. Along the project road, there are several of medical facilities and hospitals with the capacity to provide the medial aid in the case of need and Contractor established informal communication with these facilities. The official agreement with the local hospital for taking care of any emergency issues that may arise during the project implementation is not necessary, as according to legislation of RoT the medical establishments are obliged to provide medical aid in the case of emergency. In addition, the Contractor set up well equipped first aid room in the Construction Camp room.
33. The Contract requires the providing of regular Environmental monitoring and reporting including preparation of SAEMRs. This is the fourth SAEMR since the Project commencement.

2.3 Project Activities during Current Reporting Period

34. During the reporting period the Project performance was slowed down due to the COVID-19 pandemic. Contractor had to mobilize additional resources and take special restriction measures to prevent the spread of the disease. Pandemics definitely affected the Project progress during the reporting period however, it was an active stage of the project implementation with many of physical activities conducted. Despite the certain difficulties Contractor continued the design and construction activities.
35. The travel limitations caused by spread of COVID-19 pandemics also affected the scheduled rotation of the Contractor's manpower, especially expatriate specialists. Since the beginning of reporting period Contractor couldn't perform any rotations of the International staff. The people who went home for National holiday in January 2020 couldn't return to work due to travel restrictions imposed by the Governments. .
36. Contractor had 53 of International staff on the site by the time when the entrance of citizens of China People's Republic to Tajikistan was restricted and this number remained constant until the end of reporting period. By the end of December 2019, Contractor has mobilized totally 501 of staff to the Project including 87 of International personnel and 414 of national specialist.
37. Contractor kept 414 of the National staff from the beginning of the period, however reduced it to 161 in May 2020, when the presence of COVID-19 in Tajikistan was officially confirmed. However by the end of June Contractor again increased the local staff to 316 people (Figure 3).

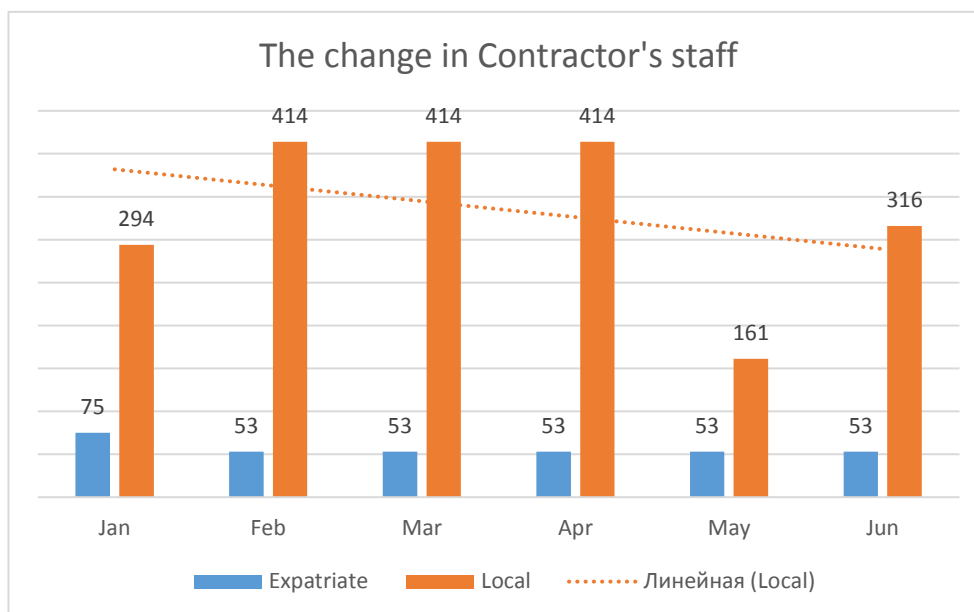


Figure 3: Diagram for mobilization of staff by Contractor

38. During the reporting period the Contractor continued demolition and removal of old asphalt pavement, site clearing, relocation of utilities, earth and rock excavation for road widening and foundation of structures, laying and compaction of the pavement structure layers, construction of new bridges, animal passes, culverts, pipes, protection walls.
39. Contractor started the placing of the geogrid, geotextile and gravel filtering layers (photo 1) at the locations where need in stabilization measures confirmed by geo-technical investigations and additional testing.



Photo 1 The placing of geotextile and geogrid at Km 49+590(photo taken in June 2020)

40. By the request of the GoT Contractor conducted the emergency work to restore a rural road destroyed by mud flows during the severe rainfall in May, 2020. The destroyed section is located in 5km east from the junction with the Km 60+000 of the Project Road. To replace the destroyed, the Contractor constructed 1km section of the asphalt paved road including two crossings of irrigation channel. As planned the works were completed by June 22, 2020.
41. The works for the construction of additional bridge in Meknatobad also requested by GoT have been continued. By the end of reporting period the concreting of abutments was completed.

Table 5: Types of conducted work by location

No	Construction Activities Conducted at the	Chainage / Location (km-km)	Status
1	Preparation of detailed design drawings	The whole Project road length	Ongoing
2	Site clearing and grubbing	46+000- 49+000	Ongoing
2	The relocation of high voltage power-lines, communication lines and utilities.	39+000 -72+000	Ongoing
3	Top-soil removal and Subgrade excavation in the sections	51+980 -52+140, 58+200 - 59+340;	Completed in Jan/ 20
		50+320 -51+140, 55+220 - 55+600; 58+800-59+600	Completed in Feb/20
		37+800-38+160; 58+680-59+300	Completed in Mar/20
		37+800-38+160;	Completed in Apr/20
		37+800 -37+100; 50+300 -50+720	Completed in May/20
4	Side soil excavation for the road widening	59+000-60+000	Ongoing
5	Construction compaction of embankment layers, including capping works	50+000 - 51+140; 52+280-53+000; 58+200 - 58+500; 58+920 - 58+980;	Completed in Jan/20
		49+660 -50+200; 55+500 -55+600; 59+600 -59+760; 60+000 -60+360;	Completed in Feb/20
		58+260-58+520;	Completed in Mar/20
		59+300-60+360; 42+300-44-600	Completed in Apr/20
		37+100 -37+660; 58+480 - 59+300; 37+800 -38+160; 58+180- 59+340	Completed in May/20
		33+475-33+840; 37+180-38+100; 42+260- 44+940; 45+100-5+700, 48+800-49+400; 42+440-47+000;	Ongoing
6	Construction and compaction	51+140-51+400; 51+980-52+400	Completed in Feb/20

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No	Construction Activities Conducted at the	Chainage / Location (km-km)	Status
	of sub-base layer	50+000 - 51+420; 57+740- 58+200;	Completed in Mar/20
		57+900 -58+180;	Completed in Apr/20
		52+200 -53+000; 58+180 -59+320	Completed in May/20
		49+400-49+800	Completed in June/20
7	Installation of geogrid, geotextile and draining gravel layer	48+600-48+900	Completed in June/20
8	Laying and compaction of aggregate base course	51+380-52+380; 55+200-55+430	Completed in Jan/20
		51+140-51+400; 51+980-52+400	Completed in Feb/20
		57+900 -58+200; 50+000 -51+140	Completed in Apr/20
		52+200 -53+000; 58+180 -59+320	Completed in May/20
		55+420 -55+620	Ongoing
9	Laying of prime and binder asphalt courses	54+460- 55+010; 57+370-57+880	Completed in Jan/20
		52+940 -53+040	Completed in Mar/20
		56+600-57+880	Completed in Apr/20
		52+940 -53+040	Completed in May/20
		55+000-55+340; 51+320-51+700	Completed in June/20
	Structures:		
10	Construction of the Underpasses	41+653;	Completed in Apr/20
		50+694	Ongoing
11	Boring and concreting of piles, and bridge foundations	Bridge 14a	Completed in Apr/20
		Bridge 7, 11	Ongoing
12	Construction of culverts	35+619; 37+158; 37+762; 38+194; 45+319; 47+462; 58+194; 62+565; 62+846 and 63+194 41+653; 49+583; 60+550	Completed in Jan/20
		44+038; 45+500; 48+359; 50+312; 50+611; 60+550; 62+846; 63+194;	Completed in Feb/20
		48+359; 48+986; 60+550; 63+194 (Backfilling) 35+619; 55+560; 50+611; 50+313; 55+527; 45+319; 37+158; 37+762; 47+462	Completed in Mar/20

No	Construction Activities Conducted at the	Chainage / Location (km-km)	Status
		35+619; 55+560; 50+611; 50+313; 55+527; 45+319; 37+158; 37+762; 47+462. 42+161; 60+550; 62+846 60+550; 44+038	Completed in Apr/20
		42+161; 43+065; 60+550; 41+653; 49+583; 60+550	Completed in May/20
		38+095; 51+246; 51+596; 52+077;	Ongoing
13	Prefabrication of pipe culverts components and beams at the precast yard.	64+500	Ongoing
14	Construction of retaining wall	34+615-34-625	Completed in Jun/20
		39+740	Ongoing
15	Construction of animal underpasses	50+110:	Ongoing
16	Temporarily stockpiling of the stripped top-soil	55+200-52+100 42+200	Ongoing
17	Cutting and removal of trees.	47+000- 49+000	completed in Apr/20
18	Disposal of unsuitable cut material	34+500; 35+200; 45+800; 58+000; 60+000; 67+200	Ongoing
19	Fabrication of precast units at concrete-batching facilities and precast yard.	64+400	Ongoing
20	Excavation and stockpiling of the material from the quarries,	access road entry at the Km 37; 55, 66 and 69	Ongoing
21	Undertaking of instrumental measurements of the environmental quality parameters for air& water and level of noise.	Selected sensitive points	completed for 1 ST and 2 nd Quarter, 2020

42. Contractor has also undertaken the various types of preparatory works, including the testing of material in the quarries, verification of topographic survey, procurement and delivery of machinery and materials. By the end of monitoring period, the total progress of work was 42.14%. Table 6 below shows the progress by month since the beginning of the monitoring period.

Table 6: Progress of work by month

No	Month, 2020	Construction Works Progress (%)	
		Monthly	Cumulative
1	January	1.29	30.91
2	February	1.65	32.56
3	March	1.60	34.16
4	April	3.32	37.48
5	May	2.04	39.52
6	June	2.62	42.14
Total progress of works		12.52.% from the beginning of reporting period	42.14% from the beginning of the project

* The values are based on Monthly Progress Reports.

43. By the end of reporting period the project progress reached 42.14%, however the slippage increased to about 10.24% compared to revised work program.

2.4 Description of Any Changes Project Design

44. During the reporting period, no changes to the Project Design were introduced. Earlier the Contractor based on the recommendations of CSC proposed several changes to the project design summarized in the variation orders 1, 2 and 3.
45. Variation order No 1 includes changes of the bridge #14 superstructure in order to cut the construction cost and reduce the time required for the completion of bridge, In accordance with structural analysis the changes will not affect the stability of structure. The Variation No 1 was approved by on PIU and CSC and consequently by PIU
46. Variation order No 2 proposes the change of the initially designed alignment section from km36+400 to km 37+300 to the left side in order to avoid significant quantities of the rock excavation and blasting. It is expected that rock excavation will significantly affect the stability of rocky slopes and consequently the safety of the Project road due to increased risk of rockfalls and landslides. The shifting of alignment will require the additional construction of embankment and retaining wall. In addition the implementation of Variation No 2 will significantly reduce the future maintenance cost for this section.
47. The comprehensive environmental and social impacts have been assessed for both variations and descriptions included to the proposals as sub-section. It is concluded that changes of the design will not cause any significant environmental impacts. The Variations Orders were approved by Employer and CSC. Currently documents are approved by PIU.

48. Variation Order No 3 comprises the re-alignment of the Project road by the shifting of the central line to the left in average by 2m at the km 42-51 due to revealed unstable soil conditions at the km 45-51 and need in preservation of hundreds of fruit trees at km 42 -45. The proposed VO #3 is currently under ADB review.

2.5 Description of Any Changes to Agreed Construction Methods

49. No changes to the approved Construction methods were proposed during the reporting period.

III. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

50. This section presents the environmental Safeguard activities that were carried out during the monitoring period for the physical and natural environment by the ES involved in the implementation of the project. The base-line environmental conditions were examined at the feasibility study and detailed design stages and have been summarized in the Initial Environmental Examination (IEE). The IEE report was prepared by Kocks and approved by PIU and ADB. The IEE: (i) identified and analyzed all significant impacts; (ii) described their likely extent, duration and severity; and (iii) formulated the required mitigation and monitoring measures and included them in the Environmental Management Plan (EMP).
51. The contractor has submitted environmental monitoring checklists after the end of each month. These environmental monitoring checklists have been prepared on a weekly basis by the national ES of the Contractor. The Contractor also has been submitting the required environmental monthly reports regularly as required by the contract.
52. Contractor has also prepared the Quarterly Environmental Monitoring Reports (EMR), which present the results of instrumental monitoring. During the reporting period, the Contractor submitted two Quarterly EMRs covering the period from January to March and April to June 2020 respectively and 6 brief monthly reports.
53. During the reporting period the Environmental Specialists of the CSC were undertook the following monitoring activities:
- Frequent visits to the site for inspections and of quarries, disposal sites, concrete and asphalt plants, camp sites, etc.;
 - Meetings with the Contractor and other stakeholders focused on: (i) sufficiency and implementation of the SSEMP, including the efficiency of Environmental Management System (EMS); (ii) waste management (including hazardous waste); (iii) environmental monitoring with instrumental measurements; and (iv) reviewing the submitted check-lists and Quarterly EMRs, with preparation of comments and discussion of SSEMP issues with the Contractor.

54. CSC ES periodically issued the non-conformance notes on the basis of the issues discovered during the inspections and reviewed the documents and permits for quarries and disposal sites submitted by the Contractor.

3.2 Site Inspections

55. The following table presents the inspections made by the environmental safeguard staff during the current reporting period:

Table 7: Environmental Inspections Schedule for January-June, 2020

No	Date	Staff Present
1	Weekly during January-June	CSC National Environmental Specialist – Mr. Igor Ziderer
2	Weekly during January-June	Contractor's Environmental Specialist – Mr. Bashid Suriev

56. The findings during the inspections were related to the following issues: ((i) excessive dusting; (ii) waste management; (iii) air pollution; (iv) improper storage of topsoil; (v) erosion and siltation of surrounding areas; (vi) unauthorized dumping of unsuitable material; (vii) improper storage of bitumen. Site inspections were undertaken frequently as both scheduled and random inspections. The inspections usually combined examination of environmental, health and safety issues. In addition to the scheduled inspections, representatives of PIU and Engineer ensured permanent presence at the site during any activities undertaken by the Contractor.
57. The Monthly Site Inspections as part of the regular Site Inspection Program have been scheduled at the end of every month, when they are undertaken jointly by the Safety and Environmental staff of the Engineer, Contractor and PIU.
58. No external environmental inspections undertaken during the reporting period due to quarantine restrictions relating to COVID-19 pandemics.

3.3 Issues Tracking (Based on Non-Conformance Notices)

59. The non-conformance issues during the monitoring period were either identified by the environmental staff of the CSC or were expressed by the local residents by phone or verbally during communication with them.
60. No written complaints relating to environmental issues were received through formal Grievance Redress Mechanism (GRM). Potential solutions to all issues have been discussed verbally between the appropriate experts from the contractor and CSC, as soon as they have emerged. Minor issues (e.g. content lacking from the reports) have been discussed directly with the person responsible for the Contractor's Safety and Environmental management. Contractor has Complaints log book at the site and

installed the box at the camp for collection of complaints. However, hitherto Contractor didn't report any received complaints relating to environmental issues.

61. There were a total of 18 issues that were identified during the monitoring period and that require correction. Out of these, 14 issues have been closed by now. The issues that have emerged are as follows:

Table 8: Identified Environmental Issues

No	Issue	Significance	Status
1	Polluting of water during the construction of cofferdam	medium	Closed. The silty gravel material was replaced by material with domination of big stones. (Photo 20)
2	Siltation of the market area due to heavy raining	medium	Closed. The consequences of the siltation are eliminated, contractor helped to the local residents to clean it up.
3	The open air fire nearby the RoW for warming up during the cold weather	minor	Closed. The Contractor provided people with tent for shelter during the cold weather,
4	The formation of ponded water due to blockage of the river by dumped material upstream from the bridge#7.	minor	Closed. NCN was forwarded to the contractor. The channel was excavated to ensure the drainage
5	The various garbage dumped on the newly built embankment at km 58+200	minor	Closed. Contractor stated that garbage was dumped by the outsiders at night time. However, Contractor cleaned area and sent garbage to the approved location, after instruction of Engineer
6	Encroachment of the property at the km 58+ The dumped material to the private land during the filling of embankment,	minor	Closed. By instruction of CSC Contractor removed material from the property and fixed the damage.
7	Disordered dumping of top-soil from Km 42-46.	medium	Closed. By the Instruction of Engineer Contractor transferred the top soil to the specially prepared area at the Km 48
8	Poor sanitary conditions in the Contractor's accommodations, waste management,	minor	Closed. The PIU letter No 249 reflecting all environmental issues was issued on March 13, 2020. The following NCN Letter was sent by the Engineer to the Contractor. Contractor took corrective

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No	Issue	Significance	Status
			measures accordingly.
9	Insufficient supply of appliances to control COVID-19 spread, such as masks, sanitizers remote thermometers.	minor	Closed. After receiving of warning letter Contractor provided adequate quantity of requested supplies for Engineer's and Contractor's staff.
10	The containers for trash collecting in the camp of Engineer are full and are not being emptied properly.	minor	Closed. The non-conformance letter was sent to the Contractor. Contractor removed the garbage and re-arranged the emptied containers.
11	The leakage of the bitumen and scattered chunks of the consolidated concrete nearby the construction of the retaining wall at km 34+615	minor	Closed. The non- conformance letter was sent to the Contractor. The Contractor mitigated the issue and reported accordingly.
12	The flood upstream from construction of retaining wall at km 34+615, with accompanying erosion	minor	Closed. By the Instruction of Engineer Contractor leaned the channel and ensured the water drainage. Risk of erosion decreased significantly.
13	About two hundreds of immature fruit trees within the RoW.	medium	Closed. Despite the delay with the re-planting the trees were replanted to new relocation in the appropriate season.
14	Verbal complaints about vibration from the local residents.	small	Closed. The measurements of vibration are conducted in sensitive points within the Environmental Monitoring Plan.
15	Dustiness on the road, due to insufficient dust control	medium	Open. The Contractor is making an efforts and mobilizing the water tanks, however the dusting persists. The penalty was applied by the letter of Engineer.
16	Visual air (black smoke) pollution in the asphalt plant	minor	Open. Contractor conducted the air quality measurements confirming that the air quality within the tolerance limits. However, no smoke clearing equipment was installed.
17	Inadequate safety equipment use	medium	Open. The issue remains open, because although the Contractor has supplied additional PPE to the workers, its usage is not properly

No	Issue	Significance	Status
			enforced.
18	Storage of bitumen drums without proper cover and outside of impermeable foundation.	medium	Open. The Contractor still did not conduct the proper mitigation of this issue.

62. Most of observed issues are minor as they can be addressed by relatively simple mitigation measures. The moderate issues such as dustiness are generally persistent, potentially have higher impact to the environment and human health and require more systematic approach for solving.

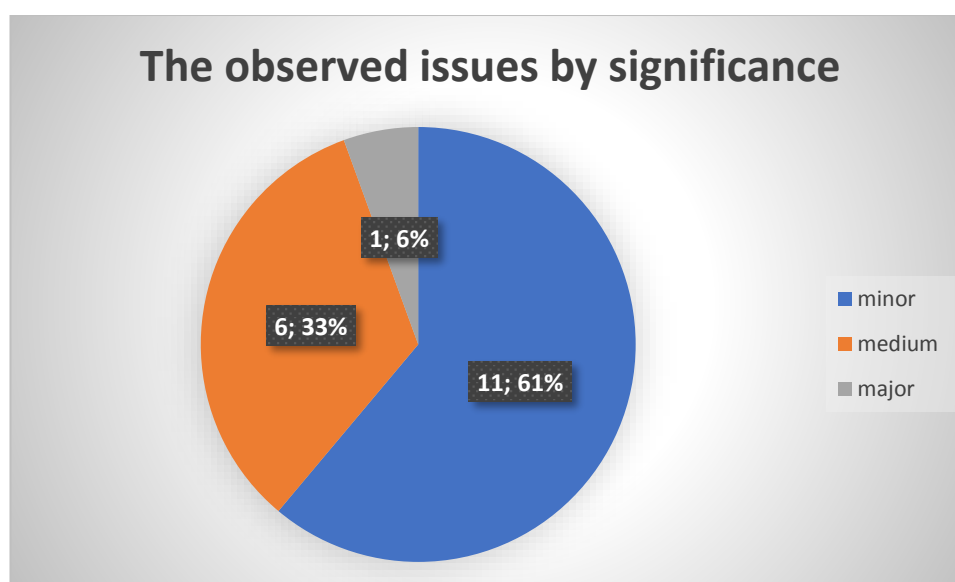


Figure 4 Ratio of observed issues by significance

63. The issues during the Tracking period are summarized below :

Summary Table

Total Number of Issues for Project	18
Number of Open Issues	4
Number of Closed Issues	14
Percentage Closed	78%
Issues Opened This Reporting Period	10
Issues Closed This Reporting Period	14

64. Seasonality has affected the emergence of some issues. For example, the aforementioned issue of insufficient dust management emerged after the ending of the

wet season. At the same time, the dry weather decreased the risks of wind erosion and siltation of the slopes.

65. Compliance issues have been discussed the appropriate experts from the contractor and CSC always right after the issues have emerged.
66. Altogether 78 % of the emerged issues have been solved during the monitoring period. The below diagram (Figure 5) shows the ratio of closed and open issues that have emerged during the reporting period.

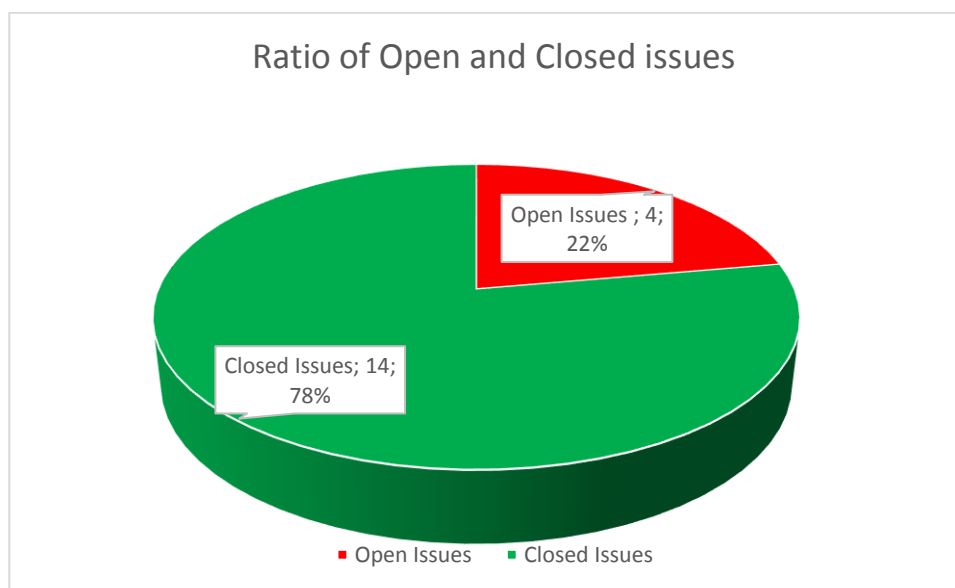


Figure 5: Ratio of open and closed issues during reporting period

3.4 Trends

67. The trends in change of conformance level illustrates the table below:

Table 9 Change of the conformance level since the beginning of the Project

Semi-annual period No	Total No of Issues	% Closed issues	% issues closed late
1	7	14	0
2	12	58	15
3	14	71	26
4	18	78	12

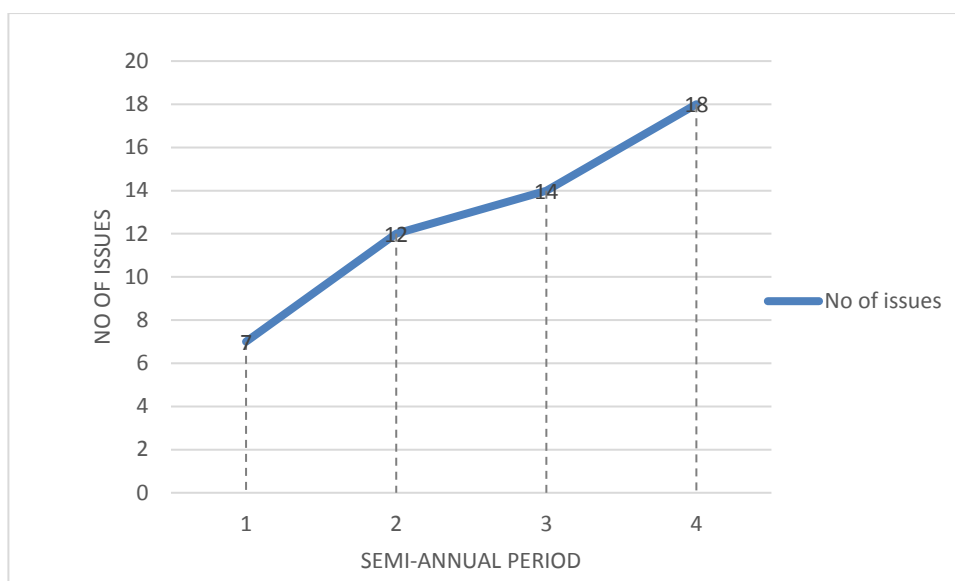


Figure 6 The number of identified environmental issues since the Project beginning

68. The Number of the identified issues increases with the Project progress as Contractor accelerates the work productivity and starts new activities. Increase of actual construction works, naturally have more of environmental implications compared to preparatory works.

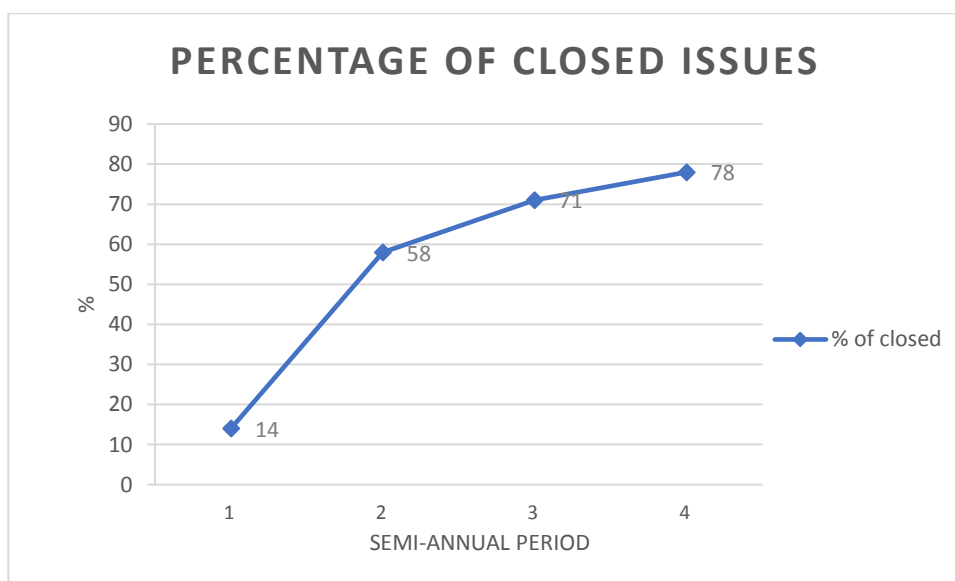


Figure 7 Change of the percentage of the closed issues since the beginning of the period

69. The increased percentage of closed issues illustrates the efficiency of environmental monitoring. Nonetheless, a significant percentage of identified issue are still open since the previous monitoring period.

3.5 Unanticipated Environmental Impacts or Risks

70. The project implementation has not caused any unanticipated impacts and the impacts, that have emerged so far, had been anticipated already in the IEE/EMP for the project.

IV. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted During Current Period

71. This section is based on the monitoring activities undertaken by the environmental staff of the project during the reporting period, regarding the identified impacts of the project to physical and natural environment. The monitoring activities are in essence about checking whether the implementation of the project is in line with the requirements of the IEE/EMP and the SSEMP.
72. The contractor has submitted the required environmental monitoring reports in the form of completed checklists after the end of each month. The Contractor has also prepared and submitted comprehensive Quarterly EMRs, including the results of instrumental monitoring of air and water quality and noise levels, after the end of each quarter. These reports have provided quantitative information on the different monitoring indicators for the CSC. After the ADB mission the Contractor conducted additional measurements of the air quality to monitor the possible impacts of the working asphalt plant to camp and local communities.

4.1.1 Air Quality

73. The Law on Environmental Protection sets the framework of the management of air quality and control of air pollution in Tajikistan. It also sets the guidelines for the protection of the ambient air quality.
74. Emissions into the air are calculated according to the “Collection of methods for calculating emissions of pollutants into the atmosphere by various industries” (1986).

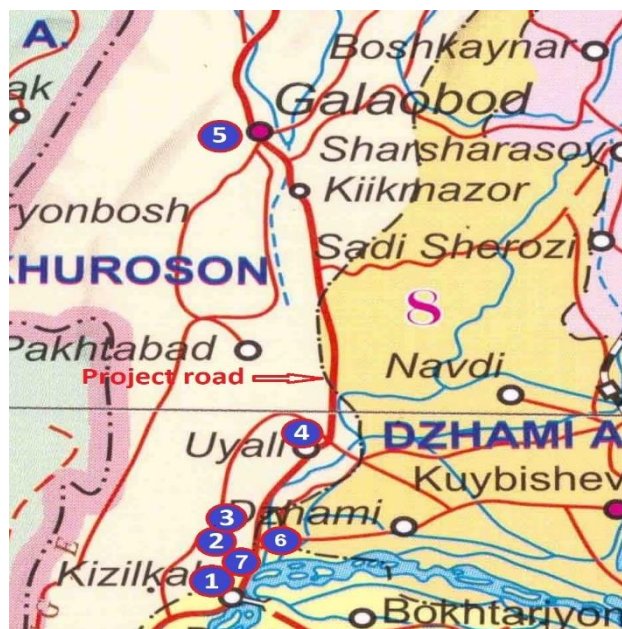


Figure 8: Locations of air quality and noise monitoring points

75. The contractor is carrying out quarterly monitoring for air quality. Air quality in the project is being monitored according to 6 indicators: (i) Total Suspended Particles (TSP); (ii) Oxides of Nitrogen (NOx); (iii) Carbon monoxide (CO); (iv) Sulfur dioxide

(SO₂); and (v) Carbon dioxide (CO₂). These are in line with the SSEMP. According to Contractor the measurements were undertaken during the full length of the working day with taking a reading every hour. Then the readings were summarized and an average air quality levels were calculated for each pollutant during the period.

76. In accordance with the ADB requirements and instructions of CSC since November, 2019 the Contractor increased the frequency of air quality measurements and currently conducts it on the monthly basis.
77. The values obtained for different pollutants from the air quality measurements have not exceeded the guideline values. The values had been obtained in March and June 2020, and they represent the baseline values to be used in the project. The Table 10 below represents the results of air quality results on the measurements conducted in March and June 2020, compared to tolerance limits established in Tajikistan.

Table 10: Air quality measurement results,

	Parameter	Tajikistan MPC (mg/m³)	Results of measurements	
No			March/2020	June/2020
Monitoring point 1 (Kyzilkala, Km 71+800)				
1.	TSP	0,15	0,02	0,11
2.	CO	3,0	1.3	1,6
3.	NO _x	0,085	0,069	0,076
4.	SO ₂	0,05	0,018	0,020
5.	CO ₂	3900	1080,00	1089,00
Monitoring point 2 (Concrete Plant, Km64+600)				
1.	TSP	0,15	0.02	0,13
2.	CO	3,0	1,0	1,4
3.	NO _x	0,085	0,068	0,077
4.	SO ₂	0,05	0.039	0,042
5.	CO ₂	3900	1015,0	1025,00
Monitoring point 3 (Asphalt Plant, Km 64+600)				
1.	TSP	0,15	0,01	0,13
2.	CO	3,0	1,0	1,4
3.	NO _x	0,085	0,069	0,075
4.	SO ₂	0,05	0,041	0,043
5.	CO ₂	3900	1088,00	1091,00
Monitoring point 4 (Uyali , Km67+800)				
1.	TSP	0,15	0,01	0,12
2.	CO	3,0	1,12	1,15
3.	NO _x	0,085	0,067	0,072
4.	SO ₂	0,05	0,042	0,044

5.	CO ₂	3900	1085,0	1092,00
Monitoring point 5 (Khuroson, Km 35+0050)				
1.	TSP	0,15	0,02	0,11
2.	CO	3,0	0,089	0,071
3.	NO _x	0,085	0,069	0,073
4.	SO ₂	0,05	0,043	0,046
5.	CO ₂	3900	1109,00	1111,00
Monitoring point 6 (Chorbog)				
1.	TSP	0,15	0.01	0,12
2.	CO	3,0	0.9	0,99
3.	NO _x	0,085	0.065	0,071
4.	SO ₂	0,05	0.032	0,037
5.	CO ₂	3900	1109.0	1012,00
Monitoring Point 7 (Khalkajar)				
1.	TSP	0,15	0.01	0,13
2.	CO	3,0	0.8	0,9
3.	NO _x	0,085	0.066	0,070
4.	SO ₂	0,05	0.030	0,040
5.	CO ₂	3900	1010.0	1013,00

78. No exceeding of the permissible concentrations of air pollutants has been observed by the monitoring activities.

4.1.2 Noise and Vibration

79. The contractor is carrying out Quarterly monitoring for noise. The noise measurements were taken nearby the sensitive receptors along the road. According to Contractor the measurements were undertaken during the whole working day with taking hourly readings. The reading were taken in all directions from the monitoring point (north, south, east and west) for average, maximal and minimal values.
80. The values for every hour were summarized and divided by the number of measurements to get an average value of the noise levels. Contractor used the Testo-615 noise meter for noise monitoring. All measuring equipment was certified by Tajik standard laboratory.
81. The values obtained for noise measurements have not exceeded the guideline values, excluding a very minor exceeding in Uyali. The monitoring results along with the guideline values are presented in the Table 11. No complaints related to noise received during the reporting period.

Table 11: Noise measurement results in 1st and 2nd Quarters of 2020

No	Location	Noise standards in decibels		Results of measurements	
		07.00-23.00	23.00-07.00	March/20	June/20
1.	Kyzylkala km 71 + 800	55	45	50,0-54,5	50,0-55,0
2.	Concrete Plant, km 64 + 600	80	80	52,0-55,0	55,0-58,0
3.	Asphalt Plant, km 64 + 600	80	80	52,5-55,5	55,5-58,5
4.	Uyali, km 67 + 800	55	45	50,0-55,0	53,0-55,0
5.	Khuroson, km 35 + 000	55	45	45,0--50,5	47,0--53,5
6	Chorbog, km 64+600	55	45	41,5-42,0	42,0-46,0
7	Khalkjar, km 64+800	55	45	43,0-45,0	45,0-49,0

82. The SSEMP includes provisions for vibration monitoring, but the contractor has not carried out monitoring of vibration during the earlier periods of the project implementation. During the compaction of embankment layers at the km 52+000 - 54+000, the local residents were periodically expressing their verbal complaints relating to vibration. However, they were not interested in expressing their concerns through formal complaint channels.
83. The following inspection with the participation of Environmental and Social Specialists of nearby houses did not identify any evidence of the cracks or other damages of property, which might be associated with vibration. However, the local residents were advised to use the GRM mechanisms for complaints and proposals if needed. The Contractor was advised to carefully monitor the vibration while compacting ground near residential areas. In the 2nd Quarter of 2020 Contractor conducted the monitoring the levels of vibration at the sensitive locations by vibrometer VM101.



Photo 2 Vibrometer VM 101

84. The results are summarized in the Table below. No exceeding of the vibration levels above the National Standards were detected.

Table 12 The results of the vibration measurements

№	Location of measurements	The maximum level of vibration acceleration, dB	Permissible values of vibration acceleration, dB	
			Z ₀	X ₀ Y ₀
1	Khuroson District Central Hospital. The distance from the project road is 200m.	18,5	98,7	99,5
2	Kindergarten in Obikik on the right side of the road at 90m.	50,5	91,9	95,6
3	A hospital in Uyali, located approximately 320 meters from the project road.	7,5	95,6	99,2
4	Trading center in Uyali, located 20 meters from the highway	10,1	97,3	101
5	The health Center in Chorbog is located about 50 m from the road on the left.	45,2	101	113
6	School № 58 in Chorbog, on the left side of the road, about 200 m from the road.	35,2	99,6	102
7	Medical center and hospital in the center of Kizilkala, on the right side 20m from the road	60,5	98,1	105

4.1.3 Water Quality

85. The surface waters of Phase 2 belong to the Vakhsh river sub-basin of the Amudarya basin. In addition to Vaksh River, the Project road crosses several natural creeks and small rivers that drain from the slopes of Aktau and Karatau mountain ranges, as well

as numerous irrigation and drainage collection channels of the Vahsh river irrigation system.

86. The contractor is carrying out quarterly monitoring of water quality. This is in line with the SSEMP. The 11 locations for the water sampling and quality measurements are presented in the map below.

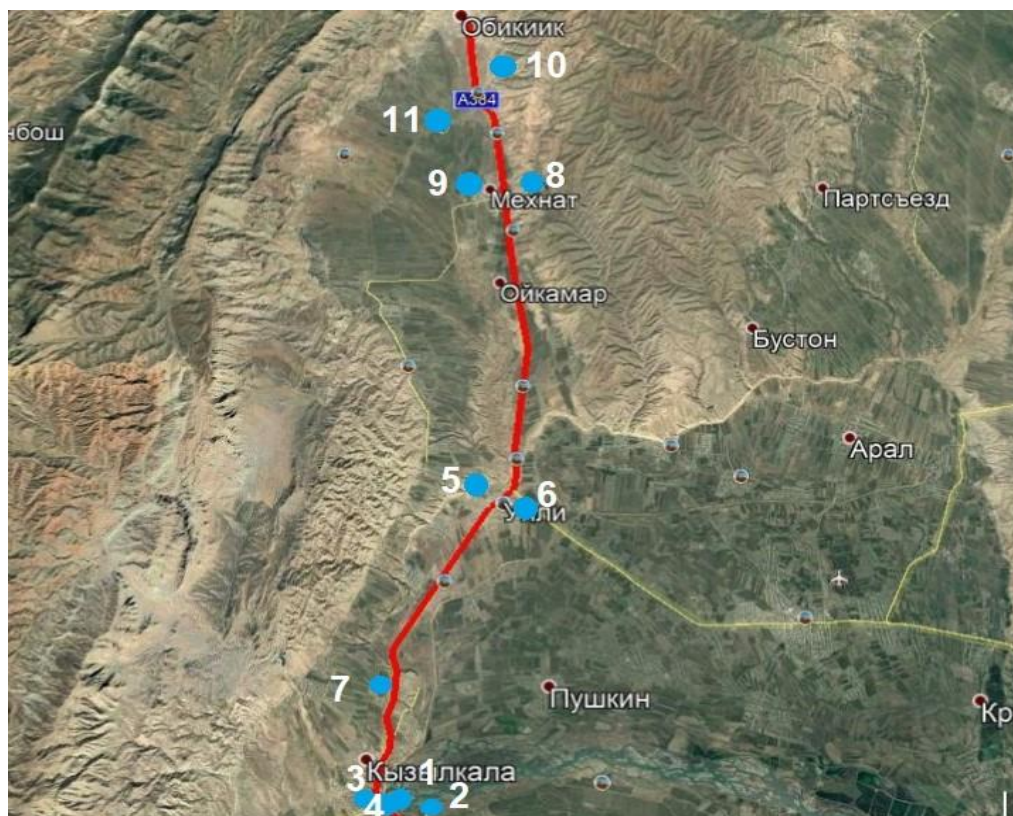


Figure 9: Water quality sampling points, September and December 2019

87. The results of the water quality measurements, along with the guideline values, have been presented in the Quarterly reports submitted by the Contractor. According to Contractor's reports, the analysis of samples has not revealed any exceeding compared to National standards for Maximum Permissible Concentrations (MPC), except for the content of suspended substances in the right side of the Vahsh river and in the Aksu River (see table 13). For example, the suspended solids content in the samples from the Vakhsh River ranging on the right Bank from 60,2 to 103,1mg/L and in the Aksu River from 66.1 to 115mg/L the permissible limits for fisheries 75mg/l and for drinking water 25mg/l. However, this is a natural phenomenon and is not associated with activities of Contractor. The Aksu river has a natural high sedimentary load due to high loess content of the banks and it joins Vakhsh river 500m upstream from the bridge 14a.

Table 13 The results of water analysis compared with National Standards

No	Parameters	National Standards		Baseline	Results of monitoring	
		Fishery	Drinking water	2018	1 st Quarter 2020	2 nd Quarter 2020
Point 1. Vakhsh river, Left Bank, 500m upstream from the bridge						
1.	Temperature			12,2	10,5	15,0
2.	Suspended matter,	75	25	12,5	9,8	14.6
3.	pH	6,5-8,85	6,5-8,85	6,2	5,2	5,0
4.	Mineralization mg/l	1000	1000	145,00	132,5	140,0
5.	BOD, mg/l	3,0	3,0	1,9	1,9	1,7
6.	Dissolved oxygen, mg/l	Not < 4,0	Not < 4,0	7,5	8,0	7,8
7.	Electrical	-	-	141,00	140,00	142,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	15,00	13.0	15,0
Point -2. Vakhsh river, Left Bank in 500m downstream from the bridge						
1.	Temperature			11,9	10,6	16,4
2.	Suspended matter,	75	25	12,3	9,5	16,0
3.	pH	6,5-8,85	6,5-8,85	6,3	5,2	5,0
4.	Mineralization mg/l	1000	1000	143,00	134,00	139,00
5.	BOD, mg/l	3,0	3,0	1,85	1,9	1,9
6.	Dissolved oxygen,	Not < 4,0	Not < 4,0	7,4	8,2	7,9
7.	Electrical	-	-	142,00	141,00	143,00
8.	Oil products mg/l	-	-	n/d	n/d	n/d
9.	Coli-index, pcs/l	1000	3	15,5	13,8	14,5
Point 3. Vakhsh River, the Right Bank 500m upstream from the bridge						
1.	Temperature			11,9	10,5	15,5
2.	Suspended matter,	75	25	46,0	60,2	101,0
3.	pH	6,5-8,85	6,5-8,85	6,2	5,3	5,0
4.	Mineralization mg/l	1000	1000	142,00	132,00	137,00
5.	BOD, mg/l	3,0	3,0	1,85	1,7	1,5
6.	Dissolved oxygen, mg/l	Not < 4,0	Not < 4,0	7,0	7,9	7,7
7.	Electrical	-	-	141,00	134,00	136,00

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No	Parameters	National Standards		Baseline	Results of monitoring	
		Fishery	Drinking water	2018	1 st Quarter 2020	2 nd Quarter 2020
8.	Oil products mg/l	-	-	n/d	n/d	n/d
9.	Coli-index, pcs/l	1000	3	13,0	12,5	13,5
Point 4. Vakhsh River, the Right Bank 500m downstream from the bridge						
1.	Temperature			11,7	10,7	15,0
2.	Suspended matter, mg/l	75	25	39,0	60,3	103,3
3.	pH	6,5-8,85	6,5-8,85	6,9	5,5	5,0
4.	Mineralization mg/l	1000	1000	145,00	135,00	138,00
5.	BOD, mg/l	3,0	3,0	1,85	1,75	1,60
6.	Dissolved oxygen, mg/l	Not < 4,0	Not < 4,0	7,06	7,6	7,5
7.	Electrical	-	-	142,00	135,00	133,00
8.	Oil products mg/l	-	-	n/d	n/d	n/d
9.	Coli-index, pcs/l	1000	3	16,0	10,0	11,5
Point 5. Aksu River, 500m upstream from the Bridge 11						
1	Temperature			11,5	11,0	18,0
2	Suspended matter, mg/l	75	25	52,0	64,1	115,1
3	pH	6,5-8,85	6,5-8,85	6,9	6,0	5,8
4	Mineralization mg/l	1000	1000	155,00	146,00	145,00
5.	BOD, mg/l	3,0	3,0	2,0	1,0	1,2
6.	Dissolved oxygen, mg/l	Not less	Not less 4,0	6,9	6,8	6,5
7.	Electrical	-	-	139,0	135,00	137,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	25,0	16,0	15,0
Point.6 Aksu River downstream from the Bridge 11						
1	Temperature			11,3	11,0	18,5
2	Suspended matter, mg/l	75	25	52,1	67,1	115,8
3	pH	6,5-8,85	6,5-8,85	6,95	6,0	6,1
4	Mineralization mg/l	1000	1000	154,5	145,00	144,00
5	BOD, mg/l	3,0	3,0	2,1	1,0	1,1
6	Dissolved oxygen, mg/l	Not < 4,0	Not < 4,0	6,5	6,7	6,5
7	Electrical	-	-	155,0	137,00	137,00
8	Oil products mg/l	-	-	-	n/d	n/d

Semi-annual Environmental Monitoring Report
Reporting period: (January – June 2020)

No	Parameters	National Standards		Baseline	Results of monitoring	
		Fishery	Drinking water	2018	1 st Quarter 2020	2 nd Quarter 2020
9	Coli-index, pcs/l	1000	3	24,9	16,0	16,7
Point 7. Water supply well at Km 64+600						
1	Temperature			8,00	10,2	17,0
2	Suspended matter,	75	25	15,9	18,0	23,0
3	pH	6,5-8,85	6,5-8,85	7,9	6,7	6,5
4	Mineralization mg/l	1000	1000	1510	750,00	739,00
5	BOD, mg/l	3,0	3,0	1,9	1,1	1,3
6	Dissolved oxygen,	Not < 4,0	Not < 4,0	7,8	6,6	6,3
7	Electrical	-	-	1510	880,00	875,00
8	Oil products mg/l	-	-	-	n/d	n/d
9	Coli-index, pcs/l	1000	3	1,3	1,0	1,4
Point 8. Bridge 10, Irrigation Channel 500m upstream from the bridge						
1.	Temperature			11,0	10,5	18,5
2.	Suspended matter,	75	25	22,9	30,8	38,8
3.	pH	6,5-8,85	6,5-8,85	6,9	6,8	6,5
4.	Mineralization mg/l	1000	1000	210,00	184,00	175,00
5.	BOD, mg/l	3,0	3,0	1,95	1,0	1,1
6.	Dissolved oxygen,	Not < 4,0	Not < 4,0	6,5	6,6	6,4
7.	Electrical	-	-	208,00	178,00	175,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	150,0	93,0	96,5
Point 9. Bridge 10, Irrigation Channel 500m downstream from the bridge						
1.	Temperature			11,1	10,5	17,5
2.	Suspended matter,	75	25	22,5	31,9	39,9
3.	pH	6,5-8,85	6,5-8,85	6,8	6,3	6,0
4.	Mineralization mg/l	1000	1000	205,00	188,00	178,00
5.	BOD, mg/l	3,0	3,0	1,99	1,1	1,2
6.	Dissolved oxygen,	Not < 4,0	Not < 4,0	6,2	6,5	6,3
7.	Electrical	-	-	210,0	184,00	179,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	148,00	94,0	97,0
Point 10 . Obi-keek stream, 500m upstream the bridge 11						
1.	Temperature			10,9	10,6	17,8
2.	Suspended matter,	75	25	13,9	35,0	40,0
3.	pH	6,5-8,85	6,5-8,85	6,95	6,0	5,8
4.	Mineralization mg/l	1000	1000	185,00	144,00	14500
5.	BOD, mg/l	3,0	3,0	2,1	1,2	1,0

Semi-annual Environmental Monitoring Report
Reporting period: (January – June 2020)

No	Parameters	National Standards		Baseline	Results of monitoring	
		Fishery	Drinking water	2018	1 st Quarter 2020	2 nd Quarter 2020
6.	Dissolved oxygen,	Not < 4,0	Not < 4,0	5,9	6,0	5,7
7.	Electrical	-	-	183,0	181,00	185,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	149,00	86,00	88,00
Point 11. Obi-keek stream 500m downstream the bridge 11						
1.	Temperature			10,8	10,5	17,5
2.	Suspended matter, mg/l	75	25	12,5	36,5	40,0
3.	pH	6,5-8,85	6,5-8,85	6,55	6,0	6,0
4.	Mineralization mg/l	1000	1000	178,00	160,00	158,00
5.	BOD, mg/l	3,0	3,0	2,2	1,3	1,1
6.	Dissolved oxygen, mg/l	Not < 4,0	Not < 4,0	5,4	5,5	5,6
7.	Electrical	-	-	187,6	180,00	182,00
8.	Oil products mg/l	-	-	-	n/d	n/d
9.	Coli-index, pcs/l	1000	3	152,00	121,00	119,00

4.1.4 Environmental, Health and Safety Issues

88. Some issues regarding the use of PPE were observed during the monitoring period. The instances included people not wearing proper PPE and working at heights without proper harnesses. These issues were pointed out to the contractor and corrections were requested.



Photo 3: The equipped first aid room in the Camp of Contractor (taken in June 2020)

89. During the reporting period the COVID-19 pandemic became the most significant health issue, in various ways affecting the project performance.
90. The contractor properly equipped the first aid room at the main work camp and hired a professional paramedic to coordinate the health issue and provide the first aid in cases of an emergency. The paramedic coordinates and conducts regular examinations of the staff and coordinates with external health facilities if necessary. In addition the first aid station.
91. In accordance with registration book the first aid station provided the treatment to 1229 visitors during the monitoring period. The main complaints included the headache, scratches and bruises. People having a temperature above 37° C and other possible symptoms of COVID-19 have been immediately isolated from the staff and sent for testing. No positive test results for the Site staff has been reported.

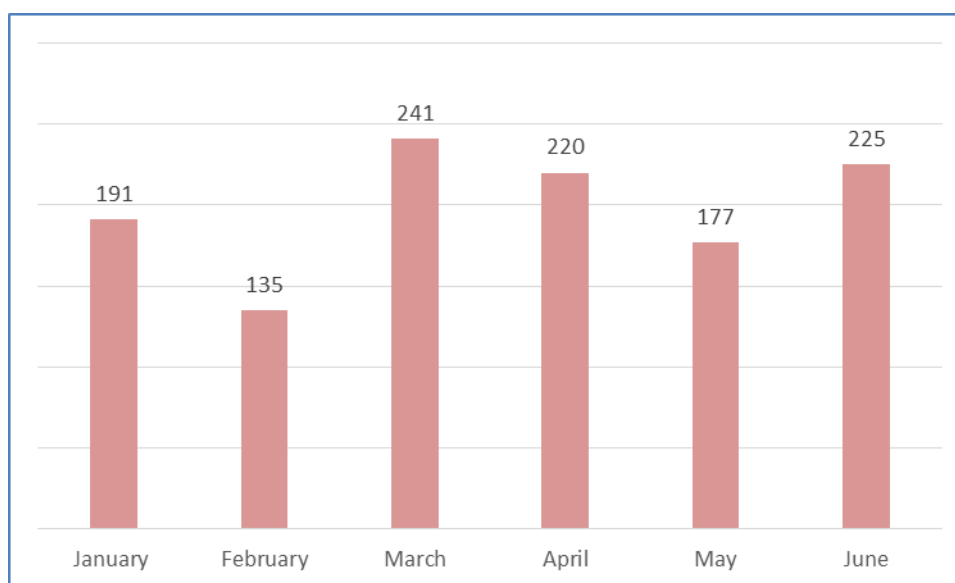


Figure 10. The number of visits to First Aid Station during the reporting period

4.1.6 Asphalt Plant

92. The asphalt plant is located at the main camp of the contractor at km64+600. During the reporting period the plant was used the limited period of time some impacts related to the leaks of the bitumen were observed during the monitoring period. CSC instructed to clean up the polluted soil and ensure the safety of the storage of bitumen.
93. The plant is located within approximately 500 meters from the nearest residential areas. This is in line with the SSEMP.
94. The Contractor utilized most of bitumen delivered for the storage during the initial shipment and now expects new deliveries. The improper storage conditions in some cases resulted in leaks of bitumen and localized soil contamination in several locations around the camp. CSC issued instructions to the Contractor to clean the contaminated areas and to store the barrels properly. The Contractor has since followed the instructions, but a risk of further leaks remains as sufficient area for storage also was not prepared.
95. The significant part of storage area is currently vacant and should be prepared for the safe storage of new deliveries of bitumen. Contractor was instructed to clean up the area properly and prepare impermeable platform (concrete lining or gravel foundation with plastic film on the top. However, this requirement was not fully implemented by the end of reporting period.

4.1.7 Aggregate Crusher

96. Contractor continued preparing of aggregates for the base layer, concrete and asphalt mixtures in two crushing plants located nearby the quarry at km 72+660 located within the area of A. Jomi district. No residential or other sensitive areas are located nearby the crushing plants.

4.1.8 Work Camps

97. Currently two work camps operate within the Project: (1) camp of the Contractor, including accommodation, offices and construction facilities, and (2) camp of Engineer, including office and accommodations.
98. Contractor's work camps is built at km64+600 and occupies an area of almost 20 hectares. Despite the large area, the land occupied by the camp is not suitable for agriculture due to the high level of salinity caused by the high groundwater level there.
99. The camp is located along a flat area, with some residential areas within 500 meters of the camp. The Camp area includes accommodation section, an office, fueling area, asphalt plant, maintenance and storage areas, etc. The camp has been designed to accommodate 100 persons, and by the end of reporting period most of the staff has been mobilized.
100. The National and expatriate staff live in different sections of the camp, however the living conditions between these areas do not differ significantly. The International section includes 38 rooms and accommodation area for the national staff includes just 18 rooms. This is due to the fact that most of the local employees live fairly nearby and return home at the end of working days. All rooms are equipped with sanitary facilities including lavatory and showers. Separate kitchens are available for expatriates and local workers. This is due to cultural difference in preferences for food.
101. Fire protection equipment, including water tanks, fire extinguishers and other instruments, are available at the camp. However the number of these equipment is not sufficient. The Contractor has been advised to acquire a sufficient amount of fire-protection equipment, but by the time of preparation of this report they have failed to do so.
102. The office and accommodation of Engineer were built in 1 km on the left from the 42+000 km mark of the Project road. The Camp includes one stored building of office and two-stored accommodation building erected at the area of the District Road Authorities. The residence buildings accommodates about 20 of Engineer and PIU staff, with each room provided with utilities. The water supply and sewerage system are not available in the area and camp equipped with the underground water reservoir. Upon the completion of the project the building will be delivered to the local road authorities.

103. During the reporting period the delays with water supply and removal of garbage took place in the camp of the Engineer. The NCN process was applied to improve the Contractor's commitment in this issue.

4.1.9 Flora and Fauna

104. The only significant issue observed regarding flora and fauna during the monitoring period was the cutting of trees during the clearance activities. Approximately 600 trees were cut during the reporting period from both sides of the road between km42+000 to km58+000. Most of the cut trees had a diameter measured at height of 1m from the surface less than 25cm. All of these trees have been planted by the road authority or private people and are mainly non-fruit species. The removed species included elm, mulberry, pine, etc.
105. The felled trees have been delivered to the local road authority and distributed to schools and kindergartens as firewood. The private trees were given to the owners
106. Between km 42-45 there are several dozens of fruit trees within the RoW of the project road. It was decided to relocate the trees instead of cutting. The beginning of the site clearance at these sections was postponed due to inappropriate season for re-planting. The relocation of the trees was performed during appropriate season in January 2020.



Photo 4 The relocation of immature fruit trees within the RoW at km 43+500(taken in January 2020)

107. The wild fauna is very scarce but still exists in the project area. The large ditch was excavated along the camp perimeter in order to isolate tortoise, snakes, mice and other animal's habitat from the camp. At the construction sites the workers were

instructed to avoid damaging any wild species. The wild fauna is very scarce but still exists in the project area. The large ditch was excavated along the camp perimeter in order to isolate tortoise, snakes, mice and other animal's habitat from the camp..

108. For example the endangered steppe tortoise (*Agrionemys horsfieldii*) was found nearby the beginning of the project (photo 5). At the construction sites the workers were instructed to avoid damaging any wild species. The observed tortoise was separated from the construction activities by the stream that ensured the safety of habitat. No other endangered or valuable species have been identified by the ES. No other endangered or valuable species have been identified in the Project influence zone during the monitoring period.



Photo 5 The steppe tortoise in the shrubs nearby the Km 35+000 of the Project Road (taken in May 2020)

4.1.10 Topsoil Management

109. During monitoring period Contractor stripped topsoil at the several locations from km42+000 to 60+000, Initially the stripped soil was partially dumped along the stripped sections. Upon the instruction of Engineer the Contractor started transferring the stripped topsoil directly to the median lane of U-turn at km 55+000 (photo 6) where it is going to be used for re-vegetation. and to the approved site at km 42+100 and 48+200.
110. Stockpiling was undertaken in compliance with the SSEMP and significant impacts to surrounded areas were avoided.
111. Excavation was undertaken on the slopes on the right side of the road at the beginning of the road section during the monitoring period. The excavated material is mainly

loose sediments with the inclusion of stones. The spoil is classified mainly as unsuitable material.



Photo 6. Dumping of the stripped top-soil at km 55+000,(taken in March 2020)

4.2 Trends

112. The monitoring activities did not reveal any significant changes in the state of environment compared to the past monitoring periods. Most of measured environmental parameters reported by the Contractor were within the tolerance limits established by the Government. The charts below show the changes of the number measured parameters over the periods of monitoring.
113. The banks of Vahsh river nearby the Bridge 14 are very important water monitoring points. The quality of water at the left bank are determined by the settlement of particles in the Nurek reservoir and content of TSD is lower than even accepted Drinking Water Standard, while the quality of the water on the right bank is affected by the junction with Aksu river about 800m upstream from the bridge, which natural carrying significant amount of sediments. Most of the Project activities such as building of cofferdams, drilling and concreting of piles were conducted at the left bank and no trends of noticeable increase of TSD were observed. Similar trends are observed for other measured water quality parameters as well.
114. The levels of noise also remain stable over the previous periods and do not exceed tolerance limits. However, it should be noted that nearby the sensitive locations the Project construction activities were very limited and conducted measurements demonstrate mainly the background levels not associated directly with the Project implementation.

4.3 Summary of Monitoring Outcomes

115. The monitoring of the works is progressing fairly well and the main issues outstanding in the project are well known. The Consultant has made efforts based on the findings of the monitoring period to train the Contractor's environmental staff and ensure that the project will be implemented in a manner that is compliant with the environmental requirements of the project.

4.4 Material and Resource Utilization

4.4.1 Current Period

116. For the reporting period, the Contractor provided estimates on the usage of water, electricity and other material resource. The paragraphs below present the use of resources within the project during the monitoring period in terms of used water, borrow materials, and electricity. Table 12 shows the estimate of the consumption of water for various needs.
117. **Water:** Sources of water supply for the project implementation didn't change significantly during the monitoring period. The main sources of the water for the project needs are: (i) groundwater well in Chorbog village (ii) irrigation channels and rivers in the project area; (iii) bottled drinking water purchased from reliable supplier at the local market. The groundwater was mainly used for the manufacturing of concrete and precast components and for sanitary purposes of the Contractor's Camp. Calculation of the exact volume of water which was used for these purposes is difficult due to lack of water meters in the water take location, however the Contractor followed approved engineering practices and methods minimizing the usage of water resources for these purposes that allowed to make an estimate.
118. During reporting period Contractor manufactured approximately 4 816m³ of concrete per, 0.2 m³ of water is required for production of 1 m³ of concrete. With such capability the Contractor spent approximately 963 m³ of water on manufacturing of concrete during the period. As for the personnel, the contractor has mobilized in average 392 personnel per month to the project. With a conservative estimate of 0,025 m³ of total water use per person per day, including cooking, sanitary, and hygiene needs, the contractor's personnel used approximately 1,764 m³ of water during the period. Assuming that the watering of the roads was done once per day during the monitoring period. The camp of Engineer consumes approximately 100 m³ of water per month, which is estimated to up of 500m³ for reporting period as the facility operates since the beginning of August, 2019.
119. With a water consumption of around 1 liter per 2 m², the total water consumption for the dust suppression would've been approximately 200 m³ during the monitoring period. This brings the total consumption estimate at 36,000 m³.

Table 14 The estimated water usage for various purposes.

Purpose	Water source	Consumption (tones)		
		Daily	Monthly	Reporting period (6 months)
Dust suppression and compaction of road layers	The existent streams	200	6000	36,000
Producing of Concrete and precast components	Ground water well	5,4	160.5	963
Consumption, cooking, sanitary and hygiene needs	Ground water wells, municipal water supply, local market	9.8	279	1,764
Total for reporting period				38,727

120. For dust control and compaction of the road layers Contractor mainly used the water from irrigation and collector channels and some also from nearby groundwater wells. In accordance with progress reports, Contractor mobilized up to seven water tanks during the hottest days, however during inspections no more than four water tanks were observed on the road. According to the Contractor, each water tank was refilled 5 times per day for dust control. In average the volume of water tank is 10 m³.
121. The same as in preceding monitoring period most of water was spent for dust suppression and compaction of the road layers (Figure 13). The share of water used for these purposes increased from 90% to 93%, due to temporary reduction of staff, and slowing down of the project progress.

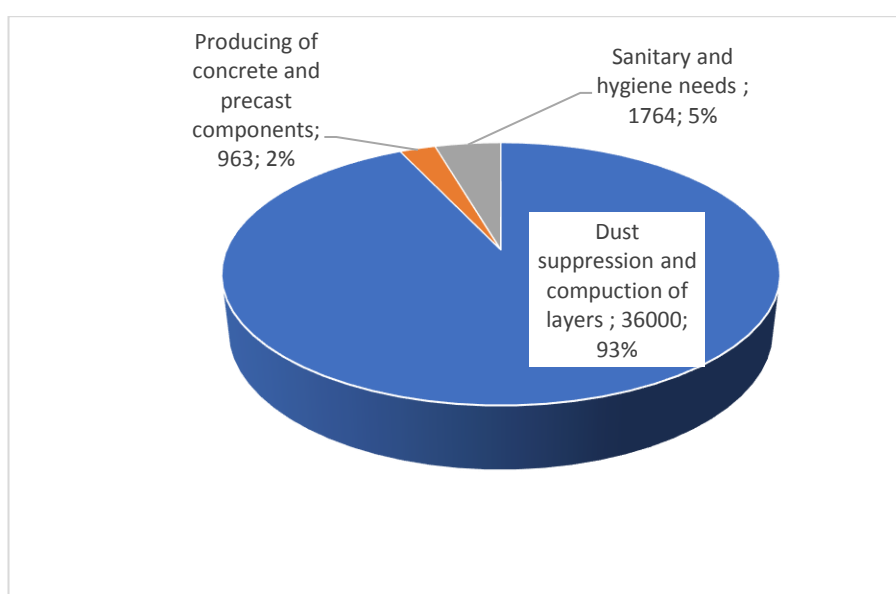


Figure 11: Consumption of water for various purposes

122. Geological Resources: Contractor actively extracted the material from borrow pits for construction of embankment, sub-base layers and backfilling. During the reporting period the material were delivered from the borrow pits located at approximately km37+600, km38+100, km 42+100, km66+100, and km72+100. Part of the extracted material was stockpiled for future use. The usage of quarry at km 55+000 was temporarily suspended due to significant distance to the sections under construction.



Photo 7 Operating quarry at km 37+200(LHS) (taken in June 2020).

123. During the reporting period Contractor reported the extraction of about 77,930m³ of geological materials, such as sand, gravel, stones from the quarries in Construction works. The accurate information of the quantity of the material stockpiled for the temporary storage is not available.



Photo 8 Excavation of material for construction of embankment for the quarry on Km42+100(LHS) (taken in April 2020)

124. The quarries and borrow areas were frequently inspected during the reporting period. The borrow areas are located so that the hauling routes mostly avoid traversing residential areas. However, potential environmental impacts from the borrow areas and quarries may originate if the time limitations for carrying out work are not observed rigorously. Furthermore, watering must be done regularly to control dust emissions. The description of borrow pits (quarries) and environmental implications are presented in Table 15.

Table 15: The borrow pits used by the contractor during the reporting period.

No	The Location of the Operational Quarry (Borrow Pit)	Environmental and Social Considerations
1	Km 37+200 (LHS)	The extracted material was used for embankment, sub-base and capping layers at around km 33+475-38+900. The quarry operation conducted nearby the local drain (Photo5), however the drain is seasonal and used by the local community only for irrigation.
2	Km 38+200 (LHS)	The quarry is located on a slope in the vicinity of the road. No residential areas are nearby. The material was mainly used for backfilling of culverts and retaining walls around the sections between km 34+710 and km 38+095
3	Km55+100 (RHS) in 1 km from the road	The extracted material was mainly used for embankment and capping layers between km 52+000 to km 58+000. The diversion of the local stream was avoided and it was further protected by an earth berm.
4	Km 66+100 RHS	The quarry is in a hilly vacant area, with no water

No	The Location of the Operational Quarry (Borrow Pit)	Environmental and Social Considerations
	located in 2 km from the road	bodies in the vicinity of the quarry. The material from the quarry was used for the sub-base and capping layers between km 52+000 to km 56+000.
5	Km 72+600(LHS)	The quarry provides material for two installed nearby crushing plants. Quarry is separated from the river channel by the gravel berm. No sensitive receptors are located in the vicinity of the site.

125. No significant environmental impacts related to the use of the quarries and borrow areas were observed during the monitoring period. All borrow pits used within the reporting period are located outside of agricultural lands and resettlements, with very scarce to obsolete vegetation cover.
126. Electricity: Contractor has an agreement with Barki Tojik on the governmental energy network. The Contractor also has back-up generators for emergency situations and for pile boring works. Contractor reported the consumption of electricity of 769,170 kWh during the reporting period. This was divided to 574,377 kWh in the 1st Quarter of 2020, and 194,793 kWh in the second Quarter of 2020.
127. Fuel: During the monitoring period the Contractor consumed the following quantity of fuel materials :

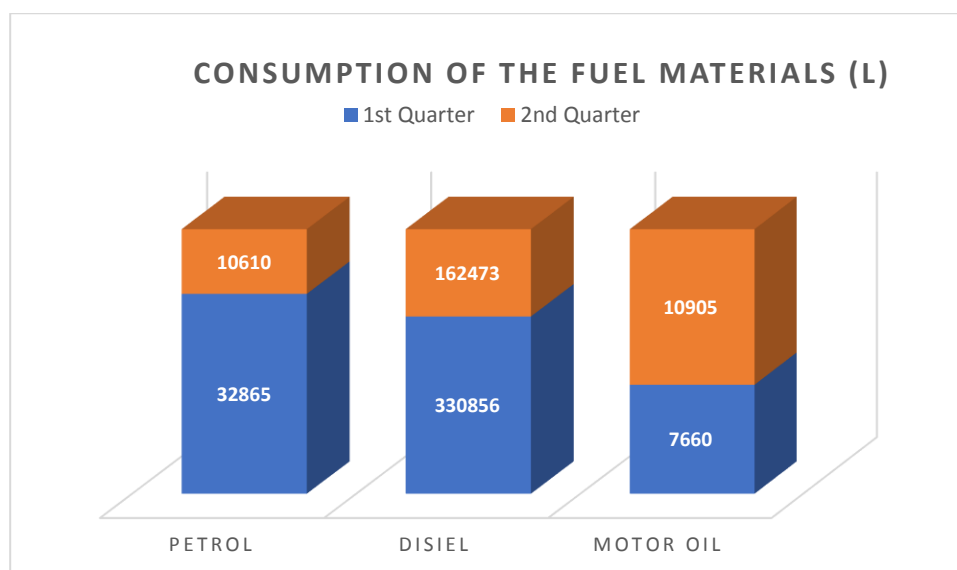


Figure 12 Consumption of fuel materials by Quarter

Table 16: Consumption of the different types of fuel materials during since the beginning of the Project

Period	Used fuel (liters)		
	Petrol	Diesel	Oil
1 st Quarter 2019	6,856	264,596	4,485
2 nd Quarter 2019	41,400	555,610	4,510
3 rd Quarter 2019	67,760	614,855	4,700
4 th Quarter 2019	37,715	971,650	5,900
1 st Quarter 2020	32,865	330,856	7,660
2 nd Quarter 2020	10,610	162,473	10,905
Total	197,206	2,900,040	38,160

4.4.2 Cumulative Resource Utilization

128. The cumulative resource utilization estimate is approximate and based on the reported quantities of the completed works. In the initial stages of the project implementation Contractor did not report the accurate utilization of material resources and did not keep records on these items. Therefore, the data were available from the contractor on the cumulative use of energy, water, etc. are approximate estimate.
129. Fuel Consumption: As can be seen from the table 16 above, the total consumption of fuel during the period was as follows: (i) petrol 197,206 liters; (ii) diesel 2,900,040 liters; and (iii) motor oil 38,160 liters.
130. Figure 15. Shows the total quantity of the consumed electricity and indicates that consumption of power is generally increasing with the Project progress with significant decrease in the 2nd Quarter of 2020 due to reduction of staff and slowing down of work caused by the impact of the COVID-19 pandemic.

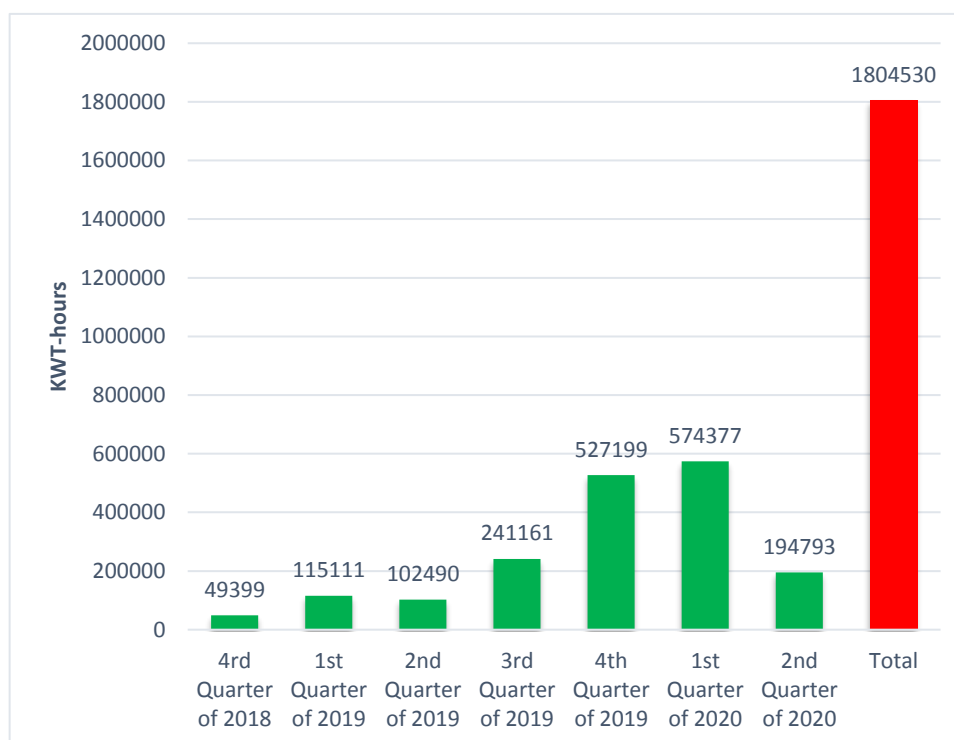


Figure 13: Consumption of the energy by the Project

4.5 Waste Management

4.5.1 Current Period

131. The Project implementation generation of the significant quantities of waste during the reporting period. The issue was addressed by a waste management contract with a local sub-contractor concluded in the previous periods.
132. The Contractor has an agreement with the local road maintenance organization for removal of the waste from the site, transportation and safe disposal of the waste to the approved landfill of Khuroson area. The same sub-contractor provides similar services for the municipal administration and other organizations in the Khuroson district.
133. Municipal waste was produced during the monitoring period mainly from the areas of camps, offices and utilities. The solid waste collected from door to door at the site camps with the help of waste tray and is then stored in the main collection point. The trucks then take the collected solid waste to the municipality landfill for further disposal.
134. According to the contractor, the average solid waste generation rate was 0.8 kg/capita/day. Therefore, the overall solid waste production in the camps is estimated to be 313 kg per day. This is calculated estimating that there are about 392 employees residing in the camp. The solid waste collection at the work camp is organized with the help of well-placed waste trays, where it is then taken to a main collection point. Trucks take the collected solid waste to the municipality landfill for final disposal. The estimated quantity of waste generated during the monitoring period is 56,340 kg. In

addition, the Engineer's camp generates about 24 kg of waste per day, that accounts to 3,600kg for reporting period. Therefore, the total solid waste generated by the Contractor during reporting period estimates 59,940kg.

135. The Contractor claimed that it had disposed all of the generated waste at a designated landfill, which has been approved by the local authorities. The contract between the contractor and the sub-contractor does not specify exact location of landfill for disposal of waste. According to the contractor there are several landfills in Khuroson which are linked to appropriate municipal units (jamoats) and the sub-contractor will dispose of the waste in accordance with the type of waste and the distance of transportation. The main approved landfill area is located within a hilly desert area of Khuroson, approximately 3 km north-east from the location of new camp of Engineer.



Figure 14: The route of transportation of garbage generated by the Project implementation

136. Currently, the contractor reports the hauling of all waste to the municipal waste dump located in Khuroson district. Despite the Contractor signing an agreement with the local road maintenance organization for removal of the waste from the site, transportation and safe disposal of the waste to the approved landfill of Khuroson area the problems of proper waste management especially at the camp area still exist.
137. Mainly municipal waste was produced during the monitoring period according to the Contractor. In addition to municipal waste the Contractor produced significant amount of construction waste, most of which is not classified as hazardous waste but require special attention to treatment and disposal.
138. Construction waste: During the reporting Contractor emptied about 1,000 of the bitumen drums and actively works over their utilization. After treatment the drums they are being delivered to the interested organizations as metallic scrap and construction material. The demolished concrete beams and other structural components are hand over to the Road authorities for the re-usage at the rural roads. For example the old

beams from the bridge No 6 were transferred for the construction of the additional Mekhnatobad bridge located on the rural road south from the Project Road.

139. Old asphalt pavement: During the reporting period Contractor reported demolishing of 6,558m³ of the old asphalt pavement. The demolished material was disposed at approved sites at km 34+500; 38+000, 60+000.
140. The excavated material that proved to be unsuitable for the construction needs, was disposed within the approved disposal sites by Contractor. It is agreed that demolished asphalt will be delivered to the local Road Authority for the future recycling and usage. The Contractor managed to avoid disturbance to the natural drainage channels and nearby residences during this process.
141. During the reporting period the by agreement with local authorities Contractor stored the oils and other chemicals, used batteries, oily rags, etc.) which, may be classified as hazardous waste at the section of area provided to Contractor for facilities. It was agreed that upon the completion of construction these material will be delivered to the Road Authority for utilization as they cannot be disposed at the municipal landfill. Contractor has provided special containers and collected the waste, however appropriate markings, are still not available.
142. The Contractor selected ten locations for disposal of inert construction waste. The Safety Management Plan describes the access to sites in detail. The permits endorsed by the local environmental authorities were acquired for all sites. The Table 17 below presents status and notes of each disposal site.

Table 17: Disposal sites for unsuitable material

No	site location	approximate quantity (m ³)	Approval Situation	
1	km33+500 (LHS) (RHS)*	100,000	permitted (additional approval for RHS)	Dumping to the site during the reporting period was very limited. Contractor disposed the crushed asphalt on the top of excavated inert unsuitable material.
2	km34+600* (LHS)	20,000	permitted (additional approval)	The site was not used during the reporting period
3	km35+600* (LHS)	500,000	permitted (additional approval)	No dumping during the reporting period
4	km37+700* (LHS)	20,000	permitted (additional approval)	Temporary storage of old asphalt removed asphalt separately from the dumped earth material
5	km42+100	200,000	permitted	Unsuitable excavated material and construction waste(chunks

No	site location	approximate quantity (m ³)	Approval Situation	
	(LHS)			of concrete)
6	km48+900 (LHS)	250,000	permitted	Unsuitable excavated material, removed asphalt, temporarily storage of top-soil
7	km55+000 (RHS)	220,000	permitted	No dumping was conducted to the site during the monitoring period
8	km58+500 (RHS)	306,000	permitted	Unsuitable excavated material
9	km60+000 (RHS)	221,000	permitted	The temporary storage of the removed old asphalt
10	km67+700 (LHS, RHS)	51,600	permitted	The excavated unsuitable soil material

143. During the monitoring period, Contractor did not used most of the earlier approved sites as most of excavation works nearby was already completed. The Contractor has most actively used the approved disposal areas located at km 42+100, 48+500, 60+000 and 67+700.



Photo 9 The dumped unsuitable material at km 42+100, (taken in March 2020)

By agreement with communities and relevant authorities the Contractor also dumped and graded the unsuitable material excavated for the road widening from km 57 to 60 for the extension of the local cemetery located from the left side of the road.



Photo 10 Dumping of unsuitable soil material for extension of cemetery (Taken in January 2020),

4.5.2 Cumulative Waste Generation

144. No exact data was available for the first semi-annual period of the project. Contractor started submitting monthly reports since October 2018 and by the start of the 3rd Quarter of 2019 had mobilized less than a half of current staff. The estimate of generated waste for the first semiannual period was as follows: $0.8 \text{ kg} \times 75 \text{ people} \times 90 \text{ days} = 5,400\text{kg}$. Therefore, the cumulative amount of generated volume by the end of the second and third monitoring period is estimated at about $5,400 \text{ kg} + 21,600\text{kg} + 71,100\text{kg} + 59,940 = 158,040 \text{ kg}$. The figures are based on the World Bank's estimate on the amount of municipal solid waste produced by the people on average per day in the ECA region. The average figure is 1.1 kg per day, but it is likely that the centralized food production among others pushes the value below the average, and therefore the figure 0.8 kg per person per day was chosen.

4.6 Health and Safety

4.6.1 Community Health and Safety

145. No community health and safety issues were reported during the monitoring period. Contractor generally provided adequate warning signage and fencing, however in some cases the separation of traffic and construction areas is not sufficient. Contractor was notified by the NCNs about improper channelization of transport, insufficiency of dust suppression and maintenance of the by-pass road. Contractor positively responded to address the observed issues, however not always in efficient and timely manner.

4.6.2 Worker Health and Safety

146. Some instances of worker health and safety violations were observed during the monitoring period. The instances included people not wearing proper PPE and working at heights without proper harnesses. However, contractor did not report any accidents or injuries during the reporting period. The aid station in the camp is available and equipped with first aid equipment. The qualified nurse is hired and properly works. In addition there are at least 3 large medical facilities, including 2 stationary almost evenly distributed along the Project road. In the case of sickness or injury the qualified Contractor's nurse will accompany people to an appropriate medical facility. The Contractor has established good working relationships with the nearby hospital.

4.7 Training

147. The CSC conducted regular environmental compliance orientation to the Contractor's staff during the weekly meeting with the presence of the representatives of PIU. In turn the new Contractor's employees were mandatorily introduced to the SHE rules during the introductory trainings provided by the Environmental and Safety Specialists.



Photo 11 The joint training/meeting of PIU Contractor and CSC to discuss the safety and environmental issues (taken in May 2020)

148. However, the pandemic situation did not allow to conduct comprehensive Environmental trainings during the reporting period. Nonetheless, the Contractor reported conducting of toolbox meetings, HSE inspections, risk assessments, monthly inspections and internal HSE meetings. Contractor posted information on need of Environmental protection and safety in Tajik and Chinese languages in accessible

locations. CSC paid special attention to COVID 19 issues during the reporting period. The issue was raised in official letter and NCNs and discussed on the regular meetings with the Contractor and PIU. The medical staff of the Contractor conducted daily examination of the workers before the commencement of work and explained them the symptoms of the disease and necessary preventive measures.



Photo 12 The poster “Life coexists with the environment” on the laboratory building (taken in April 2020).

V. FUNCTIONING OF THE SSEMP

5.1 SSEMP Review

149. The Contractor submitted the Draft of the Site-Specific Environmental Management Plan (SSEMP) on October 4, 2018. Upon the review by the International Environmental Consultant, comments were provided, and the document returned to the Contractor for corrections. The Engineer approved final copy of the Contractor's SSEMP on November 12, 2018.
150. No changes regarding the SSEMP have been presented by the Contractor by the preparation of this report. COVID-19 pandemic management plan was not developed by Contractor.

VI. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

151. Contractor did not demonstrate particular best practices during the monitoring period, that would warrant a mention here. However, there were some small positive developments during the monitoring period.
152. The issues which are worth noting as follows:
- a) Contractor has organized its work camp in a good manner, and the locations for different activities have been chosen well so that they are in line with the SSEMP;
 - b) Contracted made significant efforts to control dust and could eliminate it in the number of sections
 - c) Contractor signed the agreement on the collection and disposal of the waste in official landfill and managed to improve the sanitary conditions at the camp and facilities; and
 - d) Contractor was responsive to the requests of local communities in disposal of unsuitable material for improvement of landscape and satisfaction of their needs.
153. During monitoring period some minor issues were addressed directly on the site by the verbal order of CSC representative and did not require involvement of formal NCN procedure. In some cases the residents approached the Contractor on the site with verbal request to reduce the level of vibration or spray water on the road. In many cases such issues have been solved immediately.

VII. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

154. The project is in the state of active implementation with approximately 42.14% of the works to date completed during the monitoring period.
155. The construction activities that were carried out during the monitoring period have included: (i) clearing and grubbing; (ii) excavation and cutting; (iii) fixing and relocating of electrical, gas and communication lines; (iv) building of embankments, bypass roads and temporary cofferdams; (v) removal of top soils; (vi) preparation of embankment, sub-base and base layers; (vi) laying of primer and binder asphalt layers; and (vii) construction of bridges and culverts.
156. The Project performance was slowed down due to the COVID-19 pandemic. Contractor had to mobilize additional resources and take special restriction measures to prevent the spread of the disease. Pandemics definitely affected the Project progress during the reporting period however, it was an active stage of the project implementation with many of physical activities conducted. Despite the certain difficulties Contractor continued the design and construction activities.
157. During the previous six months, no significant environmental impacts were caused by the project implementation, and no formal complaints regarding to environmental issues associated with project activities were received from the local population. The verbal and telephone complaints about minor environmental issues were registered and adequately addressed. The construction activities of the project have been limited to the design Right of Way (RoW), generally not exceeding 10 meters in width.
158. The medium and minor environmental impacts caused by the construction activities were mitigated through measures stated in the IEE and SSEMP of the Contractor. The CSC instructed the Contractor on proper spoil disposal, prevention of soil erosion and siltation, safety of public and workers, proper operation of borrow pits and quarries, control of dust nuisance etc. during the monitoring period.
159. Results of instrumental monitoring did not revealed any exceeding compared to National standards for Maximum Permissible Concentrations (MPC), except for the content of suspended substances in the right side of the Vahsh river and in the Aksu River (see table 13). For example, the suspended solids content in the samples from the Vakhsh River ranging on the right Bank from 60,2 to 103,1mg/L and in the Aksu River from 66.1 to 115mg/L the permissible limits for fisheries 75mg/l and for drinking water 25mg/l. However, this is a natural phenomenon and is not associated with activities of Contractor. The Aksu river has a natural high sedimentary load due to high loess content of the banks and it joins Vakhsh river 500m upstream from the bridge 14a.
160. No official complaints relating to environmental issues were received through GRM. However, verbal complaints were received from people on dustiness, mud floods, preservation of spring. All verbal complaints were registered (Annex 4) and addressed,

161. Implementation of Corrective Action Plan (CAP) for period from January to June 2020 is shown in Table 18 below.

Table 18 Status of implementation of Corrective Action Plan for period from January to June 2020

#	Issue	Action required	Due Date	Status of implementation
1	Insufficient safety equipment use	Contractor shall enforce the proper use of safety equipment and organize relevant training program.	20.02.2020	Partially done Despite the warnings, Contractor didn't improve significantly the situation with PPE, especially for the local staff
2	The oily cloths and other hazardous material spread over the camp and workshop areas	Contractor shall arrange the separate special labelled containers for the hazardous waste (electronic waste, oily rags etc.)	14.02.2020	Partially done The additional containers are provided, however the selective collection of waste is not properly organized.
3	Need in replacement of removed trees	Contractor should allocate the funds for re-planting and prepare Trees Replanting Plan.	3.03.2020	Done Over 200 of immature trees were relocated from RoW and carefully planted in different nearby location
4	Visual air (black smoke) pollution in the asphalt plant	Contractor should install the filters to control the air pollution from the pipe of asphalt plant	15.03. 2020	Not done The issue is still open as Contractor failed to provide a filter due to problems with shipment
5	Storage of bitumen drums on without proper cover and impermeable foundations	Contractor should prepare the area for new storage by the preparation of concrete and gravel +plastic film foundation.	20.02.2020	Partially done The issue is not fully solved by the end of monitoring period, although part of drums moved to the safer locations.
6	.Contractor didn't conduct measurements of vibration referring on the problems with shipment	The Contractor should consider options to purchase device and conduct measurements during the works nearby the residential areas and other sensitive locations.	15.04.2020	Done Contractor rented the vibration meter and conducted measurements in the locations of sensitive receptions.

7.2 Recommendations

162. The recommendations for better environmental compliance for the Contractor, for identified 4 issues which were not solved within reporting period and described above, and one additional recommendation are included in the table below.

Table 19: Corrective Action Plan for July-December 2020

#	Issue	Action required	Due Date
1	Dustiness on the road, due to insufficient dust control	Proactive planning of dust suppressing activities. Increase of the number of water tanks mobilized for the Project. Assign a person responsible for dust suppressing activities.	25.07 2020
2	Visual air (black smoke) pollution in the asphalt plant	The filter should be delivered and installed to the asphalt pipe. The regular air quality monitoring of the nearby sensitive locations should continue which results immediately provided to Engineer.	01.08.2020
3	Inadequate safety equipment use	The Contractor should enforce training for the use of PPE and enforce the implementation of rules	
4	Storage of bitumen drums without proper cover and outside of impermeable foundation.	The storage conditions for bitumen drums should be improved as per order of the Engineer.	10.08.2020
5	COVID-19 issues*	Develop COVID-19 pandemic management plan as part of updated SSEMP	By October 2020

*refer to

<https://www.adb.org/sites/default/files/publication/614811/safety-well-being-workers-communities-covid-19.pdf>;

<https://www.who.int/publications/i/item/considerations-for-public-health-and-social-measures-in-the-workplace-in-the-context-of-covid-19>

ANNEX 1 SITE INSPECTIONS PHOTOS RELATING TO ENVIRONMENTAL ISSUES



Photo 13 Bitumen drums stored on the compacted clay plus plastic clay (April 2020)



Photo 14 Drums transferred to more suitable location and covered, however compliance is not achieved yet (May 2020)



Photo 15 Removal of topsoil from km 42+500 (March 2020)



Photo 16 Storage of top-soil at km 48+500 (LHS) (May 2020)



**Photo 17 Removal of garbage from the Engineer's Camp not always conducted timely
(March 2020)**



Photo 18 The smoke from the open air fire at km 58+200 (February 2020)



Photo 19 The black smoke from the asphalt plant chimney after restarting of work (April 2020)



Photo 20 Construction of cofferdam o divert water from the Right Bank of the Vakhsh River (February 2020)



Photo 21 The silted market area at km 60+000 after heavy rains (May 2020)



Photo 22 Water pond formed due blockage of stream at km 34+615 (April 2020)



Photo 23 Cleaning of the stream channel to release water (April 2020)



Photo 24 Spraying of water on the bypass road at Km 50+000 (May 2020)

ANNEX 2 ENGINEER'S ENVIRONMENTAL MONITORING CHECKLIST

Checklist of environmental monitoring

Checklist of site monitoring						
Site visit date: 24/06/2020		Engineer Representatives Igor Ziderer Environmental Specialist Contractor representatives Bashid Suriev-Environmental		Engineer Ref.No. Contractors Ref.No.		
Weather Conditions: Slightly windy and clear						
Work done At the moment:		km33+760- km33+840 (RHS) – The placing and compaction of eighth layer of embankment. Km55+440-km55+600 (LHS) –The placing of aggregate base-level. km36+624- Concrete pouring of bridge No7 foundation(body) km45+500-km45+640 (RHS) – Subgrade preparation				
Problems,related to the environment		Possible reasons			Proposed measures to reduce risk	
The environmental audit was carried out: _____ contractor Representative: _____						
#	pollution control	Completed		During		Comments
		Yes	No	Yes	No	
Contractor camp						
1	Placed septic tank and purified in accordance with the approved procedures	√				
2	All waste water sent to the septic tank or tanks for industrial water	√				
3	All hazardous liquids are stored in the specified place on the basis of the collection of tight runoff	√				
4	Solid hazardous materials are stored in a secure location on the established work areas	√				
5	Drains are collected in the drainage system and disposed of by the Contractor	√				

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6	All vehicles entering and leaving the town, to be controlled	√				
7	Local communities and organizations are informed of the construction schedule and any noise producing events on a regular basis by employees and other events	√				
8	open containers of material storage are covered with canvas.		√			
9	Open burning prohibited	√				
10	Fire fighting equipment <ul style="list-style-type: none"> ▪ Bucket for sand and shovel ▪ Foam fire extinguisher ▪ Safety coating in the dining area 	√				
11	access of other people in the town is prohibited by installing fencing and security organization	√				
12	All employees are provided with personal protective equipment (PPE)	√				
13	Smoking prohibited, with the exception of rooms for smokers	√				
14	Appropriate traffic signs and warning boards with inscriptions at the site and in dangerous areas	√				
15	Drinking water is provided to all employees from the commercial and licensed sources.	√				
16	Specialist. Clothing all employees are cleared on a daily basis	√				
17	All employees are provided with three meals a day		√			Only expatriates are provided with food. The locals bring food from home
18	Canteen with sanitary and hygienic conditions in the city	√				
19	Clinic and first aid kits in the town and work areas.	√				

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20	Health of all the staff is under the control of the town doctor, and provided related services, as carried out monthly medical examinations	√				
21	The entire area has been cleared, there is no unnecessary waste, except for specially designated places for waste disposal		√	√		
22	Provision of rest areas in camp	√				
23	Child labour (Below 15 years)		√			
Production area						
1	Stock bitumen and chemicals is far from the watercourse and the dam walls are impermeable and can comprise 110% of the tanks		√			
2	Liquid from the asphalt plant waste is stored in a prescribed container, and they emptied Specialized equipment suction ≤MTTSTH≥ Lyman	√				
3	Bitumen is stored in the prescribed place in the concrete and is bent to a volume of 110%		√			
4	Solid from the asphalt plant waste is stored at the designated place and disposed of in accordance with the approved procedures	√				
5	Plant area is layered with crushed stone for the purpose of reducing the dust level	√				
6	The plant area is spread gravel to reduce dust	√				
7	The plant may not release any waste to any water flow; impermeable concrete pools will be built for the reception of such waters	√				
9	All employees of asphalt, concrete plant and crusher used protective masks	√				
10	Sands and fractions for concrete and asphalt are kept in humid conditions and covered place	√				
11	The asphalt and concrete plants are provided with fire equipment	√				

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12	Plant or equipment, causing high levels of vibration are built properly maintained and managed accordingly	√				
13	Rivers / fenced passage for water protection	√				
1	Refueling is strictly Controlled and resolved only at the petrol station and workshop	√				
2	Fuel storage tanks are protected, they are impermeable, tank covers are closed	√				
3	gas stations are equipped with fire-fighting equipment be checked weekly	√				
4	At the gas station warning signs are installed	√				
5	Gas station is provided with a special extra waste basket	√				

Workshop and Contractor's carwash						
1	liquid dangerous materials are stored in the specified place in the workshop	√				
2	Solid hazardous materials are stored in the specified place in the workshop	√				
3	there are special containers for collecting the treated oil and hydraulic fluids	√				
4	Treated oil collected in canisters concreted up to 110% volume and purified cans in accordance with the approved procedures		√		√	
5	Workshop is equipped with a drainage system	√				
6	Each transport passes inspection and maintenance on a regular basis	√				

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7	All construction equipment complies with Euro standards and equipped with modern equipment noise suppression	√				The Construction equipment complies with Tajikistan standards
8	Equipment for noise suppression techniques all verified and Supported in accordance with the approved procedures	√				
9	All employees are provided with a workshop welding equipment and personal protective equipment (PPE)	√				
10	The entire process water is collected in the reservoir tank and concreted purified according to established procedures	√				
The project road						
1	All roads construction work aimed at watered using watering machine	√				
2	On the project road in the appropriate places are the flags for the passage of cattle, sheep and other animals	√				
3	Areas of culverts and bridges are equipped with warning tape and unscrewable signs	√				
4	Protections and border crossing services are installed on all workstations where you want to	√				
5	Storage waste of any type, as well as machines or parking vehicles are not permitted on the distance of 100 m from any stream (including drainage or irrigation installations)	√				Inert waste in some location is stored closer than 100m from the intermittent stream due to lack of area
6	working areas and dangerous areas are equipped with all the appropriate traffic signs and warning labels	√				
7	Construction equipment and plants are properly maintained to reduce gas emissions	√				
8	Measures to Noise Control on special objects	√				

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Borrow pits						
1	Borrow pits and quarries are equipped with drainage	√				
2	At 200 m from the nearest settlement, all construction work ceased from 10.00 pm to 6.00 am	√				
3	fractions of crushed stone are extracted only from approved quarries	√				
4	Extraction of crushed stone is carried out at 100 m from the river or waterway		√			In the quarry at km 69 it is closer with permit of authorities, with installation of protection measures
5	The stockpile does not exceed 3 m in height	√				
6	All vehicles with an open body used to transport materials with possible dusting designed for this purpose with a well matched folding bodies	√				
7	During construction works to limit the amount of noise in accordance with national standards	√				
8	Materials with possible dusting not charged if the level exceeds the hinged bodies. Closed clean tarpaulin.	√				
9	All vehicles, industrial equipment and devices comply with Euro standards on exhaust emissions		√			Vehicles comply with National standards
10	All the temporary acquired land is restored		√	√		
11	All remnants of materials and contaminated land sites collected and removed in accordance with the approved procedures		√	√		
12	During transportation and processing of materials produced irrigation water	√				

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13	Any immediate areas damaged as a result of dumping, are restored to its original appearance	√				
14	River banks are protected from premises or materials temporary piles Contractor	√				
15	The negative consequences of violations or because of construction work is monitored, with an acceptable level in accordance with the standards	√				
16	Access Road to quarries, reserves and traffic conditions are maintained in accordance with approved standards	√				
17	Draining and water drainage, avoiding flooding or damage to other works or services causing erosion	√				
Flora and fauna						
1	Trees and shrubs outside the construction site, but within the road reserve is usually protected from damage	√				
2	None of the old trees are not cut down during construction	√				
3	Felling is not carried out without prior authorization from the relevant local authorities	√				
4	Trees and bushes cut down and removed only if they interfere with the required temporary or permanent work	√				
5	Construction work is carried out on the sites construction of the bridge at the time of crop (specify yes or no construction work in the transition, specify the date)	√				

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6	Construction on sections of the river occurs only during periods of low flow, to minimize pollution	√				The concreting of supports for bridge 14a was completed before the flood season to prevent pollution and scoring
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ANNEX 3 CONTRACTOR'S WEEKLY ENVIRONMENTAL MONITORING CHECKLIST

Weekly Baseline Environmental Monitoring Report

Prepared by Sinohydro Corporation Tajikistan Co.Ltd. (The Contractor)

Weekly Environmental Checklists: The following are the monthly environmental monitoring report that are regularly checked. It illustrates the evaluation of environmental impacts and its mitigation measures of ongoing construction activities in the site. updated

Responsible Person: Bashid Suriev -Environmental Specialist

June 1-30, 2020

NA- Not applicable

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
1.	Land Use				
1.1	Disposal of debris and spoil	Disposed to the approved site,	Disposed to the approved site,	Disposed to the approved site	Disposed to the approved site
1.2	Protection of agricultural land	No agricultural lands outside of RoW were damaged	No agricultural lands outside of RoW were damaged	No agricultural land outside of RoW were damaged	No agricultural lands outside of RoW were damaged
1.3	Protection of ground cover	Complied	Complied.	Complied	Complied
1.4	Erosion control	Complied.	Complied	Complied	Complied
1.5	Quarry operations	Complied, performed at the approved sites	Complied, performed at the approved sites	Complied, performed at the approved sites	Complied, performed at the approved sites
2	Water Quality				
2.1	Protection of water sources	Complied with IEE and SSEMP. No contamination of water sources observed	Complied with IEE and SSEMP. No contamination of water sources observed	Complied with IEE and SSEMP. No contamination of water sources observed	Complied with IEE and SSEMP. No contamination of water sources observed
2.2	Prevention of water quality	Temporary worsening of the water quality on	Complied. Vahsh river brought to the	Complied	Complied

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
	worsening	the left side of Vahsh river due to diversion of water by breakwater dam	natural state due removal of temporary breakwater dam		
2.3	Siltation of water bodies	Temporary worsening of the water quality on the left side of Vahsh river due to diversion of water by breakwater dam	Complied. Vahsh river brought to the natural state due removal of temporary breakwater dam	Complied	Complied
2.4	No alteration of drainage paths	Temporary alteration of Vahsh river for breakwater dam construction approved by the Engineer	Complied. Vahsh river brought to the natural state due removal of temporary breakwater dam	Complied	Complied
2.5	Locating sanitation and waste disposal in Construction camps.	Complied	Complied	Complied	Complied
2.6	Adequate facilities for disposal of sewerage and solid waste.	Partially complied with the approved camp plan	Partially complied with the approved camp plan	Sewerage system in the camp is filled with water due heavy rains.	Sewerage system in the camp is filled with water due heavy rains.
2.7	No impact to the public or community for Water supply.	Complied with agreement about water supply	Complied with agreement about water supply	Complied with agreement about water supply	Complied with agreement about water supply
3	Air Quality and Dust Control				
3.1	Effective management of dust.	Not Complied, dusting at the bypass sections due to dry and hot weather	Complied, dust is efficiently controlled	Partially Complied. Despite the mobilization of water tanks dust was not efficiently controlled	Partially Complied. Despite the mobilization of water tanks dust was not efficiently controlled due to dry and hot

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
				due to dry and hot weather	weather
3.2	Delivering material effectively covered while Transporting.	Partially complied Contractor didn't supply sufficient amount of tarpaulin	Partially complied Contractor didn't supply sufficient amount of tarpaulin	Partially complied Contractor didn't supply sufficient amount of tarpaulin	Partially complied Contractor didn't supply sufficient amount of tarpaulin
3.3	Vehicle speed limit, which control the dust Emission.	Complied due to assistance of traffic police	Complied due to assistance of traffic police	Complied due to assistance of traffic police	Complied due to assistance of traffic police
3.4	Watering of construction & transportation Sites.	The dusting is not efficiently controlled at all sections	The dusting is not efficiently controlled at all sections	The dusting is not efficiently controlled at all sections	The dusting is not efficiently controlled at all sections
3.5	Immediate clearing of debris, dust & other Material from the road.	Complied	Complied	Complied	Complied
3.6	Level of emissions from construction Vehicles, equipment & machinery.	Complied All machinery units certificate from environmental subdivision of traffic police Department	Complied All machinery units certificate from environmental subdivision of traffic police Department	Complied All machinery units certificate from environmental subdivision of traffic police Department	Complied All machinery units certificate from environmental subdivision of traffic police Department
3.7	Regularly serviced machinery, equipment & Vehicle	Complied	Complied	Complied	Complied
3.8	Level of air emission from material Extraction sites.	Complied	Complied	Complied	Complied
4	Noise and Vibration				

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
4.1	Level of noise from vehicles, plants & equipment.	Complied with National standards	Complied with National Standards	Complied with National Standards	Complied with National Standards
4.2	Level of vibration from machineries and Equipment.	No complaints about vibration received	No complaints about vibration received	No complaints about vibration received	No complaints about vibration received
5	Flora and fauna				
5.1	Minimize loss or damage of trees.	15 tress was removed from ROW at Km 48-49	No cut of trees conducted	No cut of trees conducted	No cut of trees conducted
5.2	No destruction of other flora.	Complied	Complied	Complied	Complied
5.3	No impact on wild fauna and their habitats.	Complied	Complied	Complied	Complied
6	Sanitary				
6.1	Public & worker safety.	Complied	Complied	Complied	Complied
6.2	Provide workers safety appliances (helmets, Goggles, mask, footwear etc.)	Partially complied Some workers still do not wear PPE	Partially complied Some workers still do not wear PPE	Partially complied Some workers still do not wear PPE	Partially complied Some workers still do not wear PPE
6.3	Adequate warning signals.	Partially complied, signs road are not adequate for all locations	Partially complied, signs road are not adequate for all locations	Partially complied, signs road are not adequate for all locations	Partially complied, signs road are not adequate for all locations
7	Safety				
7.1	Prevention and control of vector based diseases	The potential vector breeding site- a water channel nearby the labor camp was cleaned by the sub-	The potential vector breeding site- a water channel nearby the labor camp was cleaned by the sub-	The potential vector breeding site- a water channel nearby the labor camp was cleaned by the sub-	The potential vector breeding site- a water channel nearby the labor camp was cleaned by the sub-contractor

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
		contractor	contractor	contractor	
7.2	Adequate actions for workers health and Safety.	Partially complied with Safety Plan. Not all workers wear PPE.	Partially complied with Safety Plan. Not all workers wear PPE.	Partially complied with Safety Plan. Not all workers wear PPE.	Partially complied with Safety Plan. Not all workers wear PPE.
7.3	First aid facility.	Complied The first aid station is basically equipped and operates	Complied The first aid station is basically equipped and operates	Complied The first aid station is determined basically equipped and operates	Complied The first aid station is determined and basically equipped and operates.
7.4	Adequate bathing, latrine facilities for Labors.	Complied partially The odor protection is not ensured in some locations	Complied partially The odor protection is not ensured in some locations	Complied partially The odor protection is not ensured in some locations	Complied partially The odor protection is not ensured in some locations
7.6	No affect to adjacent water courses by Sewerage system.	Complied	Complied	Complied	Complied
8	Landscaping				
8.1	road –side landscape	Partially complied. The landscape nearby the structures under construction is not maintained properly	Partially complied. The landscape nearby the structures under construction is not maintained properly	Partially complied. The landscape nearby the structures under construction is not maintained properly	Partially complied. The landscape nearby the structures under construction is not maintained properly
8.2	Re-planting of trees, re-vegetation of other Plants.	Not conducted	Not conducted	Not conducted	Not conducted
8.3	Reconstruction of removal-utilities such as water	Complied, conducted by the approved sub-	Complied, conducted by the approved sub-	Complied, conducted by the approved sub-	Complied, conducted by the approved sub-

No	Activity	June, 2020			
		Week I	Week II	Week III	Week IV
	,electricity , telephone	contractors	contractors	contractors	contractors

**ANNEX 4 REGISTER OF THE VERBAL
COMPLAINTS RELATING TO
ENVIRONMENTAL ISSUES**

Register of the verbal complaints relating to Environmental issues

Date of complaint	Complainant Name	Complaint Received by	Method of Complaint e.g. verbal, letter, email	Main Issue	Summary of Complaint	Action/Passed to	Status	Date Closed
23.04.2020	Abdulov Faiziddin	Ziderer -CSC Local Environmental Specialist	Verbal on the site	Dusting	The intense dusting on the bypass road	Kadamov and Ziderer	Closed	24.04.2020
15.05.2020	Nazarova Akhliya	Ziderer.I- CSC local Environmental Specialist	Verbal on site	Mud flooding of property,	Mud stream coming from the embankment under construction flooded the property	Kadamov.S	Closed	20.05..2020
05.06.2020	Kosimova Saodat behalf on the residents of Dahana village	Igor Ziderer- Local Environmental Specialist	Verbal on the site	The preservation of spring at the km 36+750 which falls within the designed protection wall	We need to preserve this spring as it is the only source of water for animals during the summer season.	The order was passed to the Contractor's design Department to consider preservation and improvement of the spring at the working drawings	Closed	10.06.2020
23.06.2020	Olimzada Safar Chairman of Khuroson Jamaot behalf on communities	Kholikov. M Local social and Resettlement Specialist	Telephone call	Intense dusting	The dust annoying the people living along the temporary bypass road at km 41+300-42+000	Nazarshoev. S.	Closed	17.09.2019

ANNEX 5 SAMPLE OF NON-CONFORMANCE LETTERS

 <p>Head Office Koblenz Kocks Consult GmbH P.O.Box 200963 68008 Koblenz, Germany Phone: +49 261 1302-0 Fax: +49 261 1302-400 E-mail: info@kocks-ing.de</p>	 <p>Office Finnish Overseas Consultants (FinOC) Ltd. / Metsärimme 7B 04220 Kerava, Finland Phone: +358 40 516 7332 Fax: +358 42 8233 800 E-mail: info@finoc.fi</p>	 <p>Office State Unitary Enterprise "Design Institute for Transport Infrastructure" (SUE "DITP") Ayni Street 14 Dushanbe 734042 Tajikistan Phone: +992 37 2212020 Fax: +992 37 2212020 Email: loikhakash@mail.ru</p>
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Your Ref.:
TAJ-DK-EN-
2020-037

Our Ref.:
0569-TAJ/DK/ABG/889

E-Mail:
alfredoguarin@yahoo.com
alfredo.guarin2@gmail.com

Contact: **Alfredo B. Guarin, Jr**
Date: **March 10, 2020**

To: M/s Sinohydro Tajikistan Corporation Limited
N. Muhammad Street 49/2, Shohmansur District
Dushanbe City, Tajikistan

Attention: Mr. Huang Zutong
Acting Contractor's Representative

Subject: **In relation to environmental issues**
Project Management and Construction Supervision
Services for CAREC AF, Corridor 2, 5 and 6
DUSHANBE - KURGONTEPPA
Km. 33+475.00 to Km. 73+050.00

Distribution:
Mr. N.S. Arabzoda, Executive Director, PIJRR
Mr. Ulrich Sprick, Kocks Consult
Mr. Carsten Griesse
Mr. Stephan Englaender
Project file

Dear Mr. Zutong,

This refers to your letter ref.no.TAJ-DK-EN-2020-037 dated of 02.03.2020. The above said letter informs about activities you performed to address the unsolved environmental issues mentioned in our letters 0569/TAJ/DK/ABG/839 and 846. We appreciate for your efforts as some improvements of environmental issues really well observed.

However, some of earlier mentioned issues relating to the Environmental Conformance are still open and require your further attention. They include but not limited by the preparation of impermeable foundation for bitumen storage, proper storage of stripped topsoil and some aspects of waste management.

The environmental compliance issues are also in the spotlight of Employer and raised in the letter #227 dated on 06.03.2020. The special attention is given to the waste management, observation of sanitary conditions and readiness of first aid facilities to emergencies including possible cases of coronary virus infection.

According to ADB policy, the Continuous Improvement is a key theme of the Environmental Management System for the ADB funded projects.

Hence, you shall continue your mitigation activities to address environmental issues and improve your performance in accordance with SSEMP in order to minimize rising of new environmental problems.

As prescribed by Employer you shall mitigate the outstanding non-conformances and submit the detailed report with photos within one week.

Yours Truly,

Alfredo B. Guarin, Jr.
Team Leader

Sparkasse Koblenz, Swift MALADES1KOB
IBAN DE88 6705 0120 0001 0243 88, Acc. 1 024 389
Deutsche Bank AG, Koblenz, Swift DEUTDE33HAN
IBAN DE91 6707 0045 0024 0101 00, Acc. 0 240 101

Interior Court, Koblenz HR B 13 10
Tax No. 22/650652/1
VAT Reg. No. DE146722247
Certification: ISO 9001

Board of Directors
Dipl.-Geol. Dr. Henning Kocks, MBE
Dipl.-Ing. Michael Leinhos
Dipl.-Ing. Ulrich Sprick



中国水电塔吉克斯坦有限责任公司
Sinohydro Tajikistan Corporation Limited
Синохидро Тоҷикистон СО

SNB

To:	Mr. Alfredo Guarin Team Leader KOCKS CONSULT GMBH	From:	Sinohydro Tajikistan Co. Ltd
No.:	TAJ-DK-EN-2020-056	Date:	17.03.2020
Cc:	Projects Implementation Unit for Roads Rehabilitation	Total Pages:	3

Title: Rehabilitation and Improvement of the Dushanbe-Kurgenteppa Road, from Km 33+475 to Km 73-050

Subject: Environmental issues

Dear sir:

Reference is made to Engineer's letter 0569-TAJ/DK/ABG/889 in connection with the above-captioned issue. Contractor has followed Engineer's instructions and arranged personnel and equipment to take further actions to handle problem of the wastes, impermeable foundation of bitumen storage, storage of stripped soil and so on. Contractor hereby submits the pictures after settlement.

Encl: Pictures after settlement

Yours sincerely

Huang Zutong
Chief Engineer

黄祖国

18.03.2020 kang

Add: N.muhammad Street 49/2, Shohmansur District, Dushanbe city, Tajikistan
Адрес: Республика Таджикистан, город Душанбе, район Шохмансур, улица Н. Муҳаммад, 49/2
Tel: (+992)-918997946; (+992)-985182720; (+992)-988559589;
E-mail: sinohydro@tk2015@163.com Website: www.sinohydro.com



ANNEX 5 CALIBRATION CERTIFICATES AND PROTOCOLS



СИСТЕМАИ МИЛЛИИ АККРЕДИТАТСИЯИ
ҶУМҲУРИИ ТОҶИКИСТОН

МУАССИСАИ ДАВЛАТИИ
«МАРКАЗИ МИЛЛӢ ОИД БА АККРЕДИТАТСИЯ»

ш. Душанбе, кӯчаи Н. Карабоев, 42/2, телефон: (+992 37) 233-50-41 (+992 44) 600-81-09

АТТЕСТАТИ

АККРЕДИТАТСИЯИ ОЗМОИШГОҲ

Дар феҳристи давлатии системаи миллии
аккредитатсияи Ҷумҳурии Тоҷикистон

аз «28» октябри соли 2019

№ TJ 762.37100.02.061-2019
ба кайд гирифта шудааст.

то «28» октябри 2021 эътибор дорад.

Аттестати мазкур тасдиқ мекунад, ки Маркази назорати таҳлилии Кумитаи ҳифзи
муҳити зисти назди Ҳукумати Ҷумҳурии Тоҷикистон

номгӯи озмоишгоҳи санҷишӣ (марказ)

шаҳри Душанбе, кӯчаи Шамсӣ-5/1.

суроға

ба талаботҳои Системаи миллии аккредитатсияи Ҷумҳурии Тоҷикистон мутобики талаботи
ИСО/МЭК 17025-2009 «Талаботҳои умумӣ оид ба салоҳиятнокии озмоишгоҳҳои таҳлиси ва
калибровкакунӣ» аккредитатсия карда шудааст.

Доираи аккредитатсия дар аттестат замима (6-саҳифа) оварда шудааст.


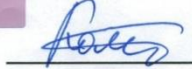



Ч.М.

Директор

Чумазода Б. Ҳ.

Verification certificate

АКЦИОНЕРНОЕ ОБЩЕСТВО «НАУЧНО-ПРОИЗВОДСТВЕННОЕ ПРЕДПРИЯТИЕ «ДЕЛЬТА» 127299, РОССИЯ, Москва г, Клары Цеткин ул, д. 18 <u>Аттестат аккредитации № 1425</u>	
СВИДЕТЕЛЬСТВО О ПОВЕРКЕ	
№ СП <u>04620</u>	
Действительно до «07» ноября 2019 г.	
Средство измерений	<u>Газосигнализатор серии ИГС-98 «Комета-3»</u>
<u>№ 21790-11</u>	
наименование, тип, модификация, регистрационный номер в Федеральном информационном фонде по обеспечению единства измерений	
(если в состав средства измерений входят несколько автономных измерительных блоков, то приводится их перечень и заводские номера)	
<u>отсутствуют</u>	
серия и номер знака предыдущей поверки (если такие серия и номер имеются)	
Заводской номер (номера)	<u>10456</u>
Поверено	<u>в соответствии с описанием типа</u>
наименование величин, диапазонов, на которых поверено средство измерений (если предусмотрено методикой поверки)	
Поверено в соответствии с	<u>ФГИМ 413415.001.МП</u>
наименование документа, на основании которого выполнена поверка	
С применением эталонов:	<u>Установка динамическая «Микрогаз Ф-11» ПГС ГСО 2987 9566 ИМ 36</u>
наименование, тип, заводской номер (регистрационный номер (при наличии), разряд, класс или погрешность эталона, применяемого при поверке)	
При следующих значениях влияющих факторов: <u>температура окружающего воздуха 22⁰С,</u>	
<u>атмосферное давление 100 кПа, относительная влажность 48 %</u>	
приводят перечень влияющих факторов, нормированных в документе на методику поверки, с указанием значений	
и на основании результатов первичной (периодической) поверки признано соответствующим установленным в описании типа метрологическим требованиям и пригодным к применению в сфере государственного регулирования обеспечения единства измерений.	
Знак поверки	
Главный метролог-начальник отдела	 подпись <u>К.И. Колтуновский</u>
Поверитель	 подпись <u>К.И. Колтуновский</u>
Дата поверки	<u>«08» ноября 2018 г.</u>

Calibration protocol Gas analyzer GANG - 4

Протокол градуировки №: ПГ0005974

Страница 1 из 1

Протокол градуировки ГАНК-4(А) зав. № 1698

Универсальный газоанализатор ГАНК-4 Зав. № 1698

Место проведения: ООО "НПО "Прибор "ганк"

Представлен организацией (Заказчик) – Нано-Электрон ,

Дата выпуска 08.02.2012

Дата градуировки 04.06.2019

Условия проведения градуировки:

Температура - 20°C

Давление - 99 кПа

Влажность - 62%

Результаты градуировки

1. Результаты внешнего осмотра _____ Годен

2. Результаты опробования _____ Годен

3. Средства измерений, оборудование и материалы используемые при градуировки приведены в таблице 1

Таблица 1

Наименование средств измерений, оборудования и материалов	Дата очередной поверки
Барометр - aneroid контрольный М-67, зав.№ 106	18.07.2020
Весы лабораторные электронные CE224-С, зав.№ 25625012	05.05.2020
Генератор газовых смесей комбинированный КГС-01, зав. № 03	16.12.2019
Дозатор одноканальный с варьируемым объемом дозирования Biohit (10-100) мкл, зав. № 6505572	05.05.2020
Дозатор одноканальный с варьируемым объемом дозирования Biohit (0,5-10) мкл, зав. № 6506272	05.05.2020
Прибор комбинированный Testo-608-H2, зав.№ 30030980	30.07.2019
Ротаметр РМ-А-0,063 ГУЗ, зав. № 0861934	04.06.2024
Ротаметр РМ-0,63 ГУЗ, зав.№ 0603674	16.07.2019
Шприц Ш-712, зав. № 1	06.05.2020
Азот (II) оксид NO, ГСО 10697-2015	12.03.2020
Азота диоксид NO2, ГСО 10547-2014, 0,0215 %	25.01.2020
Источник микропотока фенола ИМ 89-М-А2, зав. № 429-16	02.10.2019
Источник микропотока формальдегида ИМ 94-М-А2, зав. № 935	18.11.2019
Источник микропотока фтористого водорода ИМ130-М-А2, зав. № 145	02.10.2019
Кремний (IV) оксид, ГОСТ 9428-73	06.08.2019
Сера диоксид (Ангидрид сернистый) SO2, ГСО 10697-2015	14.08.2019
Углерод диоксид CO2, ГСО 10700-2015, 50,68 %	09.04.2020
Углерод оксид (Угарный газ) СО, ГСО 10700-2015, 1,016 %	18.06.2020

4. Результаты определения стабильности и основной относительной погрешности приведены в таблице 2

Таблица 2

Наименование вещества	Калибровка	Со		Смин		Сср		Смакс		Относительная погрешность измерений, %
		Концентрация ПГС, мг/м3	Показания прибора, мг/м3	Концентрация ПГС, мг/м3	Показания прибора, мг/м3	Концентрация ПГС, мг/м3	Показания прибора, мг/м3	Концентрация ПГС, мг/м3	Показания прибора, мг/м3	
Азот (II) оксид (А)		0	0	0,03	0,03435	1,25	1,0285	2,5	2,094	17,72
Азота диоксид (А)		0	0	0,02	0,02326	0,5	0,58575	1	0,9031	17,15
Гидроксибензол (Фенол) (А)		0	0	0,003	0,00339	0,075	0,08427	0,15	0,1355	13,15
Гидрофторид (Фтороводород) (А)		0	0	0,0025	0,00286	0,125	0,1038	0,25	0,22173	16,96
Сера диоксид (Ангидрид сернистый) (А)		0	0	0,025	0,02883	2,5	2,081	5	4,4355	16,76
Углерод диоксид (А)		0	0	1 950	2 207,5	2 250	2 511	4 500	5 131,8	14,04
Углерод оксид (Угарный газ) (А)		0	0	1,5	1,71615	5	5,25	10	8,91	14,41
Формальдегид (А)		0	0	0,005	0,00572	0,125	0,10641	0,25	0,21928	14,87
Пыль (70%>SiO2>20%) (А)		0	0	0,05	0,05721	0,5	0,55715	1	1,144	14,42

Дата: 04.06.2019

УСЛОВИЕ СТАБИЛЬНОСТИ ВЫПОЛНЯЕТСЯ

Исполнитель:

подпись



Gas analyzer calibration

КПГУ 413322002 ПС

9 Поверка

Таблица 6 – Поверка газоанализатора заводской № 1698

[illegible]

Основная относительная погрешность не более $\pm 20 \%$.

Межповерочный интервал один год

Поверка проводится по методике КПКУ 413322002 ДЛ