

Environmental Monitoring Report

Project Number: 48424-002
Semestral Reporting: January–June 2021
August 2021

Kazakhstan: CAREC Corridors 1 and 6 Connector Road (Aktobe–Makat) Reconstruction Project

Prepared by the "NC "KazAvtoZhol" JSC supported by Dongsung Engineering Co., Ltd./ZS Engineering LLP for the Committee of Roads of the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan and the Asian Development Bank.

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Environmental monitoring report

Project number: No.3416-KAZ

Reporting period: January–June 2021

REPUBLIC OF KAZAKHSTAN: CAREC CORRIDORS 1 AND 6 CONNECTOR ROAD (AKTOBE–MAKAT) RECONSTRUCTION PROJECT (SECTION KM 330–504)

(Financed by the ASIAN DEVELOPMENT BANK)

Prepared by the PMC “NC “KazAutoZhol” JSC with support of Construction Supervision Consultant DONGSUNG ENGINEERING CO., LTD / ZS ENGINEERING LLP Seoul, Korea / Nur-Sultan, Kazakhstan for the Committee for Roads of the Ministry of Industry and Infrastructural Development of the Republic of Kazakhstan and the Asian Development Bank.

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Approved by: PMC “NC “KazAutoZhol” JSC
(PMC's specialist name) and signature, report submission date

August 2021

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ABBREVIATIONS

ADB	Asian Development Bank
CAREC	Central Asian Regional Economic Cooperation
CFR	Committee for Roads
Covid-19	coronavirus infection 2019-nCoV
CSC	Construction Supervision Consultant
ECP	Environmental Control Program
EMP	Environmental Management Plan
EnMP	Environmental Monitoring Plan
EHS	Environmental, Health and Safety Guidelines
FLM	Fuel and lubricant materials
HR	Hygienic Regulations
HSP	Health and Safety Plan
IEM	Industrial Environmental Monitoring (carried out by an accredited laboratory)
LV	Limiting Value
LW	Liquid Waste
MAC	Maximum Allowable Concentration
MAL	Maximum Allowable Level
MIID	Ministry of Industry and Infrastructural Development
PMC	Project Management Consultant
QAJ	“National Company “QazAvtoJol” JSC
RD	Regulatory Document
RK	Republic of Kazakhstan
RMD	Road Maintenance Depot
RSE	Republic State Enterprise
RZ	Residential Zone
SAEMR	Semi-annual Environmental Monitoring Report
SPZ	Sanitary Protection Zone
SSEMP	Site Specific Environmental Management Plan
SW	Solid Waste
TS	Traffic Safety

1. INTRODUCTION

1.1 Preamble

1. This report is a semi-annual environmental monitoring review for the first half of 2021 for the CAREC Corridors 1 and 6 Connector Road (Aktobe–Makat) Reconstruction Project (road section km 330-504, Lots 4–7). The report is the seventh semi-annual report since the project beginning.

1.2 Key information

2. In July 2018, three Contracts were awarded through re-tender process to “Shanghai Construction Group” (hereinafter “SCG”) and Joint Venture “Akkord” and “Ak Zhol Kurylys” (hereinafter “AA”). Contracts Lot-4 and Lot-5 were awarded to the SCG and Lot-6 to AA. These new Contractors have started works of mobilization and preparation on the site since August 2018.
3. The Contractor “Shanghai Construction Group Co.” which is the Contractor of Lot 4 Contract 004-ADB/CW-2018 and Lot 5 Contract 005-ADB/CW-2018 received advance payments in July 2018. The Contractor acquired “Shanghai Construction Group Co.” Branch Office Registration certificate on 30.10.2018. Also, the Contractor received license for road construction of relevant category on 24.12.2018. The Engineer officially issued “Notice to Commence Works” on 08.01.2019.
4. As of 30.06.2021 Lot 4 cumulative progress of works was 53.12% achieved vs 57.69% planned (as per work program) with 4,57% lag. Pursuant to Sub-Clause 2.4 [Employer’s Financial Arrangement] of the Particular Conditions of Contract (hereinafter “PCC”), the Contractor’s progress should reach the amount of 45% of the Accepted Contract Price during the first 395 calendar days following the commencement of the Works which becomes expiry of which falls on 06.02.2020. It has been adjusted by Contract Addendum-dated 07.05 2020 to 01.08.2020.
5. As of 30.06.2021 the physical work progress of the Contractor is evaluated as totally 53.12%. Therefore, pursuant to Sub-Clauses 8.7 and 14.15(b) of the PCC, a penalty amount equivalent to 0.01% of the Accepted Contract Price per day was duty for payment since 02.08.2020 by the Contractor until such time when the Contractor reached scope of work 45% of the Accepted Contract Price on 30.11.2020.
6. Main reason of delay:
 - i. Weak organizational structure. Lack of highly qualified, experienced specialists in the field of road construction;
 - ii. Acute shortage of special equipment and personnel, consequently (in the spring and summer) work progress was minimal;
 - iii. Permission documents (technical specification, approval from Kazakhstan Railway Company, etc.) for the overpass reconstruction and a temporary railway crossing construction have not been received on time;
 - iv. The relocation of existing communication lines such as gas pipelines (4 nos.), power lines (5 nos.) and service lines (12 nos.) has been started with delay;
7. Regarding Lot 5 the Contractor SCG subcontracted 66.67% works to local company “Ak Zhol Kurylys” LLP. As of 30.6.2021 the physical work progress of the Contractor is evaluated as totally 56.50%. So, the Contractor has failed to achieve 45% progress by 01.08.2020. Therefore, pursuant to Sub-Clauses 8.7 and 14.15(b) of the PCC, a penalty equivalent to 0.01% of the Accepted Contract Price per day subject to be paid from 02.08.2020 by the Contractor until such time when the Contractor completes part of the Works in the amount of 45% of the Accepted Contract Price.
8. The Contractor’s main reason of delay:
 - i. SCG had to lead whole contract management including SCG’s part of 33.33%. However,

- SCG didn't carry out such 33.33% portion, relying on and in expectation for the Subcontractor to carry out whole 100% works.
- ii. SCG's experienced specialist personnel for key positions such as planning manager, scheduler, construction manager, quality manager, safety manager, material manager, laboratory manager, equipment operation and maintenance manager, material procurement manager etc. were not mobilized on site.
 - iii. SCG have been watching and see how the Subcontractor would manage the contract but does not intend to lead the project management.

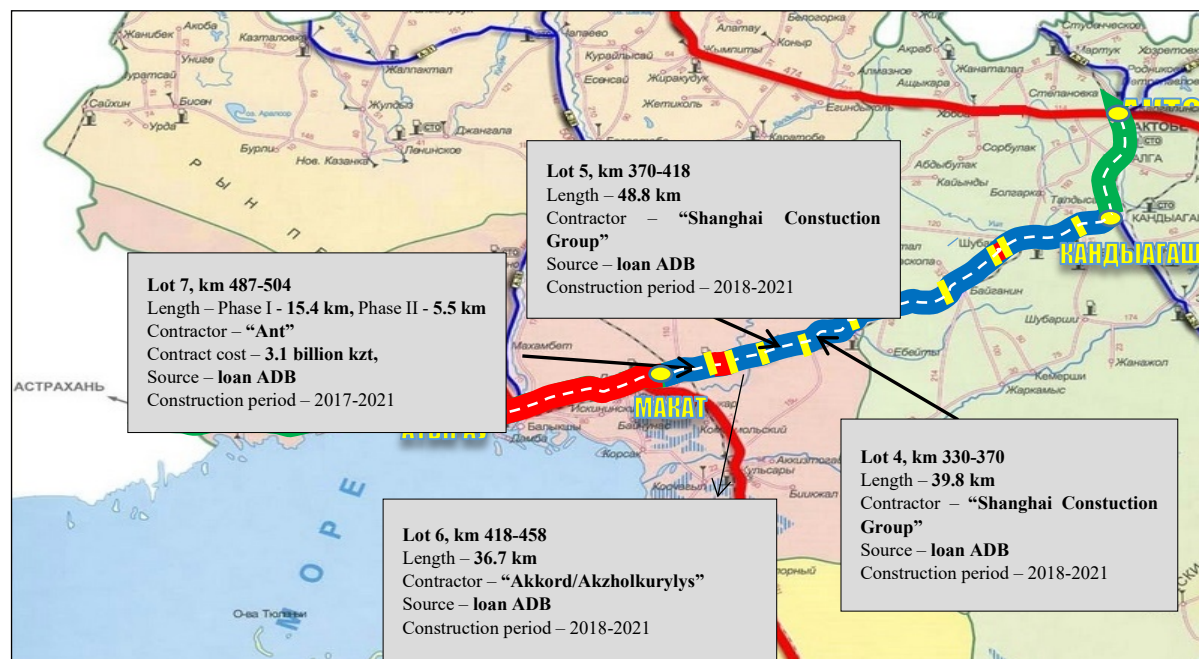
The Subcontractor's reason of delay:

- iv. The subcontractor had sharp deficiency in cash operation due to various other contracts awarded in recent elsewhere within Kazakhstan.
 - v. And head office support for the Lot-5 site dropped sharply and progress affected adversely and seriously: construction resources could not be mobilized on time.
 - vi. Borrow pit material extraction permit was delayed to obtained.
 - vii. Railway dead-end material unloading facility couldn't be completed on time, due to it road pavement structural stone materials couldn't be delivered to site timely.
 - viii. Experienced engineers, technicians and various specialists couldn't be mobilized timely on the site.
9. Lot 6 cumulative progress of works is 55.89% achieved vs 76.46% planned (as per work program) with 22.05% lag. The Engineer consented to shear the Resources of Lot 6 with Lot 5 under the consideration for the best interest of the Employer with the conditions made in his letter ref.no. ATR/5-2023 dated 13.07.2020. Moreover, the slow progress of bridge works led to work delay on the site.
 10. Lot 6, "Aktobe - Atyrau - border of the RF (to Astrakhan) road, section km 468-487". The Engineer prepared and sent the Environmental Due Diligence Report which provides a review of the uncompleted section with a length 4.8 (from km 482.1 to km 487). Variation order will be prepared for this site. Territorially this site belongs to Makat district of Atyrau region of the Republic of Kazakhstan.
 11. This project is a part of the national road network. The road is important in ensuring transport links between western and northern regions of the Republic of Kazakhstan with access to the Russian Federation, as well as for transportation of regional and local cargo and passenger traffic.
 12. Lot 7, "Dossor Bypass Construction" is the Phase II Work which was instructed by the Engineer and the Positive Conclusion has been obtained for Design Documents and Cost Estimation by the State Expertise on 30.03.2020.
 13. The Variation Order No.3 prepared in accordance with Sub-Clauses 13.1 and 13.2 FIDIC General Conditions of Contract on 10 September 2020. It is the Additional Work for the construction of "Dossor Bypass Way" with a total length of 5.52 Km with Asphalt Pavement with Road Furniture, Markings and Street Lightings including Culverts, Cattle Passes. It has Effects of Time Extension of Construction Period for 10 months.
 14. The Engineer received the Design Documents of "Dossor Bypass Way" construction by the Employer's representative of "NC KazautoZhol" JSC Atyrau branch on 08.10.2020. Having reviewed, the Engineer found some discrepancies against to Design Regulations and submitted the "Design Review Notice" to the Project Designer "Engineer Project Stry" LLP for Engineering Explanation and/or Clarification by his letter ref. No.ATR/DGN-2248 dated 20.10.2020. The Project Designer "EngineerProjectStry" LLP informed that they re-submitted a hard copy of design to "NC KazautoZhol" JSC Atyrau branch on 29.10.2020 by the letter ref. No.490 dated 30.10.2020. The Engineer conducted a pre-design environmental evaluation of the site. The report has been submitted to the Employer and approved by the PMC and ADB.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

15. The "Aktobe–Atyrau–Border of the Russian Federation to Astrakhan" road is road of republic importance. The project section is connecting the northern and western regions of Kazakhstan, with access to the Russian Federation, which requires increased requirements for transport and operational characteristics of the road.



Picture 1. Location of the project road

16. The project road category is II, according to the traffic intensity. Road construction is carried out on 4 Contracts, as indicated below.
17. **Lot 4: km 330 – km 370 (Sagiz village):** This section includes the reconstruction of the road from category III to category II with a total length of 39.80 km. Other parts of this section, the direction of traffic flow coincide with the existing coverage with partial slopes from the embankment in the area of rectification and curve. On this site, the project provides for the construction of 2 bridges and 1 overpass. Overpass on km 336+900, the length is 42.2 meters. The bridge across the river Nogaity on km 338+900 has the length of 66,15 meters. The bridge across the river Sagiz at km 342+300 has the length of 105,3 meters. This site provides the construction of 20 culverts of different diameters, 6 cattle passes, 2 rest areas and 1 RMD.
18. **Lot 5: km 370 – km 418 (v.Mukur - v. Zhanterek):** This section includes the reconstruction of the road from category III to category II with a total length of 48.21 km. Other parts of this section, the direction of traffic flow coincide with the existing cover with partial slopes from the embankment in the area of rectification and curve. On this site, the project provides for the construction of 1 bridge. The bridge across the river Mukur at km 379 +100 has the length of 48.55 meters. Also on this site, the construction of 20 culverts of different diameters, 8 cattle passes, 2 rest areas are provided.
19. **Lot 6: km 418 – km 458 (v. Zhamansor):** This section includes the reconstruction of the road from category III to category II with a total length of 36.73 km. Other parts of this section, the direction of traffic flow coincide with the existing coverage with partial slopes from the embankment in the area of rectification and curve. On this site, the project provides for the construction of 1 bridge.

The bridge across the river Sagiz at km 429+000 has the length of 84,25 meters. The project also provides the construction of 13 culverts of different diameters, 1 cattle pass, 2 rest areas and 2 RMD.

20. **Lot 7: km 487 – km 504 (v. Dossor):** length of this road section is 15,392 km, type II, 2 lanes. This section includes the reconstruction of the road from category III to category II. Other parts of the site, the direction of traffic flow coincide with the existing coverage with partial slopes from the embankment in the area of rectification and curve. This section provides the construction of 12 culverts of different diameters and 2 cattle passes. The Contractor has completed the Works substantially as of 31 July 2019 (as the terms of Phase I Work).



Picture 2. Dossor Bypass way layout scheme, Phase II of Lot 7

21. The Engineer has issued the “Taking-Over Certificate” with effect of 31 July 2019 in accordance with Sub-Clauses 10.1 and 10.2 of General Conditions of Contract. Outstanding works and defects have been registered with the Taking-Over Certificate for the Contractor to expedite. The Contractor has completed remaining works as of 30.11.2019. Cumulative progress of works is 97.29% achieved vs 97.29% planned with 148.52% of elapsed time. The balance 2.71% is composed of “International Calls” and “Day Works” which have not been necessary to be implemented and it will adjust finally. 9 culverts will be constructed within Phase II works.

Table 1: Project Information Data (As of 30.06.2021)

No	Description	Contract			
		Lot 4	Lot 5	Lot 6	Lot 7
1	Contractor	“Shanghai Construction Group Co. Ltd.”	“Shanghai Construction Group Co. Ltd”	JV “Akkord / Akzhol Kurylys”	“Ant Insaat Maden Sanayi A.S.” JSC
2	Road Length (km)	39.80	48.20	36.74	Phase I: 15.39 Phase II: 5.52
3	Contract Amount (KZT)	9 819 136 480	9 396 291 820	7 421 155 010	Phase I: 3 177 195 256 Phase II: 2 378 137 587

4	Date of Contract Signing	20.07.2018	20.07.2018	10.07.2018	16.08.2017
5	Commencement Date	08.01.2019	08.01.2019	01.10.2018	20.12.2017 (Phase I) 04.12.2020 (Phase II)
6	Time for Completion (Days)	900 (790+110)	990 (880+110)	1064 (790+274)	Phase I : 540 Phase II : 300
		Initial 07.03.2021 Extended 25.06.2021 26.08.2021	Initial 05.06.2021 Extended 23.09.2021	Initial 29.11.2020 Extended 31.08.2021	Phase I 12.06.2019 Phase II 29.09.2021
7	Defects Liability Period	2 years	2 years	2 years	2 years
		(730 days)	(730 days)	(730 days)	(730 days)
8	No. and length of bridges	2 nos. 171.45 m	1 no. 48.55 m	1 no. 84.25 m	0
	No. and length of overpass	1 no. 42.2 m	0	0	0
	No. of culverts	20	20	13	Phase I : 14 Phase II : 9
	No. of RMD	1	0	2	0

2.2 Agreements (contracts) for the project implementation and management

22. CFR MID RK signed the contract with "NC "QazAvtoJol" JSC (QAJ) for the project management consulting services in accordance with requirement specifications acceptable for ADB and applicable under the legislation of the Republic of Kazakhstan. QAJ is fully staffed during the Project implementation. The responsible specialist for environmental and social safeguard measures conducts site audits and inspections, cooperates with CSC safeguard specialist in order to effectively manage the project in part of environmental plans implementation.
23. By decree of President of the Republic of Kazakhstan dated 26.12.2018 No. 806 "On measures on further improvement of state administration system of the Republic of Kazakhstan", in order to improve the efficiency of state administration system, the Ministry of Investment and Development of the Republic of Kazakhstan was reorganized by transforming it into the Ministry of Industry and Infrastructural Development of the Republic of Kazakhstan with handing over functions and powers: to National Economy Ministry of the Republic of Kazakhstan in the sphere of state policy formation on investment attraction and the Ministry of Foreign Affairs of the Republic of Kazakhstan in the sphere of state policy implementation on investment attraction.
24. The regional representative of the Employer is "NC "QazAvtoJol" JSC Atyrau branch. A list of main organizations and their environmental staff for this project and related to environmental protection measures (Environmental Safeguards), is given in the Table No.2 below.

Table 2. Organization list and specialists' contact information, related to the Project Environmental Safeguards (as of December 2020)

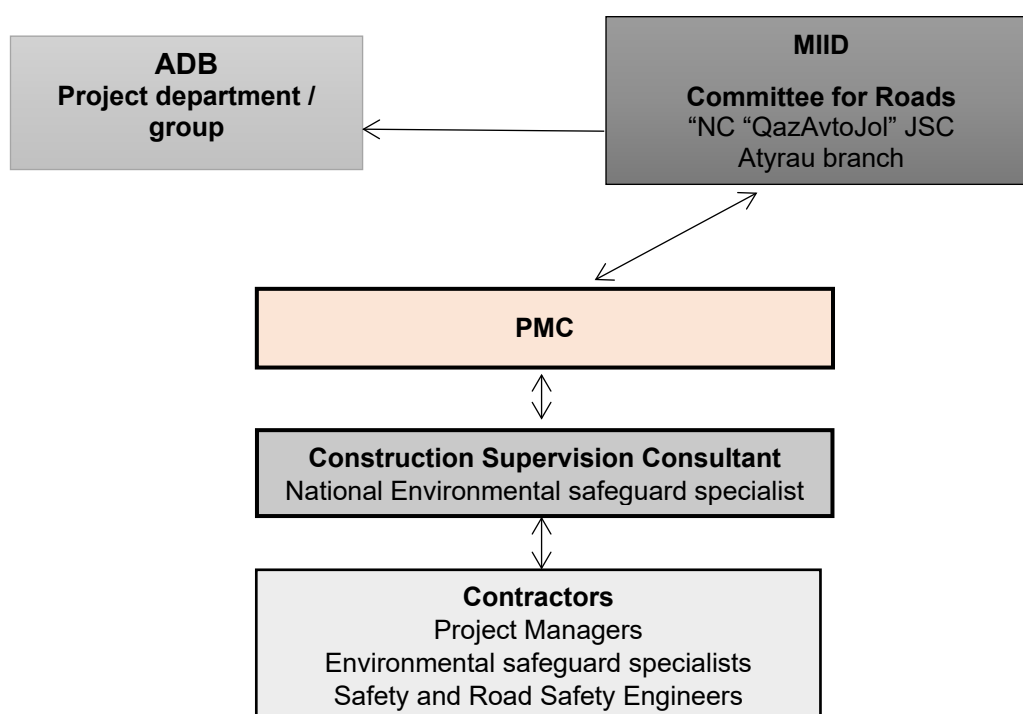
Organization name	Representative	Contact information
ADB Project department / group (Head quarter Manila)	Armine Yedigaryan Environmental specialist	ayedigaryan@adb.org
ADB office in RK	Malika Babadzhanova Environmental safeguard consultant ADB RETA 9541	mbabadjanova1.consultant@adb.org
Committee for Roads	Kasenov Nurtilek	Nur-Sultan city 010000 / Transport Tower / Kabanbay Batyr street 32/1 +7 705 226 07 16 n.khasenov@mid.gov.kz
"NC "QazAvtoJol" JSC Atyrau branch	Izbassov K. Branch Director	8 7122 29 06 77, 29 06 75 atyrau.info@kazautozhol.kz
CSC DONGSUNG ENGINEERING CO. LTD/ "ZS ENGINEERING " LLP	Imbarova Sara Environmental and social safeguards specialists	+7 701 362 36 12 atyrau_kns2@mail.ru
"Shanghai Construction Group Co." Lot 4	Satvaldinov A. Environmental specialist	+7 778 045 07 14 satvaldinov_azamat@mail.ru
"Shanghai Construction Group Co." Lot 5	Gulzhanat Zhantokova Environmental specialist	+7 777 298 88 44 g.zhk@bk.ru
Joint Venture "Akkord / Ak zhol kurylys", Lot 6		
"Ant Insaat Maden Sanayi A.S." Lot 7 Dossor Bypass, Phase II		

Table 3. Contractors' Contract Information

Contractor	Contract No.	Site length (km)	Contract signing date	Project commencement and completion date
Lot 4 "Shanghai Construction Group Co." (China)	004-ADB/CW-2018	39.80	20.07.2018	08.01.2019 26.08.2021
Lot 5 "Shanghai Construction Group Co." (China)	005-ADB/CW-2018	48.21	20.07.2018	08.01.2019 23.09.2021

Lot 6 JV “Akkord / Ak zhol kurylys” (Azerbaijan/ Kazakhstan)	006-ADB/CW-2018	36.74	10.07.2018	01.10.2018 31.08.2021
Lot 7 “Ant Insaat Maden Sanayi A.S.” (Turkey) Dossor Bypass, Phase II	007-ADB/CW-2017	15.392	16.08.2017	20.12.2017 29.09.2021
Total project length:		140.14		

25. There organization chart of interaction between the project structures is presented at Picture 3 below.



Picture 3. Organization chart of coordination of the project interaction

2.3 Project Activities during the Current Reporting Period

26. **Lot 4:** Wearing Course construction PK 74+00 - PK 122+00, PK 124+00 - PK 153+60, PK 200+00 - PK 311+60. Binder Course construction PK 0+00 - PK 50+00, PK 74+00 - PK 153+00, PK 200+00 - PK 397+00, PK 0+00 - PK 50+66 of bypass road. Upper Base Course construction PK 0+00 - PK 50+00, PK 74+00 - PK 155+00, PK 200+00 - PK 397+00, PK 0+00 - PK 50+66 of bypass road. Lower Base Course construction PK 0+00 - PK 50+00, PK 74+00 - PK 155+00, PK 200+00 - PK 398+00. Additional Base Course construction PK 0+00 - PK 50+00, PK 74+00 - PK 155+00, PK 200+00 - PK 397+00, PK 0+00 - PK 50+66 of bypass road. 19 new pipe culverts have been constructed. Carriageway concreting has been completed on Sagiz bridge. Approach slabs have been installed, removable slabs concreting has been completed on Nogaity bridge. Canting concreting has been completed on railway crossing overpass.

Table 4. The construction work progress status (as of 30.06.2021)

Contractor's name and site	Work activity	Unit	Totally by the Contract	Completed in the II half of 2019	Completed in 2020	Completed in the I half of 2021	% progress	Balance
Shanghai Construction Group Co.Ltd (section km 330-370) Lot 4 (Sagiz village)	Cost	KZT	8 828 754 266.7	1 822 959 385.6	3 477 140 818.39	432 837 84 7.92	53%	2 517 968 944.97
	Wearing Course	km	36.8	-	-	20.3	55%	16.5
	Binder Course	km	44.8	-	35	3.1	58%	6.7
	Upper Base Course	km	41.8	3.3	33.9	2.7	95%	1.9
	Lower Base Course	km	36.8	9.5	21.5	4.5	74%	1.3
	Sub-base	km	36.8	14.8	16.4	4.4	96%	1.2
	Roadbed	thou m ³	1 201	520.4	630.7	47.8	100%	3.2
	Culvert	no.	20	8	11	1	100%	-
Total work progress		%	100			53	47%	

27. During the reporting period mobilized personnel on Lot 4 site is given in the Table 5 below.

Table 5. Mobilized personnel on Lot 4 site

Item	January	February	March	April	May	June
Total number of employees	62	64	88	164	187	192
Number of Contractor's employees	40	42	57	115	127	135
Number of men / women	55 / 7	57 / 7	80 / 8	154 / 10	173 / 11	181 / 11
Foreign personnel	18	19	19	21	23	23
Local personnel (from project realization area)	24	24	29	37	52	59
From other regions of RK	20	21	40	106	109	110

28. **Lot 5:** During the reporting period the following work activities have been carried out: earthworks – 11.9 thousand m³, additional layer of SGM – 0.68 km, lower base course – 1.7 km, upper base course – 2.02 km, binder course of coarse-grained asphalt concrete – 3.09 km, wearing course of SMA-20 – 22.72 km, installation, waterproofing and backfilling of pipe at PK 41+50, waterproofing and backfilling of pipe at PK 45+46, waterproofing and backfilling of pipe at PK 49+80, installation of precast concrete bored piles on the bridge at PK 91+23.

**Table 6. The construction work progress status on Lot 5
 for the reporting period (as of 30.06.2021)**

Contractor's name and site	Work activity	Unit	Totally by the Contract	Completed in 2019	Completed in 2020	Completed in the I half of 2021	% progress	Balance
Shanghai Construction Group Co.Ltd (section km 370-418) Lot 5	Cost	KZT	8 446 782 180.62	2 478 938 530.92	3 129 874 341.85	674 725 17 1.68	56.5	2 163 244 136.17
	Wearing Course	km	48.2	0	0	22.7	47	25.5
	Binder Course	km	48.2	0	29.3	16.7	95	2.2
	Upper Base Course	km	48.2	0	32.2	13.9	96	2.1
	Lower Base Course	km	48.2	5.8	27.5	13.3	96	2.1
	Sub-base	km	48.2	13.3	28.5	3.6	96	1.8
	Roadbed	thou m ³	1 034	358.8	540.6	11.9	88	122.7
	Culvert	no.	20	1	16	3	100	0
Total work progress		%	100	-	-	56.5		43.5%

29. During the reporting period mobilized personnel on Lot 5 site is given in the Table 7 below.

Table 7. Mobilized personnel on Lot 5 site

Item	2021				
	February	March	April	May	June
Total number of employees	21	42	84	129	90
Number of Contractor's employees	12	19	22	80	42
Number of men / women	17/4	42/6	42/5	122/7	82/8
Foreign personnel	0	0	0	0	0
Local personnel (from project realization area)	7	7	8	15	9
From other regions of RK	14	14	34	114	81

30. **Lot 6.** Bypass road maintenance – levelling, dust control and hole patching are carrying out regularly. From the beginning of the year traffic of vehicles passes through the binder course. Construction of intersections and junctions, widening of road pavement have been executed for 80%.

31. **RMD Makat.** Executed activities related to the structural part such as top soil removal, fencing, foundation. Walling works are on progress on administrative building, checkpoint, material and equipment depot, boiler house. Erection of wall blocks has been started in sand depot. External

utilities (water pipe, sewerage, power, gas) works have been started. Currently work has been completed for 60%.

32. **RMD Atyrau.** The foundation of the partition of administrative building has been completed, vertical waterproofing of the internal partitions, backfilling of the sinuses and covering the bottom of floor with soil are ongoing. Installation of foundation blocks of the boiler house and preparation of trenches for the foundation of the heated parking are ongoing. Walling works are on progress on administrative building and boiler house. Now the first-floor walling works have been completed in administrative building. After in-situ belt concreting, the second-floor walling works have been started. At the moment, the administrative building walling works have been completed, the floor slabs of the second floor have been installed, and the internal finishing work of the first floor of administrative building is in process. The heated parking walling works have been completed and the gate is being installed.
33. 13 existing pipe culverts have been removed; 11 new pipe culverts have been installed. 2 new box culverts (included 1 cattle pass) have been installed. The existing beams and collars were dismantled on Sagiz bridge at PK 100 + 38.57. Rearing intermediate support body was done by a monolith. Precast concrete collar blocks were installed, and the middle part of collar and abutment stone were concreted. Rubber bearings were installed on abutment stones. In-situ sections between beams have been completed. Approach slab installation has been started on one side. Installation of metal elements broadening structure dimensions of carriageway with coating of metal structures by corrosion-resistant coating and construction of pavement of carriageway from hydrophobic concrete are in progress. At the moment, the work is carried out very slowly due to incomplete preparation of built-in parts, in-situ slabs of the pedestrian part and cones strengthening works on the abutment, as waterproof materials have not been purchased in full.

Table 8. The construction work progress status on Lot 6 for the I half of 2021
(as of 30.06.2021)

Contractor's name and site	Work activity	Unit	Totally by the Contract	Completed in the II half of 2019	Completed in 2020	Completed in the I half of 2021	% progress	Balance
Akkord / Akzhol kurylys Lot 6	Cost	KZT	6 669 640 276.85	2 126 055 705.80	1 882 028 546.27	0	55.89%	3 272 3 1 717.5
	Binder Course	km	36.7	5.0	31.7		100%	0
	Upper Base Course	km	36.7	5.1	31.6		100%	0
	Lower Base Course	km	36.7	15.0	21.7		100%	0
	Sub-base	km	36.7	15.8	20.09		100%	0
	Roadbed	thou m ³	854	436.4	300.5	44.214	94.03%	0
	Culvert	no.	13	8	5	0	100%	0
Total work progress		%	100				83.02%	16.98%

34. Number of involved personnel on Lot 6 site is presented in the Table 9 below.

Table 9. Involved personnel on Lot 6 site within January-June 2021 period

Item	April	May	June
Total number of employees	100	119	126
Number of Contractor's employees	66	85	81
Number of men / women	63/3	8/3	77/4
Foreign personnel	-	-	-
Local personnel (from project realization area)	-	-	-
From other regions of RK	-	-	-

35. **Lot 7:** Phase II – Dossor Bypass Way. Total length is 5.52 km. The Contractor has received an official access to enter to the site on 01.12.2020. During the reporting period, activities have been carried out as follows: earthworks – 263.82 m³, sub-base of SGM – 1.9 km – 34%, lower base course of crushed stone and sand mix – 1.8 km – 32%.

Table 10. The construction work progress status on Lot 7 (as of 30.06.2021)

Contractor's name and site	Work activity	Unit	Totally by the Contract	Completed in 2020	Completed in the I half of 2021	% progress	Balance
Ant Insaat Maden Sanayi Lot 7	Cost	KZT	2 123 337 131.63	96 252 650.79	917 150 097.26	47%	1 109 934 383.58
	Binder Course	km	5.51	0	0	0%	5.51
	Upper Base Course	km	5.51	0	0	0%	5.51
	Lower Base Course	km	5.51	0	3.36	61%	2.15
	Sub-base	km	5.51	0	3.71	67%	1.8
	Roadbed	thou m ³	302	57.9	210.7	89%	33.46
	Culvert	no.	9	0	6	66%	3
Total work progress		%				47%	53%

2.4 Description of Any Design Changes

36. During the reporting period there were design changes on Lot 6. The first change is regarding the cost of RMD construction and the second is the road structure change. For the first change, the Contractor proposed the amount KZT 48,936,500.40 in the tender for the construction of RMD in Atyrau. After completion of the Design for RMD in Atyrau, the Contractor asked the Engineer to consider and resolve the issue of allocating funds for the construction of RMD in Atyrau in the amount determined by the conclusion of the state expertise by his letter ref. no.: AA-243-2019 dated 29.11.2019.

37. The second change: The Engineer instructs the Contractor Lot 6, in accordance with the sub-clause of 3.3 [Instruction of the Engineer] of GCC, to change the additional base layer without

change the Contract Unit Price and Contract Completion Time. From the pavement activity “construction of additional layer of soil consolidated by cement with stabilizing additive” of the Contract, the part of “soil consolidated by cement with stabilizing additive” is deleted. The Contractor has raised argue with the matter to compensation the financial losses and/or extension of time against to the Engineer’s instruction on his letter ref. No.: DSE-AM-0862, dated 20.02.2019 to change the road structure by change “the material of additional base layer” and consequently change the thickness of lower sub-base layer (crushed stone and sand mix) increased by 5 cm. The Engineer provided numerous consultations to both Party to reach agreement as per the Contract Condition. Despite of numerous discussion the agreement has not achieved. Subsequently, the Contractor has referred his claims to the Dispute Board by the letter ref. No.: AA-006-2021 dated 11.01.2021.

38. The Dispute Board’s decision dated 30.03.2021: The claim of the Contractor Joint Venture “OJSC “Akkord Industry Construction Investment Corporation” and “Ak zhol kurylys” LLP” to the Employer the Roads Committee of the Ministry of Investments and Infrastructural Development of the Republic of Kazakhstan of its dissatisfaction with the decision of the Engineer on the dissatisfaction with the Engineer’s determination on the issue of evaluation and payment for works in BOQ-500-4, BOQ-700-2 and BOQ-700-1 under the Contract No. 006-ADB/CW-2018 dated 10.07.2018, the project: "Reconstruction of the Republican highway A-27 "Aktobe-Atyrau-border of the Russian Federation (to Astrakhan)" section km 418-458, Lot 6" (Loan No.3416-KAZ: CAREC Corridors 1 and 6 Connector Ro (Aktobe-Makat) Reconstruction Project (section km 418-458) Lot 6, Contract No. 006-ADB/CW-2018), is partially satisfied:

- a. In BOQ-500-4 of the Contract (item 4 of the BOQ-500), the volume of the Roadbed shall be reduced by 34,538 m³, from 675 908 m³ to 641 370 m³;
- b. In BOQ 700-2 of the Contract (item2 of the BOQ-700), the crushed stone and sand mixture with a volume of 28 961 m³ shall be included;
- c. In BOQ -700-1 of the Contract (item 1 of the BOQ-700), 106 694 m³ volume of an additional layer of soil reinforced with cement with a stabilizing additive shall be excluded and a sand-gravel mixture (SGM) with a volume of 106 694 m³ shall be included.

The changes will not have an adverse impact on the environment, as in the case of sub-paragraph a) of paragraph 38 there is a reduction in the impact on the volume of extraction from borrow pit and in the case of sub-paragraphs b) and c) the use of crushed stone and sand mixture and the replacement of the roadbed with SGM do not provide the use of borrow pit. The Contractor will purchase the materials from a local supplier. No EMP updating is needed.

2.5 Description of Any Changes in the Approved Construction Methods

39. During the reporting period, changes in construction methods have not been discussed.

3. THE ENVIRONMENTAL ACTIVITIES (ENVIRONMENTAL SAFEGUARDS)

3.1 General Description of Environmental Activities (Environmental Safeguards)

40. The Decree No.10 of the Chief State Sanitary Doctor of the RK dated March 5, 2021 “On making amendments and additions to the Decree of the Chief State Sanitary Doctor of the Republic of Kazakhstan” introduced zoning on the RK territory by level of infection and spread of Covid 19 disease. Since March of this year Atyrau region is in the “red zone” (high risk zone) of the spread of COVID-19 disease. Therefore, limitations on the number of mobilized personnel have been imposed on the sites.
41. The personnel transferred to work remotely includes Lot 4, Lot 5, Lot 6 and Lot 7 environmental specialists. These specialists were able to visit the sites periodically: to eliminate the Engineer's notes on the identified non-conformances during the audits conducted, as well as during instrumental measurements by the laboratory ~~with which agreements for quarterly industrial environmental monitoring were concluded.~~
42. Responsible persons of Contractors for environmental safeguards are shown in the Table 11 below.

Table 11. Environmental specialists of Contractors on the project site

Company	Position	Name	Job	Period
“Shanghai Construction Group Co.” Lot 4	environmental specialist	Satvaldinov Azamat	Fulfilment of obligations under the contract's ToR	Involvement permanently from September 2019
“Shanghai Construction Group Co.” Lot 5	environmental specialist	Zhantokova Gulzhanat	Fulfilment of obligations under the contract's ToR	Covers this position
JV “Akkord / Ak zhol kurylys”, Lot 6	environmental specialist	Zhantokova Gulzhanat	Fulfilment of obligations under the contract's ToR	Involvement permanently from 2019
“Ant Insaat Maden Sanayi A.S.” JSC, Lot 7 + Dossor bypass way				

43. According to the contractual obligations, the environmental specialists on the sites have ensured as far as possible the compliance with requirements of environmental aspects of the contract document, in particular the requirements of the General Conditions of Contract, such as 4.7. Setting out, 4.8. Safety Procedures, 4.13. Right of way and Facilities, 4.18. Protection of the Environment, 6.7. Health and Safety.
44. Due to the reality of the risks of COVID-19 spread, adjustments were made to the EMPs of all sites to ensure the implementation of COVID-19 pandemic prevention measures in the following site-specific plans: “Base Camp Management Plan”, “Health and Safety Plan”, “Emergency Response Plan”. The Contractors included appropriate measures to the HSPs from the Covid-19 Guideline provided during the ADB webinar (May 5, 2021).

45. Facilities ensuring protective and preventive measures, which arranged in the previous period, have continued their work on the sites. These facilities are responsible to monitor preventive measures and control the provision of personal protection equipment (masks, gloves, disinfectants, soap and detergent). They also monitor the quality of preventive and disinfection measures within the construction camps and construction sites. Safeguards specialists such as Health and Safety Engineers, medical staff on the site provided information to the workers with about importance of preventive measures and social distance. Boards and posters, Covid-19 guideline in languages that are applicable on the sites are hung out in accommodations and workplaces.
46. Since the second half of 2020 the PMC has implemented daily monitoring of statistics on provision of Contractors with personal protective equipment (masks, gloves, disinfectants and etc.), preventive measures and recorded facts of diseases. In order to collect and analyse information from the sites, a template of daily and weekly report of the HSP implementation was developed with the CSC and implemented. Safety specialists and medical staff on the sites were involved in this monitoring. All these measures enabled the Contractors to prevent the spread of pandemic COVID-19 on the sites. During the reporting period, no cases of COVID-19 were registered among the Contractors' staff. In this regard, the daily report was included to the Contractor's internal works, all information has been developed as the monthly template for the submission to the CSC and PMC.
47. Lot 4 concluded an agreement No.3 dated 10.02.2021 with "Akzhol-Service Atyrau" LLP for reclamation of base camp near to Mukur village. There were 2 base camps on this site, one of which left by previous contractor but it was not operated. The design of disturbed land during construction of base camp with an area of 6.0 ha in Mukur village of Kyzylkoga district of Atyrau region was approved by the Department of Land Relations, Architecture and Urban Development of Kyzylkoga district of Atyrau region. The environmental emission permit No. KZ70VCZ00881540 dated 29.04.2021 was received from the Natural Resources and Environmental Management Department of Atyrau region for the design of disturbed land during construction of base camp with an area of 6.0 ha. All reclamation works have been completed and the land has been handed over to Kyzylkoga District Akimat.
48. Agreements concluded for IEM:
- LOT 4: - "EcoNormative" LLP agreement No.1 dated 11.05.2021 (water, air);
 - LOT 5 and LOT 6 - "EcoNormative" LLP agreement No.211/3/AZhK dated 04.07.2019 and "National center of expertise" agreement for noise and vibration No.561 dated 22.05.2020, they were prolonged by 31.12.2021.
 - LOT 7 - "EcoNormative" LLP agreement No.211/3/AZhK dated 04.07.2019, it was prolonged by 31.12.2021.
49. Environmental emission permit No. KZ82VCZ00864640 dated 26.03.2021 was obtained for Lot 7. The conclusion of state environmental expertise was obtained for the EIA section with activity consequence management section to the mining plan for clay minerals extraction on the borrow pit No.2 at PK 494+500 right hand side of the project road at 160 m in Makat district of Atyrau region. There is a license for extraction of commonly occurring minerals No.60/2020 dated 02.02.2020 and valid until 02.06.2022.

Table 12. List of compliance activities with the EMP within January-June 2021 period

Work item	Lot 4	Lot 5	Lot 6	Lot 7
Contractor's industrial environmental monitoring (IEM)	<p>Instrumental measurements have been carried out in May:</p> <p>air measurements at the Asphalt plant, Sagiz river, Nogaity river and construction site.</p> <p>radiation background measurements at the construction site on km 342+100 and km 343+600. 28.05.2021</p> <p>surface water pollution measurements at Nogaity river.</p> <p>IEM laboratory report has not been submitted.</p> <p>The following documents were submitted to the Engineer: monthly reports for February, March, April, May and semi-annual report of Lot 4 environmental specialist, which include data and test reports of instrumental measurements.</p>	<p>Instrumental measurements have been carried out in May:</p> <p>air pollution level</p> <p>surface water pollution at Sagiz river and Nogaity river</p> <p>radiation background measurements</p> <p>Data about test reports of instrumental measurements is provided in the semi-annual report of Lot 5 environmental specialist.</p> <p>Laboratory report has not been submitted.</p>	<p>Instrumental measurements have been carried out in May:</p> <p>air pollution level measurements : Asphalt plant, railway dead-end and construction sites.</p> <p>Noise and vibration measurements have been conducted in June.</p> <p>Laboratory report about these measurements has not been submitted.</p> <p>Test reports of these measurements are provided in the semi-annual report of Lot 6 environmental specialist.</p>	<p>Instrumental measurements have been carried out in April, May and June:</p> <p>air pollution level</p> <p>radiation background measurements have been conducted in April, May and June.</p> <p>Noise and vibration measurements have been conducted in June at the Asphalt plant, laboratory, workplaces of road equipment at the borrow pit during operation.</p> <p>Laboratory report about these measurements has not been submitted.</p> <p>Test reports of these measurements are provided in the semi-annual report of Lot 7 environmental specialist.</p>

<p>Monitoring of EMP implementation</p> <p>Inspection / audit</p>	<p>The Engineer conducted environmental audit on 31.05.2021. Based on audit results, the Contractors' environmental specialist was provided with feedback to eliminate the identified violations in the working order:</p> <ol style="list-style-type: none"> 1. Storage area of bitumen in big bags has local contamination as a package is damaged; 2. Attention is paid for ensuring safety on the road. Installation of movable signs, signal beacons on the dangerous sites; 3. To submit EIM laboratory report to the Engineer; 4. To apply for a design borrow pit permit as the procured material is not sufficient to complete the construction work quantities. 	<p>The Engineer conducted environmental audit on 28.05.2021. Based on audit results, the Contractors' environmental specialist was provided with feedback:</p> <ol style="list-style-type: none"> 1. There is a high dustiness on the site. To increase the frequency of dust control; 2. Borrow pits are not used due to failure to obtain extraction permit. Material is used from Lot 6. To keep records of soil quantity; 3. To submit EIM laboratory report to the Engineer. 	<p>The Engineer conducted environmental audit on 26.05.2021. Based on audit results, the Contractors' environmental specialist was provided with feedback:</p> <ol style="list-style-type: none"> 1. To submit EIM laboratory report to the Engineer; 2. To notify the Engineer in advance about forthcoming instrumental measurements; 3. To ensure compliance with safety rules on the work site of RMD Makat. 	<p>The Engineer conducted environmental audit on 25.05.2021. Based on audit results, the Contractors' environmental specialist was provided with feedback:</p> <ol style="list-style-type: none"> 1. To submit the Contractor's environmental specialist's monthly report about implementation of EMP activities to the Engineer; 2. To submit EIM laboratory report to the Engineer.
<p>Consultations for environmental specialists</p>	<ul style="list-style-type: none"> ✓ Documenting the work of environmental specialists on the sites, keep records and preparation of reports about EMP activities; ✓ Report preparation and data structuring 			

50. During the reporting period, all sites have been inspected by the CSC responsible staff. Environmental audit for elimination of previously issued non-compliances was conducted (see Table 13 below). Observations of the construction process at Lot 4, Lot 5, Lot 6 and Lot 7 sites related to environmental protection and EMP implementation on the sites were also carried out. The Engineer also conducted an audit of internal documents and permits for borrow pits, special water use. This audit showed that all sites have permits for special water use valid till 31.12.2021. During the reporting period, the Contractors did not submit the IEM reports conducted in the second quarter of the reporting period due to the late receipt of report from the laboratory that implemented the IEM. In the first quarter, the sites were not able to arrange for laboratory specialists to come and conduct instrumental measurements due to the COVID-19 quarantine restrictions imposed in Atyrau region.

3.2. Site audit (site inspection)

51. During the reporting period the Engineer carried out site inspections in order to check the implementation of EMP and HSP activities in period from 25.05.2021 to 31.05.2021. Results of inspection are shown in Table 13 below.

Table 13. Information and conclusion summary of site inspections (May 2021)

Indicator code	Title and main moments	Lot 4	Lot 5	Lot 6	Lot 7
D1	EMP and environmental attachment plans	In progress on the site. No corrections and changes.		EMP was submitted and agreed with CSC on 15.12.2020	
		Industrial environmental monitoring was carried out by an independent laboratory, instrumental measurements have been conducted in the 2 quarter in May.	Industrial environmental monitoring was carried out by an independent laboratory, instrumental measurements have been conducted in the 2 quarter in May.	Industrial environmental monitoring was carried out by an independent laboratory, instrumental measurements have been conducted in the 2 quarter in May and June.	Industrial environmental monitoring was carried out by an independent laboratory, instrumental measurements have been conducted in the 2 quarter in April, May and June.
D2	Availability of Health and Safety Plan (HSP), including of corrective actions: measures for non-proliferation and prevention of Corona virus pandemic COVID-19.	A medical worker is assigned as responsible for the prevention of COVID 19. Disease prevention posters are hung on in the accommodations. There are warning pictograms in the base camps. Hand treatment places are arranged and there are schedules for cleaning and treatment of the office, canteens and accommodations in the base camps. Activities were included into HSP from COVID 19 guideline (ADB webinar, April 2021). Emergency response facilities for pandemic COVID 19 and other infectious diseases. Lectures were held for staff of Lot 4, Lot 5 and Lot 6.			
D3	Availability of Emergency plans and including of corrective actions	There is the plan on the site. Instructions were developed fully. Effective communication was arranged with the local health care department, the contact numbers to call in case of emergency situation are hung out on the visible and accessible places.			
I1	Readiness and availability of resources of medical facility	The medical facility is equipped fully with necessary resources. The unlimited supply of PPE (medical masks, gloves, antiseptics) and disinfectants is available and maintained. There is 1 local medical worker in the staff. Medical worker knows about the algorithm of actions in case of emergency situation, there are registration books of temperature	There is a medical facility and medical worker. The provision with medicines is satisfied. The unlimited supply of PPE (medical masks, gloves, antiseptics) and disinfectants are provided. There is a box for the isolation of patients before sending them to hospital.	The medical facility is equipped fully with necessary resources. The unlimited supply of PPE (medical masks, gloves, antiseptics) and disinfectants is available and maintained. There are 2 medical workers in the staff. Medical worker knows about the algorithm of actions in case of emergency situation, there are registration books of temperature	The medical facility is equipped fully with necessary resources. The unlimited supply of PPE (medical masks, gloves, antiseptics) and disinfectants is available and maintained. There are 2 medical workers in the staff. Medical worker knows about the algorithm of actions in case of emergency situation, there are registration books of

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		measurements, the cleaning schedule of rooms in the camp with disinfectants is being checked. There are a box and special isolation kits to isolate viral patients before sending them to hospital. The canteen has special equipment for heat treatment of canteen tools.		measurements, the cleaning schedule of rooms in the camp with disinfectants is being checked.	temperature measurements, the cleaning schedule of rooms in the camp with disinfectants is being checked. There are 5 quartz lamps. Registration book of quartz treatment is maintained.
I2	Sanitary and hygienic conditions of the base camps, canteens, accommodations, common areas and sanitary facilities, provision with soap and detergents	The dormitories are being cleaned in due course (2 times a day with disinfectants). The quality of work of service staff is controlled by the medical worker. This worker also gives instructions how to clean and treat the rooms with disinfectants.	There is an sufficient supply of disinfectants in the dormitories. Service staff follow the frequency of cleaning facilities and treatment of tables and furniture. Remarks for the canteen about its failure to follow the order of cleaning and treatment of facilities and instruments / tools have been eliminated. Instructions how to wash and treat tools and dishes.	The dormitories are being cleaned in due course (2 times a day with disinfectants). The instructions given earlier to provide the necessary number of service personnel have been followed. The quality of work of service staff is controlled by the medical worker.	The dormitories are being cleaned in due course (2 times a day with disinfectants). The quality of work of service staff is controlled by the medical worker. This worker also gives instructions how to clean and treat the rooms with disinfectants.
P1	Medical worker's knowledge about algorithm of actions when detecting symptoms of coronavirus COVID-19	Satisfactory	Satisfactory	Satisfactory	Satisfactory
P3	Recommendations, instructions, remarks for non-conformances	1. Storage area of bitumen in big bags has local contamination as a package is damaged;	1. There is a high dustiness on the site. To increase the frequency of dust control;	1. To submit EIM laboratory report to the Engineer; 2. To notify the Engineer in advance about	1. To submit the Contractor's environmental specialist's monthly report about

		2. Attention is paid for ensuring safety on the road. Installation of movable signs, signal beacons on the dangerous sites; 3. To submit EIM laboratory report to the Engineer; 4. To apply for a design borrow pit permit as the procured material is not sufficient to complete the construction work quantities.	2. Borrow pits are not used due to failure to obtain extraction permit. Material is used from Lot 6. To keep records of soil quantity; 3. To submit EIM laboratory report to the Engineer.	forthcoming instrumental measurements; 3. To ensure compliance with safety rules on the work site of RMD Makat.	implementation of EMP activities to the Engineer; 2. To submit EIM laboratory report to the Engineer.
		General recommendations for all Lots: <ul style="list-style-type: none"> ✓ to keep submission date of IEM reports, environmental specialist's reports (monthly, quarterly, semi-annual); ✓ to provide photos of measurement and sampling activities with date in the laboratory reports; ✓ to control production area of construction camp: local pollution, temporary storage of waste: tyres, rags, used oils and other waste; ✓ to control dust on the sections where a high dustiness; ✓ to arrange and carry out trainings according to Emergency Response Plan, Health and Safety Plan 			
EE1	Negative manifestations by the local population	None			

D – documents, plans and etc., I – infrastructure on the site, P – process, actions, EE – external environment

3.3. Tracking of issues (Based on Non-conformance Notices)

52. During audits conducted in the first half of 2021 the ES of CSC defined remarks and non-conformances as follows:

Table 14. Information on tracking the implementation of recommendations made by CSC ES for solving of identifies non-conformances

Site Date of visit	Non-conformance and instruction for elimination	Elimination status as of June 2021
Lot 4	Storage area of bitumen in big bags has local contamination as a shipping bag is damaged.	On 10.05.2021 a special company removed contaminated soil, take off packages (big bags) of bitumen and powder, also tyres and solid waste.
	Recommendations to Contractor: <ul style="list-style-type: none"> To submit IEM laboratory report for the second quarter to the Engineer; Attention is paid for ensuring safety on the road. Installation of movable signs, signal signs on the dangerous sites; To apply for a design borrow pit permit as the procured material is not sufficient to complete the construction work quantities. 	
Lot 5	There is a high dustiness on the site observed. To increase the frequency of dust suppression and control.	Water trucks have been added. The frequency of dust suppression and control is increased.
	Recommendations to Contractor: <ul style="list-style-type: none"> To submit IEM laboratory report for the second quarter to the Engineer; Borrow pits are not used due to failure to obtain extraction permit. Material is used from Lot 6. To keep records of soil quantity. 	
Lot 6	Work safety measures and requirements are not being followed on the work site of RMD Makat. Work at height is being carried out without PPE.	Safety specialist on the site conducted a training for all employees working at height. Safety and Health rules compliance on the site is being monitored.
	Recommendations to Contractor: <ul style="list-style-type: none"> To notify the Engineer in advance in written about forthcoming instrumental measurements to ensure the observance of instrumental measurement process; To submit EIM laboratory report to the Engineer. 	
Lot 7	No non-conformance	
	Recommendations to Contractor: <ul style="list-style-type: none"> To submit the Contractor's environmental specialist's monthly report about implementation of EMP activities to the Engineer; To submit EIM laboratory report for the second quarter to the Engineer. 	

53. The environmental specialists of Contractors pay more attention on sites to comply with the schedule for dust control on sections where intensive construction activities and to meet submission date of monthly, semi-annual and IEM reports.

54. According to the registration book of complaints and appeals on Lot 4, Lot 5, Lot 6 and Lot 7, there were no appeals or complaints about non-compliance on environmental safeguards during the reporting period. Since the beginning of the project up to June 30, 2021 there have not been complaints or appeals from population on the sites. There are boxes for appeals installed at the sites and in the village akimats. The removal of boxes contents is carried out weekly by commission with act.
55. During the reporting period, there was 1 major non-conformance of environmental safeguards on Lot 4 site: local contamination within storage area of bitumen in big bags. There was 1 minor non-conformance regarding the site dustiness on Lot 5 site. Non-conformances were not recorded on Lot 6 and Lot 7.
56. The Table 15 below provides information on tracking environmental issues within reporting period since the beginning of the project. The Table 15.1 shows data for this reporting period.

Table 15. Summary on tracking environmental issues for the current period since the beginning of the project on Lot 4, Lot 5, Lot 6 and Lot 7

Total number of issues on the project	23
Number of open issues	0
Number of closed issues	23
Solving Percentage	100%
Open issues during the reporting period	0
Closed issues during the reporting period	1*

** regarding area contamination on Lot 4*

Table 15.1 Data for the reporting period (1st half of 2021)

Total number of issues on the project	2
Number of open issues	0
Number of closed issues	2
Solving Percentage	100%
Open issues during the reporting period	0
Closed issues during the reporting period	2*

** - on Lot 4: contamination of temporary storage area by bitumen spills and on Lot 5: site dustiness;*

57. If divide into category non-conformances identified during the reporting period, there was 1 significant non-conformance on Lot 4: contamination of temporary bitumen storage area of bitumen in package. The package was damaged and a bitumen spill on the ground was recorded on the area. There was 1 minor non-conformance regarding the site dustiness on Lot 5. It was eliminated immediately. There are no non-conformances on Lot 6 and Lot 7 observed.

3.4 Trends (general directions)

58. During the reporting period, monitoring and audits of construction sites did not reveal any complaints from the public regarding non-compliance with environmental safeguards. Non-conformances were eliminated quickly by the Contractors on all sites. Corrective actions were implemented immediately and written reports with photos of the results of taken actions were provided. Generally, there is a positive trend in timely response to elimination of non-conformances and violations on Lot 4, Lot 5 and Lot 6. There was not non-conformance on Lot

7. The remote work of environmental specialists with periodic site visits ensured the necessary monitoring and control of the implementation of EMP activities.

3.5 Unforeseen environmental impacts or risks

59. During the reporting period, COVID-19 is viewed as an unanticipated impact and risk to the community and workers. Contractors' personnel wear mask, gloves, helmets and working wear, but not all the time. CSC advised the Contractor to monitor its workers on wearing the full set of PPE.
60. The Contractors developed Occupational Health and Safety Plan as part of its SSEMP which includes, inter alia, corresponding measures on prevention of the spread of COVID-19. The Contractor's SSEMP also includes Emergency Management Plan. This plan includes activities according to the instructions of the district's sanitary and epidemiological services.

4. ENVIRONMENTAL MONITORING RESULTS

4.1. General monitoring information conducted during the current period

61. The main applicable ambient air quality standards include:

- hygienic regulations of the Republic of Kazakhstan (maximum allowable concentrations (MAC) of pollutants in the ambient air of settlements according to Order No.168 of the Minister of National Economy of the Republic of Kazakhstan dated February 28, 2015);
- Ambient air quality regulations according to the EU Directive 2008/50/EC (Ambient air quality and cleaner air for Europe);
- WHO Recommendations on Ambient Air Quality (2005) and additional WHO recommendations and assessments related to atmospheric air pollutants.

62. Ambient air quality impacts are subject to stricter criteria than those specified in the EHS Guidelines. According to the national standards, an impact of minor intensity is an impact associated with an increase in air pollutant concentration less than 10% of the MAC, while as a general rule, the EHS Guidelines propose a level of 25% of the applicable air quality standards in order to preserve the possibility for the further sustainable development in this air basin in the future.

63. The main regulatory and methodological documents that guided the work on dosimetric control on the sites are:

- SETORB-2019 "Sanitary and epidemiological requirements for ensuring radiation safety". Order of the Ministry of Health of the Republic of Kazakhstan No.KR DSM-97 dated 26.06.2019.
- "Sanitary and epidemiological requirements for ensuring radiation safety" approved by the order of the National Economy Ministry of the Republic of Kazakhstan No.155 dated 27.02.2015.

64. The main regulatory and methodological documents that guided the work on noise and vibration monitoring are:

- Order of the Minister of National Economy of the Republic of Kazakhstan dated 16.08.2017 No.611 "On approval of Hygienic regulations for physical factors affecting humans" dated February 28, 2015 No.169;
- "Sanitary and epidemiological requirements for ensuring radiation safety" dated 27.02.2015 No.155;
- GOST 31319-2006 (EH-14253:2003) Vibration. Total vibration measurement and assessment of its affect to human;
- GOST 12.1.0.12-90 Vibration safety;
- GOST 12.1.003-83 Noise. General safety requirements;
- MCN 2.04-03-2005 Protection from noise;

65. According to the Guideline of World Health Organization (WHO), 1999, threshold values of noise in residential areas are not applicable because there are no residential areas in the close vicinity of the project. According to the Guidelines of the International Finance Corporation "Environment, Health and Safety Guidelines", the MAL of noise for construction areas is 85 dBA and a peak (instantaneous) noise is not higher 140 dBA, and for residential areas is 70 dBA. Hygienic Standard defines that MAL of noise at construction areas is 80 dBA and for operator's work in laboratory, Asphalt plant is 90 dBA, and the MAL at residential areas is 60 dBA. The national standard is used for this report because it is more demanding for the meaning of MAL.

66. To carry out industrial environmental monitoring on the construction sites, Lot 4 concluded an agreement with "Econormative" LLP No.1 dated 11.05.2021, Lot 5 concluded an agreement with "EcoNormative" LLP, Agreement No.211/3/AZHK dated 04.07.2019 and extended for 2021. Lot

6 concluded an agreement with “Analytical Laboratory for Environmental Protection” LLP, Agreement No.17/19 dated 17.01.2019 and with “EcoNormative” LLP, Agreement No.211/3/AZHK dated 04.07.2019, also extended for 2021. All companies mentioned above have the accreditation confirming the conditions necessary to conduct the measurements in the assigned laboratory activities: conduct analytical monitoring of pollutants in the working zone, air and sources of air emissions, surface, natural water, as well as the analysis of the soil and physical factors.

67. Laboratory activities are regulated by guiding and regulatory documents in the field of environmental protection, sanitary and hygienic regulations, requirements, lists of maximum allowable concentrations, approximate safe impact levels, maximum allowable discharges and emissions of harmful substances, valid within the Republic of Kazakhstan. The industrial monitoring activities were executed in accordance with the Environmental Code of the Republic of Kazakhstan No.212-III dated January 9, 2007. The Contractors carried out the initial monitoring in accordance with the sampling and measurement points approved by the CSC Engineer.
68. On Lot 4, Lot 5, Lot 6 and Lot 7, instrumental measurements and laboratory surveys were carried out on the construction workplaces according to the EMP in the second quarter of 2021. Measurements have not been conducted in the first quarter as site visit was restricted due to Covid 19 quarantine measures. Based on the laboratory survey reports, conclusions on the environmental impact and the need for mitigation measures were made.
69. Road reconstruction (construction activities) in accordance with Sanitary Rules No.237 dated 20.03.2015 is not classified. Unclassifiable facilities according to the Environmental Code of the Republic of Kazakhstan belong to category IV. Construction camp at the time of construction season is classified as III hazard class according to sanitary rules, and category II according to the Environmental Code of RK.
70. The environmental specialists on the sites, who work remotely and sometimes visit the sites, make internal record, prepare their monthly, quarterly and semi-annual reports and submit these reports in accordance with the requirements established by the authorized bodies in the field of environmental protection based on the Environmental Code of RK (Article 133, Recording and Reporting on Industrial Environmental Control). All environmental specialists did not submit the IEM laboratory reports, they only attached instrumental measurement reports to their quarterly reports addressed to the Engineer.

4.1.1 Environmental measurements on Lot 4 site

71. In the second quarter of 2021 the complex of industrial environmental monitoring activities included the followings:
- air monitoring within the construction camp and construction workplaces;
 - measurements of industrial emissions from controlled sources;
 - general chemical analysis of surface water;
 - radiation background monitoring

4.1.1.1 Soil

72. A soil survey within the construction site in the scope of environmental monitoring was conducted by the Contractor’s environmental specialist to identify possible areas contaminated by oil products resulting from the Contractor’s production and economic activities. During the Engineer’s site monitoring, contamination by bitumen spill due to a package damage was found within the construction camp of Lot 4. This contamination was eliminated immediately.

73. According to test reports of instrumental measurement of radiological indicators at the Asphalt Plant, construction site, Sagiz bridge and Nogaity bridge, for the second quarter of 2021 the level of contamination by radioactive substances was determined within 0.034 - 0.074 mc³ per hour against the established limit not more than 0.20 mc³ per hour. The results of radiation background monitoring show that the environmental condition is satisfactory.
74. During the reporting period, the Contractor did not provide borrow pit data. There is also no such information in the environmental specialist's reports for the first half of the year. Extraction permits for borrow pits have not been extended. This process is the work of environmental specialist Lot 4 as it is easier for a local company to obtain permits than for a foreign, which will delay in obtaining permits.

Table 16. Lot 4 borrow pit information for the first half of 2021, January-June

		Site	No. of license or permit for exploration	No. of license or permit for extraction Date received	Area (ha)	Reserves approved by Interregional Commission on Mineral Reserves (m ³)	Extracted volume from approved reserves as of 30.06.2021 (m ³)
Shanghai Construction Group "Aktobe-Makat" site km 330-370 Lot 4	2	Project borrow pit No.6		No.36/2020 dated 27.02.2020	27.2	No.221 dated 14.04.2016 1 645 400.00	
	3	Additional borrow pit No.1	No.273-EL dated 26.08.2019	No.50/2020 dated 02.06.2020	8.77	No.442 dated 24.09.2019 172 134.00	Site not developed. Sagiz village territory. Not extracted
	4	Additional borrow pit No.3	No.274-EL dated 04.05.2019	No.51/2020 dated 02.06.2020	9.9	No.451 dated 24.10.2019 277 200.00	
	5	Additional borrow pit No.4	No.143-EL dated 18.04.2019	No.52/2020 dated 02.06.2020	5.07	No.443 dated 24.09.2019 141 438.00	
	6	Additional borrow pit No.5	No.147-EL dated 27.06.2019	No.53/2020 dated 02.06.2020	5.21	No.445 dated 24.09.2019 145 911.00	not extracted
	7	Additional borrow pit No.6	No.147-EL dated 27.06.2019	No.54/2020 dated 02.06.2020	4.94	No.445 dated 24.09.2019 138 432.00	

4.1.1.2 Water quality

75. As sources of construction and drinking water, water is used from water towers located in Dossor, Makat villages, which are serviced by "Temirzholtzhylyu-Atyrau" LLP. During construction works, water is used for household and industrial needs. Water control is not provided, because drinking and construction water supply is provided from culvert, which is located in Makat village and serviced by PSE "Atyrau Su Arnasy". The drinking water quality meets sanitary and epidemiological requirements.
76. Possible water bodies that may be affected by the construction works are 2 rivers: Sagiz and Kenzhaly. The main regulatory and methodological documents that guided during monitoring of the natural water in Sagiz and Kenzhaly rivers are: RD No.209 dated March 16, 2015. Water sampling was conducted in accordance with ST RK GOST R 51592-2003 "Water. General requirements for sampling". The analyses were conducted in accordance with the approved standards. Water sampling was carried out within the reporting period in the second quarter on 28.05.2021. At the date of sampling from Sagiz and Nogaity rivers, they were low-water, water in some places was in the floodplains of the rivers from where the samples were taken for research. The results of the measurements were compared with MAC. No construction works were carried out during this period.

77. According to the laboratory data of the Measurement reports (Appendix 1), the indicator of chemical oxygen uptake in the samples from Sagiz and Nogaity rivers exceeds the permissible limit. Thus against to the maximum permissible limit 30.0 mg O₂/dm³, there is 48.3 mg O₂/dm³ in the samples from Sagiz river and it was 51.3 mg O₂/dm³ in the previous period. There is 42 mg O₂/dm³ in the samples from Nogaity river and it was 54.1 mg O₂/dm³ in the previous period. The exceedance is less for this reporting period than the previous. The high salt content may indicate the possible presence of toxic metal ions, along with harmless compounds, in the water that have entered as a result of economic activities of other individuals and legal entities within the project area. As the Contractor strictly controls any impacts of its personnel (prohibition of car wash near rivers, prohibition of any unauthorized activities of environmental specialist in the vicinity of water sources and other negative impacts), the Contractor is not a source of contamination of these water resources.
78. Total hardness in the samples taken from Sagiz river within 19.6 mg-eq/dm³ that is higher than the previous period which was 13 mg-eq/dm³. Data for this reporting period characterizes that water from Sagiz river is very hard, as exceeding MAL 12.0 mg-eq/dm³. This exceedance indicates the influence of groundwater which hardness is much higher than in surface water, as well as due to seasonal fluctuations of hardness values. However, this slight excess in hardness does not affect the external environment of the project, in particular the watering of animals. The samples taken from Nogaity river within 9.6 mg-eq/dm³ for the reporting period, and in the previous period it was 14.7-16.0 mg-eq/dm³.

4.1.1.3 Air quality

79. Air pollutant levels on Lot 4 site were measured on 21.05.2021 at Asphalt plant, km 342+00, km 343+600, Sagiz bridge and Nogaity bridge. The following indicators were measured: Carbon monoxide (CO), Nitrogen monoxide (NO), Nitrogen dioxide (NO₂), Sulphur dioxide (SO₂), Hydrocarbons C₁₂-C₁₉, Hydrogen sulfide, Dust (suspended solids). The laboratory measurement data according to test reports are attached in Appendix 2.
80. Analysis of test reports of industrial environmental monitoring of air quality conducted at the road reconstruction sites showed that instrumental measurements carried out in the second quarter of 2021 the highest maximum and average concentrations of pollutants for all analyzed substances do not exceed the sanitary and hygienic regulations for maximum allowable concentrations (maximum one time MAC) established for populated areas. Average concentrations of nitrogen dioxide, nitrogen oxide, carbon monoxide on the surveyed territory are within the permissible limits. Concentrations of inorganic dust 70-20% SiO₂ do not exceed the established limits in industrial and residential areas.

4.1.2 Environmental measurements on Lot 5 site

81. Lot 5 concluded an agreement for the IEM with "EcoNormative" LLP No.211/3/AZHK dated July 04, 2019 and it was extended by 31.12.2021. The laboratory has conducted instrumental measurements on 21.05.2021 on 4 points of Asphalt plant about 300 meters from external parameters: North, South, East and West and on the site at km 342+100 and km 343+600. Instrumental measurements of air pollution level have been carried out on 26.05.2021 at Sagiz bridge and Nogaity bridge. Excavation works have not been executing at borrow pits due to the absence of permit, therefore measurements of air pollution level have not been implemented.

4.1.2.1 Noise and Vibration

82. Noise and vibration level measurements on the site have not been conducted for the reporting period due to the restriction of access to the site. The environmental specialist on the site and HSE specialists conducted internal monitoring on compliance measures: the use of personal

protective equipment (ear plugs, headphones), regulated additional breaks and mandatory preliminary and periodic medical checks.

4.1.2.2 Soil

83. There are no instrumental measurements of soil contamination on this site according to the EMP. There is no permanent placement of production waste on the enterprise territory, temporary storing of production and consumption wastes is conducted in compliance with necessary requirements that exclude impact on the soil cover.

In order to reduce the impact on land resources, the Contractor executes the followings:

- compliance with the technological work procedure;
- fuelling of machinery is carried out on designated areas;
- in order to mitigate dust on workplaces, dust control activities are conducted;
- vehicles traffic is passed through the existing roads and temporary bypass roads with a hard pavement, which reduces the impact of ongoing activities.

84. According to test reports of instrumental measurement of radiological indicators carried out on 21.05.2021 and 26.05.2021 at the construction site PK 121, PK 136, Asphalt Plant, Sagiz bridge and Nogaity bridge, the level of contamination by radioactive substances was determined within 0.034 - 0.074 mc³ per hour against the established limit not more than 0.20 mc³ per hour. The results of radiation background monitoring show that the environmental condition is satisfactory.

85. Soil excavation from borrow pits has not been executed within the reporting period as extraction permits were not extended. The Table 17 below includes data as of June 30, 2021.

Table 17. Lot 5 borrow pit information for the first half of 2021, January-June

Road site and Main Contractor	No	Site	Common mineral resources	No. of license or permit for exploration	No. of license or permit for extraction Date received	Area (ha)	Reserves approved by Interregional Commission on Mineral Reserves (m ³)
1	2	3	4	5	6	7	8
“ Ak zhol kurylys” LLP, “ Aktobe-Makat” site km 370-418 Lot 5	1	Borrow pit No.7	Soil	No.368-EL dated 04.11.2019	62/2020 dated 04.06.2020	5.05	No.475 dated 11.02.2020 141 500.00
	2	Borrow pit No.10	Soil	No.144-EL dated 26.06.2019	55/2020 dated 02.06.2020	4.87	No.444 dated 24.09.2019 136 260.00
	3	Borrow pit No.11	Soil	No.145-EL dated 26.06.2019	56/2020 dated 02.06.2020	4.51	No.446 dated 24.09.2019 126 213.00
	4	Borrow pit No.12	Soil	No.145-EL dated 26.06.2019	57/2020 dated 02.06.2020	3.87	No.446 dated 24.09.2019 108 200.00
	5	Borrow pit No.13	Soil	No.146-EL dated 26.06.2019	58/2020 dated 02.06.2020	4.79	No.446 dated 24.09.2019 108 200.00
	6	Borrow pit No.3	Soil		33/2020 dated 27.02.2020	27.3	No.221 dated 14.04.2016 986 900.00
	7	Borrow pit No.4	Soil		34/2020 dated 27.02.2020	26.2	No.221 dated 14.04.2016 965 700.00

4.1.2.3 Water quality

86. Temporary watercourses occur only during heavy rain or heavy snow melt within Lot 5 project territory. Surface water resources are only the flow of Mukur river coming from Aktobe region,

also local flow of small temporary watercourses and small rivers of the second and third type. An agreement No 211/3/AZHK dated 04.07.2019 was concluded with “EcoNormative” LLP for quarterly IEM. According to the EMP, Sagiz and Nogaity rivers are controlled. Water monitoring/sampling for the second quarter was on 28.05.2021. According to the data in Appendix 7 based on test reports of instrumental measurements, the indicator of chemical oxygen uptake in the samples from Sagiz and Nogaity rivers exceeds the permissible limit. Thus against to the maximum permissible limit 30.0 mg O₂/dm³, there is 48.3 mg O₂/dm³ in the samples from Sagiz river and 42 mg O₂/dm³ in the samples from Nogaity river. The high salt content may indicate the possible presence of toxic metal ions, along with harmless compounds, in the water that have entered as a result of economic activities of other individuals and legal entities within the project area. As the Contractor strictly controls any impacts of its personnel (prohibition of car wash near rivers, prohibition of any unauthorized activities of environmental specialist in the vicinity of water sources and other negative impacts), the Contractor is not a source of contamination of these water resources.

87. Total hardness in the samples taken from Sagiz river within 19.0 mg-eq/dm³. Data for this reporting period characterizes that water from Sagiz river is very hard, as exceeding MAL 12.0 mg-eq/dm³. This exceedance indicates the influence of groundwater which hardness is much higher than in surface water, as well as due to seasonal fluctuations of hardness values. However, this slight excess in hardness does not affect the external environment of the project, in particular the watering of animals. The samples taken from Nogaity river do not exceed MAL.

4.1.2.4 Air quality

88. Instrumental measurements of air pollution level are carried out on Lot 5 based on the agreement No.211/3/AZHK dated July 04, 2019 concluded with “EcoNormative” LLP and it was extended by 31.12.2021. Air pollution level monitoring was carried out on the sites where the construction activities have been conducted during the reporting period. Appendix 5 presents data from measurement test reports attached to the semi-annual report of environmental specialist Lot 5. The IEM report has not been submitted to the Engineer. Analysis of the data from air pollution test reports shows that there were not exceedance of the MAC of all the determined indicators at all measurement points. According to the results of observations, generally, the air condition on Lot 5 site was assessed as consistently good. No deterioration of air quality was noted.

4.1.3 Environmental measurements on Lot 6 site

89. Lot 6 concluded an agreement for the IEM with “EcoNormative” LLP No.211/3/AZHK dated July 04, 2019. This agreement was prolonged by 31.12.2021. This agreement includes the scope of IEM activities for Lot 5 and Lot 6 as the Contractor is the same. The agreement for noise and vibration No.561 dated 22.05.2020 concluded with Atyrau regional RSE “National Center of Expertise” of the Committee for Public Health Protection of Atyrau region was prolonged by 31.12.2021. Noise and vibration level measurements have not been conducted due to the restriction of access to the site because of the Covid-19 pandemic.

4.1.3.1 Noise and Vibration

90. Vibration and noise level measurements were carried out on 24.06.2021 at the construction workplaces, operator’s room of Asphalt plant, ventilation in laboratory. Measurements have not been made at the borrow pits as there were not activities. Analysis of data from the measurement test reports shows that the noise levels in the operator’s room of Asphalt plant and at three measurement points of Asphalt plant were recorded within 42 dBA against to a permissible level for these places 65 dBA. Vibration levels were recorded within 65 dB against to a permissible equivalent level of vibration 95 dB and national regulation allows 12-127 dB.

4.1.3.2 Soil

91. The monitoring of soil cover on the site is not provided by the EMP. In order to reduce the impact on land resources, the Contractor executes the followings:

- compliance with the technological work procedure;
- fuelling of machinery is carried out on fuel stations in Makat and Dossor villages;
- in order to mitigate dust on workplaces, dust control activities are conducted according to the dust control schedule;
- vehicles traffic is passed through the existing roads.

92. According to test reports (data in Appendix 10) of instrumental measurement of radiological indicators carried out on 19.05.2021, 20.05.2021 and 24.05.2021 at the construction site, railway dead-end, aggregate materials storage, the level of contamination by radioactive substances was determined within 0.029 - 0.073 mc³ per hour against the established limit not more than 0.20 mc³ per hour. The results of radiation background monitoring show that the environmental condition is satisfactory.

Table 18. Lot 6 borrow pit information for the first half of 2021, January-June

Road site and Main Contractor	No	Site	Common mineral resources	No. of license or permit for exploration	No. of license or permit for extraction Date received	Area (ha)	Reserves approved by Interregional Commission on Mineral Reserves (m ³)	Extracted volume from approved reserves as of 01.04.2021 (m ³)
1	2	3	4	5	6	7	8	9
“ Ak zhol kurylys” LLP, “ Aktobe-Makat” site km 418-458 Lot 6	1	Project borrow pit No.1	Soil		31/2020 dated 27.02.2020	27.1	No.221 dated 14.04.2016 1 682 600.00	
	2	Project borrow pit No.2	Soil		32/2020 dated 27.02.2020	28	No.221 dated 14.04.2016 3 916 600.00	
	3	Additional borrow pit No.1	Soil	No.77-EL dated 18.04.2019	58/2020 dated 02.06.2020	4.7927	No.422 dated 30.09.2019 145 200.00	
	4	Additional borrow pit No.2	Soil	No.90-EL dated 04.05.2019	37/2020 dated 27.02.2020	5.18	No.422 dated 30.09.2019 140 500.00	
	5	Additional borrow pit No.3	Soil	No.90-EL dated 04.05.2019	38/2020 dated 27.02.2020	5.0	No.422 dated 30.09.2019 139 200.00	
	6	Additional borrow pit No.4	Soil	No.76-EL dated 18.04.2019	40/2020 dated 27.02.2020	8.11	No.422 dated 30.09.2019 194 600.00	
	7	Additional borrow pit No.5	Soil	No.76-EL dated 18.04.2019	41/2020 dated 27.02.2020	4.95	No.422 dated 30.09.2019 138 600.00	not extracted
	8	Additional borrow pit No.6	Soil	No.75-EL dated 18.04.2019	42/2020 dated 27.02.2020	16.76	No.422 dated 30.09.2019 190 600.00	
	9	Additional borrow pit No.7	Soil	No.74-EL dated 18.04.2019	43/2020 dated 27.02.2020	11.67	No.422 dated 30.09.2019 138 900.00	not extracted
	10	Additional borrow pit No.8	Soil	No.74-EL dated 18.04.2019	44/2020 dated 27.02.2020	14.77	No.422 dated 30.09.2019 164 700.00	not extracted

4.1.3.3 Water quality

93. There is no surface water body within Lot 6 site. Temporary watercourses occur only during heavy rain or heavy snow melt. The hydrographic system is not developed in this area. Surface

water resources are only the flow of Sagiz river coming from Aktobe region, also local flow of small temporary watercourses and small rivers of the second and third type. Sagiz river enters its lower reaches, losing in Tenteksor. Its valley in this section is unclear, its slopes are not very gentle and merge inconspicuously with the surrounding area. The riverbed is very winding. Sagiz river has not a permanent flow for 11 months throughout the area (about 30 km). The distance from the project site to Sagiz river is 40.5 km. The distance to the Caspian Sea is over 60 km. As source of drinking water, water is used from water towers, which are serviced by “Temirzholzhylu-Atyrau” LLP.

4.1.3.4 Air quality

94. Based on the service agreement with “Econormative” LLP No.211/3/AZHK dated July 04, 2019 the environmental laboratory specialists have conducted air measurements and sampling in the third quarter on 09.05.2021 and 24.05.2021 within the SPZ at 4 points of Asphalt plant, road sections, aggregate materials storage RMD Makat and railway dead-end. Measurements have not been made at the borrow pits as there were not activities. According to the measurement reports (Appendix 9), the pollution level on Lot 6 site does not exceed the MAC for all monitored indicators. The environmental impact is temporary and it does not have a negative impact.

4.1.4 Environmental measurements on Lot 7 site

95. Measurements have been carried out on Lot 7 site as follows: air – 22.04.2021, 20.05.2021 and 22.06.2021; radiation background (Appendix 13) at the borrow pit – 22.04.2021, 20.05.2021 and 22.06.2021; noise and vibration – 10.06.2021.

4.1.4.1 Air quality

96. Instrumental measurements have been conducted on the construction sites at the beginning of Dossor bypass and end of project road, borrow pit No.2. According to the measurement reports (Appendix 12), air pollution level at measurement points on Lot 7 site does not exceed the MAC for all monitored indicators. The environmental impact is temporary and it does not have a negative impact.

4.1.4.2 Noise and Vibration

97. Vibration and noise level measurements on Lot 7 were carried out on 10.06.2021. According to measurement reports, the noise and vibration measurements at any points did not exceed the permissible level. Also, the noise level was within 61 dB(A) on the road site and in the cabin of construction equipment, the vibration level was 64 dB.

Table 19. Lot 7 borrow pit information for the first half of 2021, January-June

Road site and Main Contractor	Site	No. of license for extraction	Area (ha)	Reserves approved by Interregional Commission on Mineral Reserves (m ³)	Approved reserves (No. of protocol, date)	No. of license for extraction Date received	License validity
“ANT INSAAT MADEN SAN A.Ş.” Lot 7	Project borrow pit No.2	60/2020 dated 02.06.2020 (2 years)	5.04	No.235 dated 28.06.2016 239 000.00		60/2020 dated 02.06.2020	June 2022

4.2 Trends (general directions)

98. During the reporting period, there were no adverse impacts on the environment: air, soil, water resources, vibration and noise, on the health of the project affected persons, on flora and fauna.
99. The impact of the restrictive measures due to COVID-19 pandemic has affected the work of environmental specialists on the sites in terms of ensuring disclosure of information on the EMP activities. The environmental specialists on the sites were not able to fully carry out their work according to the developed environmental impact management system of the project. The environmental awareness activities were not carried out within the project among the engineering and working staff during the reporting period.

4.3 Summary of the monitoring results

100. The submitted monthly and semi-annual reports of environmental specialists on the sites, as well as observations and audits prove that there is no negative impact of the construction activities on the environment. Pollutant impacts (water, soil, air, health of the PAP) of noise and vibration levels do not exceed MAC and MAL. The mitigation measures taken by the Contractors are sufficient. The Contractors' activities have an acceptable impact on the environment.
101. Analysis of activities executed to comply with the regulations, rules, requirements of the environmental protection activities is generally assessed as satisfactory. The activities have been carried out in accordance with the EMP. Detailed information is presented in the Table 20 below.

Table 20. Environmental compliance monitoring on Lot 4, Lot 5, Lot 6 and Lot 7

No	Location	Issues of concern	Recommended measures	Implementation/ Compliance	Execution status
1	Road section	Using safety tools (protective glasses, gloves, special clothes, helmet, safety shoes and etc.) by workers and Engineers	Availability of safety tools in the base camp and on the construction site.	Safety tools are provided for workers and Engineers as necessary	Complied on all sites
2	Base camp	Water supply	To provide drinking water and water for domestic use, availability of wash basin in shower unit, toilet, kitchen and canteen. Cross-check and uninterrupted supply of drinking water	Devices are provided. Pipelines are connected to the base camp	Provided on all sites
3		Sanitation and hygiene	Providing toilet bowls and rinsing water in shower units. Transportation to septic tanks for processing and disposal	Base camp is provided and complied	Provided on Lot 4 and Lot 5 (brought into compliance), Lot 6 and Lot 7
4		Kitchen and canteen	Provision of appropriate ventilation, cranes and providing hygiene on cooking,	The construction of own canteen, outsourcing and catering service by the third party organization	Provided on all sites

			eating and food storage places		
5		Drainage in the base camp	Provision of water drainage within the base camp territory. To avoid accumulation of water inside of camp.	Drainage system is provided	Complied on all sites
6		SW and waste	Location of waste containers, urgent arrangement of pits for waste disposal, to cover and control on base camp territory.	There are temporary waste storages on all base camps. Control the implementation of waste management plan on all sites.	Provided on all sites
7	Quarry / soil borrow pit territory	Material stockpiling in accordance with the RK environmental legislation	To extend permission for soil extraction from borrow pits		The environmental specialist of "Ak zhol kurylys" LLP is responsible for obtaining permission documents for Lot 4, Lot 5 and Lot 6 based on the agreement made between Contractors. Lot 7 has permission documents for Phase I which can be used for Phase II of construction
8	Fire-fighting equipment in the base camp and office	Fire-fighting equipment must be in the base camp, production base and office according to the requirements	To put fire-fighting equipment in well visible place and in such way it can be used in case of emergency situation.	In all facilities of camp and production base	Provided on all sites
9	Vehicle and equipment traffic in the base camp	Excessive dust pollution in the camp territory and noise impact to the environment as a result of vehicle traffic within the camp territory and site.	Equipment, which meets environmental standards for noise should be used on the construction site and base camp.	On the residential area of base camp and on the production base	Executed on all sites
10	Asphalt plant	Provision of PPE, provision of medicinal and prophylactic food	Compliance with safety regulations and requirements, compliance with	PPE provision, dust control schedule is controlled	Executed on all sites

		and milk products. Dust control within the territory and in storages.	FIDIC, contractual obligations		
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4.4 Use of Material Resources

4.4.1 Current period

102. Use of resources during the reporting period on Lot 4, Lot 5 and Lot 6 sites is shown in the Table 21 below.

Table 21. Use of resources in the second half of 2020

Resources / Sites	Lot 4	Lot 5	Lot 6	Lot 7
Power supply, kW/h	440 983	329 207	268 528	177 001
Natural gas, thousand m ³	-	-	413 430	35.585
Drinking water, m ³	2 400 000	1 264	880	2 459
Construction water, m ³	15 000	3 624.33	2.48	330.94

4.4.2 Cumulative use of resources

103. **On Lot 4**, power consumption was increased by 3 times in the first half of the year, it is because of winter period when consumption in the camp and production increases due to weather conditions. The Contractor continues to study time of work processes and record resource consumption readings. This activity has increased discipline and responsibility for rational use of resources. Regarding the drinking water, there is an increase in consumption for 28% more than the previous period due to the increased number of personnel on the site and the increased demand. Regarding the construction water, there is a slight decrease.
104. No natural gas was consumed on Lot 5. Drinking water consumption is the same as in the previous reporting period. Construction water consumption is 23 times more than in the previous reporting period. This increase is mainly due to the high demand for dust control activity and construction needs.
105. **On Lot 6**, power consumption was decreased by 2 times compared to the previous period due to the suspension of asphalt plant operation, the control and recording the power consumption. Natural gas consumption was decreased by 1.7 times due to the introduction of the control and recording gas consumption at all sites. Drinking water consumption was decreased by 3 times as the number of personnel was reduced during winter period. Regarding construction water, there is a decrease in volumes from 95 160 m³ in the previous period to 2.48 m³ in the reporting one, which is connected with a significant reduction in works at this Lot to Lot 5, where the Contractor was far behind of its construction plans.
106. **On Lot 7**: as water is specified drinking water as there is no construction water on the site. Drinking water is used both for technical needs of the camp and construction needs on the site.

4.5 Waste Management

107. Waste management is organized by the Contractor according to the prepared EMP's attachment plans. According to requirements of environmental legislation (item 2, article 289 of

Environmental Code of RK), data sheet of hazardous wastes are prepared by persons due to whose activity wastes are generated. All Contractors have completed waste data sheets and registered them in the Environment Department of Atyrau region.

108. SW generation areas on Lot 4: production base located in Sagiz village. There are the Contractor's laboratory, concrete mixing plant, asphalt plant within the production base. Wastes from this area are stored in a designated area for temporary storage with subsequent removal to disposal by specialised companies. SW is removed from this base according to the agreement with IE "NZ" dated November 16, 2020 with addendum, the followings have been disposed: oil-contaminated soil - 60 tons, used tyres – 1 800 nos., used bags of bitumen 2 000 kg, used bags of powder – 2 000 kg. An agreement for removal of liquid waste was concluded with "Temirzholyu-Atyrau" LLP, agreement No.2020/TZHZH A-15. During the reporting period, 73 m³ of liquid waste was removed (in January – 9 m³, March – 16 m³, April – 23 m³, May – 13 m³ and June 12 m³).
109. **Lot 5:** There are base camp with accommodation facilities, offices, canteen, the Contractor's laboratories, asphalt plant, workshops within the production base. According to the Camp management plan, a temporary SW storage is arranged with subsequent removal to a landfill. An agreement for removal of SW, hazardous waste and effluents was concluded with "Promecology" LLP, agreement No. 01/20 dated 05.01.2020, it was extended by 31.12.2021. According to the submitted reports, 4.1 tons SW were removed. The agreement No.23/Z/AZHK for liquid waste removal services concluded with "ZapKazService" LLP on 01.01.2020 was extended by 31.12.2021. During the reporting period 10 m³ waste was removed.
110. **Lot 6:** There are offices, accommodation for staff, canteen, laboratory, asphalt plant on the production base located in Zhamansor village. The Addendum No.1 to the Agreement No.01/20 (Disposal or neutralization of hazardous types of production waste) dated 05.01.2020 was concluded with "Promecology" LLP on 18.01.2021 and the agreement No.28-076 for realization of solid waste certificates with "Specavtobaza" LLP on 01.04.2021. The agreement No.140/Z/AZHK for liquid waste removal services was concluded with "ZapKazService" LLP on 01.01.2021. During the reporting period, the following wastes were removed: SW – 3 m³ and LW – 40 m³.



Picture 1. Tyres removal from the project road to the temporary storage on Lot 5, 07.06.2021



Picture 2. Waste collection from the project road to Lot 5, 08.06.2021



Picture 3. Waste collection from Lot 6 site
28.06.2021



Picture 4. Solid waste removal from the temporary storage on Lot 4, 14.05.2021

111. **Lot 7:** Solid waste agreements for 2020 which were automatically prolonged for 2021: service agreement No.11/20 (Disposal or neutralization of hazardous types of production waste) with “Promecology” LLP in Kulsary city dated 20.01.2020, service agreement No.01/20 (Disposal or neutralization of hazardous types of production waste) of “Promecology” LLP in Kulsary city dated 20.01.2020 with Ak zhol kurylys and the agreement No.140/Z/AZHK of “ZapKazService” LLP for liquid waste removal services dated 01.01.2021. During the reporting period, the following wastes were removed: SW– 25 tons and LW - 10 m³.

4.5.1 Current period

112. During the reporting period, regarding the waste management the Contractors followed the items prescribed in the EMP about infrastructure management. Due to the lack of landfills within the project road implementation sites, the contracted SW removal companies disposed the removed SW to landfills for which has an agreement with the landfill owner.

4.5.2 Cumulative Waste Generation

113. Cumulative waste generation on Lot 4, Lot 5 and Lot 6 consists SW, waste oil (Lot 6 data), LW, oiled soil, waste oil filters, oiled rags. The table 22 below shows cumulative waste generation based on the reports of environmental specialists on the sites.

Table 22. Cumulative waste generation on all sites

Waste	Cumulative volume on all sites	Hazard class	Recommendations	Data source
SW	33.2 t	Green	Designated area, containers with lids and marking properly	Semi-annual data from reports of environmental specialists Lot 4, Lot 5, Lot 6 and Lot 7
Tyres	1 800 nos	Green G	Not to store more than 6 months on the temporary storage until removal to dispose	Lot 4

LW	60 m ³	Green	Removal by specialised company under the agreement concluded	Lot 4, Lot 5, Lot 6 and Lot 7
Big-bags (bitumen transportation)	4 000 nos.	The composition of bags is unknown	In package, containers, bags	Lot 4
Oiled soil	60 t	Amber AE 020	In the sealed containers	Data from Lot 4 Bitumen storage area

Requirements for owners (generators) of waste tyres:

- to manage the waste safely from the moment of its generation;
- to collect and store these wastes separately in designated areas before handing them over;
- to use the services of specialized companies;
- to pay for collection, storage, transportation, disposal, recycling of waste tyres;
- to keep records of new tyres, tyres in use, also to show tyres removed from use in the logbook.

Individuals and legal entities - owners of waste tyres shall be responsible for safe waste management from the moment of its generation until its transfer to the transport company.

114. Medical wastes from medical facilities of construction camps are managed in accordance with requirements of Sanitary Rules “Sanitary and Epidemiological Requirements to Healthcare Facilities” and “Sanitary and Epidemiological Requirements for Collection, Use, Transportation, Storage and Disposal of Waste of Production and Consumption” by Order of the Minister of Health of the Republic of Kazakhstan No.187 dated April 23, 2018. Disposable, waterproof bags and pockets designed for safe collection and disposal of medical waste are used for waste collection.



Picture 5. Medical worker is preparing medical waste to send for disposal, 26.06.2021.



Picture 6. Medical waste sending for disposal, Lot 4. 26.06.2021



Picture 7. Lot 7, temporary storage of medical waste for subsequent removal for disposal, 12.04.2021



Picture 8. Special marked box for medical waste in the medical facility of Lot 5

4.6 Health and Safety

4.6.1 Public Health and Safety

115. According to the ADB letter dated 01.09.2020 about the necessity of conducting COVID-19 risk assessment at the project level and updating the respective plans such as Health and Safety Plan (HSP) and Emergency Response Plan (ERP), as well as Environmental Management Plan (EMP), on 12.09.2020 the Engineer arranged the training on COVID-19 spread risks for the Contractors' specialists and gave consultation for updating plans above. Now all plans are proceeded actively.

116. **On Lot 4** permission No.40 was received from "NC "KazAutoZhol" JSC Atyrau branch for opening traffic through asphalt binder course of road. Temporary road marking has been marked. At the moment temporary road signs are being installed by the consent of Atyrau regional Administrative police department. The project length of bypass road is 40,1 km, ready for traffic is 39,2 km with a width 9 m. Bypass road condition is generally satisfactory. During the reporting period road safety and maintenance activities were carried out, namely, grading and rolling of critical sections. Also, carriageway and shoulders of bypass road are being cleared timely from snow. During necessary periods dust control activities were carried out 3 times a day. 1 road accident was recorded during the reporting period:

- On 23.06.2021 at 11:00 a.m. at 330 km of Aktobe-Makat road a resident of Aktobe driving a car Hyundai Santa Fe ignored the warning sign no entry and hit concrete blocks. The driver was taken to hospital in Sagiz village, where he was provided with first aid. The driver had a broken arm and refused further hospitalisation. The weather was clear, visibility was within 50 metres and the driver could not have failed to see the concrete block. The Engineer issued instruction to replace the precast concrete blocks with portable prohibition signs, remove the soil stock and ensure safety for the drivers. If it is impossible to replace the precast concrete blocks with portable signs, the blocks should be painted in yellow and black stripes and flashing beacons should be installed similar to those installed on Lot 6, Lot 7.

117. **On Lot 5** based on the instruction given by the minutes of site meeting held in Atyrau region by "NC "KazAutoZhol" JSC Chairman, No.87-P dated December 2-3, 2020, the Contractor opened traffic through asphalt binder course with installation of road signs and road marking on PK 210-255 and PK 334-448. 12 road signs and 56 road delineators have been installed. An

order was applied for additional road signs. All temporary road signs were installed in accordance with approved schemes and ST RK 1412-2017, ST RK 2607-2015. Temporary road signs have a reflective surface and they have been cleaning. During the reporting period there was not a road accident on Lot 5 site.

118. **Lot 6.** The Contractor opened for traffic the bypass road from PK0+00 to PK367+00. On these sections 1) PK 0+00 to 10+50, 2) PK 20+00 to 32+00, 3) PK 35+00 to 50+00, 4) PK 59+00 to 67+00, 5) PK 70+00 to 82+00, 6) PK 86+00 to 100+50 the following work activities were carried out: levelling and compaction of the bypass road, also elimination of subsidence, potholes, bumps, blowup and other damages on the bypass road carriageway. During short-time activities on a bypass road, traffic controllers are involved here. The number of signalman and traffic controllers is 3. During the reporting period there was not a road accident on Lot 6 site.



Picture 9. At PK 100+00, Lot 6. View of road safety sign at night time

119. **Lot 7:** Temporary road signs are installed at the beginning of road PK 0+00 as follows: 1.23 (road works), 4.2.1 (keep right) and temporary road signs are installed at the end of road PK 55+00 as follows: 1.23 (road works), 4.2.2 (keep left). Temporary road signs are also installed on Makat-Dossor road: 1.23, 7.2.1, 3.24, 1.18.2, 3.24, 3.20, 3.24, 3.20, 3.24, 3.31, 1.23 and on Kulsary-Dossor road: 1.23, 7.2.1, 3.24, 1.18.2, 3.24, 3.20, 3.24, 3.20, 3.20, 3.20, 3.24, 3.31, 1.23. There is no bypass road within Dossor Bypass site. Permanent dust control is in progress on the site. The number of signal man and traffic controllers is 4. During the reporting period there was not a road accident on Lot 7 site.
120. The Table 23 below includes a summary of all accidents, that have been taken place on the sites since the commencement of road construction.

Table 23. Statistics of accidents and incidents on the project since its commencement

Name	Lot 4	Lot 5	Lot 6	Lot 7
Road accident	4	1	2	0
Incident	1	0	0	0
Loss of labour capacity	0	0	0	0
Downtime due to incident	0	0	0	0
Total:	5	1	2	0

121. Traffic safety issues on the project are monitored in accordance with the approved Traffic Safety Plans (agreed with the CSC and the Police Department of Atyrau Department of Internal Affairs). As a result of investigation of the circumstances of road accidents, the authorised body has recognised that the accidents are related to non-compliance with the Traffic Rules in terms of speed limits and keep a distance and measures when overtaking a moving vehicle.
122. Safety compliance at construction sites is also checked in a timely manner by the respective responsible persons of the contractors. The relevant incidents are investigated and additional briefings are provided to the workers.
123. In order to ensure safety for the public, the Contractors carried out activities on the sites in accordance with the instructions of the Chief Sanitary Doctor of the Republic of Kazakhstan. Medical staff together with health and safety specialists were involved in organisational work to form a resource (irreducible supply of personal protective equipment: medical masks, gloves, antiseptics, disinfectants) to implement preventive measures for COVID-19 non-proliferation.

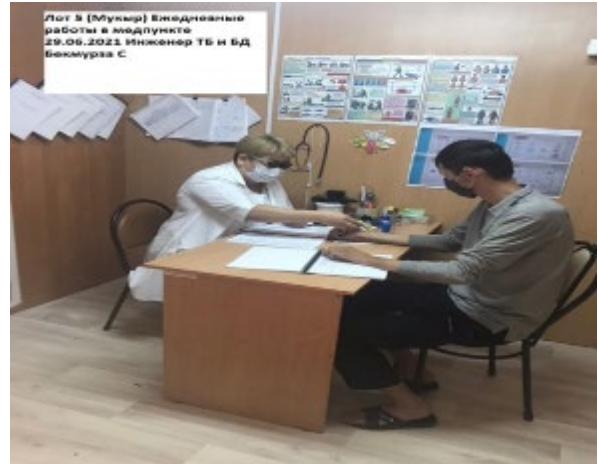
4.6.2 Workers Health and Safety

124. Health and safety conditions in the workplace are regulated by the Law “On the Safe Use of Machinery and Equipment”, Law No.305-III ZRK dated July 21, 2007, Fire Safety Regulations No.1077 dated October 9, 2014 and other legal and regulatory acts. As part of the Contract, the Contractors have developed the HSP which is periodically revised. The last revisions were related to possible risks due to COVID 19 spread.
125. During the reporting period, the Contractors carried out activities according to the approved traffic management plans. Timely supervision and consultation by the CSC’s Road Safety Engineer ensured the safety of road users and Contractor’s personnel. During the audit periods, it was noted that the necessary activities are being carried out by the Contractors such as safety signs installation, temporary roads widening, hole patching and preparation for road maintenance. Dangerous sections are marked with warning signs.
126. Daily trainings on safety and road safety have been conducting with all staff, including drivers, operators of special equipment before starting work. Explanation works are conducted with working staff on the workplaces regarding the compliance with the safety rules and safe working methods.
127. The Contractors on the sites have developed appropriate COVID-19 prevention measures. The health and safety plans include measures recommended by the local health department: strict control of third-party visits to the camp, compliance with face mask requirement, provision of personal protective equipment: medical masks, gloves, antiseptics. Conducting thermometry tests at least twice a day, maintaining a physical distance at least 1.5 metres in the accommodations and canteen. Sending staff to work remotely. Control the cleaning of facilities and treatment of surfaces with disinfectant. Information work among company staff and develop the medical boards with visual updated information in languages used for communication between staff. Sanitary facilities (sinks, showers, laundries, toilets, etc.) are provided with soap and disinfectants in necessary and sufficient quantities. The canteens are equipped with disinfectants sufficiently to do treatment of instruments and tools.
128. The site monitoring showed that on Lot 4 measures for the non-proliferation of infectious and viral diseases were arranged. Medical staff has an irreducible supply of PPE and medicines for 3 months, there is a box for isolation of patients with signs of COVID 19. Medical staff and H&S specialists ensured compliance with COVID-19 protocol on the site. The provision of an irreducible supply of PPE and antiseptics on Lot 5 site has been regulated. On Lot 6 the measures are ensured, medical staff complies with COVID-19 protocol (informing the staff, monitoring compliance with face mask requirement, actions at the first sign of disease, communication and interaction with stakeholders). The vaccination process has been organised on this Lot. 38 workers have voluntarily gotten stage 1 vaccination. Lot 7 is provided with an irreducible stock of PPE: medical masks, antiseptics.

129. Generally, the measures taken allowed to the Contractors to keep their workers health. There was not spread of seasonal disease or COVID 19 on the sites.



Picture 10. Village hospital doctors are giving information about vaccination of personnel on Lot 5, 21.06.2021



Picture 11. Medical worker on the site is doing pre-shift medical check, Lot 5, 29.06.21



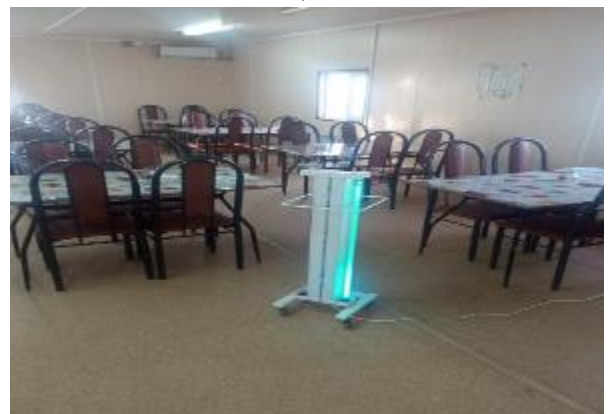
Picture 12. Vaccination of workers on the site, Lot 6, 24.06.2021



Picture 13. Lot 6, medical worker is giving a lecture about how to help in case of insect and snake bites, 10.06.2021



Picture 14. Pre-shift medical check of workers in the medical facility, Lot 7, 29.05.2021



Picture 15. Quartz treatment of canteen, Lot, 18.06.2021

4.7 Training

130. The trainings on EMP implementation, site monitoring, regular health and safety instructions, AIDS / HIV and COVID 19 pandemic issues are conducted on the sites by H&S specialists and medical staff. During the reporting period, informational lectures on HIV/AIDS, STI/STD and Covid 19 prevention were held at Lot 4, Lot 5 and Lot 6 sites.



Picture 16. Medical worker of Lot 4 is showing materials about disease prevention, 12.04.2021



Picture 17. Lecture about HIV/AIDS and COVID 19 on Lot 4. Medical worker is giving lecture for the company personnel



Picture 18. The safeguards specialist Gulnaz during a training about HIV/AIDS and COVID 19 prevention with the Con18tractor's personnel, Lot 5. 23.04.2021



Picture 19. Information materials of training about disease prevention, Lot 6. 19.04.2021

131. During the audit, the CSC noted that the Contractors' environmental specialists should pay more attention to record properly indicators of environmental activities and also to the risks associated with COVID 19 spread.

5. SEMP (SITE SPECIFIC ENVIRONMENTAL MANAGEMENT PLAN) FUNCTIONING

5.1 SEMP Review

132. As part of the EMP, the HSP and Emergency Response Plan were adjusted by the Contractors for Lot 4, Lot 5 and Lot 6 as quarantine was imposed in the region and there were pre-conditions for the realization of COVID 19 spread risks that could significantly affect the construction progress. Thus, these plans include activities to mitigate the risks of spread of infectious and viral diseases, corrective actions to educate staff about HIV/AIDS, STD/STI.
133. The activities stated in the EMP were implemented by the Contractors in the way and in the quality that the quarantine restrictions allowed. On Lot 4, the Waste Management Plan was worked out properly during the reporting period. Additional agreements were made for SW and hazardous waste removal, temporary storage areas for used oil, tyres, oiled soil were cleaned and storage area of bitumen and powder in big-bags was cleaned up. The monitoring showed that the environmental specialist on Lot 4 site had resolved all issues of concern with the project management. The Consultant gave consultation to the project management and explained the necessity and importance of complying with the EMP requirements, as the management is not sufficiently responsive to environmental issues. The environmental specialist Lot 4 submits monthly and quarterly reports on the implementation of activities under the SEMP to the Engineer. Reports to the fiscal authorities are also sent without violation of submission deadlines.



Picture 20. Loading of soil from the area where there was a bitumen spill due to damage of package with bitumen, 14.05.2021. Production site Lot 4

134. The IEM was carried out by the laboratory in May in the second quarter on Lot 4 and Lot 5. On Lot 6 – in May and June. On Lot 7 – all three months of the second quarter. In the first quarter the laboratory could not visit the sites due to the restrictive measures because of Covid 19 pandemic.
135. On Lot 4 the IEM was conducted in May: measurements of air pollution level within the Asphalt plant area in 5 points, at Nogaity bridge, Sagiz bridge, on the work site. Measurements of background radiation and water pollution on Sagiz and Nogaity rivers. Test reports of measurements were attached to the report of the Contractor's environmental specialist. But the report was not submitted by the laboratory which carried out the IEM. All reports are submitted to the fiscal authorities in accordance with the established submission schedules.
136. The EMP works on Lot 5 are divided between the environmental specialists of Lot 4 and Lot 5. Lot 4 is responsible for arranging the measurements on the construction site, directly on the road, while Lot 5 environmental specialist executes all other works of monitoring activities and arranges the instrumental measurements of the laboratory in the camp, at the production base, the development of permits for the borrow pits and the instrumental measurements at the borrow pits. The instrumental measurements were taken in May. Borrow pits were not used during the

reporting period due to a lack of permits. Soil was delivered from Lot 6 where the Contractor is the Subcontractor of Lot 5. All reports are submitted to the fiscal authorities in accordance with the established submission schedules.

137. On Lot 6 the environmental specialist ensured the implementation of activities as per the EMP. The industrial environmental monitoring has been arranged and carried out by the environmental laboratory. The instrumental measurements were made in the second quarter: in May and June. According to the measurement test reports, no adverse environmental impacts were observed, except for the need to increase the frequency of dust control activity during high dustiness time on the sites. The IEM laboratory report was not submitted. The environmental specialist's quarterly and semi-annual reports were submitted to the Engineer. All reports are submitted to the fiscal authorities in accordance with the established submission schedules.
138. On Lot 7 the environmental specialist ensured the implementation of activities as per the EMP. The industrial environmental monitoring has been arranged and carried out by the environmental laboratory. The instrumental measurements were made in the second quarter: in April, May and June. According to the measurement test reports, no adverse environmental impacts were observed for all measurements executed. The IEM laboratory report was not submitted. The environmental specialist's quarterly and semi-annual reports with attached test reports of measurements were submitted to the Engineer. All reports are submitted to the fiscal authorities in accordance with the established submission schedules.
139. Based on the results of corrective actions, the CSC prepared a number of activities for the following period January-June 2021. The Table 24 below shows the results of corrective actions to eliminate identified non-conformances for July-December 2020.

Table 24. Implementation status of Corrective Action Plan for January-June 2021

Activity	Deadline	Responsible	Implementation status
To arrange a working meeting with the safeguards team to disclose the second semi-annual report	February 2021	CSC	The second semi-annual report has been sent to all sites via e-mail
To mobilize environmental specialists on Lot 5 and Lot 7 permanently on the site	February 2021	Project Managers Lot 5, Lot 7	Earlier Zhantokova Gulzhanat was approved for Lot 7 Phase I. She is also environmental specialist on the site for Phase II who covering the same position on Lot 5.
To eliminate non-conformances on Lot 5: compliance with sanitary and hygienic regulations in the base camp, ensure acceptable conditions in accommodations, eliminate irrational water use (leaks, breakthroughs)	February 2021	Project Manager Lot 5	The FLM storage is arranged properly. The corrective action plan dated 26.03.2020 was completed in terms of ensuring acceptable living conditions: leak were eliminated, accommodation was arranged as per the sanitary regulation. The rest room was equipped.
To eliminate non-conformances on Lot 4: control timely removal of SW and production waste, ensure fire safety measures	March 2021	Environmental specialist	Fire-fighting panel on the FLM storage was equipped as per the safety requirements. The agreements for waste removal and disposal were concluded in May.
To eliminate non-conformances on Lot 6: local pollution, arrange	March 2021	Environmental specialist	A local contamination was eliminated within the

proper condition within temporary storage of production waste			temporary storage of waste oil. The temporary waste storage was fenced and appropriate signs were installed.
To develop the final EMP, taking into account defects liability period after completion of construction project on Lot 4, Lot 5 and Lot 6 sites, which will include the activities of reconstruction and rehabilitation of sites used temporary (construction camp, production area, material storage and etc.)	Lot 4: March 2021 Lot 5: April 2021 Lot 6: May 2021	Contractors' environmental specialist	Lot 4 completed on Mukur production site in April. Lot 5, Lot 6 and Lot 7 in progress according to work plans.
To conduct awareness work among the subcontractor and service provider personnel about the environmental protection and EMP activities	Monthly	Environmental specialists and medical staff on all Lots	Lot 4, Lot 5 and Lot 6 arranged and conducted training activities in April and May. Drills were carried out on Lot 4 as per the Emergency Response Plan.
To conduct a post-construction environmental audit for all lots	Upon the completion of construction activities	CSC jointly with the PMC	Completion time has been extended and therefore the execution of this item has been moved to October 2021.

5.2 Advanced methods (good practices)

140. The training conducted earlier for the environmental specialists and Safety and Road Safety specialists of all Lots on 12.09.2020 has a good practice of interaction on the sites. During the reporting period safeguards specialists gave numbers of lectures and education about disease prevention on Lot 4, Lot 5 and Lot 6. The skills of internal reporting and documenting indicators of implementation of EMP activities have been improved.

5.3 Opportunities for improvement

141. Online training and consultation should be used in the next period to plan works on the final audit of all sites jointly with all site environmental specialists and safeguards specialists.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

142. The general approach taken for the Project is to use the more strict standards in case of a difference between international regulations and RK legislation. In accordance with the IFC general guidelines on environment, health and safety, where the country regulations differ from the levels and measures presented in the guidelines, projects are expected to apply the strictest requirements. In most cases the RK national standards are stricter than EU and WHO standards and therefore they have been used in the impact assessment procedure.
143. The following activities can be noted as effective safeguards on the project:
- Getting to an effective level of interaction between the safeguards specialists: environmental specialists, Health and Safety, Road Safety specialists. Working as a team makes it possible to quickly and efficiently prepare information (daily summary of preventive resources) and, as a consequence, to immediately respond to eliminate the identified non-conformances;
 - Removal and disposal of industrial waste is performed according to work plans, with minor deviations in the removal date due to the quarantine measures in Atyrau region. All emissions to air were within permissible limits. The instrumental measurements did not show the exceedance of permissible limits at all sampling points of Lot 4, Lot 5, Lot 6 and Lot 7;
 - The constant monitoring and adjustment of water trucks timetable taking into account all factors affecting to dusting;
 - An organization chart that allows the environmental management system to work effectively. The organization chart of Contractors include vertical and horizontal interactions, and employees of linear structures (road masters, foremen, etc.) are involved in this process. In case of the absence of an environmental specialist on the site, this communication relationship was able to provide a partial implementation of the EMP activities: in particular, the implementation of the base camp management plan, dust control plan, work with complaints and appeals;
144. In the previous period it was noted about high risk of possibility that quarantine measures to be continued in 2021, therefore, in order to effectively manage industrial waste, the environmental specialists were recommended to identify and arrange temporary places for waste within construction camps in compliance with the regulations and requirements of environmental legislation. As specialised companies can not move freely due to restrictive measures. It was also recommended to include medical waste in the waste data sheets. It was followed by all sites.
145. The works to prevent the spread of COVID 19 and other viral and infectious diseases within the project area have been continued. Established communication with and feedback to stakeholders is the most appropriate and effective approach. No case affected by infectious disease registered on the sites.
146. All sites obtained a special water use permit. Previously obtained permits have an expiry date as of 31.12.2020.
147. Activities to ensure the work safety and safety for the population have been carried out in the necessary and sufficient volumes, which made it possible to prevent the realization of risks as a result of improper maintenance of the bypass and project road. During the reporting period, 1 road accident was registered on the sites, which is not the consequence of a failure to provide safe traffic. This road accident is the result of ignoring by the driver the traffic rules and safety signs installed on the sites.

6.2 Recommendations

148. To carry out the final part of environmental safeguards audit, it is recommended that environmental specialists of all Lots be present on this part of work, following all necessary COVID 19 precautions.
149. Based on the results of monitoring of the EMP implementation, the CSC prepared a number of activities for the following period July-December 2021. The Table 25 below shows the corrective actions plan.

Table 25. Corrective action plan for July-December 2021

Activity	Deadline	Responsible	Note
To develop the final EMP, taking into account defects liability period after completion of construction project on Lot 4, Lot 5, Lot 6 and Lot 7 sites, which will include the activities of reconstruction and rehabilitation of sites used temporary (construction camp, production area, material storage and etc.)	September 2021	Contractors' environmental specialist	Consultation by the CSC and PMC
To conduct awareness work among the subcontractor and service provider personnel about the environmental issues and EMP activities for Lot 7	August, September, October	Environmental specialist and medical staff	Online and in small groups, keeping the physical distance
To improve the compliance with safety rules during works on RMD and bridge. Constant monitoring of compliance with protective measures, PPE and following the instructions during working at height.	Constantly	Lot 6 Safety Engineer Project Manager	
To conduct an audit of all hazardous areas and ensure safety with modern and effective ways to attract the attention of road users to comply with traffic rules	↓ August 2021	Project Managers Lot 4, Lot 5, Lot 6 and Lot 7	On Lot 4 Installation of warning signs (warning beacons, replacement of concrete blocks with safety ones according to regulations) on the section where the road accident was
To conduct a post-construction environmental audit for all lots	Upon completion of construction activities, November 2021	CSC jointly with the PMC	Use the special template

Results of laboratory analysis of water pollution on Lot 4 site
 carried out by the testing laboratory "EcoNormative" LLP
 based on the agreement with the Contractor dated 11.05.2021

Pollutants	Limit according to the RD	Sagiz river	Nogaity river
pH	6.0-9.0	8.62	6.46
Dry residue (mg/dm ³)	No more than 1500	7.3	6.5
Copper (mg/dm ³)	1.0	0.002	0.002
Lead (mg/dm ³)	0.03	0.001	0.002
Zinc (mg/dm ³)	1.0	0.002	0.003
Oil products (mg/dm ³)	No more than 0.1	0.040	0.025
General hardness, mg.eq/dm ³	7.0-10	19.0	9.6
Nitrite nitrogen (mg/dm ³)	1.0	0.005	0.020
Nitrate nitrogen (mg/dm ³)	9.0	0.009	0.06
COD (mg O ₂ /dm ³) (<i>Chemical Oxygen Demand</i>)	30.0	48.3	42.0
Muddiness (mg/L)	1.5	30.2	28.3

Appendix 2

Emission monitoring on Lot 4 site
 carried out by the testing laboratory “EcoNormative” LLP
 based on the agreement with the Contractor dated 11.05.2021

Ambient air

Emission source (number of emission source)	Pollutants	Established limit (<u>g/s</u> ; t/year)	Actual result of monitoring (<u>g/s</u> ; t/sq; t/year)	Exceedance of maximum allowable emission limit	Activity to eliminate violation
Asphalt Plant	Carbon monoxide	7.0941	2.592	comply with regulations	-
	Nitrogen oxide	0.1277	0.0803		-
	Nitrogen dioxide	0.7858	0.69362		-
	Sulfur dioxide	23.244	0.01433		-

Radiation monitoring

Impact source	Established limit (unit of measurement mcs per h)	Actual result of monitoring (unit of measurement mcs per h)	Compliance with or exceedance of limit of “Sanitary and epidemiological requirements for radiation safety”	Activity to eliminate violation
Asphalt Plant area	not more than 0.20	0.059-0.068	comply	-
Road reconstruction site	not more than 0.20	0.046-0.051	comply	-
Road reconstruction site	not more than 0.20	0.042-0.047	comply	-
Sagiz bridge construction area	not more than 0.20	0.049-0.054	comply	-
Nogaity bridge construction area	not more than 0.20	0.050-0.059	comply	-

Monitoring of impact on the border of sanitary protection zone (SPZ)

Ambient air measurements

Sampling points	Pollutants	Actual concentration	Limit of maximum allowable concentration, mg/m ³	Exceedance of maximum allowable concentration, frequency	Proposals to eliminate violations and improve environmental condition
1	2	3	4	5	6
Asphalt Plant territory					
Asphalt Plant production territory 26.05.2021	Carbon monoxide (CO)	0.731	5.0	no	-
	Nitrogen oxide (NO)	0.0094	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0087	0.2	no	
	Sulfur dioxide (SO ₂)	0.0121	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.079	1	no	
	Hydrogen sulfide	0.0012	0.008	no	
	Dust (suspended particles)	0.0093	0.5	no	
SPZ South-west part 26.05.2021	Carbon monoxide (CO)	0.734	5.0	no	-
	Nitrogen oxide (NO)	0.0097	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0089	0.2	no	
	Sulfur dioxide (SO ₂)	0.0123	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.080	1	no	
	Hydrogen sulphide	0.0012	0.008	no	
	Dust (suspended particles)	0.0095	0.5	no	
SPZ West part 26.05.2021	Carbon monoxide (CO)	0.737	5.0	no	-
	Nitrogen oxide (NO)	0.0098	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0091	0.2	no	
	Sulfur dioxide (SO ₂)	0.0124	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.082	1	no	
	Hydrogen sulphide	0.0013	0.008	no	
	Dust (suspended particles)	0.0096	0.5	no	

Semi-Annual Environmental Monitoring Report for the 1st half of 2021
CAREC Corridors 1 and 6 Connector Road (Aktobe–Makat) Reconstruction Project (section km 330-504)

North-west part 26.05.2021	Carbon monoxide (CO)	0.732	5.0	no	-
	Nitrogen oxide (NO)	0.0096	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0081	0.2	no	
	Sulfur dioxide (SO ₂)	0.0122	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.079	1	no	
	Hydrogen sulphide	0.0013	0.008	no	
	Dust (suspended particles)	0.0094	0.5	no	
SPZ East part 26.05.2021	Carbon monoxide (CO)	0.730	5.0	no	-
	Nitrogen oxide (NO)	0.0092	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0084	0.2	no	
	Sulfur dioxide (SO ₂)	0.0121	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.076	1	no	
	Hydrogen sulphide	0.0012	0.008	no	
	Dust (suspended particles)	0.0091	0.5	no	
Road reconstruction site 21.05.2021	Carbon monoxide (CO)	0.831	5.0	no	-
	Nitrogen oxide (NO)	0.0084	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0079	0.2	no	
	Sulfur dioxide (SO ₂)	0.0125	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.086	1	no	
	Hydrogen sulphide	0.0013	0.008	no	
	Dust (suspended particles)	0.0096	0.5	no	
Road reconstruction site 21.05.2021	Carbon monoxide (CO)	0.748	5.0	no	
	Nitrogen oxide (NO)	0.0094	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0089	0.2	no	
	Sulfur dioxide (SO ₂)	0.0122	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.079	1	no	
	Hydrogen sulphide	0.0012	0.008	no	
	Dust (suspended particles)	0.0091	0.5	no	

Sagiz bridge construction area	Carbon monoxide (CO)	0.787	5.0	no	-
	Nitrogen oxide (NO)	0.0087	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0082	0.2	no	
	Sulfur dioxide (SO ₂)	0.0118	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.073	1	no	
	Hydrogen sulphide	0.0012	0.008	no	
	Dust (suspended particles)	0.0084	0.5	no	
Nogaity bridge construction area	Carbon monoxide (CO)	0.812	5.0	no	-
	Nitrogen oxide (NO)	0.0074	0.4	no	
	Nitrogen dioxide (NO ₂)	0.0071	0.2	no	
	Sulfur dioxide (SO ₂)	0.0120	0.5	no	
	Hydrocarbons C ₁₂ -C ₁₉	0.076	1	no	
	Hydrogen sulphide	0.0012	0.008	no	
	Dust (suspended particles)	0.0086	0.5	no	

Verification letter
about conducting drills in case of natural emergency situations

PURPOSE: To learn issues of preparation for emergency situations by the Company Shanghai Construction Group Co., Ltd. Kazakhstan branch, Sagiz village, Lot 4, "Aktobe-Makat" road reconstruction

DATE: April 10, 2021. TIME: 14:05

According to the winter maintenance plan for 2020-2021, an inspection of the Company's response to a natural emergency situation on the road "Aktobe-Makat", section km 330-370 was carried out. An emergency situation is a situation in a specific area as a result of an accident, industrial hazard, natural or other disaster that may cause or have caused human casualties, damage to human health or the environment, significant material losses and violation of people's living conditions. To date, the main natural (meteorological) hazards in the construction of road "Aktobe-Makat", km 330-370 include flood hazards. A flood is a phase of the water regime characterized by an intense, usually short-term increase in water levels caused by rainfall and snowmelt during thaw periods. When the company's employees detect the threat or occurrence of an emergency situation, the signal (information) will be reported to the Employer represented by the PMC "NC "KazAutoZhol" JSC and Atyrau regional branch of "NC "KazAutoZhol" JSC.

Generally, the preparedness of the Company Shanghai Construction Group Co., Ltd. Kazakhstan branch for natural emergency situations on the site km 330-370 of road "Aktobe-Makat" is assessed as "GOOD".

Acting Head of Emergency Department

//signature and stamp//

A.Akzhigitov

Project Manager

//signature and stamp//

Yang Bin

Appendix 4

Environmental Monitoring Checklist

Lot 4 site inspection checklist		
Site visiting date: 25.08.2021 Time: 10:00	Engineer's Representative: Environmental specialist Imbarova Sara Contractor's Representative: Environmental specialist Azamat	Engineer's ref. No. Contractor's ref. No.
Weather condition: clear, +28 C°, south-east wind with speed 5 m/s		
Work is in progress:	Construction of binder course of coarse-grained asphalt concrete on km 0.6 (PK6-49) Works on Sagiz and Nogaity bridges	
Issues related to environment	Possible reasons	Proposed mitigation measures
Bitumen storage area is contaminated due to damage of package	Improper storage, outdoor for a long time, package was damaged during transportation, loading / unloading	Permanent monitoring of site and temporary storage of waste and resources

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to approved procedures	<input type="checkbox"/>				
2	All effluents flow to septic tanks or to reservoirs for construction water	<input type="checkbox"/>		<input type="checkbox"/>		
3	All hazardous liquids are collected on non-permeable facilities at designated area	<input type="checkbox"/>		<input type="checkbox"/>		Places were defined
4	Solid hazardous materials are stored on designated safe places at work areas	<input type="checkbox"/>				The agreement for waste removal and disposal was concluded. Temporary waste storage places were arranged properly: fenced and signs were installed

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
5	Effluents are collected in drain system and disposed by the Contractor	<input type="checkbox"/>		<input type="checkbox"/>		
6	All vehicle drive in and out the base camp are controlled	<input type="checkbox"/>		<input type="checkbox"/>		Safety specialist and mechanic are controlling this work
7	Local communities and organizations are informed about construction schedule and any noisy activities on a regular basis through workers and by other activities	<input type="checkbox"/>		<input type="checkbox"/>		
8	Open containers for material storage are covered with canvas	<input type="checkbox"/>		<input type="checkbox"/>		Place was chosen for storage with the further disposal
9	Open fire is prohibited	<input type="checkbox"/>		<input type="checkbox"/>		No open fire neither on site nor base camp
10	Fire-fighting equipment <ul style="list-style-type: none"> ▪ Sand bucket and shovel ▪ Foam fire extinguisher ▪ Fire blanket in the canteen 	<input type="checkbox"/>		<input type="checkbox"/>		There is fire-fighting equipment within the FLM storage area
11	Entering of strangers to base camp is prohibited by installing fencing and security	<input type="checkbox"/>		<input type="checkbox"/>		There is a security man and checkpoint at the base camp entrance
12	All employees provided with personal protective equipment (PPE)	<input type="checkbox"/>		<input type="checkbox"/>		All employees are provided. There is an irreducible supply for the mobilized personnel
13	Smoking is prohibited except smoking places	<input type="checkbox"/>		<input type="checkbox"/>		There are smoking places on base camp territory
14	Relevant road signs and warning signs are installed on site and at unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		
15	Drinking water is provided by commercial and licensed sources for all employees	<input type="checkbox"/>		<input type="checkbox"/>		
16	Safety clothes of all employees are washed every day	<input type="checkbox"/>				Safety clothes of employees are washed as necessary

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
17	All employees are provided with three time meal per day	<input type="checkbox"/>				Local residents have lunch only as they do not work on rotation. It does not breach the Labor Code of the RK.
18	Canteen with sanitary and hygienic conditions on camp	<input type="checkbox"/>				
19	Medical facility and first aid kit on camp and on work areas	<input type="checkbox"/>		<input type="checkbox"/>		First aid kits are replenished as necessary. Logbook for medical facility visit is maintained
20	All employees health is under control of base camp doctor, and appropriate services are provided, also a monthly health checks	<input type="checkbox"/>		<input type="checkbox"/>		Daily pre-work check-up of employees are arranged in medical facility and logbooks for daily health check-up, and also for COVID-19 (body temperature, sobriety test, blood pressure etc.) are maintained.
21	All territory are clean, there is no any waste, except special places for waste disposal	<input type="checkbox"/>		<input type="checkbox"/>		Territory is in proper condition
22	Provision of rest area on camp		<input type="checkbox"/>			The base camp plan does not provide it
23	Child labour (younger than 15 year)	<input type="checkbox"/>				Not observed
Production site						
1	Liquid wastes from Asphalt Plant are stored in a tank and disposed by vacuum vehicle Liman ≤MTTSTH≥	<input type="checkbox"/>		<input type="checkbox"/>		
2	Solid wastes from Asphalt Plant are stored at designated area and disposed per approved procedures	<input type="checkbox"/>				Plants are installed
3	The plant area is covered by gravel in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
4	The plant area is watered in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		Dust control schedule includes watering of plant area
5	Plant can not discharge effluents to any area; non-permeable concrete basins will be constructed for such purpose	<input type="checkbox"/>		<input type="checkbox"/>		Permanent control by the Contractor's environmental specialist
6	All employees of Asphalt concrete and Crusher Plants are supplied with dust masks	<input type="checkbox"/>		<input type="checkbox"/>		According to the HSP and safety regulations
7	All employees at Asphalt Plants are wearing dust masks	<input type="checkbox"/>		<input type="checkbox"/>		Low production culture
8	Sand and crushed stone for concrete and asphalt are stored on wet and covered place	<input type="checkbox"/>				
9	There is a fire fighting equipment in Asphalt Plant	<input type="checkbox"/>		<input type="checkbox"/>		It is provided by the EMP and Fire Safety
10	Plant or equipment with high vibration are installed properly, maintained and operated correctly	<input type="checkbox"/>		<input type="checkbox"/>		
Fuel station						
1	Oil filling will be strictly controlled and is permitted only at the fuel filling station and on workshop area	<input type="checkbox"/>		<input type="checkbox"/>		
2	Fuel tank storage area is fenced and it is a non-permeable, tank's roof is closed	<input type="checkbox"/>		<input type="checkbox"/>		
3	Fuel station, which provided with fire fighting equipment, is checked every week	<input type="checkbox"/>		<input type="checkbox"/>		
4	There is the warning signs at fuel station	<input type="checkbox"/>			<input type="checkbox"/>	
5	Fuel station is provided with wastebasket	<input type="checkbox"/>				Fuelling is made in Sagiz village
Contractor's Workshop and Car Wash						
1	Liquid hazardous materials are stored in designated area at the workshop	<input type="checkbox"/>		<input type="checkbox"/>		A special concreted areas was arranged to keep a hazardous materials and installed a fence

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
2	Solid hazardous materials are stored in designated area at the workshop	<input type="checkbox"/>		<input type="checkbox"/>		
3	There are containers for used oils and hydraulic liquids	<input type="checkbox"/>		<input type="checkbox"/>		
4	Used oil products are collected in concrete tank with a volume up to 110% and tank is cleaned according to approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
5	Workshop is provided with drainage system	<input type="checkbox"/>		<input type="checkbox"/>		
6	Every vehicle is inspected and maintained on a regular basis	<input type="checkbox"/>		<input type="checkbox"/>		Daily control of special equipment is provided
7	All construction vehicles meet Euro standards and are equipped with modern noise control equipment	<input type="checkbox"/>		<input type="checkbox"/>		
8	Noise control equipment of all vehicles is maintained and checked as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
9	All workshop workers are provided with welding equipment and personal protective equipment	<input type="checkbox"/>		<input type="checkbox"/>		
10	All construction water is collected in concrete tank and cleaned as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
Project Road						
1	All roads, where planned construction works, are watered by water trucks	<input type="checkbox"/>		<input type="checkbox"/>		To increase watering frequency and water truck number during rain-free period and to take under strict control the sites near to villages
2	There are structures for passage of cattle, sheep and other animals on appropriate places of the project road	<input type="checkbox"/>				

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
3	Culvert and bridge construction areas are provided with safety ribbons and wringing signs	<input type="checkbox"/>				
4	Fencing and checkpoint are installed at all work areas where necessary	<input type="checkbox"/>				
5	Waste storage for any kind as well as machinery or vehicles parking is not permitted within a distance of 100m from any facility (including drainage or irrigation facilities)	<input type="checkbox"/>		<input type="checkbox"/>		
6	All appropriate road signs and warning signs are provided on work sites and unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		
7	Construction vehicle and plants are maintained properly to reduce gas emissions	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen control of special equipment
8	Noise control measures at special areas	<input type="checkbox"/>		<input type="checkbox"/>		
Borrow pits						
1	Temporary drainage is provided at borrow pits and quarries	<input type="checkbox"/>				
2	Construction work is stopped between 10.00 p.m. and 6.00 a.m. at 200m from the nearest habitation					There is no any close village
3	Stockpiles do not exceed 3m in height	<input type="checkbox"/>				Control by the master and safety engineer
4	All vehicles with an open body are used for transportation of materials with possible dusting, designed for these purposes with a well-chosen convertible body	<input type="checkbox"/>		<input type="checkbox"/>		
5	During construction works all noise volume is reduced according to the national standards	<input type="checkbox"/>		<input type="checkbox"/>		If necessary

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
6	Materials with possible dusting are not loaded higher than convertible body level and covered with clean canvas	<input type="checkbox"/>		<input type="checkbox"/>		Operators and recorders monitor the level of soil loading
7	All vehicles, equipment and plant meet Euro standards for exhaust gas emissions	<input type="checkbox"/>		<input type="checkbox"/>		Machineries rented from local people do not comply with regulations, the Contractor's machineries comply with regulations
8	All temporary acquired land is rehabilitated		<input type="checkbox"/>			Upon completion of construction works
9	All material residues and contaminated sites are collected and disposed accordance with approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
10	Watering is provided during material delivery and processing	<input type="checkbox"/>		<input type="checkbox"/>		
11	Any adjacent areas are damaged due to spoil ground, restored to its original state					No such case
12	River banks are protected from materials or temporary stockpiles of the contractor	<input type="checkbox"/>				Sagiz river
13	Negative effects or violations due to construction works are controlled with permissible level according to standards	<input type="checkbox"/>				Control by the environmental specialist
14	Access roads to borrow pits, and also borrow pits, quarries and traffic operations are maintained by approved standards	<input type="checkbox"/>		<input type="checkbox"/>		
15	Water discharge and removal, avoiding flooding or damaging to other works or service causing erosion	<input type="checkbox"/>				
Flora and Fauna						
1	Trees and shrubs outside of construction site, but on road reserve are generally preserved from damages					There are no trees on construction site territory

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
2	Ancient trees have not cut during construction works					There are no ancient trees on construction site territory
3	Cutting off has not taken place without the prior permission of relevant local authorities					No trees
4	Trees or shrubs cut or removed only if they interfere for necessary temporary or permanent works					No trees
5	Construction works are stopped on bridge sites during harvest period (indicate yes or no to construction activities, indicate date)		<input type="checkbox"/>			Bridge construction does not affect to cultivation and harvesting, because they are located on far places

Appendix 5

Results of measurement of air pollution level on Lot 5 site, 21.05.2021

No	Sampling point	RD for sampling method	Meteorological characteristics of atmosphere					Pollutant content													
			Air temperature, °C	Atmosphere pressure, mm of mercury	Wind direction	Wind speed, m/s	Humidity, %	CO		NO		NO ₂		SO ₂		Hydrocarbons C ₁₂ -C ₁₉		Hydrogen sulphide		Dust (suspended particles)	
								Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Asphalt plant territory	GOST12.1.005-88, ST RK 2.302-2014, MVI-4215-004A-56591409-2012, MI-4215-013-56591409-2010	28	768	N	3	37	0.731	5.0	0.0094	0,4	0.0087	0.2	0.0121	0.5	0.078	1	0.0012	0.008	0.0093	0.5
2	SPZ – South-west part		28	768	N	3	37	0.734	5.0	0.0097	0,4	0.0089	0.2	0.0123	0.5	0.080	1	0.0012	0.008	0.0095	0.5
3	SPZ – West part		28	768	N	3	37	0.737	5.0	0.0098	0,4	0.0091	0.2	0.0124	0.5	0.082	1	0.0013	0.008	0.0096	0.5
4	SPZ – North-west part		28	768	N	3	37	0.732	5.0	0.0096	0,4	0.0088	0.2	0.0122	0.5	0.079	1	0.0013	0.008	0.0094	0.5
5	SPZ – East part		28	768	N	3	37	0.730	5.0	0.0092	0,4	0.0084	0.2	0.0021	0.5	0.076	1	0.0012	0.008	0.0091	0.5
6	Road site PK 310		28	768	N	3	37	0.831	5.0	0.0084	0,4	0.0079	0.2	0.0125	0.5	0.086	1	0.0013	0.008	0.0096	0.5
7	Road site PK 340		28	768	N	3	37	0.748	5.0	0.0094	0,4	0.0089	0.2	0.0122	0.5	0.079	1	0.0012	0.008	0.0091	0.5
8	Sagiz bridge		28	768	N	3	37	0.787	5.0	0.0087	0,4	0.0082	0.2	0.0118	0.5	0.073	1	0.0012	0.008	0.0084	0.5
9	Nogaity bridge		28	768	N	3	37	0.812	5.0	0.0074	0,4	0.0071	0.2	0.0120	0.5	0.076	1	0.0012	0.008	0.0086	0.5

Radiation measurement data on Lot 5

Name of impact source	Established limit (unit of measurement mcs per h)	Actual result of monitoring (unit of measurement mcs per h)	Compliance with or exceedance of limit of “Sanitary and epidemiological requirements for radiation safety”	Activity to eliminate violation
Asphalt Plant area	not more than 0.20	0.049-0.074	comply	-
Road reconstruction site	not more than 0.20	0.037-0.046	comply	-
Road reconstruction site	not more than 0.20	0.034-0.049	comply	-
Sagiz bridge construction area	not more than 0.20	0.040-0.053	comply	-
Nogaity bridge construction area	not more than 0.20	0.043-0.061	comply	-
Site PK 121	not more than 0.20	0.034-0.049	comply	-
Site PK 136	not more than 0.20	0.031-0.057	comply	-

Appendix 7

Results of laboratory analysis of water pollution on Lot 5 site carried out by the testing laboratory “EcoNormative” LLP on 28.05.2021

Pollutants	Limit according to the RD	Sagiz river	Nogaity river
pH	6.0-9.0	8.62	6.46
Dry residue (mg/dm ³)	No more than 1500	7.3	6.5
Copper (mg/dm ³)	1.0	0.002	0.002
Lead (mg/dm ³)	0.03	0.001	0.002
Zinc (mg/dm ³)	1.0	0.002	0.003
Oil products (mg/dm ³)	No more than 0.1	0.040	0.025
General hardness, mg.eq/dm ³	7.0-10	19.0	9.6
Nitrite nitrogen (mg/dm ³)	1.0	0.005	0.020
Nitrate nitrogen (mg/dm ³)	9.0	0.009	0.06
COD (mg O ₂ /dm ³) (Chemical Oxygen Demand)	30.0	48.3	42.0
Muddiness (mg/L)	1.5	30.2	28.3

Environmental Monitoring Checklist

Lot 5 site inspection checklist		
Site visiting date: 28.05.2021 Time: 10:00	Engineer's Representative: Environmental specialist Imbarova Sara Contractor's Representative: Zhantokova G.– Environmental specialist	Engineer's ref. No. Contractor's ref. No.
Weather condition: clear, -23 C°, snow		
Work is in progress:	Construction works on the site	
Issues related to environment	Possible reasons	Proposed mitigation measures
High dustiness on the site	Dust control schedule does not meet the need of this activity, may be the frequency of watering is not controlled	To revise dust control schedule, to strengthen control over the frequency of watering and water truck provision

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to approved procedures	<input type="checkbox"/>				
2	All effluents flow to septic tanks or to reservoirs for construction water	<input type="checkbox"/>		<input type="checkbox"/>		
3	All hazardous liquids are collected on non-permeable facilities at designated area	<input type="checkbox"/>		<input type="checkbox"/>		
4	Solid hazardous materials are stored on designated safe places at work areas	<input type="checkbox"/>		<input type="checkbox"/>		Places were defined
5	Effluents are collected in drain system and disposed by the Contractor	<input type="checkbox"/>		<input type="checkbox"/>		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
6	All vehicle drive in and out the base camp are controlled	<input type="checkbox"/>		<input type="checkbox"/>		Safety specialist and mechanic are controlling this work
7	Local communities and organizations are informed about construction schedule and any noisy activities on a regular basis through workers and by other activities	<input type="checkbox"/>		<input type="checkbox"/>		
8	Open containers for material storage are covered with canvas	<input type="checkbox"/>		<input type="checkbox"/>		Place was chosen for storage with the further disposal
9	Open fire is prohibited	<input type="checkbox"/>		<input type="checkbox"/>		No open fire neither on site nor base camp
10	Fire-fighting equipment <ul style="list-style-type: none"> ▪ Sand bucket and shovel ▪ Foam fire extinguisher ▪ Fire blanket in the canteen 	<input type="checkbox"/>		<input type="checkbox"/>		Safety signs and fire-fighting panels have been installed within FLM storage area and local fuel station
11	Entering of strangers to base camp is prohibited by installing fencing and security	<input type="checkbox"/>		<input type="checkbox"/>		There is a security man and checkpoint at the base camp entrance
12	All employees provided with personal protective equipment (PPE)	<input type="checkbox"/>		<input type="checkbox"/>		Not all employees provided
13	Smoking is prohibited except smoking places	<input type="checkbox"/>		<input type="checkbox"/>		There are smoking places within the territory
14	Relevant road signs and warning signs are installed on site and at unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		Road Safety Plan have been preparing
15	Drinking water is provided by commercial and licensed sources for all employees	<input type="checkbox"/>		<input type="checkbox"/>		
16	Safety clothes of all employees are washed every day	<input type="checkbox"/>				Safety clothes of employees are washed as necessary

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
17	All employees are provided with three time meal per day	<input type="checkbox"/>				Local residents have lunch only as they do not work on rotation. It does not breach the Labor Code of the RK.
18	Canteen with sanitary and hygienic conditions on camp	<input type="checkbox"/>				The compliance with the Sanitary and hygienic regulations are checking by the medical worker and Safety specialist
19	Medical facility and first aid kit on camp and on work areas		<input type="checkbox"/>	<input type="checkbox"/>		First aid kits are replenished. Logbook for medical facility visit is maintained
20	All employees health is under control of base camp doctor, and appropriate services are provided, also a monthly health checks	<input type="checkbox"/>		<input type="checkbox"/>		Daily pre-work check-up of employees are arranged in medical facility and logbooks for daily health check-up (body temperature, sobriety test, blood pressure etc.) are maintained.
21	All territory are clean, there is no any waste, except special places for waste disposal	<input type="checkbox"/>		<input type="checkbox"/>		Timely removal of solid waste, cleaning of territory and road site are provided
22	Provision of rest area on camp	<input type="checkbox"/>		<input type="checkbox"/>		A gazebo is provided for rest
23	Child labour (younger than 15 year)	<input type="checkbox"/>				Not observed
Production site						
1	Liquid wastes from Asphalt Plant are stored in a tank and disposed by vacuum vehicle Liman	<input type="checkbox"/>		<input type="checkbox"/>		
2	Solid wastes from Asphalt Plant are stored at designated area and disposed per approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		Plant is an idle as it was broken
3	The plant area is covered by gravel in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		
4	The plant area is watered in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		Documents have been preparing in order to receive permits

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
5	Plant can not discharge effluents to any area; non-permeable concrete basins will be constructed for such purpose	<input type="checkbox"/>		<input type="checkbox"/>		Permanent control by the Contractor's environmental specialist
6	All employees of Asphalt concrete and Crusher Plants are supplied with dust masks	<input type="checkbox"/>		<input type="checkbox"/>		In the HSP
7	All employees at Asphalt Plants are wearing dust masks			<input type="checkbox"/>		Plant does not operate
8	Sand and crushed stone for concrete and asphalt are stored on wet and covered place	<input type="checkbox"/>		<input type="checkbox"/>		
9	There is a fire fighting equipment in Asphalt Plant	<input type="checkbox"/>		<input type="checkbox"/>		It is provided by the EMP and Fire Safety
10	Plant or equipment with high vibration are installed properly, maintained and operated correctly	<input type="checkbox"/>		<input type="checkbox"/>		
Fuel station						
1	Oil filling will be strictly controlled and is permitted only at the fuel filling station and on workshop area		<input type="checkbox"/>	<input type="checkbox"/>		
2	Fuel tank storage area is fenced and it is a non-permeable, tank's roof is closed		<input type="checkbox"/>	<input type="checkbox"/>		
3	Fuel station, which provided with fire fighting equipment, is checked every week		<input type="checkbox"/>	<input type="checkbox"/>		
4	There is the warning signs at fuel station		<input type="checkbox"/>		<input type="checkbox"/>	
5	Fuel station is provided with wastebasket		<input type="checkbox"/>			Fuelling is made on the village fuel station
Contractor's Workshop and Car Wash						
1	Liquid hazardous materials are stored in designated area at the workshop		<input type="checkbox"/>	<input type="checkbox"/>		The special concreted areas are arranged to keep a hazardous materials and a fence is installed
2	Solid hazardous materials are stored in designated area at the workshop		<input type="checkbox"/>	<input type="checkbox"/>		Temporary storage is fenced and marked with warning signs

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
3	There are containers for used oils and hydraulic liquids	<input type="checkbox"/>		<input type="checkbox"/>		
4	Used oil products are collected in concrete tank with a volume up to 110% and tank is cleaned according to approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
5	Workshop is provided with drainage system	<input type="checkbox"/>		<input type="checkbox"/>		
6	Every vehicle is inspected and maintained on a regular basis	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen daily control of special equipment
7	All construction vehicles meet Euro standards and are equipped with modern noise control equipment		<input type="checkbox"/>	<input type="checkbox"/>		
8	Noise control equipment of all vehicles is maintained and checked as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
9	All workshop workers are provided with welding equipment and personal protective equipment	<input type="checkbox"/>		<input type="checkbox"/>		
10	All construction water is collected in concrete tank and cleaned as per the approved procedures		<input type="checkbox"/>	<input type="checkbox"/>		
Project Road						
1	All roads, where planned construction works, are watered by water trucks	<input type="checkbox"/>		<input type="checkbox"/>		Additional water trucks are provided during rain-free period
2	There are structures for passage of cattle, sheep and other animals on appropriate places of the project road		<input type="checkbox"/>		<input type="checkbox"/>	
3	Culvert and bridge construction areas are provided with safety ribbons and warning signs	<input type="checkbox"/>				
4	Fencing and checkpoint are installed at all work areas where necessary	<input type="checkbox"/>			<input type="checkbox"/>	
5	Waste storage for any kind as well as machinery or vehicles parking is not permitted within a distance of 100m from any facility (including drainage or irrigation facilities)	<input type="checkbox"/>		<input type="checkbox"/>		
6	All appropriate road signs and warning signs are provided on work sites and unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		
7	Construction vehicle and plants are maintained properly to reduce gas emissions	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen control of special equipment

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
8	Noise control measures at special areas	<input type="checkbox"/>		<input type="checkbox"/>		
Borrow pits						
1	Temporary drainage is provided at borrow pits and quarries			<input type="checkbox"/>		
2	Construction work is stopped between 10.00 p.m. and 6.00 a.m. at 200m from the nearest habitation			<input type="checkbox"/>		There is no any close village
3	Stockpiles do not exceed 3m in height			<input type="checkbox"/>		
4	All vehicles with an open body are used for transportation of materials with possible dusting, designed for these purposes with a well-chosen convertible body	<input type="checkbox"/>		<input type="checkbox"/>		
5	During construction works all noise volume is reduced according to the national standards	<input type="checkbox"/>		<input type="checkbox"/>		
6	Materials with possible dusting are not loaded higher than convertible body level and covered with clean canvas	<input type="checkbox"/>		<input type="checkbox"/>		Operators and recorders monitor the level of soil loading
7	All vehicles, equipment and plant meet Euro standards for exhaust gas emissions		<input type="checkbox"/>	<input type="checkbox"/>		
8	All temporary acquired land is rehabilitated		<input type="checkbox"/>			Upon completion of construction works
9	All material residues and contaminated sites are collected and disposed accordance with approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
10	Watering is provided during material delivery and processing		<input type="checkbox"/>	<input type="checkbox"/>		
11	Any adjacent areas are damaged due to spoil ground, restored to its original state		<input type="checkbox"/>	<input type="checkbox"/>		Upon completion of construction works
12	River banks are protected from materials or temporary stockpiles of the contractor		<input type="checkbox"/>			
13	Negative effects or violations due to construction works are controlled with permissible level according to standards	<input type="checkbox"/>				

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
14	Access roads to borrow pits, and also borrow pits, quarries and traffic operations are maintained by approved standards	<input type="checkbox"/>		<input type="checkbox"/>		
15	Water discharge and removal, avoiding flooding or damaging to other works or service causing erosion	<input type="checkbox"/>				
Flora and Fauna						
1	Trees and shrubs outside of construction site, but on road reserve are generally preserved from damages					There are no trees on construction site territory
2	Ancient trees have not cut during construction works					There are no ancient trees on construction site territory
3	Cutting off has not taken place without the prior permission of relevant local authorities					No trees
4	Trees or shrubs cut or removed only if they interfere for necessary temporary or permanent works					No trees
5	Construction works are stopped on bridge sites during harvest period (indicate yes or no to construction activities, indicate date)		<input type="checkbox"/>			Bridge construction does not affect to cultivation and harvesting, because they are located on far places

Appendix 9

Results of air measurement on Lot 6 site

No	Sampling point	RD for sampling method	Meteorological characteristics of atmosphere					Pollutant content													
			Air temperature, °C	Atmosphere pressure, mm of mercury	Wind direction	Wind speed, m/s	Humidity, %	CO		NO		NO ₂		SO ₂		Hydrocarbons C ₁₂ -C ₁₉		Hydrogen sulphide		Dust (suspended particles)	
								Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
19.05.2021	Road site		27	769	SW	2	34	0.931	5.0	0.0093	0.4	0.0086	0.2	0.0092	0.5	0.064	1	0.0012	0.008	0.0088	0.5
	Railway dead-end		27	769	SW	2	34	0.825	5.0	0.0087	0.4	0.0081	0.2	0.0084	0.5	0.061	1	0.010	0.008	0.0093	0.5
	RMD – 20.05.2021		27	769	SW	2	34	0.854	5.0	0.0076	0.4	0.0071	0.2	0.0121	0.5	0.054	1	0.0010	0.008	0.0071	0.5
24.05.2021	Asphalt plant territory	GOST 12.1.005-88, ST RK 2.302-2014, MVI-4215-004A-56591409-2012, MI-4215-013-56591409-2010	31	768	W	2	34	0.871	5.0	0.0115	0.4	0.0110	0.2	0.0131	0.5	0.064	1	0.0011	0.008	0.0083	0.5
	SPZ – South-west part		31	768	W	2	34	0.873	5.0	0.0117	0.4	0.0113	0.2	0.0134	0.5	0.067	1	0.0011	0.008	0.0085	0.5
	SPZ – West part		31	768	W	2	34	0.875	5.0	0.0119	0.4	0.0116	0.2	0.0134	0.5	0.066	1	0.0010	0.008	0.0087	0.5
	SPZ – North-west part		31	768	W	2	34	0.872	5.0	0.0115	0.4	0.0114	0.2	0.132	0.5	0.063	1	0.0010	0.008	0.0084	0.5
	SPZ – East part		31	768	W	2	34	0.871	5.0	0.0115	0.4	0.0110	0.2	0.0129	0.5	0.061	1	0.0010	0.008	0.0081	0.5
	Aggregate materials storage		31	768	W	2	34	0.831	5.0	0.0110	0.4	0.0087	0.2	0.0113	0.5	0.054	1	0.0010	0.008	0.0091	0.5
	Road site		31	768	W	2	34	0.931	5.0	0.0093	0.4	0.0086	0.2	0.0092	0.5	0.064	1	0.0012	0.008	0.0088	0.5
	Railway dead-end		31	768	W	2	34	0.825	5.0	0.0087	0.4	0.0081	0.2	0.0084	0.5	0.061	1	0.0010	0.008	0.0093	0.5

Appendix 10

Radiation measurement data on Lot 6

Name of impact source	Established limit (unit of measurement mcs per h)	Actual result of monitoring (unit of measurement mcs per h)	Compliance with or exceedance of limit of “Sanitary and epidemiological requirements for radiation safety”	Activity to eliminate violation
Road site (19.05.2021)	not more than 0.20	0.038-0.052	comply	-
Road site (20.05.2021)	not more than 0.20	0.026-0.038	comply	-
Railway dead-end (19.05.2021)	not more than 0.20	0.029-0.043	comply	-
Asphalt Plant (24.05.2021)	not more than 0.20	0.041-0.068	comply	-
Aggregate materials storage area (24.05.2021)	not more than 0.20	0.039-0.073	comply	-
Road site (24.05.2021)	not more than 0.20	0.038-0.052	comply	-

Appendix 11

Environmental Monitoring Checklist

Lot 6 site inspection checklist		
Site visiting date: 26.05.2021 Time: 11:00	Engineer's Representative: Environmental specialist Imbarova Sara Contractor's Representative: Zhantokova G.– Environmental specialist. Safety and Road Safety specialists	Engineer's ref. No. Contractor's ref. No.
Weather condition: clear, +29 C°		
Work is in progress:	Asphalt paving, buildings construction in RMD	
Issues related to environment	Possible reasons	Proposed mitigation measures
Not identified		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to approved procedures	<input type="checkbox"/>				
2	All effluents flow to septic tanks or to reservoirs for construction water	<input type="checkbox"/>				
3	All hazardous liquids are collected on non-permeable facilities at designated area	<input type="checkbox"/>		<input type="checkbox"/>		Places were defined
4	Solid hazardous materials are stored on designated safe places at work areas	<input type="checkbox"/>				
5	Effluents are collected in drain system and disposed by the Contractor					
6	All vehicle drive in and out the base camp are controlled	<input type="checkbox"/>		<input type="checkbox"/>		Safety specialist and mechanic are controlling this work

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
7	Local communities and organizations are informed about construction schedule and any noisy activities on a regular basis through workers and by other activities	<input type="checkbox"/>		<input type="checkbox"/>		
8	Open containers for material storage are covered with canvas	<input type="checkbox"/>		<input type="checkbox"/>		Place was chosen for storage with the further disposal
9	Open fire is prohibited	<input type="checkbox"/>		<input type="checkbox"/>		No open fire neither on site nor base camp
10	Fire-fighting equipment <ul style="list-style-type: none"> Sand bucket and shovel Foam fire extinguisher Fire blanket in the canteen 	<input type="checkbox"/>		<input type="checkbox"/>		
11	Entering of strangers to base camp is prohibited by installing fencing and security	<input type="checkbox"/>		<input type="checkbox"/>		There is a security man and checkpoint at the base camp entrance
12	All employees provided with personal protective equipment (PPE)	<input type="checkbox"/>		<input type="checkbox"/>		All employees are provided
13	Smoking is prohibited except smoking places	<input type="checkbox"/>		<input type="checkbox"/>		There are smoking places on base camp territory
14	Relevant road signs and warning signs are installed on site and at unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		Road Safety Plan is proceeded
15	Drinking water is provided by commercial and licensed sources for all employees	<input type="checkbox"/>		<input type="checkbox"/>		Water allowance according to the recommendation of medical worker
16	Safety clothes of all employees are washed every day	<input type="checkbox"/>				Safety clothes of employees are washed as necessary
17	All employees are provided with three time meal per day	<input type="checkbox"/>				Local residents have lunch only as they do not work on rotation. It does not breach the Labor Code of the RK.
18	Canteen with sanitary and hygienic conditions on camp	<input type="checkbox"/>				
19	Medical facility and first aid kit on camp and on work areas	<input type="checkbox"/>		<input type="checkbox"/>		First aid kits are replenished as necessary. Logbook for medical facility visit is maintained

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
20	All employees health is under control of base camp doctor, and appropriate services are provided, also a monthly health checks	<input type="checkbox"/>		<input type="checkbox"/>		Daily pre-work check-up of employees are arranged in medical facility and logbooks for daily health check-up (body temperature, sobriety test, blood pressure etc.) are maintained.
21	All territory are clean, there is no any waste, except special places for waste disposal		<input type="checkbox"/>	<input type="checkbox"/>		
22	Provision of rest area on camp	<input type="checkbox"/>				There is a rest room in the separate container, and area in open air
23	Child labour (younger than 15 year)	<input type="checkbox"/>				Not observed
Production site						
1	Liquid wastes from Asphalt Plant are stored in a tank and disposed by vacuum vehicle Liman ≤MTTSTH≥	<input type="checkbox"/>		<input type="checkbox"/>		
2	Solid wastes from Asphalt Plant are stored at designated area and disposed per approved procedures	<input type="checkbox"/>				Plants are installed
3	The plant area is covered by gravel in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		
4	The plant area is watered in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		During overdusting period and according to dust control schedule
5	Plant can not discharge effluents to any area; non-permeable concrete basins will be constructed for such purpose	<input type="checkbox"/>		<input type="checkbox"/>		Permanent control by the Contractor's environmental specialist
6	All employees of Asphalt concrete and Crusher Plants are supplied with dust masks	<input type="checkbox"/>		<input type="checkbox"/>		In the HSP
7	All employees at Asphalt Plants are wearing dust masks	<input type="checkbox"/>				Coveralls are provided
8	Sand and crushed stone for concrete and asphalt are stored on wet and covered place	<input type="checkbox"/>				
9	There is a fire fighting equipment in Asphalt Plant	<input type="checkbox"/>		<input type="checkbox"/>		It is provided by the EMP and Fire Safety

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
10	Plant or equipment with high vibration are installed properly, maintained and operated correctly	<input type="checkbox"/>		<input type="checkbox"/>		
Fuel station						
1	Oil filling will be strictly controlled and is permitted only at the fuel filling station and on workshop area	<input type="checkbox"/>		<input type="checkbox"/>		
2	Fuel tank storage area is fenced and it is a non-permeable, tank's roof is closed	<input type="checkbox"/>		<input type="checkbox"/>		
3	Fuel station, which provided with fire fighting equipment, is checked every week	<input type="checkbox"/>		<input type="checkbox"/>		
4	There is the warning signs at fuel station	<input type="checkbox"/>			<input type="checkbox"/>	
5	Fuel station is provided with wastebasket	<input type="checkbox"/>				
Contractor's Workshop and Car Wash						
1	Liquid hazardous materials are stored in designated area at the workshop	<input type="checkbox"/>		<input type="checkbox"/>		Arranged a special concreted areas to keep a hazardous materials and installed a fence. Tanks have leaks
2	Solid hazardous materials are stored in designated area at the workshop	<input type="checkbox"/>		<input type="checkbox"/>		
3	There are containers for used oils and hydraulic liquids	<input type="checkbox"/>		<input type="checkbox"/>		
4	Used oil products are collected in concrete tank with a volume up to 110% and tank is cleaned according to approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
5	Workshop is provided with drainage system		<input type="checkbox"/>	<input type="checkbox"/>		Not necessary
6	Every vehicle is inspected and maintained on a regular basis	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen daily control of special equipment
7	All construction vehicles meet Euro standards and are equipped with modern noise control equipment		<input type="checkbox"/>	<input type="checkbox"/>		
8	Noise control equipment of all vehicles is maintained and checked as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
9	All workshop workers are provided with welding equipment and personal	<input type="checkbox"/>		<input type="checkbox"/>		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
	protective equipment					
10	All construction water is collected in concrete tank and cleaned as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
Project Road						
1	All roads, where planed construction works, are watered by water trucks	<input type="checkbox"/>		<input type="checkbox"/>		To increase watering frequency and water truck number during rain-free period and to take special control the sites near to villages
2	There are structures for passage of cattle, sheep and other animals on appropriate places of the project road	<input type="checkbox"/>			<input type="checkbox"/>	
3	Culvert and bridge construction areas are provided with safety ribbons and wringing signs	<input type="checkbox"/>				
4	Fencing and checkpoint are installed at all work areas where necessary	<input type="checkbox"/>			<input type="checkbox"/>	
5	Waste storage for any kind as well as machinery or vehicles parking is not permitted within a distance of 100m from any facility (including drainage or irrigation facilities)	<input type="checkbox"/>		<input type="checkbox"/>		
6	All appropriate road signs and warning signs are provided on work sites and unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		
7	Construction vehicle and plants are maintained properly to reduce gas emissions	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen control over special equipment
8	Noise control measures at special areas	<input type="checkbox"/>		<input type="checkbox"/>		
Borrow pits						
1	Temporary drainage is provided at borrow pits and quarries			<input type="checkbox"/>		
2	Construction work is stopped between 10.00 p.m. and 6.00 a.m. at 200m from the nearest habitation			<input type="checkbox"/>		There is no any close village
3	Stockpiles do not exceed 3m in height			<input type="checkbox"/>		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
4	All vehicles with an open body are used for transportation of materials with possible dusting, designed for these purposes with a well-chosen convertible body	<input type="checkbox"/>		<input type="checkbox"/>		
5	During construction works all noise volume is reduced according to the national standards	<input type="checkbox"/>		<input type="checkbox"/>		
6	Materials with possible dusting are not loaded higher than convertible body level and covered with clean canvas	<input type="checkbox"/>		<input type="checkbox"/>		Operators and recorders monitor the level of soil loading
7	All vehicles, equipment and plant meet Euro standards for exhaust gas emissions		<input type="checkbox"/>	<input type="checkbox"/>		
8	All temporary acquired land is rehabilitated		<input type="checkbox"/>			Upon completion of construction works
9	All material residues and contaminated sites are collected and disposed accordance with approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
10	Watering is provided during material delivery and processing	<input type="checkbox"/>		<input type="checkbox"/>		As necessary
11	Any adjacent areas are damaged due to spoil ground, restored to its original state			<input type="checkbox"/>		
12	River banks are protected from materials or temporary stockpiles of the contractor	<input type="checkbox"/>		<input type="checkbox"/>		
13	Negative effects or violations due to construction works are controlled with permissible level according to standards	<input type="checkbox"/>				
14	Access roads to borrow pits, and also borrow pits, quarries and traffic operations are maintained by approved standards	<input type="checkbox"/>		<input type="checkbox"/>		
15	Water discharge and removal, avoiding flooding or damaging to other works or service causing erosion	<input type="checkbox"/>				
Flora and Fauna						
1	Trees and shrubs outside of construction site, but on road reserve are generally preserved from damages					There are no trees on construction site territory

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
2	Ancient trees have not cut during construction works					There are no ancient trees on construction site territory
3	Cutting off has not taken place without the prior permission of relevant local authorities					No trees
4	Trees or shrubs cut or removed only if they interfere for necessary temporary or permanent works					No trees
5	Construction works are stopped on bridge sites during harvest period (indicate yes or no to construction activities, indicate date)		<input type="checkbox"/>			Bridge construction does not affect to cultivation and harvesting, because they are located on far places

Appendix 12. Results of air pollution level measurement on Lot 7 site

No	Sampling point	RD for sampling method	Meteorological characteristics of atmosphere					Pollutant content													
			Air temperature, °C	Atmosphere pressure, mm of mercury	Wind direction	Wind speed, m/s	Humidity, %	CO		NO		NO ₂		SO ₂		Hydrocarbons C ₁₂ -C ₁₉		Hydrogen sulphide		Dust (suspended particles)	
								Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³	Actual, mg/m ³	RD limit, mg/m ³
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Road site PK 55 (22.04.2021)	GOST 12.1.005-88, ST RK 2.302-2014, MVI-4215-004A-56591409-2012, MI-4215-013-56591409-2010	21	767	SW	2	54	0.733	5.0	0.0091	0.4	0.0074	0.2	0.0121	0.5	0.062	1	0.0010	0.008	0.0084	0.5
	Borrow pit No.2		28	767	SW	2	31	0.813	5.0	0.0091	0.4	0.0076	0.2	0.0121	0.5	0.054	1	0.0010	0.008	0.0087	0.5
	Beginning of project road PK 0+00		28	767	SW	2	31	0.781	5.0	0.0087	0.4	0.0078	0.2	0.0119	0.5	0.068	1	0.0011	0.008	0.0091	0.5
	End of project road PK 55+00		28	767	SW	2	31	0.791	5.0	0.0094	0.4	0.0091	0.2	0.0113	0.5	0.063	1	0.002	0.008	0.0092	0.5
	Beginning of project road PK 0+00		34	766	S	2	27	0.731	5.0	0.0092	0.4	0.0088	0.2	0.0121	0.5	0.075	1	0.0011	0.008	0.0084	0.5
	End of project road PK 55+00		34	766	S	2	27	0.735	5.0	0.0084	0.4	0.0078	0.2	0.0126	0.5	0.069	1	0.0013	0.008	0.0093	0.5
	Borrow pit No.2		34	766	S	2	27	0.635	5.0	0.0071	0.4	0.0067	0.2	0.0081	0.5	0.054	1	0.010	0.008	0.0088	0.5
	Road site PK 65		28	768	SW	2	31	0.813	5.0	0.0081	0.4	0.0076	0.2	0.0121	0.5	0.059	1	0.0010	0.008	0.0087	0.5
	Beginning of project road		28	768	SW	2	31	0.781	5.0	0.0087	0.4	0.0078	0.2	0.0119	0.5	0.068	1	0.0011	0.008	0.0091	0.5
	End of project road		28	768	SW	2	31	0.791	5.0	0.0094	0.4	0.0091	0.2	0.0113	0.5	0.063	1	0.0012	0.008	0.0092	0.5
	Borrow pit No.2		28	768	SW	2	31	0.733	5.0	0.0091	0.4	0.0074	0.2	0.0121	0.5	0.062	1	0.0010	0.008	0.0084	0.5
	Beginning of project road		36	768	SW	2	54	1.221	5.0	0.0125	0.4	0.0117	0.2	0.0117	0.5	0.072	1	0.0010	0.008	0.0093	0.5
	End of project road		36	768	SW	2	54	1.217	5.0	0.0125	0.4	0.0115	0.2	0.0114	0.5	0.071	1	0.0010	0.008	0.0091	0.5
	Borrow pit No.2		36	768	SW	2	54	1.348	5.0	0.0148	0.4	0.0154	0.2	0.0133	0.5	0.0113	1	0.0011	0.008	0.0112	0.5

Appendix 13

Radiation measurement data on Lot 7

Date of measurement	Name of impact source	Established limit (unit of measurement mcs per h)	Actual result of monitoring (unit of measurement mcs per h)	Compliance with or exceedance of limit of "Sanitary and epidemiological requirements for radiation safety"	Activity to eliminate violation
22.04.2021	Construction site beginning	not more than 0.20	0.033-0.054	comply	-
	Borrow pit No.2	not more than 0.20	0.028-0.046	comply	-
26.04.2021	Construction site beginning	not more than 0.20	0.033-0.054	comply	-
20.05.2021	Beginning of project road	not more than 0.20	0.034-0.052	comply	-
	Borrow pit No.2	not more than 0.20	0.027-0.047	comply	-
	End of project road	not more than 0.20	0.029-0.048	comply	-
	Beginning of project road	not more than 0.20	0.038-0.054	comply	-
	Borrow pit No.2	not more than 0.20	0.025-0.043	comply	-
	End of project road	not more than 0.20	0.031-0.049	comply	-
22.06.2021	Beginning of project road	not more than 0.20	0.038-0.054	comply	-
	End of project road	not more than 0.20	0.031-0.049	comply	-
	Borrow pit No.2	not more than 0.20	0.025-0.043	comply	-

Environmental Monitoring Checklist

Lot 7 site inspection checklist		
Site visiting date: 25.05.2021 Time: 15:00	Engineer's Representative: Environmental specialist Imbarova Sara Contractor's Representative: Zhantokova G.– Environmental specialist. Safety and Road Safety specialists	Engineer's ref. No. Contractor's ref. No.
Weather condition: clear, +28 C°		
Work is in progress:	Soil filling, road levelling	
Issues related to environment	Possible reasons	Proposed mitigation measures
Not identified		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
Contractor's base camp						
1	Septic tanks are installed and cleaned according to approved procedures	<input type="checkbox"/>				
2	All effluents flow to septic tanks or to reservoirs for construction water	<input type="checkbox"/>				
3	All hazardous liquids are collected on non-permeable facilities at designated area	<input type="checkbox"/>		<input type="checkbox"/>		Places were defined
4	Solid hazardous materials are stored on designated safe places at work areas	<input type="checkbox"/>				
5	Effluents are collected in drain system and disposed by the Contractor					
6	All vehicle drive in and out the base camp are controlled	<input type="checkbox"/>		<input type="checkbox"/>		Safety specialist and mechanic are controlling this work

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
7	Local communities and organizations are informed about construction schedule and any noisy activities on a regular basis through workers and by other activities	<input type="checkbox"/>		<input type="checkbox"/>		
8	Open containers for material storage are covered with canvas	<input type="checkbox"/>		<input type="checkbox"/>		Place was chosen for storage with the further disposal
9	Open fire is prohibited	<input type="checkbox"/>		<input type="checkbox"/>		No open fire neither on site nor base camp
10	Fire-fighting equipment <ul style="list-style-type: none"> ▪ Sand bucket and shovel ▪ Foam fire extinguisher ▪ Fire blanket in the canteen 	<input type="checkbox"/>		<input type="checkbox"/>		
11	Entering of strangers to base camp is prohibited by installing fencing and security	<input type="checkbox"/>		<input type="checkbox"/>		There is a security man and checkpoint at the base camp entrance
12	All employees provided with personal protective equipment (PPE)	<input type="checkbox"/>		<input type="checkbox"/>		All employees are provided
13	Smoking is prohibited except smoking places	<input type="checkbox"/>		<input type="checkbox"/>		There are smoking places on base camp territory
14	Relevant road signs and warning signs are installed on site and at unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		Road Safety Plan is proceeded
15	Drinking water is provided by commercial and licensed sources for all employees	<input type="checkbox"/>		<input type="checkbox"/>		Water allowance according to the recommendation of medical worker
16	Safety clothes of all employees are washed every day	<input type="checkbox"/>				Safety clothes of employees are washed as necessary
17	All employees are provided with three time meal per day	<input type="checkbox"/>				Local residents have lunch only as they do not work on rotation. It does not breach the Labor Code of the RK.

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
18	Canteen with sanitary and hygienic conditions on camp	<input type="checkbox"/>				
19	Medical facility and first aid kit on camp and on work areas	<input type="checkbox"/>		<input type="checkbox"/>		First aid kits are replenished as necessary. Logbook for medical facility visit is maintained
20	All employees health is under control of base camp doctor, and appropriate services are provided, also a monthly health checks	<input type="checkbox"/>		<input type="checkbox"/>		Daily pre-work check-up of employees are arranged in medical facility and logbooks for daily health check-up (body temperature, sobriety test, blood pressure etc.) are maintained.
21	All territory are clean, there is no any waste, except special places for waste disposal		<input type="checkbox"/>	<input type="checkbox"/>		
22	Provision of rest area on camp	<input type="checkbox"/>				
23	Child labour (younger than 15 year)	<input type="checkbox"/>				Not observed
Production site						
1	Liquid wastes from Asphalt Plant are stored in a tank and disposed by vacuum vehicle Liman ≤MTTSTH≥	<input type="checkbox"/>		<input type="checkbox"/>		
2	Solid wastes from Asphalt Plant are stored at designated area and disposed per approved procedures	<input type="checkbox"/>				Plant is installed
3	The plant area is covered by gravel in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		
4	The plant area is watered in order to reduce a dusting	<input type="checkbox"/>		<input type="checkbox"/>		During overdusting period and according to dust control schedule
5	Plant can not discharge effluents to any area; non-permeable concrete basins will be constructed for such purpose	<input type="checkbox"/>		<input type="checkbox"/>		Permanent control by the Contractor's environmental specialist
6	All employees of Asphalt concrete and Crusher Plants are supplied with dust masks	<input type="checkbox"/>		<input type="checkbox"/>		In the HSP

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
7	All employees at Asphalt Plants are wearing dust masks	<input type="checkbox"/>				Coveralls are provided
8	Sand and crushed stone for concrete and asphalt are stored on wet and covered place	<input type="checkbox"/>				
9	There is a fire fighting equipment in Asphalt Plant	<input type="checkbox"/>		<input type="checkbox"/>		It is provided by the EMP and Fire Safety
10	Plant or equipment with high vibration are installed properly, maintained and operated correctly	<input type="checkbox"/>		<input type="checkbox"/>		
Fuel station						
1	Oil filling will be strictly controlled and is permitted only at the fuel filling station and on workshop area	<input type="checkbox"/>		<input type="checkbox"/>		
2	Fuel tank storage area is fenced and it is a non-permeable, tank's roof is closed	<input type="checkbox"/>		<input type="checkbox"/>		
3	Fuel station, which provided with fire fighting equipment, is checked every week	<input type="checkbox"/>		<input type="checkbox"/>		
4	There is the warning signs at fuel station	<input type="checkbox"/>			<input type="checkbox"/>	
5	Fuel station is provided with wastebasket	<input type="checkbox"/>				
Contractor's Workshop and Car Wash						
1	Liquid hazardous materials are stored in designated area at the workshop		<input type="checkbox"/>	<input type="checkbox"/>		Arranged a special concreted areas to keep a hazardous materials and installed a fence. Tanks have leaks
2	Solid hazardous materials are stored in designated area at the workshop	<input type="checkbox"/>		<input type="checkbox"/>		
3	There are containers for used oils and hydraulic liquids	<input type="checkbox"/>		<input type="checkbox"/>		

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
4	Used oil products are collected in concrete tank with a volume up to 110% and tank is cleaned according to approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
5	Workshop is provided with drainage system		<input type="checkbox"/>	<input type="checkbox"/>		Not necessary
6	Every vehicle is inspected and maintained on a regular basis	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen daily control of special equipment
7	All construction vehicles meet Euro standards and are equipped with modern noise control equipment			<input type="checkbox"/>		
8	Noise control equipment of all vehicles is maintained and checked as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
9	All workshop workers are provided with welding equipment and personal protective equipment	<input type="checkbox"/>		<input type="checkbox"/>		
10	All construction water is collected in concrete tank and cleaned as per the approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
Project Road						
1	All roads, where planned construction works, are watered by water trucks	<input type="checkbox"/>		<input type="checkbox"/>		To increase watering frequency and water truck number during rain-free period and to take special control the sites near to villages
2	There are structures for passage of cattle, sheep and other animals on appropriate places of the project road				<input type="checkbox"/>	It is not necessary as it is a bypass and no passage for livestock
3	Culvert and bridge construction areas are provided with safety ribbons and warning signs	<input type="checkbox"/>				
4	Fencing and checkpoint are installed at all work areas where necessary	<input type="checkbox"/>			<input type="checkbox"/>	
5	Waste storage for any kind as well as machinery or vehicles parking is not permitted within a distance of 100m from any facility (including drainage or irrigation facilities)	<input type="checkbox"/>		<input type="checkbox"/>		
6	All appropriate road signs and warning signs are provided on work sites and unsafe areas	<input type="checkbox"/>		<input type="checkbox"/>		
7	Construction vehicle and plants are maintained properly to reduce gas emissions	<input type="checkbox"/>		<input type="checkbox"/>		To strengthen control over special equipment

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
8	Noise control measures at special areas	<input type="checkbox"/>		<input type="checkbox"/>		
Borrow pits						
1	Temporary drainage is provided at borrow pits and quarries			<input type="checkbox"/>		
2	Construction work is stopped between 10.00 p.m. and 6.00 a.m. at 200m from the nearest habitation			<input type="checkbox"/>		There is no any close village
3	Stockpiles do not exceed 3m in height			<input type="checkbox"/>		
4	All vehicles with an open body are used for transportation of materials with possible dusting, designed for these purposes with a well-chosen convertible body	<input type="checkbox"/>		<input type="checkbox"/>		
5	During construction works all noise volume is reduced according to the national standards	<input type="checkbox"/>		<input type="checkbox"/>		
6	Materials with possible dusting are not loaded higher than convertible body level and covered with clean canvas	<input type="checkbox"/>		<input type="checkbox"/>		Operators and recorders monitor the level of soil loading
7	All vehicles, equipment and plant meet Euro standards for exhaust gas emissions		<input type="checkbox"/>	<input type="checkbox"/>		
8	All temporary acquired land is rehabilitated		<input type="checkbox"/>			Upon completion of construction works
9	All material residues and contaminated sites are collected and disposed accordance with approved procedures	<input type="checkbox"/>		<input type="checkbox"/>		
10	Watering is provided during material delivery and processing	<input type="checkbox"/>		<input type="checkbox"/>		As necessary
11	Any adjacent areas are damaged due to spoil ground, restored to its original state			<input type="checkbox"/>		
12	River banks are protected from materials or temporary stockpiles of the contractor	<input type="checkbox"/>		<input type="checkbox"/>		
13	Negative effects or violations due to construction works are controlled with permissible level according to standards	<input type="checkbox"/>				

No	Environmental safeguard measures	Executed		In process		Comments
		Yes	No	Yes	No	
14	Access roads to borrow pits, and also borrow pits, quarries and traffic operations are maintained by approved standards	<input type="checkbox"/>		<input type="checkbox"/>		
15	Water discharge and removal, avoiding flooding or damaging to other works or service causing erosion	<input type="checkbox"/>				
Flora and Fauna						
1	Trees and shrubs outside of construction site, but on road reserve are generally preserved from damages					There are no trees on construction site territory
2	Ancient trees have not cut during construction works					There are no ancient trees on construction site territory
3	Cutting off has not taken place without the prior permission of relevant local authorities					No trees
4	Trees or shrubs cut or removed only if they interfere for necessary temporary or permanent works					No trees
5	Construction works are stopped on bridge sites during harvest period (indicate yes or no to construction activities, indicate date)		<input type="checkbox"/>			Bridge construction does not affect to cultivation and harvesting, because they are located on far places

Appendix 15

Site photos



Lot 7, dust control activity, June 2021



Thermometry at the enter to the base camp Lot 6, May 2021



Vibration level measurement at the Asphalt Plant Lot 6.
24.06.2021



Noise and vibration level measurements in the laboratory Lot 6.
24.06.2021



Noise and vibration level measurements in the operator's room of Asphalt Plant, 24.06.2021



Instrumental measurements at the RMD Lot 6, 19.05.2021



Dust control activity on Lot 6 site, 12.05.2021



Solid waste storage place, Lot 6, April 2021



Noise and vibration level measurements in the laboratory
Lot 7, 10.06.2021



Noise and vibration level measurements on Lot 7 site,
10.06.2021



Dust control activity on Lot 7 site, 12.05.2021



Temporary storage place for solid waste, Lot 7 base camp ,
May 2021



Dust control activity within Lot 6 base camp,
Zhamansor, 21.05.2021



Treatment of company car with disinfectant, Lot 4,
29.04.2021