

Environmental Monitoring Report

Project Number: 48424-002
September 2018

KAZ: CAREC Corridors 1 and 6 Connector Road (Aktobe–Makat) Improvement Road

Prepared by the Dongsung Engineering Co., Ltd in association with subconsultant Zhol-Sapa LLP for the Ministry of Investments and Development, Republic of Kazakhstan and the Asian Development Bank.

This bi-annual environmental monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the “terms of use” section on ADB’s website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status or any territory or area.

Biannual environment monitoring report

Project No. 3416 - KAZ

Reporting period: October 2017 г. – June 2018 г.

Republic of Kazakhstan: CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project (Road section km 160-330)

Funded by the Asian Development Bank

Prepared by: Construction Supervision Consultant DONGSUNG ENGINEERING CO., LTD /
Zhol Sapa LLP

For: Committee of Roads Ministry of Investments and Development of the Republic of
Kazakhstan

Approved by: Project Management Consultant – "NC "KazAuoZhol" JSC

Project No. 3416 - KAZ

Reporting period: October 2017 r. – June 2018 r.

**Republic of Kazakhstan: CAREC Corridors 1 and 6
Connector road (Aktobe-Makat) Reconstruction Project
(Road section km 160-330)**

Funded by the Asian Development Bank

Prepared by: Construction Supervision Consultant DONGSUNG ENGINEERING CO., LTD /
Zhol Sapa LLP

For: Committee of Roads Ministry of Investments and Development of the Republic of
Kazakhstan, RSE "Aktobezhollaboratoriya," Project Management Consultant - "NC
"KazAutoZhol" JSC - "Directorate for Construction"

Content

| | |
|---|-----------|
| Part I - Introduction | 6 |
| 1.1 Construction work and project progress during the previous 6 months | 6 |
| 1.2 Changes in the team for project organization and environmental management | 12 |
| 1.3 Relations with contractors, owner, creditor | 13 |
| Part II - Environmental Monitoring | 14 |
| 2.1. Environmental monitoring of Lot 1 road section | 14 |
| 2.1.1. Noise and vibration | 16 |
| 2.1.2. Water quality monitoring | 20 |
| 2.1.3. Monitoring of soil condition | 22 |
| 2.1.4. Air quality | 22 |
| 2.1.5. Essential characteristics for Lot 1 | 23 |
| 2.2. Environmental monitoring of Lot 2 road section | 26 |
| 2.2.1. Noise and vibration..... | 27 |
| 2.2.2. Water quality monitoring | 30 |
| 2.2.3. Monitoring of soil condition | 31 |
| 2.2.4. Air quality | 32 |
| 2.2.5 Essential characteristics for Lot 2..... | 33 |
| 2.3. Environmental monitoring of Lot 3 road section | 36 |
| 2.3.1. Noise and vibration..... | 36 |
| 2.3.2. Water quality monitoring..... | 39 |
| 2.3.3. Monitoring of soil condition..... | 39 |
| 2.3.4. Air quality..... | 40 |
| 2.3.5. Essential characteristics for Lot 3..... | 42 |
| Part III - Environmental management | 45 |
| 3.1. Environmental management system (EMS), environmental management plan (EMP) and work plans | 45 |
| 3.1.1. Analysis of Contractors' EMP | 46 |
| 3.2. Inspections and audits of the site | 48 |
| 3.3. Non-conformance reports..... | 50 |
| 3.4. Plans to implement corrective measures | 51 |
| 3.5. Final measures..... | 55 |
| Part IV - Action Plan for the next period June-December 2018 | 56 |
| Part V - Consultations and complaints | 56 |
| Annexes | 59 |

Abbreviations

| | |
|--------|---|
| RK | Republic of Kazakhstan |
| MID | Ministry of Investment and Development |
| CoR | Committee of Roads |
| KAZh | "NC "KazAvtoZhol" JSC |
| ADB | Asian Development Bank |
| CAREC | Central Asian Regional Economic Cooperation |
| PMC | Project Management Consultant |
| DED | Design Estimation Documentation |
| CSP | Crushing Screening Plant |
| CBP | Concrete Batching Plant |
| ACP | Asphalt Concrete plant |
| CSC | Construction Supervision Consultant |
| JSC NC | Joint Stock Company National Company |
| RSE | Republican State Enterprise |
| EMP | Environmental Management Plan |
| EMMP | Environmental Management and Monitoring Plan |
| MEIRP | Monitoring and Environmental Impact Reducing Plan |
| MAC | Maximum Allowable Concentration |
| MAE | Maximum Allowable Emission |
| ESE | Environmental State Expertise |
| SPZ | Sanitary Protection Zone |
| SHW | Solid Household Waste |
| LLP | Limited Liability Partnership |
| EMS | Environmental Management System |
| OJSC | Open Joint Stock Company |
| EP | Environmental Protection |
| S&H | Safety and Health |
| RS | Road Safety |
| PHP | Public Health Protection |

| | |
|-----------|--|
| EoA | Examination of Appeal |
| PHP MH RK | Public Health Protection of the Ministry of Health of the Republic of Kazakhstan |
| AS | Anion Surfactant |
| PPE | Personal Protective Equipment |

Part I - Introduction

The Government of the Republic of Kazakhstan has requested the Asian Development Bank (ADB) to finance the reconstruction of the Aktobe-Makat section of the Aktobe-Atyrau-the border of the Russian Federation (to Astrakhan) road. The proposed Road Improvement Project (Aktobe-Makat) connecting Corridors 1 and 6 (Project) of the Central Asian Regional Economic Cooperation (CAREC) will expand regional cooperation and accommodate economic growth in Kazakhstan, and especially in Atyrau and Aktobe regions. Within the framework of the Project, (i) about 300 km of the Aktobe-Makat road section will be reconstructed and improved to meet the standard category, and (ii) road safety and maintenance will be enhanced.

The road Aktobe-Makat is a two-lane national road that was built in 1970-1980. The section length is 459 km; mainly the road belongs to III / IV category, and passes through the territory of Aktobe and Atyrau region, which contains significant reserves of oil and mineral resources, with population of approximately 1.7 million. . The complete reconstruction of the pavement with the strengthening of its structure will reduce the travel time, the vehicles fuel consumption and the cost of vehicles operation, and will also increase the transport links and economic development of the region. The road will be reconstructed according to the standards for category II in accordance with the national standard of the Republic of Kazakhstan (RK).

1.1 Construction works and project progress

1. The project begins in Aktobe, in the administrative center of the Aktobe region. The road follows the south-western route to the village of Makat, which is located about 20 km north-west of Atyrau in the Atyrau region. Aktobe-Makat Road is a two-lane road of republican importance and was built in 1970-1980. The length of the road section is 457 km, mainly the road has III / IV category, and passes through the territory of Aktobe and Atyrau regions. The project is mainly aimed to restore 457 km of the section of the national road A-27 between Aktobe and Makat on seven sub-sites that will be financed by ADB within the framework of this project (a total of 300 km). The road will be reconstructed according to the standards for category II in accordance with the national standard of the Republic of Kazakhstan. The location of the proposed Aktobe-Makat road section is presented below in Figure 1.

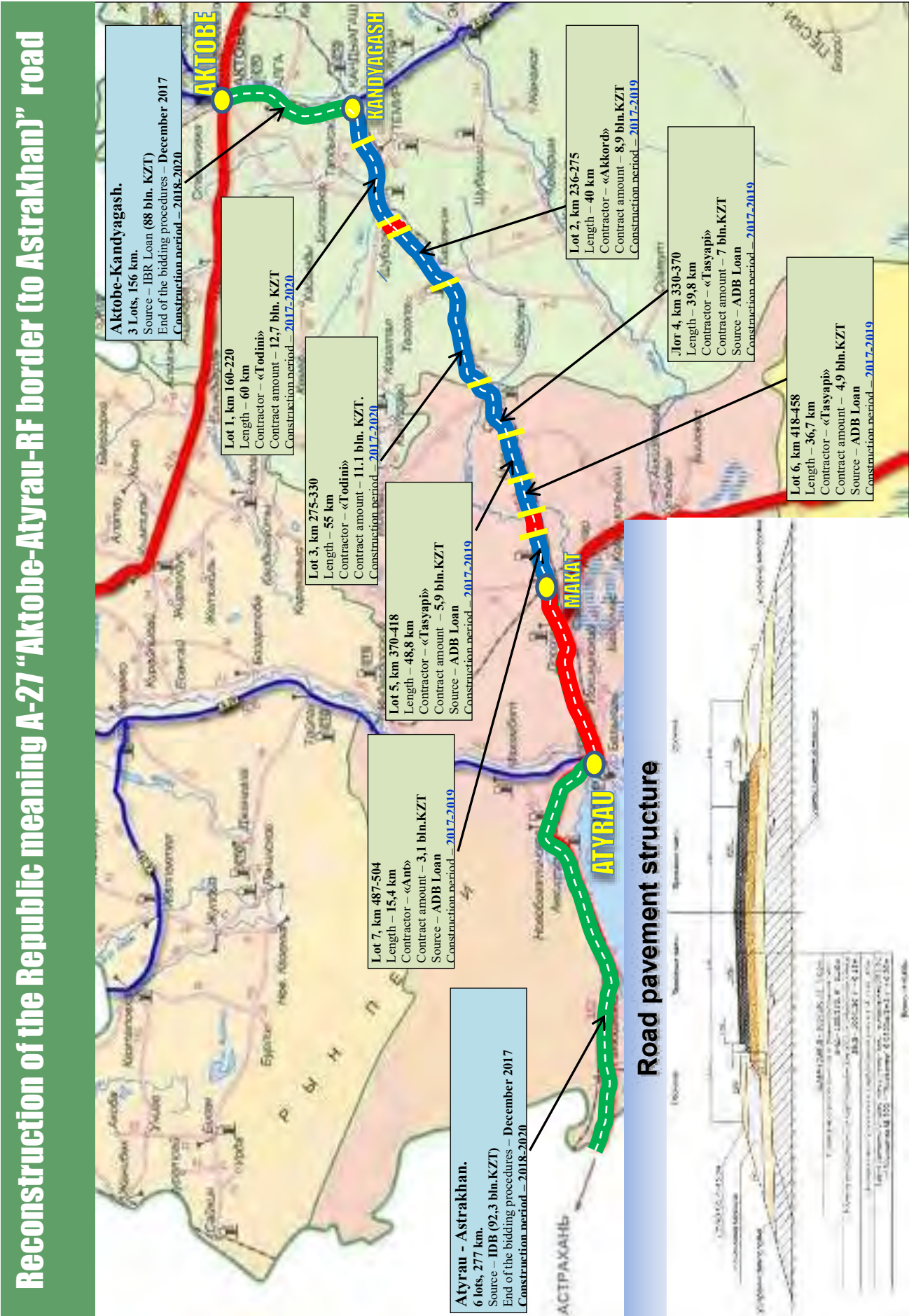
2. The road section is divided into the following Lots: Lot 1 (Km 160- Km 220), Lot 2 (Km 236-Km 275), Lot 3 (Km 275-Km 330), Lot 4 (Km 330-Km 370), Lot 5 (Km 370-Km 418), Lot 6 (Km 418-Km 458) and Lot 7 (Km 487-Km 504). During the reporting period, construction works were carried out only on Lot 1, Lot 2 and Lot 3. These consolidated first and second reports include information on first three sections. Lot1: km 160 - km 220 (Shubarkuduk village - Karaulykeldi village): This section includes the reconstruction of the road from category III to category II with a total length

of 60.833 km and the construction of a detour, it is expected that bypassing the Shubarkuduk village (km 172+600 to km 181+100) will pass along a new road.

3. Lot 2: km 236 - km 275 (Karaulykeldi village): This section includes the reconstruction of a road from category III to category II with a total length of 39 km and construction of one detour, it is expected that bypassing Karaulykeldi village (km 236 to km 247) (11, 8 km) will pass along a new road. Other parts of this section, the direction of the traffic flow, coincide with the existing pavement with partial deviation from the embankment in the rectification and the curve area. On this section the project provides for the construction of 1 bridge and 1 overpass.

4. Lot 3: km 275 - km 330 (Zharly village - Nogayty village): This section includes the reconstruction of a road from category III to category II with a total length of 55 km. Other parts of this section, the direction of the traffic flow, coincide with the existing pavement with partial deviation from the embankment in the rectification and the curve area.

Figure 1. Location of the project road



5. During the reporting period, Lot 1 carried out the following types of work: winter road maintenance, geodetic surveying of temporary benchmarks, cross-section of the roadbed. Work is continuing on the mobilization of the construction site. As a percentage, the work is done for 10% of the total work for the preparation of the construction site. The Engineer's office facilities do not meet the technical specification. Contractor in the process of preparation of the design estimates for the relocation of power lines and communication lines. The expected time for completion of the Design Estimates is February 2018. 6 units of special equipment and 6 units of cars are mobilized on site. Documents for Borrow pits are at the stage of allotment and preparation of permits.

**Table № 1: Construction work performed during the reporting period
(October 2017 to June 2018). Lot 1**

| № | months | Construction activity |
|---|---------------|---|
| 1 | October | Mobilization |
| 2 | November | Mobilization |
| 3 | December | Mobilization |
| 4 | January | Mobilization |
| 5 | February | Mobilization and materials procurement |
| 6 | March | Mobilization and materials procurement |
| 7 | April | Earth works, bypass road, materials procurement |
| 8 | May | Earth works, bypass road, materials procurement |
| 9 | June | Earth works, bypass road, materials procurement |
| Percentage of executed works as on June 30, 2018. | | 10 % |

6. During the reporting period from October to December 2017, on Lot 2 the following types of activities carried out: activities for winter road maintenance, surveying of temporary benchmarks, cross sections of the roadbed. Mobilization of the construction site is slow, about 60% of the total volume of works for the construction site preparation. 6 units of the special equipment and 3 units of passenger cars are mobilized. Crashing plant - none, elements of CBP and ACP are delivered on site. For the CBP and ACP, the first batch (on 6 long-trucks) was delivered.

7. Contractor in the process of preparation of design estimation documentation (DED) for the relocation of power lines and communication lines. Under the project three borrow pits are provided. During the reporting period, the contractor took samples from all three borrow pits to determine the suitability of the soil and handed them over for testing at the Aktobezhollaboratoriya. 19.10.2017 the contractor presented a plan for environmental protection. The contractor concluded an insurance agreement for construction and installation risks from 16.11.2017. According to the submitted work schedule, the contractor plans to begin construction work from April 2018.

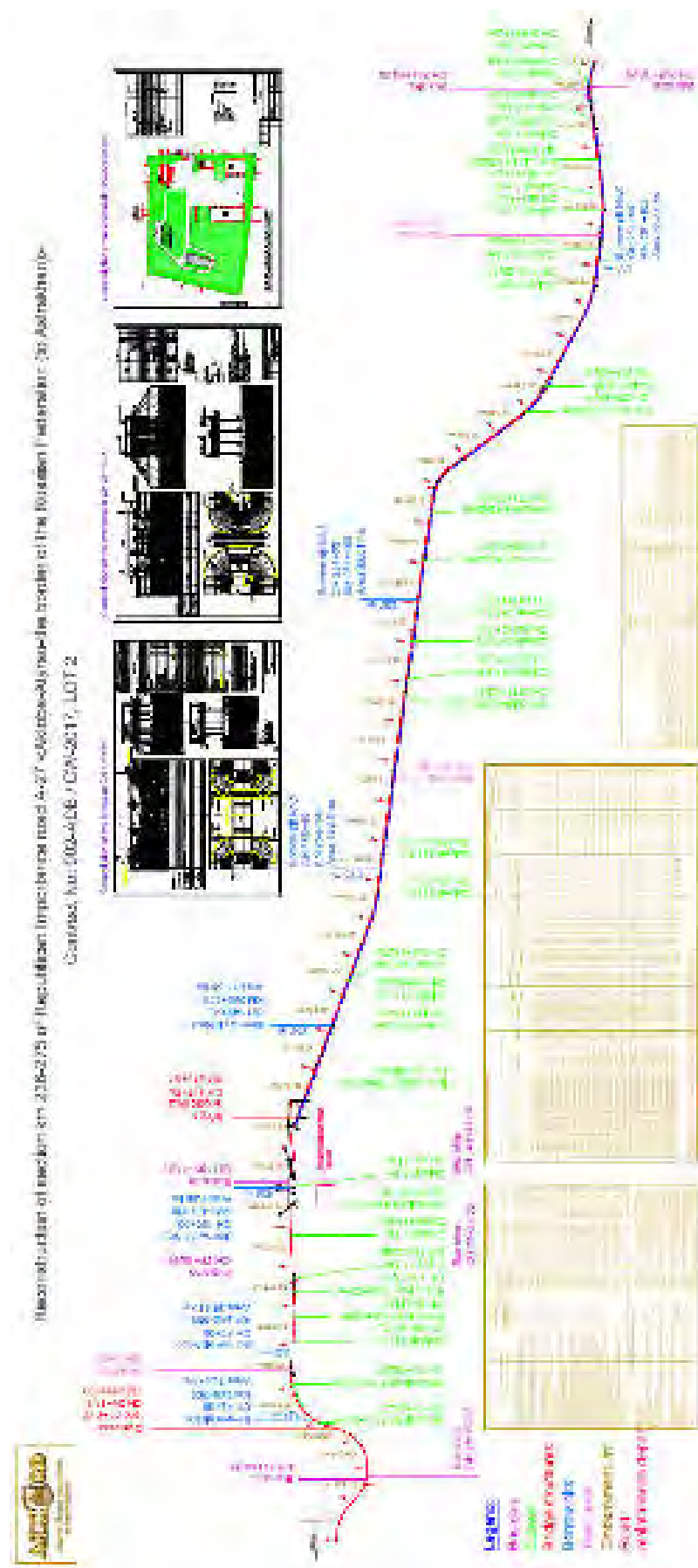
8. The base camp in the Karaulykeldy village, a trench around the perimeter of the camp area is digging, blocks for accommodation, office and laboratory are delivered. From the Akimat of the rural district of Karaulykeldy, technical conditions have been obtained for the arrangement and connection of electricity to the production site and shift camp. The application was submitted to JSC "KazTransGasAimak" for obtaining technical conditions for gas connection from the main gas pipeline.

9. For the period from January to June 2018, on Lot 2 the following types of work carried out: the construction of base camp was completed of 50%; the construction of the ACP and CBP, according to the work plan was to be completed in May, but during the site monitoring, the performance of these works was identified to the planned term by 50%; surveying works, including bypassing the village of Karaulykeldy, were completed in January completely; activities for winter maintenance of roads are carried out at the proper level by concluding a contract with "Merety i K" LLP; An agreement was concluded with "Stroydetal" LLP on the production and delivery of reinforced concrete products to the station of Karaulykeldy; with "Merety i K" LLP a contract was concluded for the rental of a railway dead-end for the placement of aggregate materials and cisterns with bitumen; "InzhGeosystem" LLP prepared documents on land allocation, on obtaining permits.

10. In May, the main work on land clearing and excavation began. 43 units of equipment were mobilized at the site with the planned number of 133 units. Contractor in the process of preparation of design estimation documentation (DED) for the relocation of power lines and communication lines. Expected completion time of the DED is February 2018. Survey of the road is completed.

**Table № 2: Construction work performed during the reporting period
(October 2017 to June 2018). Lot 2**

| № | Months | Construction activity |
|---|---------------|---|
| 1 | October | Mobilization |
| 2 | November | Mobilization |
| 3 | December | Mobilization |
| 4 | January | Mobilization |
| 5 | February | Mobilization and materials procurement |
| 6 | March | Mobilization and materials procurement |
| 7 | April | Earth works, bypass road, materials procurement |
| 8 | May | Earth works, bypass road, materials procurement |
| 9 | June | Earth works, bypass road, materials procurement |
| Percentage of executed works as on June 30, 2018. | | 5 % |



11. During the period from January to June 2018, on Lot 3 the following work carried out: road

safety monitoring, winter road maintenance, protection of existing communications, field surveying and preparation of working drawings, providing the engineer according to the Contract, crushing plant delivered to the site. Clearing of the territory, removal of the topsoil; the preparation of the base of the roadbed at the places of road widening and the existing pavement; the main road embankment construction, intersections, junctions. The contractor conducted a basic environmental monitoring in April. In May, conducted laboratory tests of natural soil and materials for construction. In May, the amount of equipment on the site was increased from 1 unit in February to 69 units.

**Table № 3: Construction work performed during the reporting period
(October 2017 to June 2018). Lot 3**

| № | Months | Construction activity |
|---|---------------|---|
| 1 | October | Mobilization |
| 2 | November | Mobilization |
| 3 | December | Mobilization |
| 4 | January | Mobilization |
| 5 | February | Mobilization and materials procurement |
| 6 | March | Mobilization and materials procurement |
| 7 | April | Earth works, bypass road, materials procurement |
| 8 | May | Earth works, bypass road, materials procurement |
| 9 | June | Earth works, bypass road, materials procurement |
| Percentage of executed works as on June 30, 2018. | | 11 % |

1.2 Changes in the team for project organization and environmental management

12. In the implementation of the Project, environmental protection specialists with different levels of authority and responsibilities are involved in the field of environmental protection, monitoring and assessment of the impact on the environment. So in this project are involved: PMC, CSC, Contractors, Subcontractors, approved by the CSC, organizations that perform outsourcing services for analysis and environmental monitoring of the environment. Organizations that perform environmental monitoring services have the appropriate licenses to carry out such works and laboratories with accreditation for the relevant equipment.

13. According to the contract No. 01-ADB / PMC-2017, a team of Project Management Consultants has started to work on October 9. From the PMC of "NC"KazAutoZhol" JSC the expert on Social Safeguards Specialist Zeynullina Aliya Amantayevna is represented. The CSC is represented by the local environmental specialist Shchedreev Yerzhan which was mobilized in October 2017.

14. The team for environmental management, environmental protection in the Contractor organization is represented by the following specialists. For Lot 1 and 3 - "Todini Kostruzioni Generali S p. A." JSC (Italy), an international environmental specialist, Urais Hasan, was mobilized, a local environmental specialist was not mobilized by the reporting period for 2017. During the reporting period, the mobilization of the local specialist was not carried out due to competitive selection. The local environmental specialist was mobilized from January 2018. Works on development of EMP for the site were carried out.

15. For Lot 2 on environmental protection and management of negative environmental impacts, a local environmental specialist was mobilized in February 2018 in "ICIC Akkord" OJSC. All this period from October 2017 to February 2018, the contractor conducted competitive selection among local specialists. Works on development of EMP for the site were also carried out. Below in Figure 2, an organigram of the Project interaction is presented.

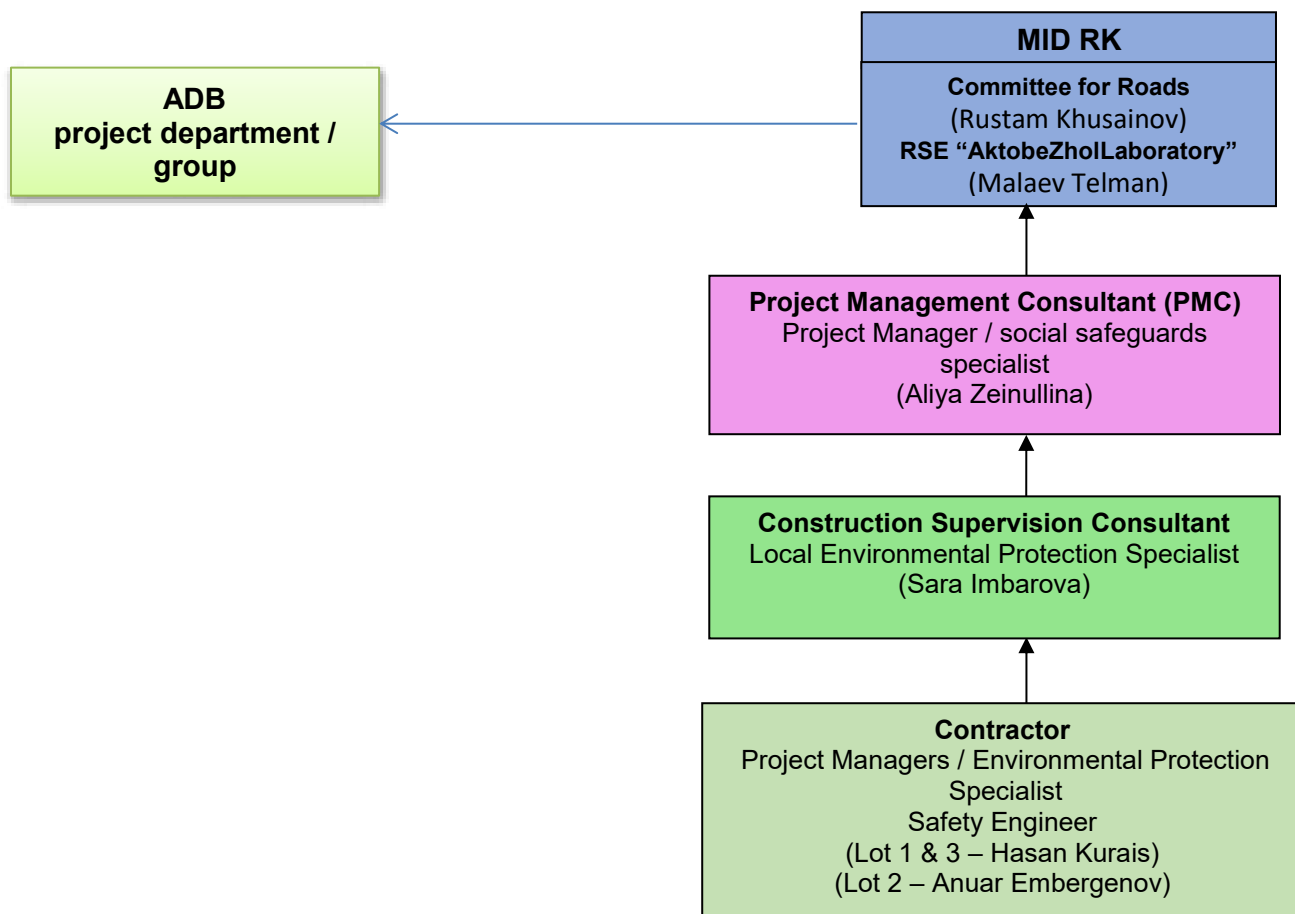


Figure 2. Organigram of the Project interaction

1.3 Relations with Contractors, Employer, Creditor, etc.

16. Loan Agreement for the Reconstruction project of the Aktobe-Makat road connecting CAREC Corridors 1 and 6 between the Republic of Kazakhstan and the Asian Development Bank No. 3416-KAZ was signed on December 7, 2016 in Astana.

17. CoR MID signed a service agreement with "NC "KazAutoZhol" JSC (KAZh) to provide consulting services for project management in accordance with the technical design specification acceptable to ADB and applicable under the laws of the Republic of Kazakhstan. The KAZh remains fully staffed throughout the implementation of the Project. "NC" KazAutoZhol" was established in accordance with the Resolution of the Government of the Republic of Kazakhstan dated February 1, 2013 No. 79 with amended on August 21, 2013.

18. Regional representative from the Employer on site is Branch of the RSE "AktobeZhollaboratoriya"

19. Contracts between the Employer and the Construction Supervision Consultant (CSC-1) - Dongsung Engineering Co., Ltd. (Republic of Korea), together with the Sub-consultant "Zhol-Sapa" (Kazakhstan), was signed on September 6, 2017. The Contract for construction supervision was awarded to DONGSUNG ENGINEERING CO. LTD jointed with "ZHOL SAPA" LLP. Under the Contract, CSC services consisted of consulting services for contract management and construction supervision. Annex No. 1 provides detailed information on the CSC team.

20. Contractor for Lot 1, "Todini Costruzioni Generali S p. A." JSC (Italy) registered its branch in Aktobe on September 29, 2017. The contract No. 001-ADB / CW-2017 is concluded with the Contractor of Todini Costruzioni Generali S p. A. (Italy). The date of signing the contractual agreement is September 7, 2017. The work commencement date is November 28, 2017. By Lot 3. The contract No. 003-ADB / CW-2017 is concluded with the Contractor of the JSC "Todini Costruzioni Generali S p. A." (Italy). The date of signing the contractual agreement is September 7, 2017. The commencement date is November 28, 2017. By Lot 2. Contract No. 002-ADB / CW-2017 is concluded with the Contractor of JSC "SPIK Accord" (Azerbaijan). Date of signing the contract August 16, 2017. The commencement date November 28, 2017 For Lot 1 and Lot 3, the subcontract organization LLP "Sine Midas Story" was approved by Employer's letter ref. No. 23-23-07 / 3382 dated December 15, 2017.

Part II - Environmental Monitoring

21. Kazakhstan has ratified a significant number of conventions in the field of protecting the main components of the biosphere - water, air, ozone layer, biodiversity - in order to stop the deterioration of the environmental situation in the country through the harmonization of national legislation with international provisions. The Republic of Kazakhstan signed in February 1992 an intergovernmental agreement on cooperation in the field of ecology and environmental protection. The CIS states agreed to establish an International Environmental Council and, with it, the Interstate Environmental Fund for the implementation of agreed interstate environmental programs, primarily to eliminate the consequences of environmental disasters. Additional information on the main provisions of the conventions signed by the RK is attached in Annex 2.

2.1 Environmental monitoring of Lot 1 road section

22. During the reporting period, construction work from December 2017 to March 2018 was suspended due to weather conditions. But, nevertheless, in order to carry out effective monitoring, the Environmental Impact Assessment Report, together with the Environmental Control Plan, the Environmental specialist of the CSC, conducted advisory work on preparation for all Contracts.

23. On uncovered bypass roads, access roads, the surface was periodically wetted by using a water-spreyer. This procedure is carried out to control the excessive spread of dust, especially during the dry spring season. ACP on the production base Lot 1 was built from scratch. In the equipment of the plant, a dust collection system is provided and filters are additionally available. All construction work was carried out in such a way as to reduce or even eliminate the spread of dust and other negative stimuli to road users and roadside population groups.

24. During the reporting period from October to December 2017, instrumental measurements were not carried out, as preparatory and mobilization work was not completed, and the main construction work was not started by this time. All mobilization work during the reporting period had no impact on the environment. The basic measurements on Lot 1 and 3 were carried out in April. Production monitoring of environmental protection was held in May. The report on this monitoring was submitted to the CSC on June 13, 2018. Work on industrial environmental monitoring was carried out by "GidroEkoresurs-L" LLP on the basis of an agreement between this laboratory and the subcontractor of the joint venture "Sine Mindas Stroi" dated April 17, 2018. The laboratory has licenses and accreditation for these types of work. Annex No. 2 to this report includes scans of permits and certificates of verification of equipment of the laboratory of "GidroEkoresurs-L" LLP.

25. During the period from October to December 2017, the CSC Environmental Engineer / Engineers periodically conducted a visual inspection of the base camps at the lots, as well as the mobilization and preparation of sites for the CSP, ACP. The Environmental Protection Specialist of the Engineering Service carried out an audit of the necessary documents of the Contractor. During the reporting period, the environmental specialist sent comments to the contractor to the submitted EMP options. The Environmental Protection Specialist from the CSC recommended that Contractors submit to the EMP additional management plans: a plan for the construction of a base camp; Management plan for the disposal and treatment of solid waste; Management plan for disposal of hazardous waste; Management plan for dust prevention; Management plan for soil development; Water and air quality management plan; Noise Management Plan, Health and Safety Management Plan. Comments from the CSC Engineer for the preparation of the EMP were also in the part of the detailed management of environmental risks, measures to reduce the negative environmental impacts.

References

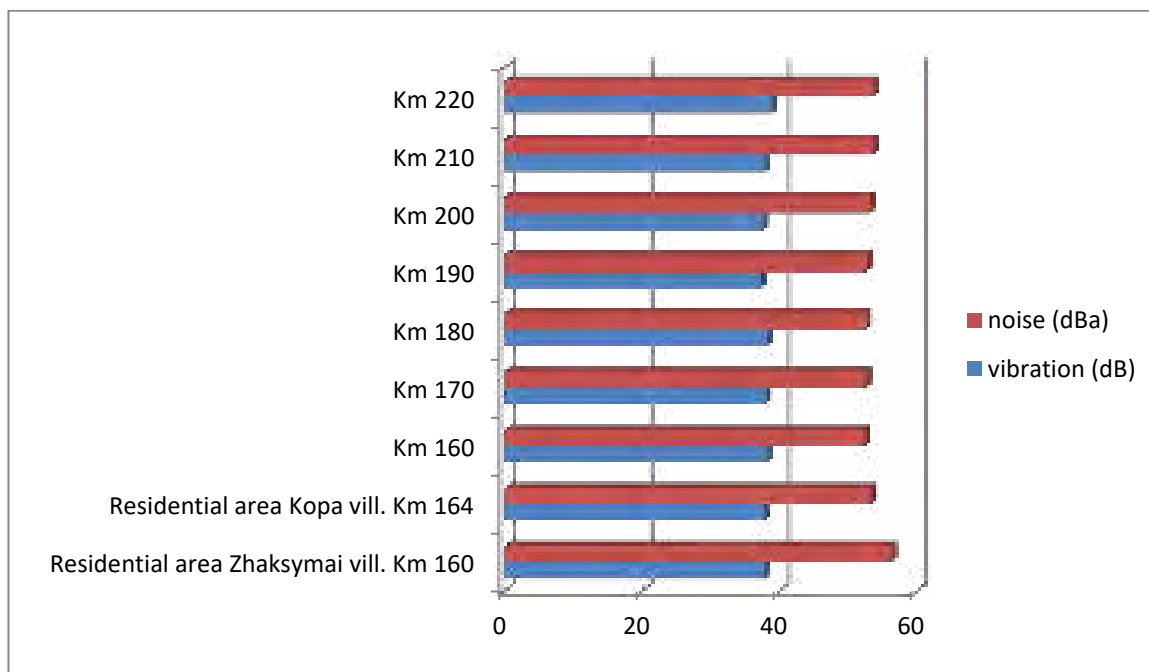


Fig.4. The diagram of the basic value of noise and vibration measurements on Lot 1.

27. The results of measurements of Lot 1 road section according to the protocols on May 24, 2018 show that, with an allowable sound rate of 80 dBA, the data is fixed in the range from 52.9 dBA to 55.4 dBA. The data indicate that the noise level does not exceed the permissible standards. Vibration measurements show that at these measurement points, vibration acceleration was observed in the range of 37 to 38.8 dB, with an allowable equivalent level of 95 dB. The diagram is presented in Fig. 4

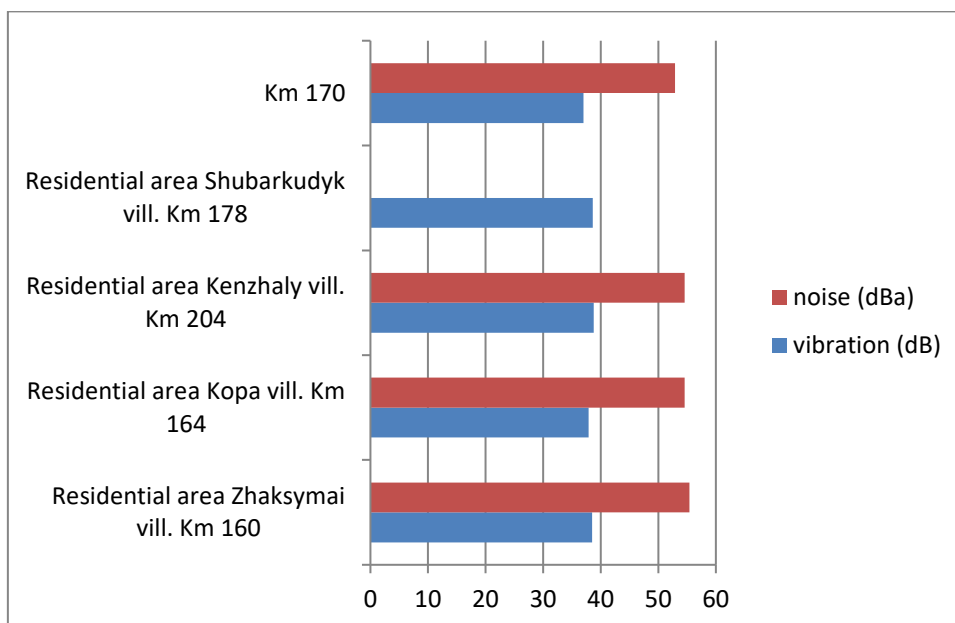


Fig.5. Diagram of measurement results dated May 24, 2018

28. The results of the instrumental measurements carried out on April 23-24, 2018 show that the vibration and noise levels of the laboratory equipment and the operator's equipment, machinery and equipment around the Lot 1 road construction site do not exceed the permissible standards. Figures 5 and 6 show the vibration measurement data (in dB) as compared to the baseline values obtained during the measurement period in April 2018.

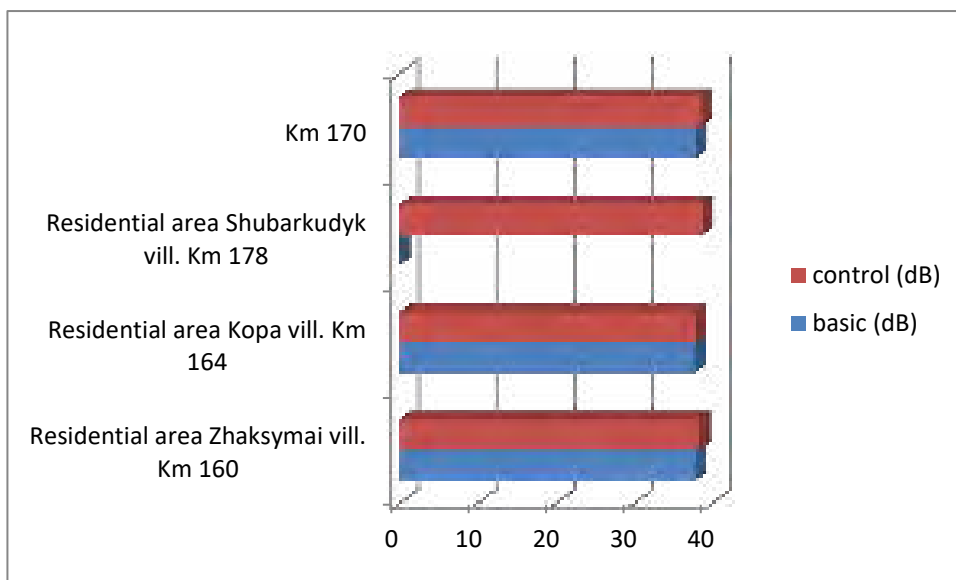


Fig.6. Comparative data of vibration acceleration during control periods

29. In Figure No. 6, a noticeable excess of the vibration values is observed in the area of the Settlement Zone in Shubarkudyk village km 178 in comparison with the baseline data. It should be noted that there were no baseline measurements. But in general, the measurements in May do not exceed the permissible levels.

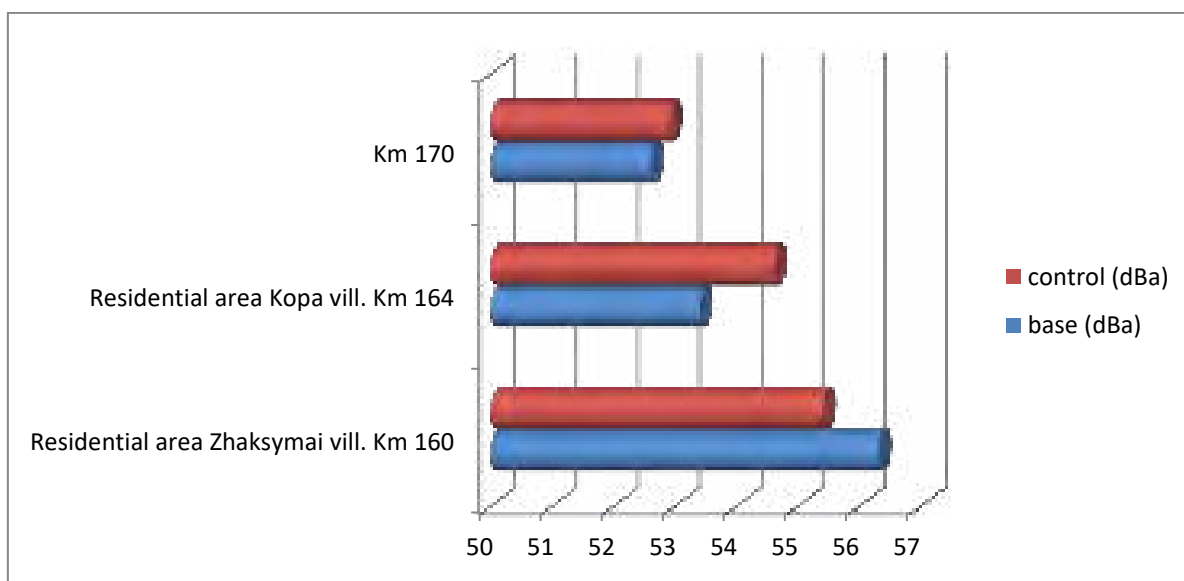


Fig. 7. The noise levels in comparison between the periods of control

30. In Figure 7, in the residential area of the Kopa settlement, km 164, it can be seen that the noise figure obtained in May exceeds the baseline. But this excess does not exceed the permissible noise level. At this site, active construction work was conducted in connection with which the measure of noise measurement is exceeded from the base one. Annex No. 3 gives the results of noise and vibration measurements for this area of work.

31. The contractor used effective ways to reduce the noise level from their construction work. Monitoring of the site and monitoring of works showed that, the contractor level of noise reduced by the proper use of machinery and equipment. The contractors organized their work taking into account the location of the installation and traffic in order to reduce noise. Workers of the site were not provided with special headphones-ear plugs to protect themselves from harmful long-term noise effects originating from construction equipment. In most cases, noise-related work was conducted during the day. Dosimetric measurements during the period from April 2018 to May 2018 at the points of measurement for this Lot did not fix the radiation source.

2.1.2 Water quality monitoring

32. Regulatory framework for water quality assurance:

- Ecological Code of the Republic of Kazakhstan;
- Sanitary rules "Sanitary and epidemiological requirements for water sources, water intake points for household and drinking purposes, domestic and drinking water supply, places of cultural and domestic water use and safety of water bodies", approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 209 of 16.03.2015.
- TR "Requirements to the safety of drinking water for the population", approved by the Government of the Republic of Kazakhstan as of 13.05.2008 No. 456;

33. The rivers running on the Aktobe section have a continuous flow throughout the year. These rivers are the sources of technical water for the period of construction work. In the Atyrau region, the road crosses 2 rivers, Sagyz km 340 and Nogayty km 301. The level of groundwater is mostly quite deep, and their quality is low due to salt injections. Monitoring of water resources was conducted on the rivers Kenjaly km 204, Shieli km 181 and draw Zhaksymai km 160. Sampling was conducted according to the standard. Below in Figure 8 and Figure 8.1 is given a map of water sampling.



Fig. 8. situational map of water sampling points

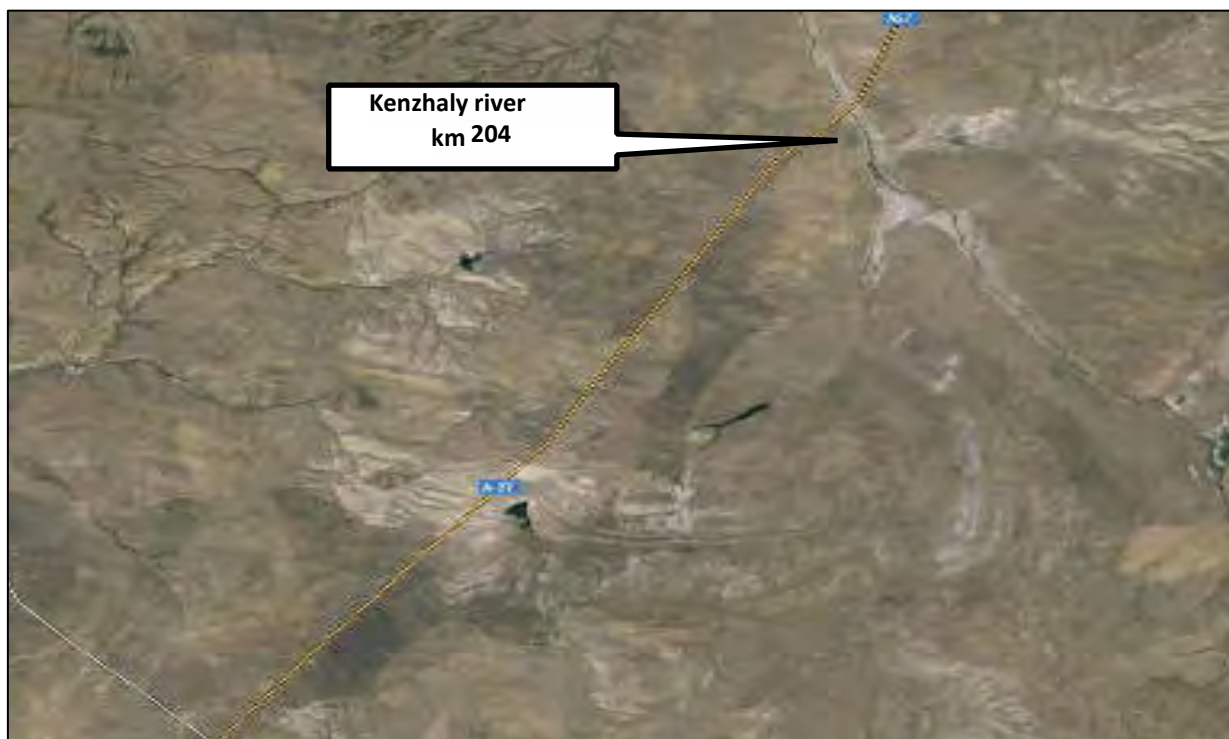


Fig.8.1. situational map of water sampling Km 204 of Kenzhaly river

Analyzes of water samples were carried out for controlled indicators: Hydrogen pH, Dry residue, water insoluble matter, Chlorides, Nitrogen Ammonium, Petroleum products, Total hardness, Magnesium, Calcium, Sulfates, Nitrates, Nitrites, Iron, Chromium, Total phosphorus, AS.

34. According to the results of the chemical analysis of water during the baseline measurement, it was observed that in the Kenzhaly River, the limit values were exceeded for the following analytes: chloride at 2485 mg / dm, ammonium nitrogen at 7.05 mg / dm, and sulfate at 378 mg / dm. In the Shieli River, exceeding the maximum permissible standards for ammonium nitrogen by 4.93 mg / dm, as well as the excess on the draw Zhaksymai on the following analytes: chloride at 910 mg / dm, ammonium nitrogen at 10.88 mg / dm, total hardness by 38 mg / dm, and sulfate at 189 mg / dm. These data are recorded as background indicators of the chemical composition of water above the listed sources. The results of basic and subsequent measurements of water samples are presented in the table of Annex No. 4.

35. The results of monitoring and laboratory investigations of the conditions and composition of natural waters in May in the rivers Kenzhaly and Shiely do not exceed the maximum permissible standards. There was no water in the draw Zhaksymai.

2.1.3 Monitoring of soil condition

36. Regulatory framework for soil analysis:

- Ecological Code of the Republic of Kazakhstan;
- Hygienic standards for the safety of the environment (soil), approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 452 of June 25, 2015.

37. To analyze the condition of the soil samples were taken during the basic measurements in April 2018 at the points km 170: two points, on the industrial base of the Zhaksymai village two points. Controlled indicators: pH hydrogen, dense residue, Petroleum products mg / g, Chlorides, Sulfates, Calcium, Magnesium, Carbonates, Bicarbonates. According to the protocols of soil monitoring results, the negative impact of works within the SPZ is assessed as low. Soil pollution by oil products and petroleum products is not fixed. But the duration of the impact is defined as a constant, since construction work is being accelerated because of the backlog of the working schedule. The detailed values of soil studies are given in Annex No. 5

2.1.4 Air quality

38. Regulatory and legal framework for instrumental measurements in atmospheric air, workplace air and on sources of air emissions:

- Ecological Code of the Republic of Kazakhstan;
- Hygienic standards for atmospheric air in urban and rural settlements, approved by the order of the Minister of National Economy of the Republic of Kazakhstan № 168 of February 28, 2015.
- TR "Requirements for the safety of ventilation systems" approved by the Government of the Republic of Kazakhstan as of 02.03.2009 No. 234;
- TR "Requirements for environmental emissions from the combustion of various fuels in boiler plants of thermal power plants", approved by the Government of the Republic of Kazakhstan as of 14.12.2007 No. 1232;

39. According to the submitted sampling protocols and their results during the selection, the parameters of atmospheric air, climatic parameters were recorded: wind speed, direction, barometric pressure, humidity, temperature. Air quality monitoring was performed in order to determine the concentration level of the polluting components. The following parameters were investigated: inorganic dust, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), formaldehyde (CH₂O), carbon monoxide (CO) hydrocarbons (C₁₂-C₉), hydrogen sulfide (H₂S), benzene (C₆H₆), methyl benzene C₅H₆-CH₃) and xylene (C₈H₁₀) were conducted on the territory according to EMP. This

monitoring and measurements were carried out by specialists of HydroEkoresurs-L. Figure 9 below shows sampling map.

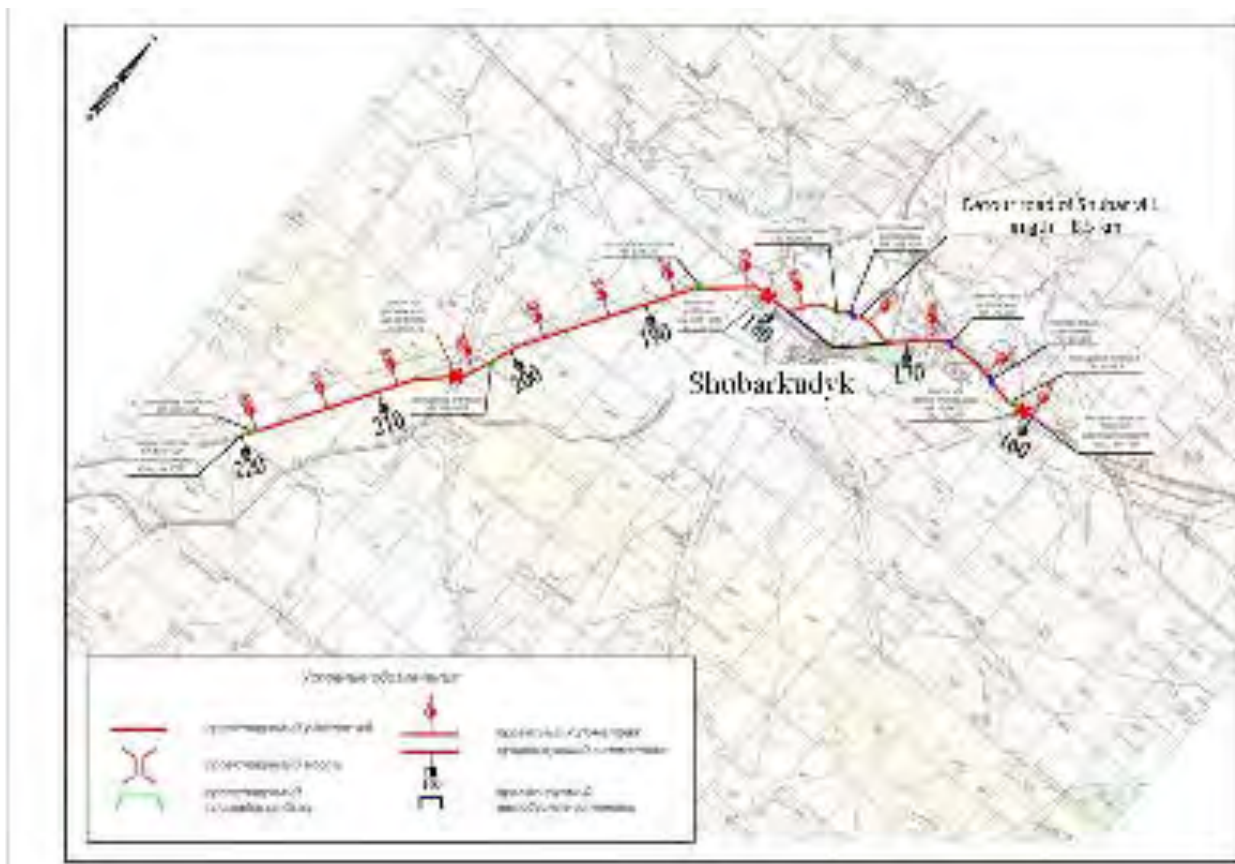


Fig.9. Point of measurement of air pollution of the Lot 1 road section.

Laboratory data on the level of contamination on this lot are presented in Annex No. 6 to this report.

2.1.5 Essential characteristics for Lot 1

40. Effective as of favorable weather conditions, the following environmental protection measures were carried out on site:

- Standard equipment checks;
- Dust suppression at various sites, such as access roads, production facilities, temporary storage of building material. However, the EMP specifies that a suspension for dust suppression will be used. Actually, water is used without suspension;

41. During the period from October to December 2017, the CSC environmental specialist Shchedreev Yerzhan (hereinafter referred to as the CSC environmental specialist) periodically conducted a visual inspection of the base camp, and also recorded the status of mobilization and preparation of sites for the CSP and ACP. The CSC Environmental specialist conducted an audit

of the necessary Contractor's documents. During the period October-December, a letters were sent to the contractor about the need to submit an EMP to the CSC engineer and relevant environmental protection plans in accordance with the list:

- Organization and management of a base camp;
- Solid waste disposal and treatment;
- Management of hazardous waste disposal;
- Control of dust prevention;
- Management of soil development;
- Water quality management;
- Air quality management;
- Noise level control;
- Health and Safety;
- Ensuring safe traffic.

42. Comments from the environmental specialist of the CSC on the preparation of the EMP were also in the part of detailing environmental risks, measures to reduce the negative environmental impacts. The very process of finalizing the EMP to an acceptable quality caused a number of questions to the local environmental specialist. The international specialist in environmental protection and the local environmental specialist was not mobilized on site. These specialists were in the office in Aktobe. Site monitoring by the CSC engineer was conducted with the invitation of the team of environmental specialists on site. As a result of the joint visit and monitoring of the environmental situation on June 11, 2018, the CSC Engineer presented the Non-conformance report on sites and in base camp. In Annex No. 7 to this report, this document is attached.

43. Also, consulting work on the part of the CSC Environmental specialist was hampered by the lack of mobilization of a team of environmental specialists. The essential point was not the completeness of the EMP, the inconsistency of the English version of the document to the Russian version. In fact, construction work began, but the adoption of the EMP stretched until June 2018. One of the reasons is the absence of international specialist on site due to the visa trip. Also, the contractor's environmental specialists did not take into account the recommendations of the PMC and the CSC on the division of correspondence, that is, separately for each lot, including its EMP and its Annexes. In general, in this way, the work of an international specialist and a local environmental specialist, moreover he is limited in the powers, the CSC environmental specialist has doubts about the success of implementing environmental protection measures. With such a weak communication and an ineffective approach in the work, Contractor's

the environmental specialist team very slowly and for a long time formed a package of permits. The table of project approval documents is attached to this report in Annex 8.

Table № 4: Monitoring of the environmental compliance on Lot 1

| № | Location | Issues of concern | Recommended measures | Implications / correspondence | Corrective action |
|---|--------------------------------|--|---|--|--|
| | Road site | Use of safety tools (safety glasses, gloves, work clothes, helmet, safety shoes, etc.) by workers / engineers. | Availability of safe tools in base camp and on the construction site. | Safe tools are provided to workers and engineers as needed | Done |
| | Base camp | Water supply | Provide water for drinking and for domestic use, presence of a sink in bathrooms, toilet, kitchen and dining room. Cross-check and uninterrupted supply of drinking water | Means are provided. Communications are connected to the base camp | Completed In terms of providing the office to CSC engineers - partially done. Non-compliance reports were issued, in Appendix No. 8 |
| | | Sanitation and hygiene | Providing toilet bowls and rinsing water in the showers. Transportation to septic tanks for treatment and disposal | Base camp is provided and observed | The CSC office is not completed. Details of the discrepancies in Appendix No. 7 |
| | | Kitchen and canteen | Provision of appropriate ventilation, cranes and hygiene of dining and cooking area, storage of products | The complex of a local resident is rented with the provision of all conditions | Done |
| | | Drainage in base camp | Ensure the drainage of water in the camp. Avoid accumulation of water inside the camp. | complex has everything needed | Done |
| | | Household waste | The location of the trash buckets and the urgent modernization of the pits of waste disposal, cover and control on the territory of the base camp. | The complex of buildings of a local resident, with the provision of export and disposal On the production base, there are no fire shields in the laboratory | Not done |
| | Territory of quarry/borrow pit | Collection of material compliance with the legislation | Get permission for excavation for three borrow pits on CH | In process | done |

| | | | | | |
|--|---|--|---|--|---|
| | | of the Republic of Kazakhstan on environmental protection | 134, CH 40+00 and CH 00. | | |
| | Fire-fighting equipment in the base camp, office. | Fire-fighting equipment must be located in base camp and in the office. | Arrange the fire fighting equipment in a conspicuous place and in such a way that it can be used in case of an emergency. | Base camp is not always provided. There are no fire shields in the laboratory | Not done |
| | Movement of transport and equipment in base camp. | Excessive dust contamination in camp territory and noise pollution of the environment as a result of traffic in the camp and the site. | On the construction site and base camp should be used equipment that meets its environmental standards for noise. | In the camp zone (on the territory of the local resident complex) everything is observed, on the territory of the production base - it is not executed | Not Performed Written prescriptions are issued |
| | ACP | Provision of PPE and milk. Dust suppression in the territory and in warehouses | Compliance with safety standards and requirements, ensuring compliance with FIDIC, Contract obligations | In process | In process |

2.2. Environmental monitoring of Lot 2 road section 2

44. During the reporting period, on Lot 2, construction work from December 2017 to March 2018 as a result of the cold weather was interrupted. But, nevertheless, in order to carry out effective monitoring, the Environmental Impact Assessment Report, together with the Environmental Control Plan, the CSC Environmental specialist, conducted advisory work on preparation for all Contracts.

45. On uncovered bypass roads, access roads, the surface was periodically wetted by using a water-spreyer. This procedure is carried out to control the excessive spread of dust, especially during the dry spring season. ACP on Lot 2 was deployed from the previous site of the project. During the reporting period, the ACP, CBP and DSP were not put into operation, as the company had financial problems not related to the project.

46. During the reporting period from October to December 2017, instrumental measurements were not carried out, as preparatory and mobilization work was not completed, and the main construction work was not started by this time. All mobilization work during the reporting period had no impact on the environment. Basic measurements were carried out in April. The work on industrial environmental monitoring was carried out by "GidroEcoResurs-L" LLP on the basis of the contract of April 5, 2018. The laboratory has licenses and accreditation for these types of work. In Annex No. 2, all permits and certificates of verification of the equipment of the laboratory of "GidroEcoResurs-L" LLP are presented.

2.2.1 Noise and Vibration

47. The basic measurement of noise and vibration level at the production base and on the sections of the reconstruction of the road "Aktobe-Atyrau", 236-275 km. During the measurement at these control points, construction work was carried out. The results of measurements on the points according to the protocols show that, with an allowable sound level of 80 dBA, the data are fixed in the range from 51.4 dBA to 52.4 dBA. The data indicate that the noise level does not exceed the permissible standards. Measurement points show vibration in the range from 35.6 to 37.6 dB, with an allowable equivalent level of 95 dB. Below in Fig.10 the diagram of the indicators of noise and vibration measurements during the baseline measurement is presented. The baseline measurements are presented in Annex 9.

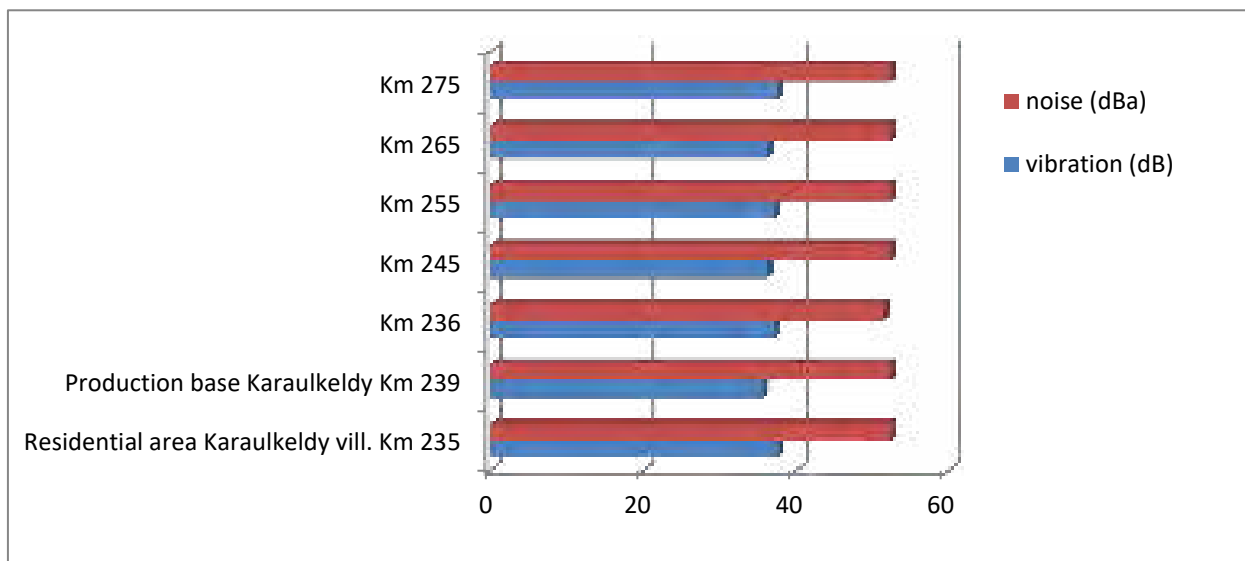


Fig.10. The diagram of indicators of basic measurements of noise and vibration on Lot 2 road section

47. During production control (May 2018), noise and vibration measurements were carried out at the Karaulkeldy production base and at the reconstruction sites of the Aktobe-Atyrau road, 236-275 km. Below in Fig. 11. the scheme of measuring points is presented.

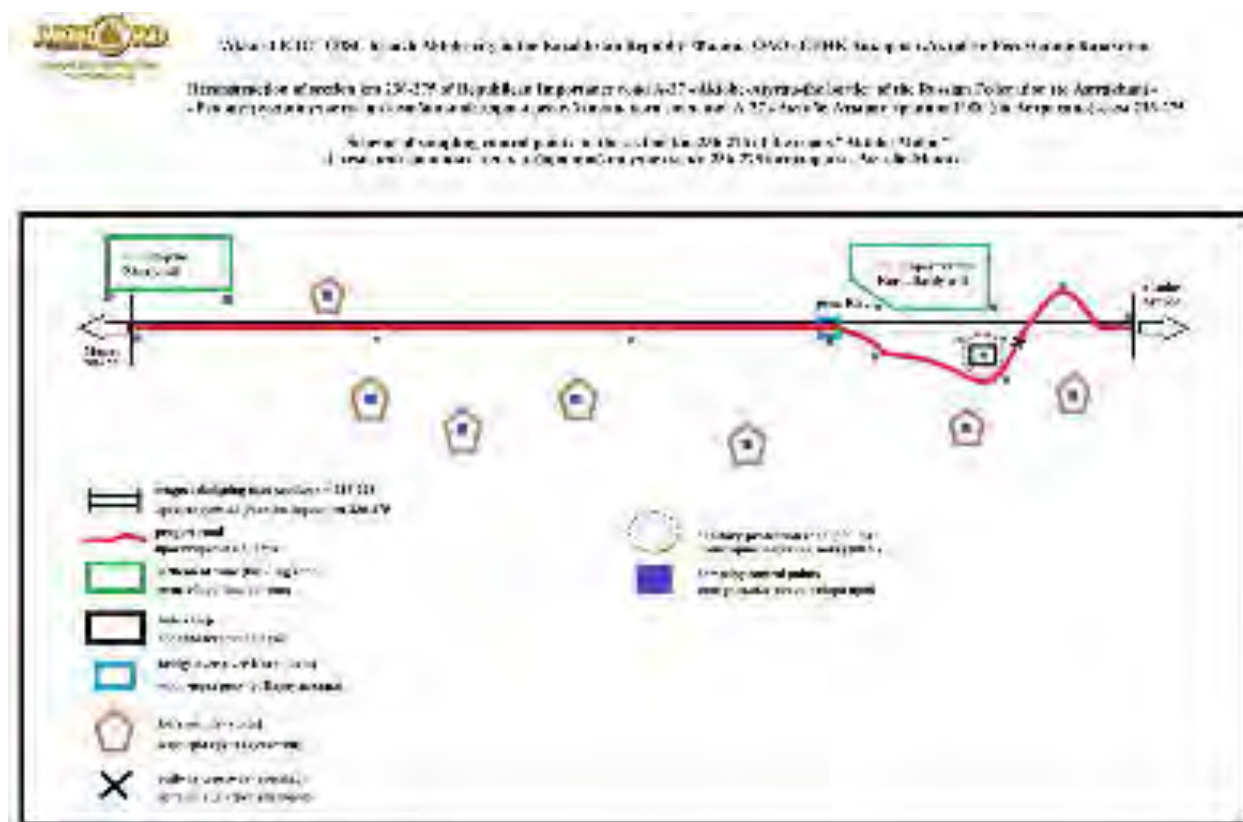


Fig.11. Scheme of the locations of the Noise and Vibration points of the Lot 2 road section

The main source of noise (vibration) is the road construction machinery. Figure 12 below shows the dynamics of indicators for measuring the production indicator.

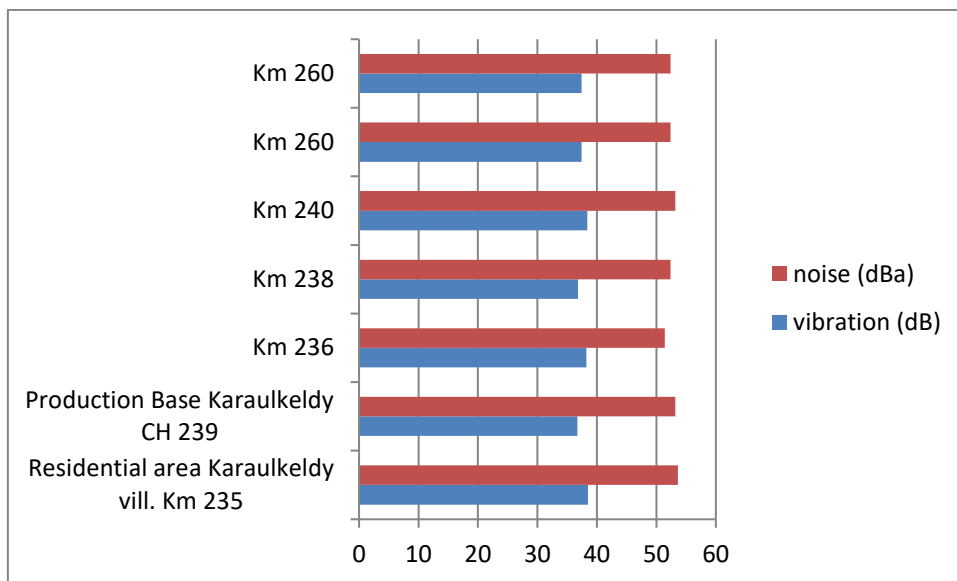


Fig 12. Diagram of vibration measurement results from May 23, 2018

48. In the diagram, Figure 13 below, the comparison of vibration data is shown and in Figure 14 below, the noise comparison of the values is shown. These results indicate that the level of vibration and noise has increased in comparison with the baseline values, but they do not exceed the permissible standards for vibration and noise.

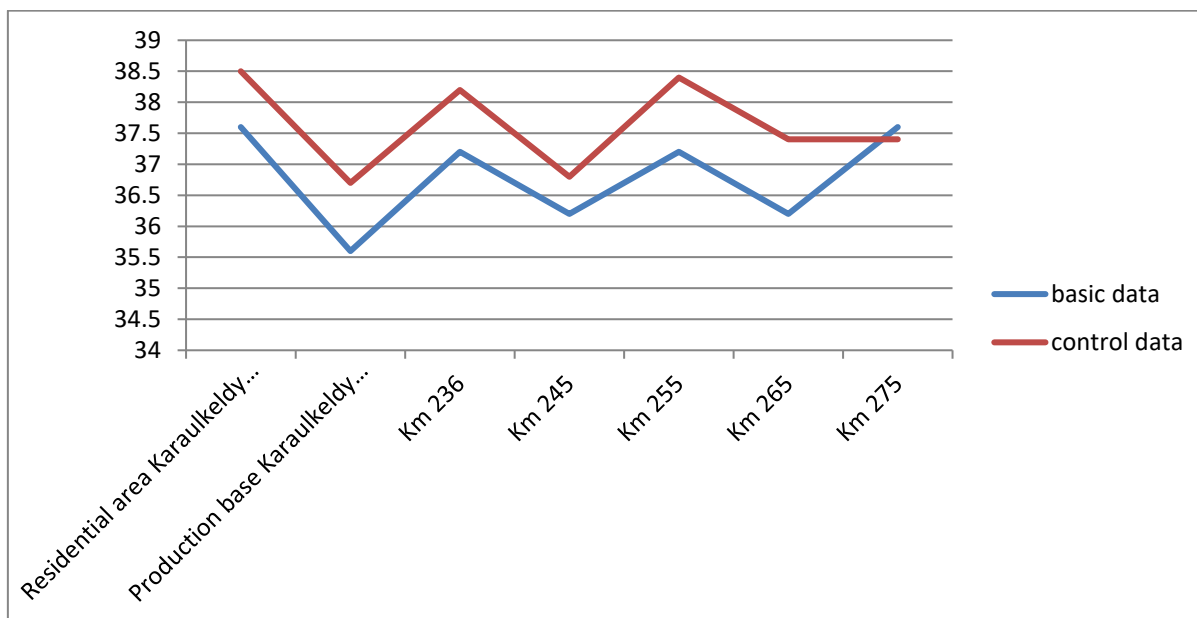


Fig. 13. Dynamics of vibration level (dB) in comparison with the basic and subsequent control dated 23 May 2018

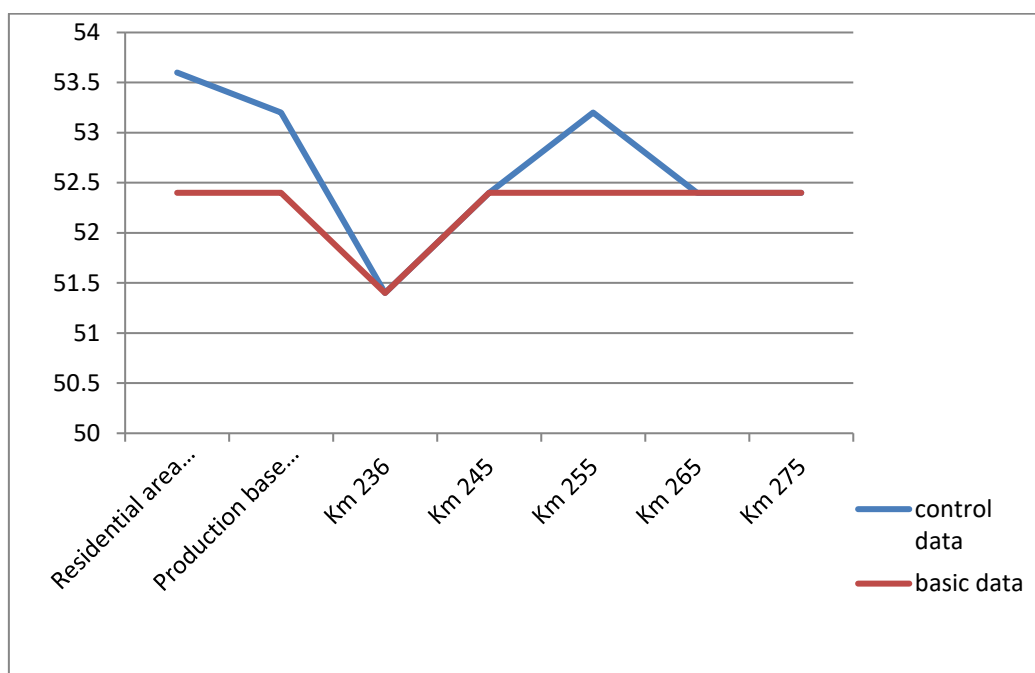


Fig. 14. Dynamics of noise measurements (dB) in comparison with the basic and subsequent control on 23 May 2018.

50. The contractor used effective ways to reduce the noise level from their construction work. Monitoring of the site and monitoring of works showed that, the contractor level of noise reduced by the proper use of machinery and equipment. The contractors organized their work taking into account the location of the installation and traffic in order to reduce noise. In most cases, noise-related work was carried out in the daytime.

51. Thus, measurements of the noise and vibration level of the laboratory equipment and precessing control equipment, machines and equipment around the construction site on Lot 2 do not exceed the permissible standards. Dosimetric measurements during the basic monitoring at the points of measurement for this Lot did not fix the radiation source.

2.2.2 Monitoring of water quality

52. Regulatory and legal framework for conducting chemical water analysis:

- Ecological Code of the Republic of Kazakhstan;
- Sanitary rules "Sanitary and epidemiological requirements for water sources, water intake points for household and drinking purposes, domestic and drinking water supply, places of cultural and domestic water use and safety of water bodies", approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 209 of 16.03.2015.
- TR "Requirements to the safety of drinking water for the population", approved by the Government of the Republic of Kazakhstan as of 13.05.2008 No. 456;

53. Water resources are monitored on the Karaulkeldy River, km 239, flowing on this section of the road. Analyzes were conducted in accordance with approved standards. Controlled substances: PH, Solids, Water insoluble substances, Chlorides, Ammonium Nitrogen, Petroleum products, Rigidity General, Calcium, Magnesium, Sulphates, Nitrates, Nitrites, Iron, Chrome, General phosphorus, AS. The figure below shows the dynamics of changes in controlled substances.

54. Figure 15 shows data on the chemical analysis of water from the Karaulkeldy River, where it can be seen that the changes are insignificant on a dry residue and sulfates. The detailed data in Annex No. 10 are attached to this report. Analyzing the data of laboratory investigation, it should be noted that none of the above-listed indicators of water pollution do not record exceedances of permissible standards. Observations of the CSC environmental specialist did not record the facts of oil spills, fuel in the river.

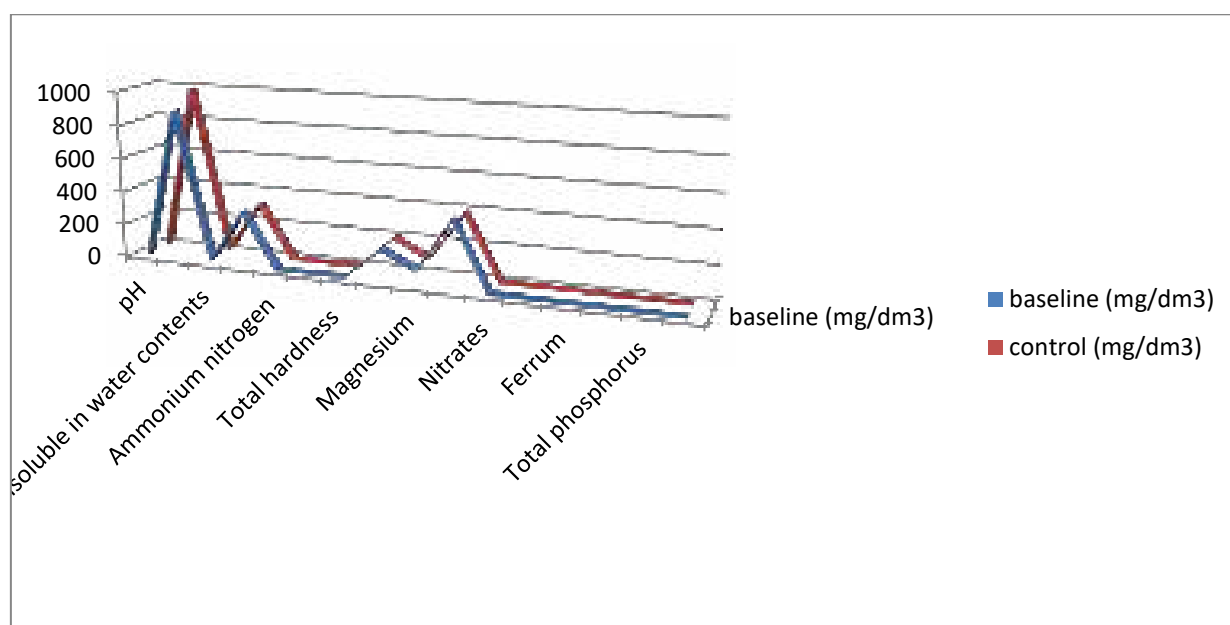


Fig.15. Dynamics of changes in water quality in comparison of baseline measurement followed by measurement in May 2018.

2.2.3 Monitoring of soil condition

55. Regulatory and legal framework for soil analysis:

- Ecological Code of the Republic of Kazakhstan;
- Hygienic standards for the safety of the environment (soil), approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 452 of June 25, 2015.

56. Specialists of the laboratory LLP "Gidro Eco Resurse L" conducted a basic and subsequent soil sampling for analyzes on sections of the highway Aktobe-Atyrau, 236 km; 245 km; 255km; 265 km; 275 km and the borrow pit section No. 1; No. 2; No. 3; No. 4; No. 5; No. 6; No. 7 in accordance with approved standards. Controlled substances: Dense residue, pH, petrolleum products, chlorides, sulphates, calcium, magnesium, carbonates, bicarbonates.

57. According to the results of chemical analyzes (Annex 11 is attached to this report), the quantity of the negative impact on the surrounding soil cover at the SPZ boundary is assessed as low, while the impact area to vegetation corresponds to a local scale, the duration of impact to a constant. It should be noted that the submitted measurement data in the base period and subsequent measurement in May 2018 show identical results for all parameters of the chemical analysis at the site of the Karaulkeldy base camp point 1 (north), point 2 (South), point 3 (west), point 4 (east) and point 5 (center), which is unlikely to be the actual results of chemical analyzes, even if there were no construction works on these sites. Below in Fig. 16. are presented sampling points of the soil.



Fig. 16. Soil sampling points on the Lot 2 road section

2.2.4 Air quality

58. Regulatory and legal framework for instrumental measurements in ambient air, workplace air and on sources of air emissions

- Ecological Code of the Republic of Kazakhstan;
- Hygienic standards for atmospheric air in urban and rural settlements, approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 168 dated February 28, 2015.
- TR "Requirements for the safety of ventilation systems" approved by the Government of the Republic of Kazakhstan as of 02.03.2009 No. 234;
- TR "Requirements for environmental emissions from the combustion of various fuels in boiler plants of thermal power plants" approved by the Government of the Republic of Kazakhstan as of 12.12.2007 No. 1232;

59. The baseline monitoring was carried out at the points specified in the Contractor's EMP. According to the basic sampling protocols and sampling results, the parameters of atmospheric air, climatic parameters were recorded: wind speed, direction, barometric pressure, humidity, temperature. Air quality monitoring was carried out to determine the level of concentration of polluting components: Study of the parameters of inorganic dust, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), formaldehyde (CH₂O), carbon monoxide (CO) hydrocarbons (C₁₂-C₉), hydrogen sulfide (H₂S), Benzene (C₆H₆), methyl benzene (C₅H₆-CH₃) and xylene (C₈H₁₀) were conducted on the territory according to EMP. This monitoring and measurements were carried out by specialists of "HydroEkoresurs-L".

60. During the period of production monitoring, construction work in May 2018 was conducted at 236-240 km, 260 km of the Aktobe-Atyrau road section. Instrumental measurements of atmospheric air quality were carried out at four control points (sections of road: km 236, 238, 240, 260) and in seven sections of the borrow pits (one control point in each section). Point number 1; No.2; No. 3; No. 4; No.5; No.6; No.7. Controlled substances are all listed above when measuring in residential areas of the villages of Lot 2. In fact, at that time, construction work was carried out. The actual concentration of pollutants in mg/m³ is determined: nitrogen dioxide; dust inorganic 70-20%; sulfur dioxide; carbon oxide; formaldehyde; hydrocarbons C₁₂ = C₁₉; hydrogen sulphide; benzene; xylene; methylbenzene.

61. According to the environmental monitoring data in May 2018, no exceeding of MAC was recorded for any of the controlled substances. Above in Fig. 15. is presented a map with sampling points of air. The results of basic and control instrumental measurements in May 2018 are given in Annex No. 12.

62. Radiation measurements during baseline measurements at sites and subsequent measurements did not show an excess of permissible values.

2.2.5 Essential characteristics for Lot 2 road section.

63. With the beginning of favorable weather conditions, the following environmental protection measures were carried out at the site:

- Standard equipment checks;
- Dust suppression at various sites, such as access roads, production facilities, temporary storage of construction material;
- Due to financial difficulties, the Contractor on this Lot has significant backlogs in the Work Schedule. At the time of preparation of this report, base camp is not ready, the shift camp with housing blocks, infrastructure, laboratory, warehouses is mobilized for 50% of the planned readiness of the base;
- Environmental specialist of Contractor Lot 2 after correction and comments of the environmental specialist of the CSC at the time of preparation of this report did not submitted required volume for CSC approval. However, reports on baseline measurements and subsequent environmental monitoring in May were submitted to CSC.

64. During the period from October to December 2017, environmental specialist of the CSC Shchedreev Erzhan (hereinafter environmental specialist of the CSC) periodically conducted a visual inspection of the base camp site, and also recorded the status of mobilization and preparation of sites for the CSP and ACP. Environmental specialist of the CSC conducted an audit of the necessary documents of the Contractor. During the period October-December, letters about necessity to submit EMP to the CSC were sent to the contractor and the corresponding plans for the protection of the environment according to the list:

- organization and management of a construction campus;
- solid waste management;
- management of hazardous waste disposal;
- control of dust prevention;
- management of soil excavation;
- water quality management;
- air quality management;
- noise level control;
- Health and Safety;
- provision of safe traffic.

65. Comments from the CSC Engineer on the preparation of the EMP were also in the part of detailing environmental risks, measures to reduce the negative environmental impacts. The table of project approval documents is attached to this report in Annex 13.

Table № 5: Monitoring of the environmental compliance on Lot 2

| № | Location | Issues of concern | Recommended measures | Implications / correspondence | Corrective action |
|---|--------------------------------|--|---|---|---|
| | Road site | Use of safety tools (safety glasses, gloves, work clothes, helmet, safety shoes, etc.) by workers / engineers. | Availability of safe tools in base camp and on the construction site. | Safe tools are provided to workers and engineers as needed | Done |
| | Base camp | Water supply | Provide water for drinking and for domestic use, presence of a sink in bathrooms, toilet, kitchen and dining room. Cross-check and uninterrupted supply of drinking water | Means are not provided. Communications are not connected to the base camp | Not completed The personnel lives in Aktobe, Engineers of CSC live in Shubarkudyk village. The CSC office is not provided in accordance with technical specifications. |
| | | Sanitation and hygiene | Providing toilet bowls and rinsing water in the showers. Transportation to septic tanks for treatment and disposal | Base camp and office not ready | In process |
| | | Kitchen and canteen | Provision of appropriate ventilation, cranes and hygiene of dining and cooking area, storage of products | Modular buildings are not ready and communications are not connected | Not done |
| | | Drainage in base camp | Ensure the drainage of water in the camp. Avoid accumulation of water inside the camp. | Communications are not connected | Not done |
| | | Household waste | The location of the trash buckets and the urgent modernization of the pits of waste disposal, cover and control on the territory of the base camp. | Base camp is not ready | Not done |
| | Territory of quarry/borrow pit | Collection of material compliance with the legislation of the Republic of | Get permission for excavation for three borrow pits on CH | In process | Not done |

| | | | | | |
|--|---|--|---|------------------------|------------|
| | | Kazakhstan on environmental protection | 134, CH 40+00 and CH 00. | | |
| | Fire-fighting equipment in the base camp, office. | Fire-fighting equipment must be located in base camp and in the office. | Arrange the fire fighting equipment in a conspicuous place and in such a way that it can be used in case of an emergency. | Base camp is not ready | Not done |
| | Movement of transport and equipment in base camp. | Excessive dust contamination in camp territory and noise pollution of the environment as a result of traffic in the camp and the site. | On the construction site and base camp should be used equipment that meets its environmental standards for noise. | Base camp is not ready | Not done |
| | ACP | Provision of PPE and milk. Dust suppression in the territory and in warehouses | Compliance with safety standards and requirements, ensuring compliance with FIDIC, Contract obligations | In process | In process |

2.3 Environmental monitoring of Lot 3 road section.

2.3.1 Noise and Vibration

66. The noise and vibration level was measured at Lot 3 at the sampling points in accordance with EMP during the construction period. So, on Lot 3, measurements were made at the points of Production Base Nogaity village, Zharly village, Nogayty village, road sections km 275, 285, 295, 300, 310, 320, 330. Basic measurements at these control points were carried out in April 23 -24. Figure 17 below shows map of sampling points



Fig. 17. Point of measurement of noise and vibration level of the Lot 3 road section

The results of monitoring for noise and vibration for April (basic) in 2018 showed that the level does not exceed the permissible sanitary standards. Below in Fig. 18 is the diagram of values of measurements.

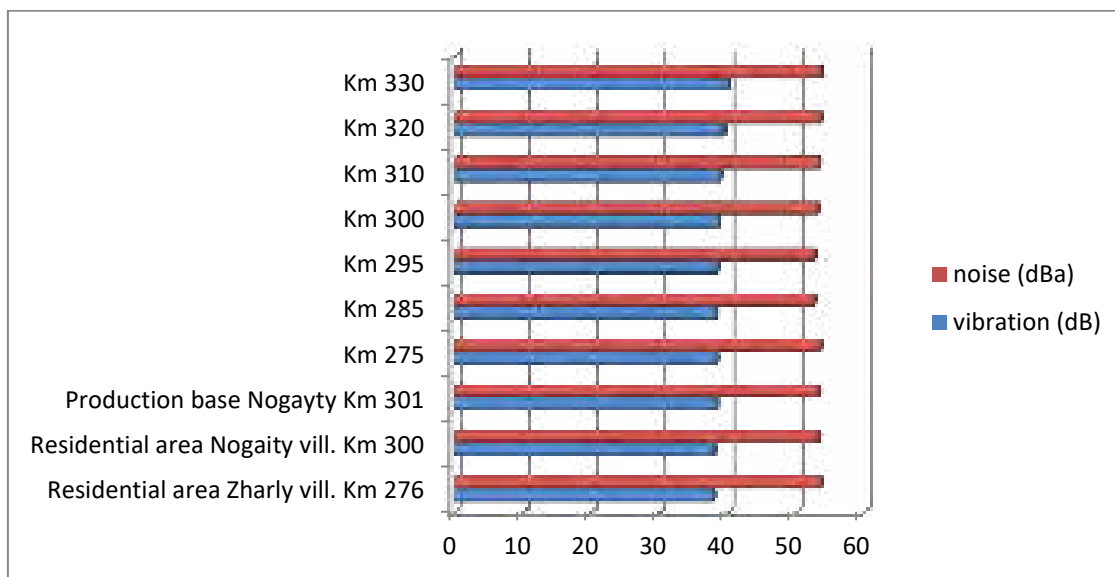


Fig. 18 basic value of noise and vibration measurements, April 2018.

67. The results of the measurements at the points indicated above, according to the protocols of May 24, 2018, show that, with an allowable sound level of 80 dBA, data are recorded in the range from 53.6 dBA to 55.6 dBA. The data indicate that the noise level does not exceed the permissible standards. Vibration measurements show that vibration measurements were observed at these measurement points in the range from 38.4 to 39.2 dB with an allowable equivalent level of 95 dB. The diagram below is presented in Figure No. 19, which clearly shows that the noise and vibration values were not exceeded during the construction work carried out during the monitoring in May at the measuring points.

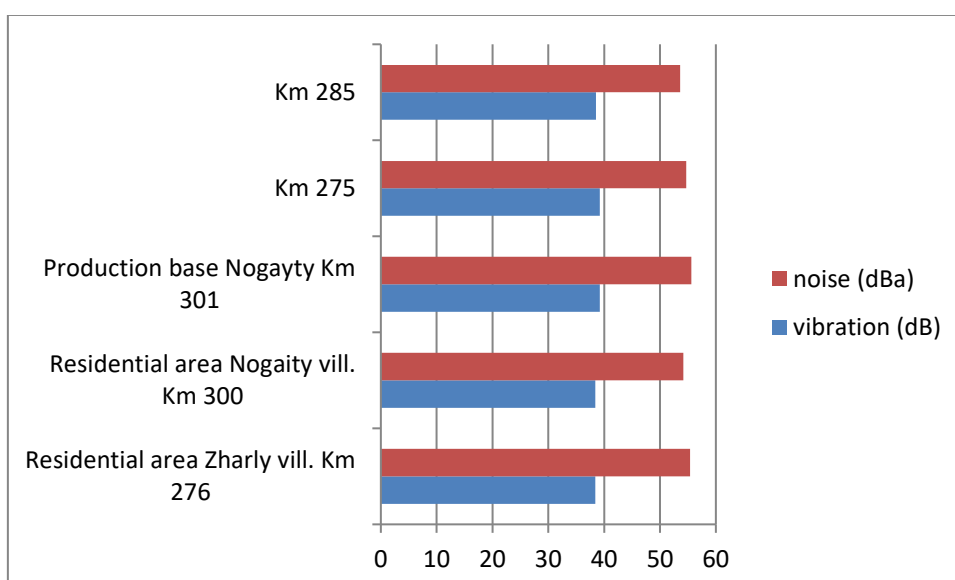


Fig. 19. Noise Measurement Results Chart, May 24, 2018

68. According to the diagrams in Figures 19 and 20, compiled from the results of noise and vibration measurements during the baseline measurements and during the monitoring period in May of 2018, there is no excess of limits.

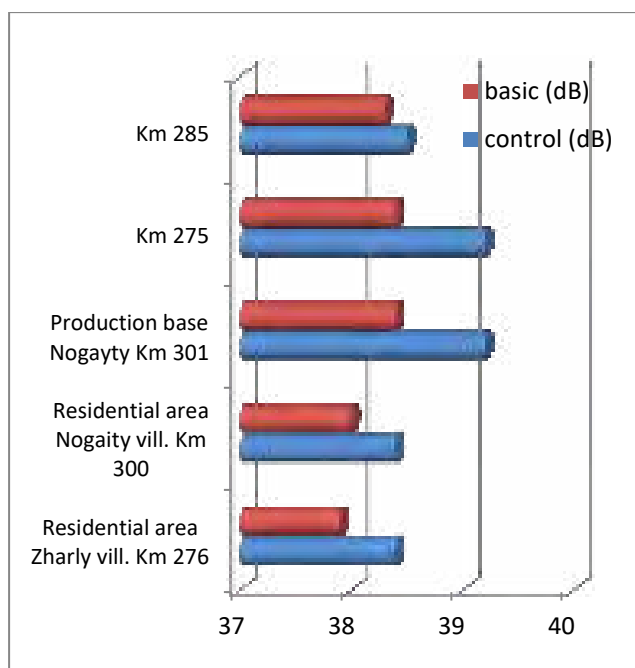


Fig.20. Vibration acceleration indices at the points of measurements at Lot 3 in comparison between the control periods

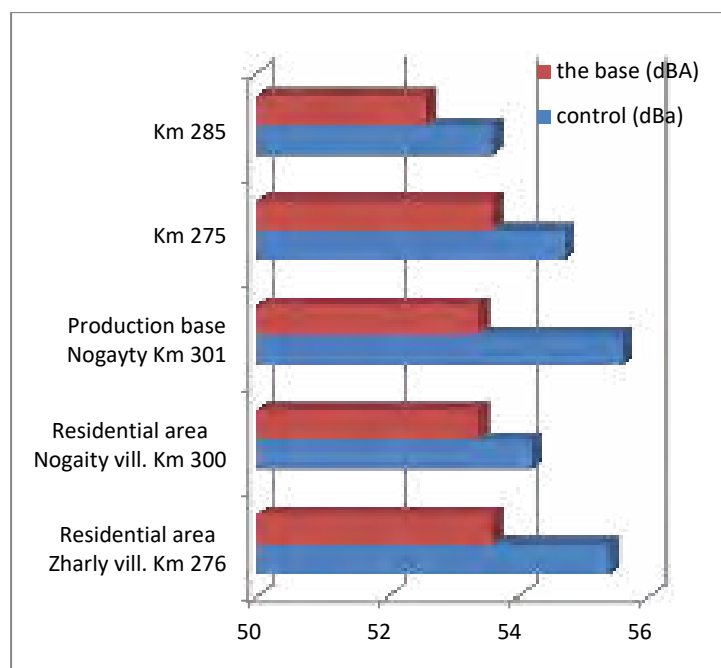


Fig.21. Indicators of the noise level at the measurements points on Lot 3 in comparison between the control periods

69. In Fig. 20, the comparison of the measurement vibration level in May with the baseline measurements shows an excess at all measurement points, but these indicators do not exceed the permissible exceedances. At the metering points of km 275 and the Production Base of Nogayty there is a sharp excess, this is due to the concentration of equipment and mechanisms at these area. In Figure 21, the noise histograms in the May measurements show an increase in values compared to the baseline values. This is observed at the points km 275, the production base of the Nogayty village, the residential areas of the villages Zharly and Nogayty. But these excesses are within the permissible norms. Detailed data are presented in Annex No. 14 to this report.

70. The contractor used effective ways to reduce the noise level from construction work. Monitoring of the site and monitoring of works showed that, the contractor level of noise reduced by the proper use of machinery and equipment. Contractors organized their work taking into account the location of the installation and the traffic in order to reduce noise. In most cases, noise-related work was conducted during the day. Dosimetric measurements during the basic monitoring at the points of measurement for this Lot did not fix the radiation source.

2.3.2 Monitoring of water quality

71. During the baseline measurements on 23-24 April for the monitoring of water resources, water sampling was carried out on the draw Ayrik. Sampling was conducted according to the standard. Figure 22 below shows water sampling map.

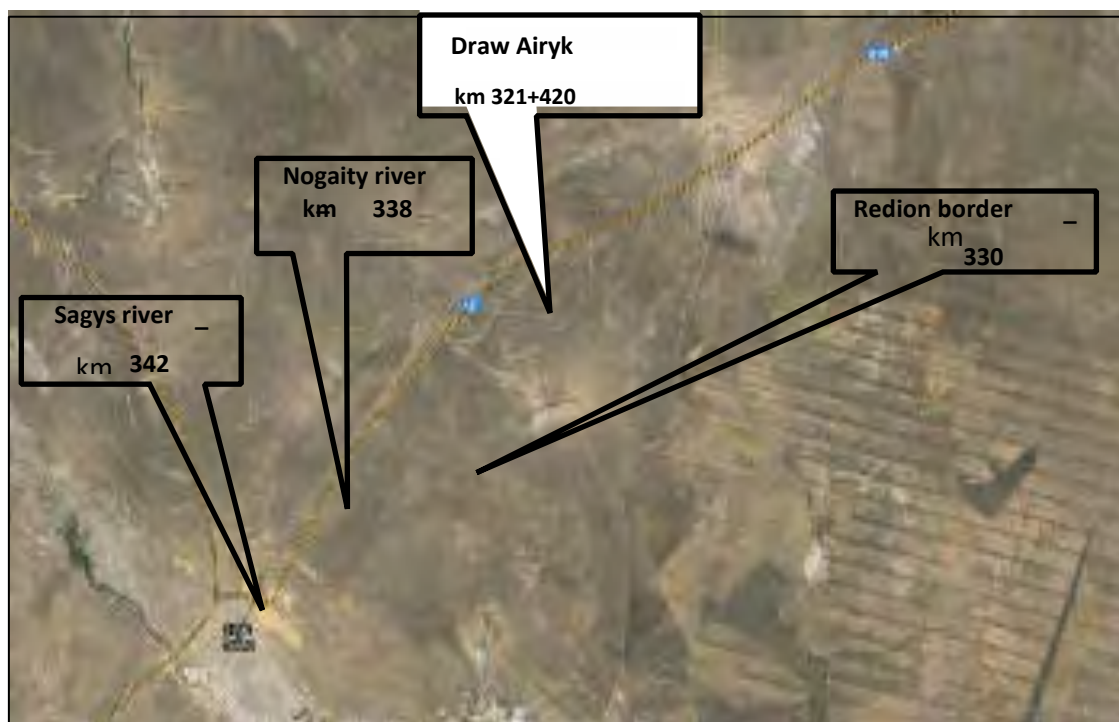


Fig. 22. Location of rivers on Lot 3 road section. Sampling of water from Ayrik draw

72. Analyzes of water samples were carried out for controlled indices: Hydrogen index pH, Dry residue, water insoluble matter, Chlorides, Nitrogen Ammonium, Petroleum products, Total hardness, Magnesium, Calcium, Sulfates, Nitrates, Nitrites, Iron, Chromium, Total phosphorus, AS. According to the results of the chemical analysis of water, no basic measurement was observed, exceeding the maximum permissible standards for all analytes. These data are recorded as background indicators of the chemical composition of the water of the above water source. In Annex No. 15 to this report, the results of basic measurements are given. Due to the lack of water in the reservoirs of Ayrik, Zharly and Nogayty, monitoring and sampling for conducting laboratory water investigation were not carried out in May.

2.3.3 Monitoring of soil condition

73. Regulatory framework for soil analysis:

Ecological Code of the Republic of Kazakhstan;

Hygienic standards for the safety of the environment (soil), approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 452 of June 25, 2015.

74. To analyze the state of soils, samples were taken during the base measurements in April 2018 at the points km 275, 285, 295, 300, 310, 320, 330 and the production base in Nogayty. Figure 23 below shows soil sampling map.

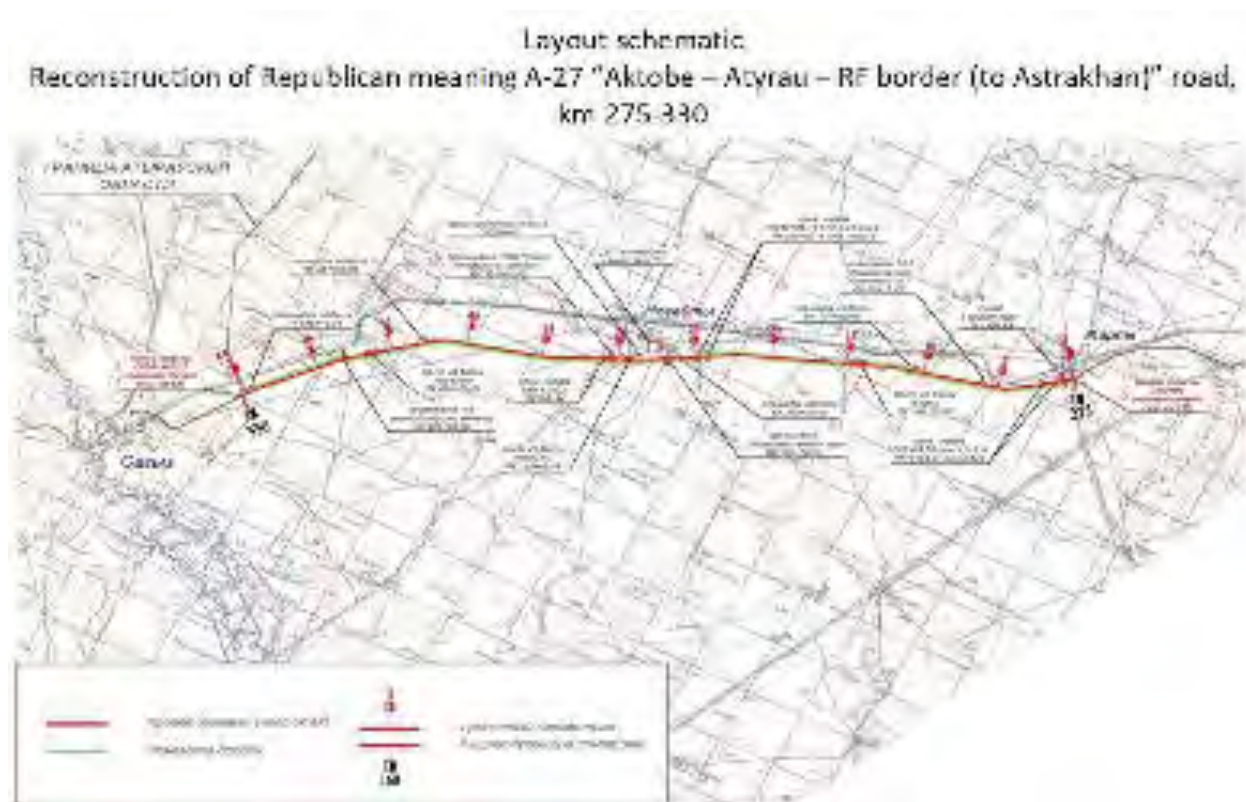


Fig. 23 Soil sampling points on Lot 3 road section

75. Controlled indicators: pH hydrogen, dense residue, Petroleum products mg / g, Chlorides, Sulfates, Calcium, Magnesium, Carbonates, Bicarbonates. According to the protocols of soil monitoring results in May, 2018, the negative impact of works within the SPZ is assessed as low. Soil pollution by oil products and petroleum products is not fixed. But the duration of the impact is defined as a constant, since construction work is being accelerated because of the backlog of the working schedule. The detailed results of soil examinations are given in Annex No. 16.

2.3.4 Air quality

76. Regulatory and legal framework for instrumental measurements in atmospheric air, workplace air and on sources of air emissions:

- Ecological Code of the Republic of Kazakhstan;
- Hygienic standards for atmospheric air in urban and rural settlements, approved by the order of the Minister of National Economy of the Republic of Kazakhstan No. 168 of February 28, 2015.

- TR "Requirements for the safety of ventilation systems" approved by the Government of the Republic of Kazakhstan as of 02.03.2009 No. 234;
- TR "Requirements for environmental emissions from the combustion of various fuels in boiler plants of thermal power plants", approved by the Government of the Republic of Kazakhstan as of 14.12.2007 No. 1232;

77. According to the submitted sampling protocols and their results during the selection, the parameters of atmospheric air, climatic parameters were recorded: wind speed, direction, barometric pressure, humidity, temperature. Air quality monitoring was performed in order to determine the concentration level of the polluting components. Figure 24 below shows sampling map on Lot 3 road section.

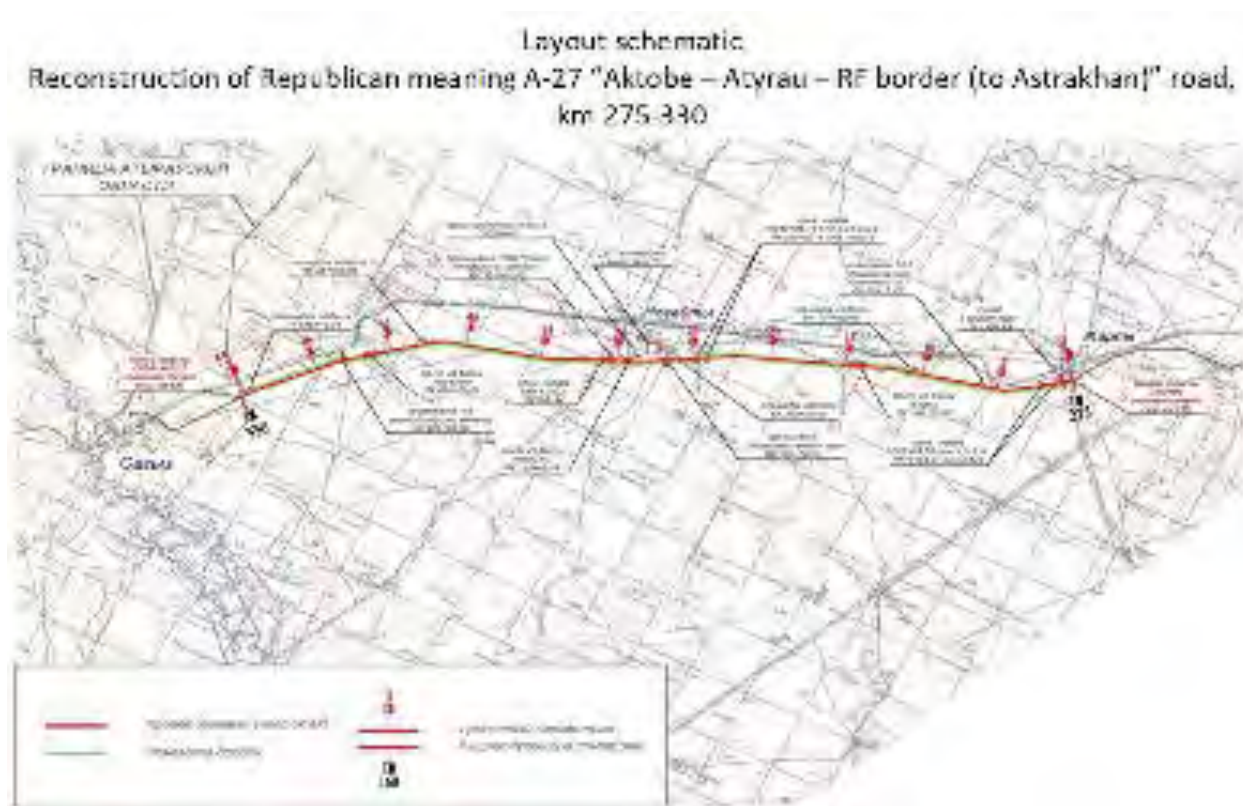


Fig. 24 Soil sampling points on Lot 3 road section

The following parameters were investigated: inorganic dust, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), formaldehyde (CH₂O), carbon monoxide (CO) hydrocarbons (C₁₂-C₉), hydrogen sulfide (H₂S), benzene (C₆H₆), methyl benzene C₅H₆-CH₃) and xylene (C₈H₁₀) were conducted on the territory in accordance with EMP.

78. For the analysis of atmospheric air, samples were taken in the residential areas of the villages of Zharly and Nogayty, from the sections of the project road at 6 points in the intervals of 10-20 meters: at km 275, km 285, km 300, km 320, km 330 and at the production base of the contractor

in Nogayty. According to the results of instrumental measurements, without exception, the parameters of pollutants do not exceed the MPC.

79. After analyzing the results of measurements of the level of air pollution, it can be concluded that in the sites studied there are no excess of MPC for all parameters of pollutants. Details on basic metering and measurements in May 2018 are provided in Annex 17.

2.3.5 Essential characteristics for Lot 3

80. With the beginning of favorable weather conditions, the following environmental protection measures were carried out at the site:

- Standard equipment checks;
- Dust suppression at various sites, such as access roads, production facilities, temporary storage of building material.

However, the EMP specifies that a suspension for dust suppression will be used. Actually, water is used without suspension;

81. During the period from October to December 2017, the CSC environmental specialist Shchedreev Yerzhan (hereinafter referred to as the CSC environmental specialist) periodically conducted a visual inspection of the base camp, and also recorded the status of mobilization and preparation of sites for the CSP and ACP. The CSC Environmental specialist conducted an audit of the necessary Contractor's documents. During the period October-December, a letters were sent to the contractor about the need to submit an EMP to the CSC engineer and relevant environmental protection plans in accordance with the list:

- Organization and management of a base camp;
- Solid waste disposal and treatment;
- Management of hazardous waste disposal;
- Control of dust prevention;
- Management of soil development;
- Water quality management;
- Air quality management;
- Noise level control;
- Health and Safety;
- Ensuring safe traffic.

82. Comments from the CSC environmental specialist on the preparation of the EMP were also in the part of detailing environmental risks, measures to reduce the negative environmental

impacts. The very process of finalizing the EMP to an acceptable quality caused a number of questions to the local environmental specialist. The international specialist in environmental protection and the local environmental specialist was not mobilized to the site. These specialists were involved in Lot 3 and were in the office in Aktobe. Site monitoring by the CNS engineer was conducted with the invitation of the team of environmental specialists to the site. As a result of the joint exit and monitoring of the environmental situation on June 12, 2018, at the construction sites and in the shift camp, the CSC Engineer submitted a Notice of Inconclusions. In Annex No. 18 to this report, this document is attached.

83. Also, consulting work on the part of the CSC Environmental specialist was hampered by this fact. The essential point was not the completeness of the EMP itself, the inconsistency of the English version of the document of the Russian version. In fact, construction work began, but the adoption of the EMP extended until June 30, 2018. One of the reasons is the absence of an international specialist on site due to the visa trip. Also, the contractor's environmental specialists did not take into account the recommendations of the PMC and the CSC on the division of correspondence, that is, separately for each lot, including its EMP and its Annexes.

84. In general, in this way of work of an international specialist and a local environmental specialist, moreover, he is limited in the powers, CSC environmental specialist has doubts about the success of implementing environmental protection activities. With such a weak communication and an ineffective way to work of the team of Contractor's environmental specialists, they very slowly and for a long time formed a package of permits. The table of project permission documents is attached to this report in Annex 19 and in Annex 20, information on the status and obtaining for Lots 1 and 3.

Table № 6: Monitoring of the environmental compliance on Lot 3

| Place | Problematic issues | Recommended measures | Implications / Relevance | Corrective actions |
|-----------|---|--|---|---|
| Road site | Use of safety tools (goggles, gloves, work clothes, helmet, safety shoes, etc.) by workers / engineers. | Availability of safe tools in shift camp and on the construction site. | Safe tools are provided to workers and engineers as needed | done |
| Base camp | Water supply | Provide water for drinking and for domestic use, presence of washbasin in the shower, toilet, kitchen and canteen. Cross-check and | Means are provided. Communications are connected to the base camp | The contractor did not perform the work according to the technical specifications for the CSC office. A written notice of non-conformances is provided in |

| | | | | |
|--|--|---|--|--------------------------|
| | | uninterrupted supply of drinking water | | Annex 18 to this report. |
| | Sanitation and hygiene | Provision of toilet bowls and rinsing water in the showers. Transportation to septic tanks for treatment and disposal | The camp and offices are provided | In process |
| | Kitchen and canteen | Provision of appropriate ventilation, faucet and hygiene places of reception of preparation and reception of food, storage | Modular buildings are ready and communications are connected but sanitation and hygiene does not meet the requirements | In process |
| | Drainage in shift camp | Ensure the drainage of water in the camp. Avoid accumulation of water inside the camp. | communications are connected | Done |
| | household waste | The location of the trash buckets and the urgent modernization of the pits of waste disposal, cover and control on the territory of the shift camp. | The camp is ready Contracts for export and utilization are concluded | Done |
| Quarry / borrow pit area | Collection of material comply with the legislation of the Republic of Kazakhstan on environmental protection | Get permission for borrow pits excavation for which no permits | In process | Not done |
| Fire-fighting equipment in shift camp, office. | Fire-fighting equipment must be located in a shift camp and in the office. | Arrange the fire fighting equipment in a conspicuous place and in such a way that it can be used in case of an emergency. | Base camp is ready | Done |
| Movement of transport and equipment in shift camp. | Excessive dust contamination in camp territory and noise pollution of the environment as a result of traffic in the camp and the site. | On the site and shift camp should be used equipment that meets environmental standards for noise. | camp and the production base are ready | Done |
| ACP | Provision of PPE, provision of medicinal and prophylactic food and milk | Compliance with safety standards and requirements, ensuring compliance with FIDIC, Contractual obligations | In process | In process |

| | | | | |
|--|---|--|--|--|
| | Dust suppression in the territory and in warehouses | | | |
|--|---|--|--|--|

Part III - Environmental management

3.1. Environmental management system (EMS), environmental management plan (EMP) and work plans.

85. The management system includes the institutional responsibilities and mechanisms necessary to ensure compliance with environmental requirements in the implementation of the Project. The preparatory stage of the Project includes an Environmental Impact Assessment (EIA), developed in 2015 by the Employer and received approval by the Department of State Environmental Expertise of the Natural Resources and Environmental Management. Nominee coordination: E14-0022/16 received on 18.04.2016.

86. During the period from October to December 2017, the CSC Environmental Engineer / Engineers periodically conducted a visual inspection of the construction camps at the lots, as well as the mobilization and preparation of sites for the crashing plant, ACP. The Environmental specialist of the Engineering Service carried out an audit of the necessary documents of the Contractor. During the reporting period, the environmental specialist sent comments to the contractor regarding submitted EMP. The Environmental Specialist of the CSC recommended to Contractors to submit additional management plans to the EMP: base camp construction plan; Management plan for the disposal and processing of solid waste; Management plan for disposal of hazardous waste; Management plan for dust prevention; Management plan for soil development; Water and air quality management plan; Noise Management Plan, Health Plan and Safety Techniques.

87. Also this stage includes preparation of the Environmental Management Plan (EMP) by the Contractor. In addition, specific environmental requirements and measures to protect the environment are taken into account, aimed at minimizing the negative impact on the environment and human health. The main impacts are presented in the matrix of Annex 21. The EMS covers the following aspects:

Table 7 Aspects of the Environmental Management System

| Preparatory stage: | |
|--|---|
| Baseline Environmental Management Plan | Completed by the Employer |
| Publication of information | done |
| Informing and consulting with the public | Public consultations and |
| Analysis and approval | Available in documentation and contractual obligations |
| Related conditions and responsibilities | Prescribed in the pre-project EIA |
| Preliminary and subsequent analysis | Completed by the Employer |
| Implementation phase: | |
| Environmental management activities | Dust-suppression on the site, planting of the camp site |
| Education and development | Ecological education and information is not available due to the low qualification of the local environmental specialist. |
| Reporting | There is no reporting. Involved companies has conducted monitoring, but there is no report |

88. In order to prepare the EMP, the Environment Protection Plans during the preparation period October-December, environmental specialist of CSC did not have opportunity to advise on the preparation of the EMP and the environmental plans, since the contractor's environmental specialist was not mobilized.

3.1.1 Analysis of EMP of Contract Organizations

89. The following table provides information on the EMP development by the contractors, the evaluation of its content and quality. Submitted EMP with the Annexes of plans for environmental protection, management of borrow pits, air quality, water management, noise impact, waste management, dust reduction plan, health and safety plan, were subsequently adjusted for 5 months because of complete set of plans, did not take into account all measures to reduce the impact on the environment, indicators for assessing environmental protection measures. Slow work local environmental specialist is cause for concern. The receipt of permit documents was outsourced to a third-party organization. Requests for the status of permits and timing of the submission to CSC remained without the response of contractor environment specialist, and during personal consultations there were explanations about the expectation of the result from state structures. At the time of preparation of this report, the status of permits is provided in Annex No. 20

Table № 8: Timeline for the development and approval of EMP for Lot 1 and 3

| № | Document name | Date of submission | Date of approval / modification |
|----------|--|---|---|
| 1 | EMP | 18.05.2018 | 22.05.2018 - modified 04.07.2018 г. – CSC approval |
| 2 | organization and management of base camp; | 18.05.2018 | 04.07.2018 approved |
| 3 | management for the disposal and processing of solid waste management for the disposal of hazardous waste; | 04.05.2018 | 04.07.2018 approved |
| 4 | dust prevention management | 18.05.2018 | 04.07.2018 approved |
| 5 | soil development management | 04.05.2018 | 04.07.2018 approved |
| 6 | water quality management; | 18.05.2018 | 04.07.2018 approved |
| 7 | air quality management | 18.05.2018 | 04.07.2018 approved |
| 8 | noise level management; | 18.05.2018 | 04.07.2018 approved |
| 9 | Health and Safety; | 03.05.2018 28.05.2018 after modification | 04.07.2018 approved |
| 10 | ensuring safe traffic. | 30.10.2017 | 10.11.2017 approved |

Table No. 9: Timeline for the development and approval of EMP for Lot 2

| № | Document name | Date of submission | Date of approval / modification |
|----------|--|---------------------------|--|
| 1 | EMP | 23.03.2018 | 19.07.2018 approved |
| 2 | organization and management of base camp; | 23.03.2018 | 19.07.2018 approved |
| 3 | management for the disposal and processing of solid waste management for the disposal of hazardous waste; | 23.03.2018 | 19.07.2018 approved |
| 4 | dust prevention management | 23.03.2018 | 19.07.2018 approved |
| 5 | soil development management | 23.03.2018 | 19.07.2018 approved |
| 6 | water quality management; | 23.03.2018 | 19.07.2018 approved |
| 7 | air quality management | 23.03.2018 | 19.07.2018 approved |

| | | | |
|----|-------------------------|------------|---------------------|
| 8 | noise level management; | 23.03.2018 | 19.07.2018 approved |
| 9 | Health and Safety; | 23.03.2018 | |
| 10 | ensuring safe traffic. | 02.05.2018 | 30.05.2018 approved |

3.2. Site inspections and audits

90. During the reporting period, a series of meetings, inspections and audits of the site were carried out by the Employer, PMC, CSC.

Table No. 10: Information on meetings, inspections and audits

| № | Auditor's name | Visit purpose | Date |
|----------|---|---|--|
| 1 | ADB mission | exploratory mission throughout road reconstruction ышеу | 28.09.2017 29.09.2017 |
| 2 | MID, a group of specialists and managers, Kasymbek Zh.M. | Зқцоусе щзутштп | 08.11.2017 |
| 3 | Krykbaev Nurzhan Nazymbekovich and Specialist on social safeguard specialist Zeynullina Aliya Amantayevna | Audit of mobilization | 30.10.2017 |
| 4 | E. Shchedreev CSC | mobilization audit of the ACP and works on the crushing plant | 30.10.2017 31.10.2017 |
| 5 | E. Shchedreev CSC | Environmental monitoring Lot 1, Lot 2, Lot 3 | 12.12.2017 27.12.2017 21.02.2017 15.03.2018 |
| 6 | Specialists and Engineers of COR and RSE "AktobeZhollaboratory" | Construction audit on Lot 1, Lot 2, Lot 3 road section | 10.04.2018 11.04.2018 |
| 7 | ADB | Construction works audit, monitoring of plans | 12.04.2018 13.04.2018 |
| 8 | Imbarova S.E. CSC | Environmental audit Lot 1, Lot 2 Lot 3 | 04.05.2018 |

Below is information on inspections and audits in expanded form.

91. The opening ceremony of the Aktobe-Makat road reconstruction project connecting the CAREC corridors 1 and 6, Lot 1 - Lot 7 took place on November 8, 2017 in the presence of the

Minister of Investments and Development - Mr. Kasymbek Zhenis Makhmudovich, on the 11th kilometer of the Aktobe-Astrakhan road.

92. During the reporting period, a number of missions were carried out to audit and verify the status of work on the sites. From October 30, visit was made by the representatives of the PMC (project management consultants) as part of the visit's mission: Project Manager / Road Engineer Krykbaev Nurzhan Nazymbekovich and Specialist for Social Safeguards Specialist Zeynullina Aliya Amantayevna. The PMC team leader and Social Safeguards Specialist left for the site to familiarize with the construction site, with representatives of contract organizations, and to monitor the current situation. During the visit to the site, the PMC representatives conducted an inspection of the construction site, laboratories, construction program, provisions to the Engineer, and also checked availability of permitting documents for permanent and temporary land acquisition.

93. PMC held meetings with contractors and engineering services, where the PMC group was represented, its role in the project and acquaintance with representatives of the Engineer and the Contractor Company was announced. During the meeting, for each lot, the current state of mobilization of personnel and equipment, readiness of the objects in general for construction work was studied and discussed. Also, the road engineer was personally acquainted with all the facilities by going to the site

94. The Social Safeguards Specialist of the PMC checked the documents submitted by the contractor and checked by the construction supervision consultants, in accordance with the requirements of ADB and the legislation of the Republic of Kazakhstan. Corresponding correspondence was also checked with respect to accelerating the work on the implementation of the EPMP.

95. Social Safeguards Specialist of PMC in the period October 30-31 visited the sections of the road Lot 2, inspected the location of production bases and the construction camp, alleged dead ends. A mechanism for interaction with local executive bodies on the impact of the Project was discussed on the site. During the meetings with the involved parties together with the representatives of the Employer, Director of the Aktobe OblzholLaboratory were appointed responsible persons for complaints in the framework of the EoA, Construction Engineer, Malaev Telman Dzhadigerovich (Aktobe). Discussed with the contractor on the installation of boxes for complaints from the public, provision of the final version of the EMP prior to the start of construction work under the contract and accelerate the work for obtaining permits from relevant authorities.

96. During reporting period, local environmental officer of the CSC visited sites. During the reporting period, joint inspection was carried out by the Engineer and the Contractor's Environmental specialist, as well as by the Contractor's personnel responsible for environmental protection, HSE. Construction sites, storage areas, construction site, and factories were also inspected. As a result of monitoring and visits, written instructions and notifications were issued to correct nonconformances. On 11 and 12 June 2018, written notifications were issued about violations and nonconformances identified in Lot 1 and 3.

97. During the reporting period there were 2 ADB missions. The first study visit by the ADB experts was on September 28-29, 2017, the study mission included environmental experts from Almaty ADB, from the office of Manila (Philippines), engineers from the RSE "AktobeZhollaboratoriya". During this period, the expert on environmental protection of the CSC was not mobilized in connection, than there is no information about the details of the visit, the issues raised at the site of site visits. The second visit was on April 12, 2018 in a more enlarged format: the head of the Bank's mission, ADB specialists, environment specialist, social impact specialist, road engineers, Committee for Roads of the Ministry of Investment and Development of the RK, AktobeZholaboratorya, PMC, CSC, Lot 1, 2 and 3 Contractors. The purpose of the visit is familiarization with work on the project, equipping the engineer's office, infrastructure of the production bases, status of the EMP and EPP development, background measurements, permit documents.

3.3 Non-conformance reports

98. During the reporting period, CSC engineer issued non-conformance reports to Lot 2 - 6 notifications. CSC issued non-conformance reports during the visit 1 time and 1 in writing on the preparation of the EMP and the completeness of the EMP documents. Employer gave to all lots written non-conformance report of traffic safety in winter.

Table 11 non-compliance repots for the reporting period (October 2017-June 2018)

| Date of monitoring / audit | Name of auditor / organization | Description of non-conformances |
|--|---|---|
| 30.11.2017 | environmental specialist of the PMC | The slow pace of the EMP preparation, lack of completeness of plans for EMP |
| Ref. 003-ATB2-2017 Date: 04.11.2017 | Specialist for environmental supervision of the CSC | 10.19.2017 JSC "ICIC Akkord" submitted Environmental Protection Plan for Lot 2. Having considered this document, the engineer makes the following comments: Finalize the EPMP according to the standard And to arrange properly |

| | | |
|--|---|--|
| 14.11.2017 | Employer, CSC, Contractors | Joint monitoring of the site and notification of non-compliance of work to ensure safe traffic at the project sites. |
| 21.11.2017 | PMC, Manager | Timing and completeness of the EMP |
| 22.11.2017 | CSC Engineer | Inconsistency of winter maintenance and safe traffic for the public |
| 24.11.2017 | Specialist for environmental supervision of the CSC | Notice of absence on site Lot 2 of JSC "ICIC Akkord" environmental specialist |
| Ref. 019-ATB2-2017 Date: 29.11.2017 | | Notice of absence on Lot 2 of environmental specialist |
| 29.11.2017 | CSC engineer | Engineer has inspected Lot No. 2 km 236-275. During the inspection, it was revealed that measures to ensure traffic safety for the public are not fully and inappropriately carried out |
| 09.01.2018 | PMC | To contractor were indicated in writing following points: Incompleteness of the EMP, not all facilities and impact parameters are specified in the EMP, no information on the selection and basic values measurement, no implementation schedule and reporting methodology. |
| 26.01.2018 | PMC | To environmental specialist of the PMC were written for the following discrepancies in the semi-annual report for 2017: Facts contradict the reality on the site, data are taken from the reports of other projects and are not adapted to this project |
| 26.03.2018 | CSC | CSC environmental specialist issued a written instruction to Lot 2 on the correction of the EMP |
| 29.03.2018 | CSC | Environmental specialist of the CSC issued a written instruction on the need for a complete set of the EMP for Lot 1 and 3 |
| 13.04.2018 | CSC | Environmental specialist of the CSC issued a written instruction about inclusion in the EMP of information on the EoA. For Lot 2, include impacts on the village of Karaulkeldy |

3.4. Plans to implement corrective measures

99. In the previous report period, October-December 2017, the CSC engineer developed a plan of corrective measures to eliminate the above-described non-conformances. In 2018, CSC held a special seminar for specialists of the Contract organizations Lot 1,2 and 3 seminar in Aktobe to organize a safe space for the project. At the seminar, materials and presentations were given on regulatory and legal documentation in the field of shift camps organization, on labor protection and safety on objects.

100. The table below provides information on the status of implementation and the reasons for the incompleteness of certain types of work. For each discrepancy, were given written notifications of corrective measures

Table 12: Status of nonconformities elimination on Lot 1 and 3

| Events | Time | Expected result | Implementation |
|--|--------------------|--|---|
| Submission of EMP from contractor | February 2018 | Approved document | Not completed by the due date |
| full set of plans for monitoring and environmental protection | February 2018 | Complete set of documents on environmental protection consisting of 10 items of plans. | Received on 4.05.2018 |
| plans for production and environmental monitoring | February 2018 | Approved document | Agreed with the engineer and the PMC on May 22, 2018, delay is due to the low competence of the contractor's environmental specialist and his lack of experience in preparation of such documents |
| Obtaining a package of permits from the contractor | May 2018 | Legalization of all types of work and emissions into the environment | Partially implemented |
| Obtain from the contractor a notice of engagement of an accredited laboratory for carrying out basic and production measurements | March 2018 | Approval of the laboratory for production measurements for all indicators of EMP | Received on 17 April 2018 |
| Obtain an initial monitoring program. It should be presented with the content of the basic environmental study (BES) | March – April 2018 | Approved document | program received on May 18 |
| Obtain environmental reports on the implementation of EMP, EPP | June 2018 | Data on environmental measures for environmental protection, analysis of risk factors, reconciliation of actual with planned indicators of environmental aspects | reports on basic measurements and the report on production control |

Table 13: Status of nonconformities elimination on Lot 2

| Events | Time | Expected result | Implementation |
|---------------------|---------------|------------------------|---|
| EMP from contractor | February 2018 | Approved document | 23.03.2018 not approved due to non-compliance with the requirements for similar documents. 27.04.2018 submitted again, but CSC did not agree due to incompleteness of applications 12.06.2018 submitted without plan for warehouses and |

| | | | |
|--|---------------------|--|--|
| | | | management of ACP, plants. 19.07.2018, by letter for No. 32/32-1480-i, the PMC approved the EMP |
| full set of plans for monitoring and environmental protection | February 2018 | Complete set of documents on environmental protection consisting of 10 items of plans. | In process |
| plans for production and environmental monitoring | February 2018 | Approved document | Basic report received on 10.05.2018 |
| Obtaining a package of permits from the contractor | Май 2018 г. | Legalization of all types of work and emissions into the environment | Partially implemented |
| Obtain from the contractor a notice of engagement of an accredited laboratory for carrying out basic and production measurements | Март 2018 г. | Approval of the laboratory for production measurements for all indicators of EMP | received on 17 April 2018 г. |
| Obtain an initial monitoring program. It should be presented with the content of the basic environmental study (BES) | Март-апрель 2018 г. | Approved document | 10.05.2018 |
| Obtain environmental reports on the implementation of EMP, EPP | Июнь 2018 | Data on environmental measures for environmental protection, analysis of risk factors, reconciliation of actual with planned indicators of environmental aspects | reports on basic measurements and the report on production control submitted Submitted on 4.07.2018 |

101. Considering the pace of work of the environmental team of the Contractors Lot 1, Lot 2 and Lot 3, environmental specialist of the CSC has developed measures to adjust the work of environmental specialists, starting with the completion of the EMP plans, production control plans, observation of work on the sites, keeping weekly records and generating reports: monthly, quarterly, semi-annual. Below is a list of corrective actions for the next reporting period of 2018.

Table № 14 : Corrective action plan for non-conformities on Lot 1 and Lot 3

| name of nonconformities | Measures to eliminate nonconformances | Time | Responsible person | Performance Indicators |
|---|--|-------------|------------------------------|--|
| Absence of environmental specialist on site | <ul style="list-style-type: none"> written notice of permanent presence on Lot 1 and 3; Immediately mobilize the base camp to house the local environmental specialist for Lot 1 and Lot 3 and also ensure a permanent presence of the environmental specialist at the site, exclude the remote work | 20.07.2018 | Contractor's Project Manager | <ul style="list-style-type: none"> - monitoring report for the base camp - Accommodation of environment specialist on the site |

| | | | | |
|---|--|-------------|---|--|
| | of this specialist from Aktobe | | | |
| Inadequate preparation of EMP and environmental plans | <ul style="list-style-type: none"> Accompanying consultation of environmental specialists | 15.07.2018 | Project Manager | Plans are submitted for approval |
| Absence of CSC during sampling, measurements on environmental monitoring | During the sampling of various parameters (air quality, water quality, noise and vibration, electromagnetic radiation, etc.), the Contractor shall inform CSC in advance by submitting a Request for Inspection, letters. Thus, CSC representatives can assist in the development of a common research program, including cross-checking locations, calibrating tools and confirming the relevant procedures under the environmental management; | 15 августа | Project Manager Head of Environmental Protection | Requests for forthcoming works to be submitted to the CSC in advance Coordination of the graph of the site measurements |
| Irregular monitoring of quarry conditions | <ul style="list-style-type: none"> Verbal instructions to the contractor's environmental specialist; joint environmental audit of quarries | 15.07.2018 | Head of Environmental Protection | - report on environmental audit |
| Drilling of wells on Lot 3 road sections to find groundwater for dust suppression | <ul style="list-style-type: none"> Instruction on the inadmissibility of such works without coordination with the CSC | 30.07. 2018 | Project manager Head of Environmental Protection | -Approval of CSC |

Table № 15: Corrective action plan for non-conformities on Lot 2

| name of nonconformities | Measures to eliminate nonconformances | Time | Responsible person | Performance Indicators |
|---|---|-------------|--------------------------------|---|
| Absence of environmental specialist on site | <p>ускорение запуска вахтового городка для Лота 2;</p> <ul style="list-style-type: none"> written notice of permanent presence on Lot 2; <p>Immediately mobilize the base camp to house the local environmental specialist for Lot 1</p> | 20.07.2018 | Contractors project manager | <p>- monitoring report for the base camp</p> <p>- Accommodation of environment specialist on the site</p> |

| | | | | |
|--|--|------------|---|--|
| | and Lot 3 and also ensure a permanent presence of the environmental specialist at the site, exclude the remote work of this specialist from Aktobe | | | |
| Inadequate preparation of EMP and environmental plans | Accompanying consultation of environmental specialists | 15.07.2018 | Contractors project manager | Plans are submitted for approval |
| Absence of CSC during sampling, measurements on environmental monitoring | During the sampling of various parameters (air quality, water quality, noise and vibration, electromagnetic radiation, etc.), the Contractor shall inform CSC in advance by submitting a Request for Inspection, letters. Thus, CSC representatives can assist in the development of a common research program, including cross-checking locations, calibrating tools and confirming the relevant procedures under the environmental management; | 15 August | Project manager Head of Environmental Protection | Requests for forthcoming works to be submitted to the CSC in advance Coordination of the graph of the site measurements |

3.5. Final recommendations

102 The implementation of the project on Lot 2 goes with big delay from the work plan, but work on the environmental components should be carried out within the deadlines indicated by the contract. These works are necessary to monitor compliance with all recommendations of the Environmental Control Plan and to further comply with the requirements of the environmental legislation of the Republic of Kazakhstan and ADB requirements. Permission documents and the conclusion of a public limited liability company have not been received at this lot for ACP. There are no contracts for the export and disposal of solid waste and waste. Actually, the camp in Karaulkeldy village is not ready for the deployment of workers. Lots 1 and Lot 3 completed all work on the completion of permits except permits for borrow pits. This work in process for 11 borrow pits

Part IV - Action Plan for the next period July-December 2018

Table No. 16: Activities for the second half of 2018

| Actions | Time | Responsible | Expected result |
|---------|------|-------------|-----------------|
|---------|------|-------------|-----------------|

| | | | |
|--|----------------------|---|--|
| Mobilization of environmental specialists on lots of 1,2,3 on permanent basis | July 2018 | Contractor Project manager | Environmental specialist is on all lot on permanent basis |
| Submission of EMP from Lot 2 contractors | 15 July 2018 | Contractor Project manager Head of Environmental Protection | Approved document |
| Submission of complete set of plans for monitoring and environmental protection for Lot 2 | July 2018 | Project manager Head of Environmental Protection | Complete set of documents on environmental protection consisting of 10 items of plans. |
| plans on production and environmental monitoring | Monthly basis 2018 | CSC | Approved document |
| Submission from the contractors a package of permits for borrow pits, plants | July 2018 | Project manager | Legalization of all types of work and emissions into the environment |
| Conducting information work on environmental education among the contractor's staff and local residents | Quarterly | Project manager Head of Environmental Protection | Reports on information work, booklets and memos on the environmental theme |
| Weekly reports-notes of environmental specialist for monitoring work on the site | Weekly | CSC | Reports and analytics on observations |
| Organization of works on prevention of negative impact on flora and fauna, taking into account regional peculiarities: periods of birds nesting, migration | September - November | Project manager Head of Environmental Protection | Photo reports, environmental reports |

103. For Lot 1, Lot 2 and Lot 3 road sections for the period from July to December 2018, the following aspects will be measured according to approved sampling points:

Table 17: Aspects of measurements by road sections

| Actions | List of measurement parameters | Period |
|-------------------------|--|---------------|
| Monitoring of emissions | Sulphurous anhydride (sulfur dioxide) SO ₂ Nitrogen oxide (nitric oxide) NO. | |

| | | |
|--|---|--|
| Monitoring on road construction (2 points: the beginning and the end of the site) | Nitrogen dioxide (nitrogen dioxide) NO ₂ Carbon oxide CO (carbon monoxide) Carbon dioxide (carbon dioxide) CO ₂ Hydrogen sulfide, H ₂ S, Total suspended particles (VHF) Formaldehyde Vibration and noise Dust inorganic: 70-20% 20% SiO ₂ Hydrocarbons C ₁₂ -C ₁₉ (Alkane C ₁₂ -C ₁₉) | For 3 and 4 quarters 2018 |
| Monitoring at the border SPZ of the enterprise ACP (4 points) | All pollutants from the list above and plus Radiation background - 1 time in 3 quarter (for reconciliation with the background indicator) | |
| Borrow pits monitoring | All names of pollutants | For the 3rd and 4th quarter 2018 |
| Wastes from production and consumption | Amount of waste | As accumulated in the places of temporary storage |
| Monitoring of noise and vibration | noise and vibration | Monthly basis 2018 |
| Monitoring of water quality | Controlled substances: PH, Solids, Water insoluble substances, Chlorides, Ammonium Nitrogen, Petroleum products, Rigidity General, Calcium, Magnesium, Sulphates, Nitrates, Nitrites, Iron, Chrome, General phosphorus, APAC. | Monthly basis 2018 |
| Submission of environmental reports | - quarterly environmental reports - instrument measurement records | For the 2nd quarter, to submit report - July 10, For the 3rd quarter, to submit - October 10 For the 4th quarter to submit - December 20 |

104. For the period from July to December 2018, environmental specialist CSC prepared a list of activities for contractors environmental specialists to implement for Lot 1, 2 and 3. These activities are presented in Annex 23 to this report.

Part V - Consultations and complaints

105. On the sites of Lot 1, Lot 2 and Lot 3, the EoA is introduced. The work on ensuring the work of the EoA was entrusted to safety and road safety engineers. For their more detailed and complete information, CSC provided them with brochures on the EoA developed by COR MID.

106. During the report period, on-site consultations were organized and conducted at the project site. So on 22.12.2017 in the rural district of Karaulkeldy a meeting was held with residents on the disclosure of information on the project, on the mechanisms for filing complaints and appeals on the impact of the project on the public and the environment, contact coordinators at the level of the akimat of the rural district, the contractor and CSC. A similar meeting was organized and was held on 27.12.2017 in the house of culture of the village of Shubarkudyk. The meeting clarified the work of the EoA, developed by COR MID, with the participation of JSC NC "KazAvtoZhol" in the framework of TC 7566 REC: Strengthening and application of national systems for protective measures, public consultation and a complaint resolution mechanism introduced from August 2014 on all road construction projects. During the monitoring of the site, a number of interviews were conducted with the public and employees of the contractor.

107. During the reporting period, Lot 2 received no complaints or appials. Lot 1 and Lot 3 received 2 appeals. One is registered in the register of requests for Lot No. 1. 28.12.2017 Bialiyev A. Head of the Department of Architecture and Urban Development Aktobe region, Shubarkuduk requested information on project documentation for 160 - 220 m. Information was provided by the CSC on the electronic carrier of the applicant.

108. The second appeal was for Lot 3 Kadyrov Adil, a senior inspector for ODTI complained of dust on the bypass road. This complaint was registered and the environmental specialists of the contractor traveled to the specified site. The register of complaints in Annex No. 22 to this report.

Annexes:

Annex 1.

Information about mobilization of the CSC

| No | Name | Position | Date of mobilization |
|---------------------------|-----------------------------------|--|-----------------------------------|
| Key staff (International) | | | |
| 1 | Lee In Soo | Team Leader / Resident Engineer | 2 October 2017 |
| 2 | Kim Jin Woo | Senior Road Engineer | 28 January 2018 |
| Key staff (Local) | | | |
| 3 | Imbarova Sara Esenbekovna | Social Safeguards Specialist | 4 March 2018 |
| 4 | Temirbek Zhenisgul Temirbekovna | Traffic Safety Engineer | 20 October 2017 |
| 5 | Khairiev Rasul Kadyrbekovich | Deputy Resident Engineer / Road Engineer | 19 October 2017 |
| 6 | Nesipbekov Zhaksylyk Zhanabaevich | Quantity Engineer | 2 October 2017 |
| 7 | Gulmanov Bazarbai Nurbergenovich | Material engineer | 2 October 2017 |
| 8 | Kaliakparov Rollan Kilyshbekovich | Surveyor | 2 October 2017 |
| 9 | Sultanov Duman Gylymbekovich | Surveyor | 10 October 2017 |
| 7 | Shchedreev Erzhan Bizhanovich | Environmental specialist | 2 October 2017 Till 30.03.2018 |
| 8 | Kurbanov Bekzat Maratovich | Artificial structures engineer | 11 December 2017 |
| 9 | Erezhepov Nurkanat Sansyzbaevich | Road Safety Engineer | 2 October 2017 |
| Local non-key staff | | | |
| 10 | Orynbai Nurila Talgatkyzy | Interpreter | 10 October 2017 |
| 11 | Kofler Anna Orestovna | Interpreter | 2 October 2017 |
| 12 | Bakhur Igor Vladimirovich | Interpreter | 22 December 2017 |
| 13 | Ajtuganova Nurgul Nagashibaykyzy | Office Manager | 2 October 2017 |

Annex 2:







14.03.2014 r. 53

01694F

Бүтэц

Товарищество с ограниченной ответственностью "ТриолЗлоРесурс-1"

© 1986, Под редакцией Кандидата Агрономических наук Л. С. Бондаренко
Издательство «Сельхозгиз», Москва

(полное наименование, наименование, результаты НИИ федерального научного центра, общества, результаты НИИ федерального научного центра)

150 3201778

Выполнение работ и оказание услуг в области охраны окружающей среды

ПОДПИСАНО НА ЛИЦЕНЗИРУЕМОМ ЛИДЕ ДОСТАВЛЯЮТ В КОМПЬЮТЕРНОМ И В ЗАПИСИ
БЕЗЫБЛИЧНОЙ КОПИИ (О ЛИЦЕНЗИРОВАНИИ)

Вилл напхэн

ГЛАВНЫЙ

Сколько у вас друзей?
 Сколько вы знаете людей, с которыми вы можете поговорить по телефону или написать письмо?

Procedimento de eratare de la 5-a si 6-a pozitie de la caracterul de noul caracter

Примечания

Ключевые слова: жилищно-коммунальный рынок, управление и контроль, Министерство
окружающей среды и природных ресурсов Республики Казахстан,
Министерство экономической политики и жилищного хозяйства Республики
Казахстан.

POSTAL CODE

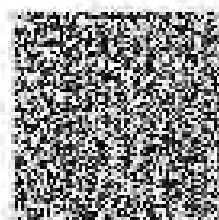
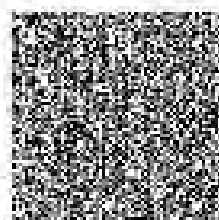
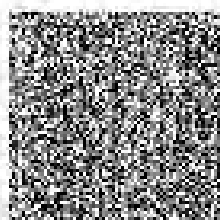
Рубрикация
Рубрикация (по)

ТАУТЕВ ДУСБЕК ЭПАШЕВНА

© 2007 The Authors
Journal compilation © 2007 Blackwell Publishing Ltd

Место в школе

Discussion



© 2010 by the author(s). Published by the American Psychological Association, 750 First Street, NE, Washington, DC 20002-4242. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.



The results of measurements of Noise and Vibration

Baseline data 24 Apr 2018 Lot 1

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|----------------------------------|--|---|
| Residential area Zhaksymai vill. | 37.9 | 56.3 |
| Residential area Kopa vill. | 37.8 | 53.4 |
| Km 160 | 38.1 | 52.4 |
| Km 170 | 38.0 | 52.6 |
| Km 180 | 38.2 | 52.5 |
| Km 190 | 37.3 | 52.7 |
| Km 200 | 37.6 | 53.2 |
| Km 210 | 37.9 | 53.6 |
| Km 220 | 38.9 | 53.6 |

The results of measurements of Noise and Vibration

Production monitoring of 23 may 2018 Lot 1

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|------------------------------------|--|---|
| Residential area Zhaksymai vill. | 38.5 | 55.4 |
| Residential area Kopa vill. | 37.9 | 54.6 |
| Residential area Kenzhali vill. | 38.8 | 54.6 |
| Residential area Shubarkuduk vill. | 38.6 | - |
| Km 170 | 37.0 | 52.9 |

Results of the chemical analysis of natural water (underground) r. Shieli

Basic measurement in April, Lot 1

| No. | Name of indicators | Permissible rates | Actual results | | |
|-----|--|----------------------|----------------|-----------|----------------|
| | | | R. Kenzhali | R. Shieli | Draw Zhaksymai |
| | pH factor | 6-9 | 8.34 | 7.86 | 7.92 |
| | Solids content, mg/dm ³ | Not exceeding 1000 | 41.50 | 41.38 | 43.76 |
| | Water-insoluble substances, mg/dm ³ | Not exceeding 0,25 | 20 | 13.0 | 18.0 |
| | Chlorides, mg/dm ³ | Not exceeding 350 | 2 835,0 | 182.4 | 1260 |
| | Ammonium nitrogen, mg/dm ³ | Not exceeding 2,0 | 9.05 | 6.93 | 12.88 |
| | Petroleum products, mg/dm ³ | Not exceeding 0,1 | 0.06 | 0.04 | 0.05 |
| | Total hardness, mg-equ/L | Not exceeding 7.0 | 7.5 | 6.4 | 45 |
| | Magnesium, mg-equ/L | Not normalized | 560 | 78.0 | 222 |
| | Calcium, mg-equ/L | Not normalized | 564 | 30 | 408 |
| | Sulfate, mg-equ/L | Not exceeding 500 | 878 | 272 | 689 |
| | Nitrates, mg-equ/L | Not exceeding 45 | 0.223 | 0.254 | 0.262 |
| | Nitrites, mg-equ/L | Not exceeding 3.3 | 0.672 | 0.072 | 0.074 |
| | Ferrum, mg-equ/L | Not exceeding 3,0 | 1.75 | 1.12 | 2.0 |
| | Chrome (6), | Not exceeding 0,05 | 00 | 0.0 | 0.0 |
| | Total phosphorus, | Not exceeding 0,0001 | 0.0 | 0.0 | 0.0 |
| | AS | Not exceeding 0,5 | 0.07 | 0.02 | 0.08 |

Results of the chemical analysis of natural water (underground) water

Investigation on may 23-24, 2018 Lot 1

| No. | Name of indicators | Permissible rates | Actual results | |
|-----|--|----------------------|----------------|-----------|
| | | | R. Kenzhali | R. Shieli |
| | pH factor | 6-9 | 7.98 | 8.01 |
| | Solids content, mg/dm ³ | Not exceeding 1000 | 1000 | 1000 |
| | Water-insoluble substances, mg/dm ³ | Not exceeding 0,25 | 18.6 | 20.1 |
| | Chlorides, mg/dm ³ | Not exceeding 350 | 157.5 | 350 |
| | Ammonium nitrogen, mg/dm ³ | Not exceeding 2,0 | 2.0 | 2.0 |
| | Petroleum products, mg/dm ³ | Not exceeding 0,1 | 0.003 | 0.002 |
| | Total hardness, mg-equ/L | Not exceeding 7.0 | 7.0 | 7.0 |
| | Magnesium, mg-equ/L | Not normalized | 32.4 | 132 |
| | Calcium, mg-equ/L | Not normalized | 86.0 | 0 |
| | Sulfate, mg-equ/L | Not exceeding 500 | 283.11 | 500 |
| | Nitrates, mg-equ/L | Not exceeding 45 | 0.08 | 1.65 |
| | Nitrites, mg-equ/L | Not exceeding 3.3 | 0.12 | 0.13 |
| | Ferrum, mg-equ/L | Not exceeding 3,0 | 0.228 | 0.228 |
| | Chrome (6), | Not exceeding 0,05 | 00 | 0 |
| | Total phosphorus, | Not exceeding 0,0001 | 0.0001 | 0.0001 |
| | AS | Not exceeding 0,5 | 0.03 | 0.03 |

Annex 5

Test results of soil investigation (baseline) April 2018 Lot 1

| Name of indicators | PB Zhaksybai | Km 160 | Km 170 | Km 180 | Km 190 | Km 200 | Km 210 | Km 220 |
|-------------------------|--------------|--------|--------|--------|--------|--------|--------|--------|
| pH factor | 7.73 | 7.87 | 7.82 | 7.20 | 7.22 | 7.22 | 7.78 | 7.86 |
| Dissolved solids | 0.272 | 0.147 | 0.150 | 0.250 | 0.250 | 0.250 | 0.250 | 0.260 |
| Petroleum products mg/g | 0.050 | 0.01 | 0.02 | 0.021 | 0.024 | 0.024 | 0.024 | 0.021 |
| Chlorides | 0.18 | 0.05 | 0.15 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Sulfates | 0.480 | 0.462 | 0.452 | 0.450 | 0.440 | 0.440 | 0.439 | 0.438 |
| Calcium | 1.73 | 0.4 | 0.7 | 1.12 | 15.5 | 15.5 | 0.49 | 0.50 |
| Magnesium | 0.0 | 0.16 | 0.6 | 5.05 | 0.0 | 0.0 | 0.0 | 0.0 |
| Carbonates | 0.06 | 0.0 | 0.08 | 0.0 | 0.0 | 0.0 | 0.04 | 0.03 |
| Bicarbonates | 23.0 | 0.98 | 26.0 | 18.0 | 18 | 18.0 | 28 | 26.0 |

Test results of soil investigation, May 2018 Lot 1

| Name of indicators | Km 170 | | PB Zhaksybai | |
|-------------------------|-----------|-----------|--------------|-----------|
| | 1st point | 2nd point | 1st point | 2nd point |
| pH factor | 7.67 | 7.66 | 7.80 | 7.67 |
| Dissolved solids | 0.138 | 0.135 | 0.144 | 0.150 |
| Petroleum products mg/g | 0.01 | 0.01 | 0.01 | 0.01 |
| Chlorides | 0.04 | 0.04 | 0.04 | 0.06 |
| Sulfates | 0.252 | 0.253 | 0.282 | 0.288 |
| Calcium | 9.1 | 9.2 | 0.9 | 1.8 |
| Magnesium | 0.5 | 0.6 | 0.9 | 0.8 |
| Carbonates | 0.0 | 0.0 | 0.0 | 0.0 |
| Bicarbonates | 0.12 | 0.12 | 0.08 | 0.08 |

**Test results of the baseline measurements in atmospheric air
the contaminants on Lot 1**

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|---------------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Road section km 170 | Inorganic dust 70-20% | 0.063 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.062 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.2 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.093 | 1 | Not available | Not required |
| | Benzene | 0.060 | 0.3 | Not available | Not required |
| | Xylene | 0.079 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 180 | Inorganic dust 70-20% | 0.061 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.063 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.3 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.095 | 1 | Not available | Not required |
| | Benzene | 0.063 | 0.3 | Not available | Not required |
| | Xylene | 0.081 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 190 | Inorganic dust 70-20% | 0.063 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.060 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.4 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.097 | 1 | Not available | Not required |
| | Benzene | 0.65 | 0.3 | Not available | Not required |
| | Xylene | 0.082 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 200 | Inorganic dust 70-20% | 0.065 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.062 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.5 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.099 | 1 | Not available | Not required |
| | Benzene | 0.067 | 0.3 | Not available | Not required |
| | Xylene | 0.083 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |

| | | | | | |
|---|---|-------------|--------------|---------------|---------------|
| The section of the road km 210 village Kenzhegaly | Inorganic dust 70-20% | 0.067 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.064 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 1 | Not available | Not required |
| | Benzene | 0.069 | 0.3 | Not available | Not required |
| | Xylene | 0.085 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 220 | Inorganic dust 70-20% | 0.068 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.065 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 1 | Not available | Not required |
| | Benzene | 0.070 | 0.3 | Not available | Not required |
| | Xylene | 0.087 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Production base Zhaksymai | Inorganic dust 70-20% | 0.0362 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.0272 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.099 | 1 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| | | u/s* | d/s** | | |
| Residential area of the Shubarkuduk village | Inorganic dust 70-20% | 0.0351 | 0.0353 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0261 | 0.0263 | 0.2 | Not available |
| | Sulfur dioxide | n/a | n/a | 0.5 | Not available |
| | Carbon monoxide | 1.5 | 1.6 | 5.0 | Not available |
| | formaldehyde | 0.0011 | 0.0012 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.097 | 0.0099 | 1 | Not available |
| | Hydrogen sulfide | n/a | n/a | 0.008 | Not available |
| | | u/s* | d/s** | | |
| Residential area Kopa vill. | Inorganic dust 70-20% | 0.0344 | 0.0345 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0261 | 0.0263 | 0.2 | Not available |
| | Sulfur dioxide | n/a | n/a | 0.5 | Not available |
| | Carbon monoxide | 1.4 | 1.5 | 5.0 | Not available |
| | formaldehyde | 0.0012 | 0.0013 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.096 | 0.098 | 1 | Not available |
| | Hydrogen sulfide | n/a | n/a | 0.008 | Not available |

* u/w - upwind side

* d/s - downwind side

Test results of atmospheric air pollutants measurements on Lot 1

May 23-24, 2018

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|---------------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Road section km 160 | Inorganic dust 70-20% | 0.070 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.065 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.4 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.094 | 1 | Not available | Not required |
| | Benzene | 0.060 | 0.3 | Not available | Not required |
| | Xylene | 0.078 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 170 | Inorganic dust 70-20% | 0.070 | 0.03 | Not available | Not required |
| | Nitrogen dioxide | 0.066 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.4 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.096 | 1 | Not available | Not required |
| | Benzene | 0.062 | 0.3 | Not available | Not required |
| | Xylene | 0.081 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 180 | Inorganic dust 70-20% | 0.069 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.066 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.4 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.098 | 1 | Not available | Not required |
| | Benzene | 0.066 | 0.3 | Not available | Not required |
| | Xylene | 0.084 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 190 | Inorganic dust 70-20% | 0.070 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.063 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.5 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 1 | Not available | Not required |
| | Benzene | 0.68 | 0.3 | Not available | Not required |
| | Xylene | 0.085 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 200 | Inorganic dust 70-20% | 0.071 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.065 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |

| | | | | | |
|---|--|-------------|--------------|---------------|---------------|
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 1 | Not available | Not required |
| | Benzene | 0.070 | 0.3 | Not available | Not required |
| | Xylene | 0.086 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| The section of the road km 210 village Kenzhegaly | Inorganic dust 70-20% | 0.070 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.066 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.2 | 1 | Not available | Not required |
| | Benzene | 0.071 | 0.3 | Not available | Not required |
| | Xylene | 0.089 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Road section km 220 | Inorganic dust 70-20% | 0.072 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.069 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.8 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0015 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.2 | 1 | Not available | Not required |
| | Benzene | 0.072 | 0.3 | Not available | Not required |
| | Xylene | 0.090 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Production base Zhaksymai | Inorganic dust 70-20% | 0.0402 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.0301 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/a | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 1 | Not available | Not required |
| | Hydrogen sulfide | n/a | 0.008 | Not available | Not required |
| Residential area of the Shubarkuduk village | | u/s* | d/s** | | |
| | Inorganic dust 70-20% | 0.0398 | 0.04 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0268 | 0.0270 | 0.2 | Not available |
| | Sulfur dioxide | n/a | n/a | 0.5 | Not available |
| | Carbon monoxide | 1.6 | 1.7 | 5.0 | Not available |
| | formaldehyde | 0.0012 | 0.0012 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.99 | 0.1 | 1 | Not available |
| Residential area Kopa vill. | Hydrogen sulfide | n/a | n/a | 0.008 | Not available |
| | | u/s* | d/s** | | |
| | Inorganic dust 70-20% | 0.0398 | 0.0402 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0312 | 0.0315 | 0.2 | Not available |
| | Sulfur dioxide | n/a | n/a | 0.5 | Not available |
| | Carbon monoxide | 1.5 | 1.5 | 5.0 | Not available |
| | formaldehyde | 0.0013 | 0.0014 | 0.051 | Not available |

| | | | | | | |
|--|--|-------|-----|-------|---------------|--------------|
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.099 | 0.1 | 1 | Not available | Not required |
| | Hydrogen sulfide | n/a | n/a | 0.008 | Not available | Not required |

* *u/w - upwind side*

* *d/s - downwind side*

Non Conformance Report No. 1

11 June 2018

| | |
|--|--|
| Project: Reconstruction of the road of the republican significance a-27 "Aktobe-Atyrau-Border of the Russian Federation (to Astrakhan)", km 160-220 | Non Conformance Report TODINI Costruzioni Generali S.p.A. |
| Contract: 001-ADB/CW-2017 | |
| Contractor: TODINI Costruzioni Generali S.p.A. | |
| Construction Supervision: Dongsung Engineering Co.,Ltd/LLP "Zhol Sapa" | |
| Reference: LOT 1 | |

This notice is to inform you, general contractor, specified in the contract, about following notice of measures in the field of health, safety and environment, which must be implemented as a matter of urgency

Base camp site (laboratory, asphalt batching plant)

Discrepancies:

- The generated waste and construction waste must be immediately removed from the site;
- It is necessary to organize and establish a temporary place of storage of solid waste and waste from the laboratory with the placement of containers on a concrete site fenced on three sides with a concrete wall of at least 1.5 m high with the appropriate signs;
- All trees located on the construction site must be properly protected;
- The inner area must be zoned with the appropriate signs and to be cleaned regularly. All construction materials must be properly separated and appropriately stored for export to the landfill for the disposal of solid waste;
- Appropriate warning signs must be installed;
- The site should be properly organized in accordance with instructions, including internal and access roads (to avoid heavy dustiness both inside the site and access to the site);
- Provide all employees with special clothes and PPE;
- The territory has a single toilet, but it is not available for employees. Bio-toilet must be installed



Production base, Km 168
Inadequate storage of solid waste,
June 2018



Laboratory on the Production Base
Km 168
Inadequate storage of solid waste,
June 2018



Production base Km 168 trees are not
adequately protected

Concrete batching plant and asphalt batching plant area

- In accordance with EMP appropriate measures to prevent fuel and lubricants leakage should be implemented on site, but it was noted that this discrepancy has not been eliminated since May;
- Trees located on the construction site must be protected and saved correctly!



production base KM 168 gas station is not organized according to the technical regulations. Spillage of fuel and lubricants. May 2018



Spillage of fuel and lubricants at the production base of the ACP, Km 168, May 2018



Production base Km 168 spill of fuel, June 2018



ACP Km 168 trees are not adequately protected



production base of Km 168 trees is not adequately protected



Laboratory KM 168 drainage is not constructed according to EMP

Construction site PK 130 construction of bypass road

- It is necessary to submit a logging ticket to damaged trees. To reflect measures for the restoration of tree plantations in the EMP;
- To exclude work on equipment and mechanisms that do not meet the health and safety requirements;
- To exclude the presence on the work site of persons who do not observe safety requirements



KM130 bypass road Lot 1 improper removal of the topsoil layer, May 2018.



Bypass road Km 130 excavator works without PPE, June 2018.



Bypass road Km 130 driver is exposed to dust. No PPE and overalls

Contractors base camp Shubarkuduk village, restaurant building

- medical staff should conduct internal monitoring of the sanitary and hygienic condition of the housing, dining room, cooking area. It is necessary to have and maintain a food brokerage log;
- It is necessary to observe the placement of workers in living quarters with observance of sanitary norms for 1 person. There is a high density of placement of workers in one room;
- It is necessary to complete the laundry equipment, because at the time of base camp monitoring there is one washing machine with loading capacity 6 kg. this machine is used for bedclothing, and work clothes washing, which is an unacceptable measure.



Base camp Km 175 Laundry is not equipped with equipment sufficient for washing Workwear. June 2018



Base camp Km 175 violation of norms of occupancy for 1 person. June 2018

Engineers office, Shubarkuduk village

- to provide garbage bins, place for smoking, place of storage of solid waste in accordance with the requirements of sanitary and hygienic standards with observance of schedule of exportation to the landfill for household waste disposal;
- to ensure the availability of necessary number of toilet rooms for engineering personnel, taking into account the sanitary and hygienic requirements for the construction of such places (number of people, gender characteristics);
- Maintenance of the engineer's office is to be carried out according to the requirements of the engineer and technical specifications: fence around office area, parking with a carport, to install windows in three rooms (rooms are without windows and no ventilation and sufficient natural lighting) replace the glass on two windows. Install 4 doors in 4 rooms. To install a metal grate at the entrance to office for shoes cleaning, to install air conditioners;



Entrance to the engineer's office. Not equipped, does not meet the engineer's requirement



Facade of the Engineer's office. There is no fencing



View from the side of the street. There is no fence around the perimeter of the Engineer's office



The reverse side of the Engineer's office. The place of collection of solid waste is not organized



Interior of the Engineer's office. Rooms are not isolated from each other, no natural light, air ventilation

Imbarova S.
Specialist on social and environmental impact

Temirbek Zh.T.
Road safety and HSE Engineer

Annex 8

Approval Permitting Documents for Lot 1

| Title of the document | Information and the document status |
|--|--|
| Aktobe – Makat road, km | Permission for emissions into the environment No. KZ 10VD00092475 dated 20.04.2018. |
| "Environmental Impact Assessment (EIA)" of the project | Received on 05/30/2018 KZ65VDC00070584 |
| Act on the right of permanent land use for a land plot of 62.24 hectares for the reconstruction of the highway "Aktobe - Atyrau - the border of the Russian Federation (Astrakhan), km 487-504 | Received on 05/30/2018 KZ65VDC00070584 |
| Borrow pits and status of work on them | The permit for production was received on 28.04.2018. Permission KZ65VDC00070584 dated 30.05.2018 for borrow pit in Temir district from 1 to 8. The permit for development and production was received on 30.05.2018 by the term until 30.07.2020. |
| Environmental monitoring | The contract with LLP HydroEcoResurs-L was signed on April 17, 2018. The laboratory has the certificate of accreditation KZ.I.05. dated 17.04.2013. The baseline report is submitted on May 18, 2018. |

| | |
|---|---|
| Services on removal and utilization of solid waste and other waste products | The contract with LLP "Ecological Technologies XXI" dated 2.05.2018 |
| EMP with 10 Action Plans for Environmental Protection | Detailed EMP is approved on 19.07.2018. |
| For special water use | Received |

Annex 9

**The results of Noise and Vibration measurements
Baseline data 24 APR 2018 Lot 2**

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|------------------------------------|---|--|
| Residential area Karaulkeldy vill. | 37.6 | 52.4 |
| Production Base Karaulkeldy | 35.6 | 52.4 |
| Km 236 | 37.2 | 51.4 |
| Km 245 | 36.2 | 52.4 |
| Km 255 | 37.2 | 52.4 |
| Km 265 | 36.2 | 52.4 |
| Km 275 | 37.6 | 52.4 |

**The results of Noise and Vibration measurements
Production monitoring on May 23, 2018 Lot 2**

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|------------------------------------|---|--|
| Residential area Karaulkeldy vill. | 38.5 | 53.6 |
| Production Base Karaulkeldy | 36.7 | 53.2 |
| Km 236 | 38.2 | 51.4 |
| Km 238 | 36.8 | 52.4 |
| Km 240 | 38.4 | 53.2 |
| Km 260 | 37.4 | 52.4 |

Annex 10

The results of chemical analysis of natural water

Baseline date of April, Lot 2

| Sampling points* | Pollutant name | The actual concentration | MPC rate, mg/dm ³ | Occurrence of MPC excess, the multiplicity factor |
|-------------------|----------------------------|--------------------------|------------------------------|---|
| 1 | 2 | 3 | 4 | 5 |
| Karaulkeldy river | pH | 8.20 | 6,0-9,0 | not available |
| | Solids content | 896.0 | 1000 | not available |
| | Water insoluble substances | 18.0 | Not normalized | - |
| | Chlorides | 328.4 | Not exceeding 350 | not available |
| | Ammonium nitrogen | 0.528 | Not exceeding 0.2 | not available |
| | Petroleum products | 0.041 | Not exceeding 0.1 | not available |
| | Total hardness | 7.01 | 7.0(10) | not available |
| | Calcium | 194 | Not normalized | - |
| | Magnesium | 93.6 | Not normalized | - |
| | Sulfates | 410.0 | Not exceeding 500 | not available |
| | Nitrates | 3.57 | Not exceeding 45 | not available |
| | Nitrites | 0.195 | Not exceeding 3.3 | not available |
| | Ferrum | 0.125 | Not exceeding 3.0 | not available |
| | Chrome | 0.0 | Not exceeding 0.05 | not available |
| | Total phosphorus, | 0.0 | Not exceeding 0.0001 | not available |
| | AS | 0.008 | 0.5 | not available |

The actual concentrations of pollutants in natural water

Investigation on May 23, 2018 Lot 2

| Sampling points* | Pollutant name | The actual concentration | MPC rate, mg/dm ³ | Occurrence of MPC excess, the multiplicity factor |
|-------------------|----------------------------|--------------------------|------------------------------|---|
| 1 | 2 | 3 | 4 | 5 |
| Karaulkeldy river | pH | 8.12 | 6,0-9,0 | not available |
| | Solids content | 991.0 | 1000 | not available |
| | Water insoluble substances | 20.0 | Not normalized | - |
| | Chlorides | 324.4 | Not exceeding 350 | not available |
| | Ammonium nitrogen | 0.601 | Not exceeding 0.2 | not available |
| | Petroleum products | 0.049 | Not exceeding 0.1 | not available |
| | Total hardness | 6.9 | 7.0(10) | not available |
| | Calcium | 200.0 | Not normalized | - |
| | Magnesium | 96.2 | Not normalized | - |
| | Sulfates | 390.0 | Not exceeding 500 | not available |
| | Nitrates | 3.62 | Not exceeding 45 | not available |
| | Nitrites | 0.2 | Not exceeding 3.3 | not available |
| | Ferrum | 0.2 | Not exceeding 3.0 | not available |
| | Chrome | 0.0 | Not exceeding 0.05 | not available |
| | Total phosphorus, | 0.0 | Not exceeding 0.0001 | not available |
| | AS | 0.007 | 0.5 | not available |

Annex 11

Test results of soil investigation (baseline) April 2018 Lot 2

| Sampling points* | Pollutant name | The actual concentration | MPC rate, mg/kg | Occurrence of MPC excess, the multiplicity factor |
|--|--------------------|--------------------------|-----------------|---|
| 1 | 2 | 3 | 4 | 5 |
| Section of ongoing road construction work | | | | |
| The road section Aktobe –Atyrau, 236 km. | pH, units. | 7.91 | - | - |
| | Dissolved solids | 0.150 | - | - |
| | Petroleum products | 0.01 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.814 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.2 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.6 | - | - |
| The road section Aktobe –Atyrau, 245 km. | pH, units. | 8.06 | - | - |
| | Dissolved solids | 0.153 | - | - |
| | Petroleum products | 0.021 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 1.22 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.1 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.56 | - | - |
| The road section Aktobe –Atyrau, 255 km. | pH, units. | 8.08 | - | - |
| | Dissolved solids | 0.15 | - | - |
| | Petroleum products | 0.15 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.782 | - | - |
| | Calcium | 0.3 | - | - |
| | Magnesium | 0.10 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.80 | - | - |
| The road section Aktobe –Atyrau, 265 km. | pH, units. | 7.90 | - | - |
| | Dissolved solids | 0.159 | - | - |
| | Petroleum products | 0.012 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.491 | - | - |
| | Calcium | 0.4 | - | - |
| | Magnesium | 0.1 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.72 | - | - |
| The road section Aktobe –Atyrau, 275 km. | pH, units. | 7.79 | - | - |
| | Dissolved solids | 0.160 | - | - |
| | Petroleum products | 0.010 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.460 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.10 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.6 | - | - |
| Borrow pits | | | | |
| section 1 | pH, units. | 7.90 | - | - |
| | Dissolved solids | 0.173 | - | - |
| | Petroleum products | 0.05 | - | - |
| | Chlorides | 0.06 | - | - |

| | | | | |
|-----------|--------------------|-------|---|---|
| | Sulfates | 0.480 | - | - |
| | Calcium | 0.4 | - | - |
| | Magnesium | 0.16 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.95 | - | - |
| section 2 | pH, units. | 7.75 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.06 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.478 | - | - |
| | Calcium | 0.4 | - | - |
| | Magnesium | 0.16 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.90 | - | - |
| section 3 | pH, units. | 7.80 | - | - |
| | Dissolved solids | 0.166 | - | - |
| | Petroleum products | 0.07 | - | - |
| | Chlorides | 0.06 | - | - |
| | Sulfates | 0.481 | - | - |
| | Calcium | 0.42 | - | - |
| | Magnesium | 0.18 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.93 | - | - |
| section 4 | pH, units. | 8.02 | - | - |
| | Dissolved solids | 0.176 | - | - |
| | Petroleum products | 0.03 | - | - |
| | Chlorides | 0.07 | - | - |
| | Sulfates | 0.484 | - | - |
| | Calcium | 0.45 | - | - |
| | Magnesium | 0.17 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.35 | - | - |
| section 5 | pH, units. | 8.0 | - | - |
| | Dissolved solids | 0.181 | - | - |
| | Petroleum products | 0.05 | - | - |
| | Chlorides | 0.07 | - | - |
| | Sulfates | 0.490 | - | - |
| | Calcium | 0.8 | - | - |
| | Magnesium | 0.20 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.42 | - | - |
| section 6 | pH, units. | 7.96 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.04 | - | - |
| | Chlorides | 0.06 | - | - |
| | Sulfates | 0.481 | - | - |
| | Calcium | 0.7 | - | - |
| | Magnesium | 0.19 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.33 | - | - |
| section 7 | pH, units. | 7.94 | - | - |
| | Dissolved solids | 0.170 | - | - |
| | Petroleum products | 0.03 | - | - |
| | Chlorides | 0.04 | - | - |
| | Sulfates | 0.460 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.17 | - | - |
| | Carbonates | 0.0 | - | - |

| | | | | |
|------------------------|--------------------|-------|---|---|
| | Bicarbonates | 1.34 | - | - |
| Production base | | | | |
| point 1 (North) | pH, units. | 8.05 | - | - |
| | Dissolved solids | 0.225 | - | - |
| | Petroleum products | 0.07 | - | - |
| | Chlorides | 0.10 | - | - |
| | Sulfates | 0.495 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.17 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.75 | - | - |
| point 2 (South) | pH, units. | 7.92 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.073 | - | - |
| | Chlorides | 0.09 | - | - |
| | Sulfates | 0.488 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.18 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.90 | - | - |
| point 3 (West) | pH, units. | 8.07 | - | - |
| | Dissolved solids | 0.186 | - | - |
| | Petroleum products | 0.077 | - | - |
| | Chlorides | 0.11 | - | - |
| | Sulfates | 0.484 | - | - |
| | Calcium | 0.62 | - | - |
| | Magnesium | 0.28 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.93 | - | - |
| point 4 (East) | pH, units. | 8.02 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.067 | - | - |
| | Chlorides | 0.074 | - | - |
| | Sulfates | 0.486 | - | - |
| | Calcium | 0.55 | - | - |
| | Magnesium | 0.27 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.75 | - | - |
| point 5 (center) | pH, units. | 8.08 | - | - |
| | Dissolved solids | 0.197 | - | - |
| | Petroleum products | 0.070 | - | - |
| | Chlorides | 0.08 | - | - |
| | Sulfates | 0.500 | - | - |
| | Calcium | 0.81 | - | - |
| | Magnesium | 0.22 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.62 | - | - |

The actual concentrations of pollutants in soil samples Lot 2

| Sampling points* | Pollutant name | The actual concentration | MPC rate, mg/kg | Occurrence of MPC excess, the multiplicity factor |
|--|--------------------|--------------------------|-----------------|---|
| 1 | 2 | 3 | 4 | 5 |
| Section of ongoing road construction work | | | | |
| The road section Aktobe –Atyrau, 236 km. | pH, units. | 7.87 | - | - |
| | Dissolved solids | 0.154 | - | - |
| | Petroleum products | 0.02 | - | - |
| | Chlorides | 0.05 | - | - |
| | Sulfates | 0.820 | - | - |
| | Calcium | 0.7 | - | - |
| | Magnesium | 0.3 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.5 | - | - |
| | | | | |
| The road section Aktobe –Atyrau, km 238. | pH, units. | 8.09 | - | - |
| | Dissolved solids | 0.159 | - | - |
| | Petroleum products | 0.023 | - | - |
| | Chlorides | 0.05 | - | - |
| | Sulfates | 1.25 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.2 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.6 | - | - |
| | | | | |
| The road section Aktobe –Atyrau, km 240. | pH, units. | 8.0 | - | - |
| | Dissolved solids | 0.16 | - | - |
| | Petroleum products | 0.03 | - | - |
| | Chlorides | 0.05 | - | - |
| | Sulfates | 0.490 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.18 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.66 | - | - |
| | | | | |
| The road section Aktobe –Atyrau, km 260. | pH, units. | 8.1 | - | - |
| | Dissolved solids | 0.153 | - | - |
| | Petroleum products | 0.017 | - | - |
| | Chlorides | 0.05 | - | - |
| | Sulfates | 0.786 | - | - |
| | Calcium | 0.4 | - | - |
| | Magnesium | 0.2 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.7 | - | - |
| | | | | |
| Borrow pits | | | | |
| section 1 | pH, units. | 7.87 | - | - |
| | Dissolved solids | 0.182 | - | - |
| | Petroleum products | 0.06 | - | - |
| | Chlorides | 0.07 | - | - |
| | Sulfates | 0.486 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.19 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.98 | - | - |
| | | | | |
| section 2 | pH, units. | 7.81 | - | - |
| | Dissolved solids | 0.180 | - | - |
| | Petroleum products | 0.07 | - | - |
| | Chlorides | 0.05 | - | - |

| | | | | |
|------------------------|--------------------|-------|---|---|
| | Sulfates | 0.482 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.18 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.92 | - | - |
| section 3 | pH, units. | 7.83 | - | - |
| | Dissolved solids | 0.171 | - | - |
| | Petroleum products | 0.08 | - | - |
| | Chlorides | 0.06 | - | - |
| | Sulfates | 0.485 | - | - |
| | Calcium | 0.44 | - | - |
| | Magnesium | 0.20 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 0.95 | - | - |
| section 4 | pH, units. | 8.1 | - | - |
| | Dissolved solids | 0.179 | - | - |
| | Petroleum products | 0.04 | - | - |
| | Chlorides | 0.08 | - | - |
| | Sulfates | 0.487 | - | - |
| | Calcium | 0.47 | - | - |
| | Magnesium | 0.19 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.38 | - | - |
| section 5 | pH, units. | 8.02 | - | - |
| | Dissolved solids | 0.188 | - | - |
| | Petroleum products | 0.06 | - | - |
| | Chlorides | 0.08 | - | - |
| | Sulfates | 0.493 | - | - |
| | Calcium | 0.9 | - | - |
| | Magnesium | 0.20 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.45 | - | - |
| section 6 | pH, units. | 8.01 | - | - |
| | Dissolved solids | 0.180 | - | - |
| | Petroleum products | 0.05 | - | - |
| | Chlorides | 0.07 | - | - |
| | Sulfates | 0.488 | - | - |
| | Calcium | 0.8 | - | - |
| | Magnesium | 0.20 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.36 | - | - |
| section 7 | pH, units. | 7.99 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.04 | - | - |
| | Chlorides | 0.05 | - | - |
| | Sulfates | 0.463 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.19 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.37 | - | - |
| Production base | | | | |
| point 1 (North) | pH, units. | 8.05 | - | - |
| | Dissolved solids | 0.225 | - | - |
| | Petroleum products | 0.07 | - | - |
| | Chlorides | 0.10 | - | - |
| | Sulfates | 0.495 | - | - |
| | Calcium | 0.5 | - | - |
| | Magnesium | 0.17 | - | - |

| | | | | |
|---------------------|--------------------|-------|---|---|
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.75 | - | - |
| point 2 (South) | pH, units. | 7.92 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.073 | - | - |
| | Chlorides | 0.09 | - | - |
| | Sulfates | 0.488 | - | - |
| | Calcium | 0.6 | - | - |
| | Magnesium | 0.18 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.90 | - | - |
| point 3 (West) | pH, units. | 8.07 | - | - |
| | Dissolved solids | 0.186 | - | - |
| | Petroleum products | 0.077 | - | - |
| | Chlorides | 0.11 | - | - |
| | Sulfates | 0.484 | - | - |
| | Calcium | 0.62 | - | - |
| | Magnesium | 0.28 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.93 | - | - |
| point 4 (East) | pH, units. | 8.02 | - | - |
| | Dissolved solids | 0.175 | - | - |
| | Petroleum products | 0.067 | - | - |
| | Chlorides | 0.074 | - | - |
| | Sulfates | 0.486 | - | - |
| | Calcium | 0.55 | - | - |
| | Magnesium | 0.27 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.75 | - | - |
| point 5 (center) | pH, units. | 8.08 | - | - |
| | Dissolved solids | 0.197 | - | - |
| | Petroleum products | 0.070 | - | - |
| | Chlorides | 0.08 | - | - |
| | Sulfates | 0.500 | - | - |
| | Calcium | 0.81 | - | - |
| | Magnesium | 0.22 | - | - |
| | Carbonates | 0.0 | - | - |
| | Bicarbonates | 1.62 | - | - |

Annex 12

Test results of the baseline measurements in atmospheric air
for contaminants by Lot 2, April 24-25 2018

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|---------------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Road section km 236 | Inorganic dust 70-20% | 0.058 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.057 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.2 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0011 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.089 | 1 | Not available | Not required |
| | Benzene | 0.056 | 0.3 | Not available | Not required |
| | Xylene | 0.074 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 245 | Inorganic dust 70-20% | 0.062 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.055 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.1 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.064 | 1 | Not available | Not required |
| | Benzene | 0.053 | 0.3 | Not available | Not required |
| | Xylene | 0.070 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 255 | Inorganic dust 70-20% | 0.060 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.054 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.3 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.063 | 1 | Not available | Not required |
| | Benzene | 0.55 | 0.3 | Not available | Not required |
| | Xylene | 0.061 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 265 | Inorganic dust 70-20% | 0.052 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.055 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.0 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0010 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.062 | 1 | Not available | Not required |
| | Benzene | 0.052 | 0.3 | Not available | Not required |
| | Xylene | 0.073 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.1 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| | Inorganic dust | 0.054 | 0.3 | Not available | Not required |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | | |
|--|--|--------|-------|---------------|--------------|
| Road section km 275 | 70-20% | | | | |
| | Nitrogen dioxide | 0.058 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.2 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0010 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.076 | 1 | Not available | Not required |
| | Benzene | 0.057 | 0.3 | Not available | Not required |
| | Xylene | 0.069 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Border of SPZ (North) Production base | Inorganic dust 70-20% | 0.094 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.064 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 0.76 | 5.0 | Not available | Not required |
| | formaldehyde | 0.02 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.089 | 1 | Not available | Not required |
| | Benzene | 0.075 | 0.3 | Not available | Not required |
| | Xylene | 0.091 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Production Base Karaulkeldy | | | | | |
| Border of SPZ (South) Production base | Inorganic dust 70-20% | 0.096 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.066 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 0.77 | 5.0 | Not available | Not required |
| | formaldehyde | 0.03 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.090 | 1 | Not available | Not required |
| | Benzene | 0.077 | 0.3 | Not available | Not required |
| | Xylene | 0.092 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.1 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Border of SPZ (East) Production base | Inorganic dust 70-20% | 0.097 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.068 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 0.74 | 5.0 | Not available | Not required |
| | formaldehyde | 0.01 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.091 | 1 | Not available | Not required |
| | Benzene | 0.097 | 0.3 | Not available | Not required |
| | Xylene | 0.095 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Border of SPZ (West) Production base | Inorganic dust 70-20% | 0.095 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.070 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 0.80 | 5.0 | Not available | Not required |
| | formaldehyde | 0.02 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.092 | 1 | Not available | Not required |
| | Benzene | 0.078 | 0.3 | Not available | Not required |
| | Xylene | 0.093 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |

| | | | | | | |
|---------------------------------------|--|-------------|--------------|-------|---------------|--------------|
| | Hydrogen sulfide | n/d | | 0.008 | Not available | Not required |
| | | u/s* | d/s** | | | |
| Residential area Karaulkeldy vill. | Inorganic dust 70-20% | 0.0325 | 0.0328 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.0254 | 0.0256 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.4 | 1.5 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.095 | 0.0097 | 1 | Not available | Not required |
| | Hydrogen sulfide | n/d | n/d | 0.008 | Not available | Not required |

* u/w - upwind side

* d/s - downwind side

n/d - not defined/not detected

Results of baseline measurements of atmospheric air on borrow pits, Lot 2

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|-----------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Borrow pit 1 | Inorganic dust 70-20% | 0.086 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.072 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.090 | 1 | Not available | Not required |
| | Benzene | 0.060 | 0.3 | Not available | Not required |
| | Xylene | 0.090 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Borrow pit 2 | Inorganic dust 70-20% | 0.088 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.074 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.5 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.092 | 1 | Not available | Not required |
| | Benzene | 0.065 | 0.3 | Not available | Not required |
| | Xylene | 0.092 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Borrow pit 3 | Inorganic dust 70-20% | 0.090 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.078 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.094 | 1 | Not available | Not required |
| | Benzene | 0.069 | 0.3 | Not available | Not required |
| | Xylene | 0.094 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |

| | | | | | |
|--------------|---|--------|-------|---------------|--------------|
| Borrow pit 4 | Inorganic dust 70-20% | 0.092 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.079 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.095 | 1 | Not available | Not required |
| | Benzene | 0.071 | 0.3 | Not available | Not required |
| | Xylene | 0.096 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Borrow pit 5 | Inorganic dust 70-20% | 0.090 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.081 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.094 | 1 | Not available | Not required |
| | Benzene | 0.072 | 0.3 | Not available | Not required |
| | Xylene | 0.095 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Borrow pit 6 | Inorganic dust 70-20% | 0.089 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.080 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.092 | 1 | Not available | Not required |
| | Benzene | 0.070 | 0.3 | Not available | Not required |
| | Xylene | 0.093 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Borrow pit 7 | Inorganic dust 70-20% | 0.090 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.082 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.095 | 1 | Not available | Not required |
| | Benzene | 0.095 | 0.3 | Not available | Not required |
| | Xylene | 0.2 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |

**Actual concentrations of pollutants in atmospheric air Lot 2
May 23-24, 2018**

| Sampling points* | Pollutant name | The actual concentration | MPC rate s.t, mg/m3 | Occurrence of MPC excess, the multiplicity factor | Proposal of corrective measures and environmental situation improving |
|---|-----------------------|--------------------------|---------------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Construction sites | | | | | |
| The Aktobe – Atyrau road section 236 km | Inorganic dust 70-20% | 0.064 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.060 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.4 | 5.0 | not available | not required |
| | Formaldehyde | 0.0012 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.091 | 1.0 | not available | not required |
| | Benzene | 0.058 | 0.3 | not available | not required |
| | Xylene | 0.076 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The Aktobe – Atyrau road section 238 km | Inorganic dust 70-20% | 0.065 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.057 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.2 | 5.0 | not available | not required |
| | Formaldehyde | 0.0013 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.066 | 1.0 | not available | not required |
| | Benzene | 0.055 | 0.3 | not available | not required |
| | Xylene | 0.072 | 0.2 | not available | not required |
| | Methylbenzene | 0.3 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The Aktobe – Atyrau road section 240 km | Inorganic dust 70-20% | 0.062 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.056 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.4 | 5.0 | not available | not required |
| | Formaldehyde | 0.0013 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.065 | 1.0 | not available | not required |

| | | | | | |
|---|-----------------------|--------|-------|---------------|--------------|
| | Benzene | 0.057 | 0.3 | not available | not required |
| | Xylene | 0.063 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The Aktobe – Atyrau road section 260 km | Inorganic dust 70-20% | 0.056 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.057 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.2 | 5.0 | not available | not required |
| | Formaldehyde | 0.0011 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.064 | 1.0 | not available | not required |
| | Benzene | 0.055 | 0.3 | not available | not required |
| | Xylene | 0.075 | 0.2 | not available | not required |
| | Methylbenzene | 0.2 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| Production base | | | | | |
| The border of the SPZ (North) | Inorganic dust 70-20% | 0.098 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.068 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 0.79 | 5.0 | not available | not required |
| | Formaldehyde | 0.03 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.091 | 1.0 | not available | not required |
| | Benzene | 0.077 | 0.3 | not available | not required |
| | Xylene | 0.093 | 0.2 | not available | not required |
| | Methylbenzene | 0.2 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The boundary of the SPZ (South) | Inorganic dust 70-20% | 0.099 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.069 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 0.80 | 5.0 | not available | not required |
| | Formaldehyde | 0.04 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.093 | 1.0 | not available | not required |
| | Benzene | 0.079 | 0.3 | not available | not required |
| | Xylene | 0.096 | 0.2 | not available | not required |
| | Methylbenzene | 0.2 | 0.6 | not available | not required |

| | | | | | |
|-------------------------------|-----------------------|--------|-------|---------------|--------------|
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The border of the SPZ (East) | Inorganic dust 70-20% | 0.1 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.070 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 0.78 | 5.0 | not available | not required |
| | Formaldehyde | 0.02 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.095 | 1.0 | not available | not required |
| | Benzene | 0.080 | 0.3 | not available | not required |
| | Xylene | 0.097 | 0.2 | not available | not required |
| | Methylbenzene | 0.3 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The border of the SPZ (North) | Inorganic dust 70-20% | 0.099 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.072 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 0.82 | 5.0 | not available | not required |
| | Formaldehyde | 0.03 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.093 | 1.0 | not available | not required |
| | Benzene | 0.079 | 0.3 | not available | not required |
| | Xylene | 0.096 | 0.2 | not available | not required |
| | Methylbenzene | 0.3 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| Borrow pits | | | | | |
| section 1 | Inorganic dust 70-20% | 0.090 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.076 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.7 | 5.0 | not available | not required |
| | Formaldehyde | 0.0014 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.094 | 1.0 | not available | not required |
| | Benzene | 0.063 | 0.3 | not available | not required |
| | Xylene | 0.094 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 2 | Inorganic dust 70-20% | 0.091 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.078 | 0.2 | not available | not required |

| | | | | | |
|-----------|-----------------------|--------|-------|---------------|--------------|
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.6 | 5.0 | not available | not required |
| | Formaldehyde | 0.0014 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.095 | 1.0 | not available | not required |
| | Benzene | 0.068 | 0.3 | not available | not required |
| | Xylene | 0.095 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 3 | Inorganic dust 70-20% | 0.095 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.091 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.7 | 5.0 | not available | not required |
| | Formaldehyde | 0.0013 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.098 | 1.0 | not available | not required |
| | Benzene | 0.073 | 0.3 | not available | not required |
| | Xylene | 0.096 | 0.2 | not available | not required |
| | Methylbenzene | 0.3 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 4 | Inorganic dust 70-20% | 0.096 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.083 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.8 | 5.0 | not available | not required |
| | Formaldehyde | 0.0014 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.098 | 1.0 | not available | not required |
| | Benzene | 0.075 | 0.3 | not available | not required |
| | Xylene | 0.098 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 5 | Inorganic dust 70-20% | 0.093 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.085 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.7 | 5.0 | not available | not required |
| | Formaldehyde | 0.0014 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.098 | 1.0 | not available | not required |

| | | | | | |
|---|-----------------------|--------|-------|---------------|--------------|
| | Benzene | 0.074 | 0.3 | not available | not required |
| | Xylene | 0.096 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 6 | Inorganic dust 70-20% | 0.092 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.084 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.8 | 5.0 | not available | not required |
| | Formaldehyde | 0.0013 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.094 | 1.0 | not available | not required |
| | Benzene | 0.072 | 0.3 | not available | not required |
| | Xylene | 0.095 | 0.2 | not available | not required |
| | Methylbenzene | 0.4 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| section 7 | Inorganic dust 70-20% | 0.094 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.085 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.7 | 5.0 | not available | not required |
| | Formaldehyde | 0.0014 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.098 | 1.0 | not available | not required |
| | Benzene | 0.077 | 0.3 | not available | not required |
| | Xylene | 0.098 | 0.2 | not available | not required |
| | Methylbenzene | 0.3 | 0.6 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| The nearest residential area (village Karaulkeldy) | | | | | |
| vill. Karaulkeldy, upwind side | Inorganic dust 70-20% | 0.033 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.0288 | 0.2 | not available | not required |
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.5 | 5.0 | not available | not required |
| | Formaldehyde | 0.0013 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.098 | 1.0 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |
| vill. Karaulkeldy, downwind side | Inorganic dust 70-20% | 0.0335 | 0.3 | not available | not required |
| | Nitrogen dioxide | 0.029 | 0.2 | not available | not required |

| | | | | | |
|--|----------------------|--------|-------|---------------|--------------|
| | Sulfur dioxide | n/d | 0.5 | not available | not required |
| | Carbon monoxide | 1.5 | 5.0 | not available | not required |
| | Formaldehyde | 0.0015 | 0.05 | not available | not required |
| | Hydrocarbons C12-C19 | 0.1 | 1.0 | not available | not required |
| | Hydrogen sulfide | n/d | 0.008 | not available | not required |

Annex 13

Approval Permitting Documents for Lot 2

| Title of the document | Information and the document status |
|------------------------------|--|
| Aktobe – Makat road, km | June 1, 2017, No. K88VDD00094630 |

| | |
|---|--|
| "Environmental Impact Assessment (EIA)" of the project | Number: KZ29VDC00070747 Date: 06/05/2018 |
| Borrow pits and status of work on them | Received on 27.04.2018 and on 07.06.2018 The permission for subsoil use was received on 7.06.2018 until January 20, 2020 |
| Environmental monitoring | The contract with LLP HidroEkoResurs-L dated 5.04.2018. The laboratory has the certificate of accreditation KZ.I.05. dated 17.04.2013. The baseline monitoring report is presented. The production monitoring (basic measurements) was carried out before the beginning of the construction works on site on April 12-13. A complete report on all the objects was made. |
| Services on removal and utilization of solid waste and other waste products | A contract with a specialized organization LLP "Zelenstroy" for the export of industrial waste is at the stage of concluding. The camp is not ready. |
| EMP with 10 Action Plans for Environmental Protection | Approved by PMC on 17.07.2018. |
| For special water use | In the process of obtaining |

The results of Noise and Vibration measurements

Baseline data 24 Apr 2018 Lot 3

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|-----------------------------------|---|--|
| Residential area Zharly vill. | 37.9 | 53.6 |
| Residential area Nogaity vill. | 38.0 | 53.4 |
| The production base Nogajty | 38.4 | 53.4 |
| Km 275 | 38.4 | 53.6 |
| Km 285 | 38.3 | 52.6 |
| Km 295 | 38.5 | 52.7 |
| Km 300 | 38.7 | 53.2 |
| Km 310 | 38.9 | 53.4 |
| Km 320 | 39.4 | 53.6 |
| Km 330 | 40.01 | 53.7 |

The results of Noise and Vibration measurements

Production monitoring on 23 may 2018 Lot 3

| Place/Point of measurement | Equivalent the level of vibration acceleration (dB) acceptable – 95 dB | Equivalent sound level La, dBA Valid – 80 dBA |
|-----------------------------------|---|--|
| Residential area Zharly vill. | 38.4 | 55.4 |
| Residential area Nogaity vill. | 38.4 | 54.2 |
| The production base Nogajty | 39.2 | 55.6 |
| Km 275 | 39.2 | 54.7 |
| Km 285 | 38.5 | 53.6 |

Results of the chemical analysis of natural water of draw Airyk

Baseline measurement in April, Lot 3

| № | Name of indicators | Permissible rates | Actual results | Occurrence of the excess |
|----------|--|--------------------------|-----------------------|---------------------------------|
| 1 | pH factor | 6-9 | 7.49 | Not available |
| 2 | Solids content, mg/dm ³ | Not exceeding 1000 | 672.0 | Not available |
| 3 | Water-insoluble substances, mg/dm ³ | Not exceeding 0,25 | 15.0 | Not available |
| 4 | Chlorides, mg/dm ³ | Not exceeding 350 | 132.3 | Not available |
| 5 | Ammonium nitrogen, mg/dm ³ | Not exceeding 2,0 | 0.0 | Not available |
| 6 | Petroleum products, mg/dm ³ | Not exceeding 0,1 | 0.03 | Not available |
| 7 | Total hardness, mg-equ/L | Not exceeding 7.0 | 7.2 | Not available |
| 8 | Magnesium, mg-equ/L | Not normalized | 76.0 | - |
| 9 | Calcium, mg-equ/L | Not normalized | 40.8 | - |
| 10 | Sulfate, mg-equ/L | Not exceeding 500 | 235.0 | Not available |
| 11 | Nitrates, mg-equ/L | Not exceeding 45 | 0.247 | Not available |
| 12 | Nitrites, mg-equ/L | Not exceeding 3.3 | 0.105 | Not available |
| 13 | Ferrum, mg-equ/L | Not exceeding 3,0 | 1.15 | Not available |
| 14 | Chrome (6), | Not exceeding 0,05 | 0.0 | Not available |
| 15 | Total phosphorus, | Not exceeding 0,0001 | 0.0 | Not available |
| 16 | AS | Not exceeding 0,5 | 0.03 | Not available |

**Results of the chemical analysis of natural water (underground)
Investigation on May 23, 2018 Lot3**

| № | Name of indicators | Permissible rates | Actual results | |
|----------|--|--------------------------|-----------------------|------------------|
| | | | R. Kenzhali | R. Shieli |
| | pH factor | 6-9 | 7.98 | 8.01 |
| | Solids content, mg/dm ³ | Not exceeding 1000 | 1000 | 1000 |
| | Water-insoluble substances, mg/dm ³ | Not exceeding 0,25 | 18.6 | 20.1 |
| | Chlorides, mg/dm ³ | Not exceeding 350 | 157.5 | 350 |
| | Ammonium nitrogen, mg/dm ³ | Not exceeding 2,0 | 2.0 | 2.0 |
| | Petroleum products, mg/dm ³ | Not exceeding 0,1 | 0.003 | 0.002 |
| | Total hardness, mg-equ/L | Not exceeding 7.0 | 7.0 | 7.0 |
| | Magnesium, mg-equ/L | Not normalized | 32.4 | 132 |
| | Calcium, mg-equ/L | Not normalized | 86.0 | 0 |
| | Sulfate, mg-equ/L | Not exceeding 500 | 283.11 | 500 |
| | Nitrates, mg-equ/L | Not exceeding 45 | 0.08 | 1.65 |
| | Nitrites, mg-equ/L | Not exceeding 3.3 | 0.12 | 0.13 |
| | Ferrum, mg-equ/L | Not exceeding 3,0 | 0.228 | 0.228 |
| | Chrome (6), | Not exceeding 0,05 | 00 | 0 |
| | Total phosphorus, | Not exceeding 0,0001 | 0.0001 | 0.0001 |
| | AS | Not exceeding 0,5 | 0.03 | 0.03 |

Test results of soil investigation (baseline) April 2018 Lot 3

| Name of indicators | PB Nogayty | Km 275 | Km 285 | Km 295 | Km 300 | Km 310 | Km 320 | Km 330 |
|-------------------------|------------|--------|--------|--------|--------|--------|--------|--------|
| pH factor | 7.78 | 7.80 | 7.83 | 7.42 | 7.32 | 7.36 | 7.20 | 7.23 |
| Dissolved solids | 0.276 | 0.257 | 0.277 | 0.272 | 0.279 | 0.270 | 0.250 | 0.259 |
| Petroleum products mg/g | 0.057 | 0.020 | 0.019 | 0.018 | 0.017 | 0.016 | 0.017 | 0.012 |
| Chlorides | 0.28 | 0.07 | 0.065 | 0.08 | 0.09 | 0.07 | 0.08 | 0.08 |
| Sulfates | 0.580 | 0.448 | 0.449 | 0.469 | 0.470 | 0.465 | 0.462 | 0.460 |
| Calcium | 1.82 | 0.50 | 0.7 | 0.76 | 0.78 | 0.73 | 0.71 | 0.73 |
| Magnesium | 0.0 | 0.0 | 0.0 | 1.5 | 1.6 | 1.2 | 1.1 | 1.12 |
| Carbonates | 0.06 | 0.0 | 0.04 | 0.1 | 0.2 | 0.1 | 0.08 | 0.06 |
| Bicarbonates | 33.0 | 27.0 | 24.0 | 26.0 | 28.0 | 28.0 | 32.0 | 33.0 |

Test results of soil investigation, May 2018 Lot 3

| Name of indicators | The production base Nogajty | | Zharly vill. | Km 275 | Km 285 | Km 300 |
|-------------------------|-----------------------------|-----------|--------------|--------|--------|--------|
| | 1st point | 2nd point | | | | |
| pH factor | 7.77 | 7.67 | 7.36 | 7.65 | 7.27 | 7.17 |
| Dissolved solids | 0.133 | 0.138 | 0.243 | 0.223 | 0.423 | 0.433 |
| Petroleum products mg/g | 0.02 | 0.138 | 0.019 | 0.025 | 0.023 | 0.025 |
| Chlorides | 0.06 | 0.02 | 0.16 | 0.16 | 0.36 | 0.56 |
| Sulfates | 0.262 | 0.258 | 0.282 | 0.452 | 0.572 | 0.632 |
| Calcium | 0.6 | 0.7 | 0.72 | 0.55 | 0.61 | 0.70 |
| Magnesium | 0.0 | 0.0 | 0.59 | 0.54 | 0.54 | 0.63 |
| Carbonates | 0.6 | 0.7 | 0.0 | 0.0 | 0.0 | 0 |
| Bicarbonates | 0.06 | 0.06 | 0.08 | 0.08 | 0.18 | 0.28 |

Test results of atmospheric air pollutants measurements on Lot 3
Baseline measurements in April 2018.

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|---------------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Road section km 275 | Inorganic dust 70-20% | 0.071 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.069 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.13 | 1 | Not available | Not required |
| | Benzene | 0.074 | 0.3 | Not available | Not required |
| | Xylene | 0.090 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 285 | Inorganic dust 70-20% | 0.069 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.067 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.12 | 1 | Not available | Not required |
| | Benzene | 0.072 | 0.3 | Not available | Not required |
| | Xylene | 0.088 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 295 | Inorganic dust 70-20% | 0.069 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.067 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.12 | 1 | Not available | Not required |
| | Benzene | 0.072 | 0.3 | Not available | Not required |
| | Xylene | 0.088 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 300 | Inorganic dust 70-20% | 0.067 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.068 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.12 | 1 | Not available | Not required |
| | Benzene | 0.073 | 0.3 | Not available | Not required |
| | Xylene | 0.089 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 310 | Inorganic dust 70-20% | 0.068 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.069 | 0.2 | Not available | Not required |

| | | | | | |
|---------------------------------|---|--------|--------|---------------|---------------|
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.13 | 1 | Not available | Not required |
| | Benzene | 0.074 | 0.3 | Not available | Not required |
| | Xylene | 0.088 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.2 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 320 | Inorganic dust 70-20% | 0.070 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.071 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.13 | 1 | Not available | Not required |
| | Benzene | 0.075 | 0.3 | Not available | Not required |
| | Xylene | 0.089 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 330 | Inorganic dust 70-20% | 0.071 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.070 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.12 | 1 | Not available | Not required |
| | Benzene | 0.077 | 0.3 | Not available | Not required |
| | Xylene | 0.090 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| | | u/s | d/s | | |
| Production base Nogayty Point 1 | Inorganic dust 70-20% | 0.0354 | 0.0356 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0269 | 0.0271 | 0.2 | Not available |
| | Sulfur dioxide | n/d | n/d | 0.5 | Not available |
| | Carbon monoxide | 1.6 | 1.7 | 5.0 | Not available |
| | formaldehyde | 0.0014 | 0.0014 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.099 | 0.1 | 1 | Not available |
| | Hydrogen sulfide | n/d | n/d | 0.008 | Not available |
| | | u/s* | d/s** | | |
| Residential area Zharly vill. | Inorganic dust 70-20% | 0.0348 | 0.0349 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0265 | 0.0269 | 0.2 | Not available |
| | Sulfur dioxide | n/d | n/d | 0.5 | Not available |
| | Carbon monoxide | 1.5 | 1.6 | 5.0 | Not available |
| | formaldehyde | 0.0013 | 0.0014 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.098 | 0.099 | 1 | Not available |
| | Hydrogen sulfide | n/d | n/d | 0.008 | Not available |

* u/w - upwind side

* d/s - downwind side

* n/d – not detected

Test results of atmospheric air pollutants measurements on Lot 3

In may 2018

| Sampling points | Pollutant name | The actual concentration | Norm MPC s.t, mg/m ³ | Occurrence of MPC excess, the multiplicity factor | Proposals for corrective measures |
|---------------------|---|--------------------------|---------------------------------|---|-----------------------------------|
| Road section km 275 | Inorganic dust 70-20% | 0.072 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.071 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.13 | 1 | Not available | Not required |
| | Benzene | 0.075 | 0.3 | Not available | Not required |
| | Xylene | 0.091 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 285 | Inorganic dust 70-20% | 0.073 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.072 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.18 | 1 | Not available | Not required |
| | Benzene | 0.079 | 0.3 | Not available | Not required |
| | Xylene | 0.095 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 300 | Inorganic dust 70-20% | 0.072 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.071 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.14 | 1 | Not available | Not required |
| | Benzene | 0.76 | 0.3 | Not available | Not required |
| | Xylene | 0.091 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 310 | Inorganic dust 70-20% | 0.073 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.071 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.16 | 1 | Not available | Not required |
| | Benzene | 0.076 | 0.3 | Not available | Not required |
| | Xylene | 0.090 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 320 | Inorganic dust 70-20% | 0.078 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.074 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.8 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0014 | 0.051 | Not available | Not required |

| | | | | | |
|---------------------------------|---|-------------|--------------|---------------|---------------|
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.15 | 1 | Not available | Not required |
| | Benzene | 0.077 | 0.3 | Not available | Not required |
| | Xylene | 0.091 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.3 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Road section km 330 | Inorganic dust 70-20% | 0.079 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.073 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.7 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0013 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.15 | 1 | Not available | Not required |
| | Benzene | 0.079 | 0.3 | Not available | Not required |
| | Xylene | 0.092 | 0.2 | Not available | Not required |
| | Methylbenzene | 0.4 | 0.6 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| Production base Nogayty Point 1 | Inorganic dust 70-20% | 0.0401 | 0.3 | Not available | Not required |
| | Nitrogen dioxide | 0.0292 | 0.2 | Not available | Not required |
| | Sulfur dioxide | n/d | 0.5 | Not available | Not required |
| | Carbon monoxide | 1.6 | 5.0 | Not available | Not required |
| | formaldehyde | 0.0012 | 0.051 | Not available | Not required |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.2 | 1 | Not available | Not required |
| | Hydrogen sulfide | n/d | 0.008 | Not available | Not required |
| | | u/s* | d/s** | | |
| Residential area Nogaity vill. | Inorganic dust 70-20% | 0.073 | 0.070 | 0.3 | Not available |
| | Nitrogen dioxide | 0.070 | 0.057 | 0.2 | Not available |
| | Sulfur dioxide | n/d | n/d | 0.5 | Not available |
| | Carbon monoxide | 1.7 | 1.9 | 5.0 | Not available |
| | formaldehyde | 0.0013 | 0.0011 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.15 | 0.16 | 1 | Not available |
| | Hydrogen sulfide | n/d | n/d | 0.008 | Not available |
| | | u/s* | d/s** | | |
| Residential area Zharly vill. | Inorganic dust 70-20% | 0.0401 | 0.0379 | 0.3 | Not available |
| | Nitrogen dioxide | 0.0271 | 0.0273 | 0.2 | Not available |
| | Sulfur dioxide | n/d | n/d | 0.5 | Not available |
| | Carbon monoxide | 1.6 | 1.6 | 5.0 | Not available |
| | formaldehyde | 0.0014 | 0.0014 | 0.051 | Not available |
| | Hydrocarbons C ₁₂ -C ₁₉ | 0.1 | 0.1 | 1 | Not available |
| | Hydrogen sulfide | n/d | n/d | 0.008 | Not available |

* u/w - upwind side

* d/s - downwind side

Non Conformance Report No 2

12 June 2018

| | |
|--|---|
| Project: Reconstruction of the road of the republican significance a-27 "Aktobe-Atyrau-Border of the Russian Federation (to Astrakhan)", km 160-220 | Non Conformance Report TODINI Costruzioni Generali S.p.A. |
| Contract: 003-ADB/CW-2017 | |
| Contractor: TODINI Costruzioni Generali S.p.A. | |
| Construction Supervision: Dongsung Engineering Co.,Ltd/LLP "Zhol Sapa" | |
| Reference: LOT 3 | |

This notice is to inform you, general contractor, specified in the contract, about following notice of measures in the field of health, safety and environment, which must be implemented as a matter of urgency

**Base camp area
non-conformity:**

- It is necessary to organize temporary place of storage of waste with placement of containers on a concrete site fenced on three sides with a concrete wall of at least 1.5 m high with the appropriate signs;
- The inner area must be zoned with the appropriate signs and to be cleaned regularly. All solid domestic and production processes waste must be properly separated and appropriately stored for export to the landfill for the disposal of solid waste

Contractors Base camp

- Arrange the medical center to the state of effective functioning. Provide a list of medicines;
- Medical personnel should conduct an internal monitoring of the sanitary and hygienic state of the housing, canteen, cooking area. It is necessary to have and maintain a food broker log;
- it is necessary to install urgently a box for appeals and complaints in the base camp, indicating the contacts responsible for the seizure and consideration of applications. This paragraph related also to base camp of Lot 1.

Canteen of the base camp:

- bring into compliance hygienic requirements of the cooking zone, distribution zone, storage area of products, zone of reception and washing of dishes



Canteen in the base camp. The window for receiving dishes does not comply with the Sanitary and Hygienic Standards and Requirements (SGST)



Canteen of the base camp. The premises do not correspond to the SGST, the preparation and washing workshops are not zoned.

Engineer's office in the base camp

- it is necessary to equip the engineer's office in accordance with the Technical Specifications: at least 5 rooms of at least 240 square meters area, completely isolated (do not have a combination with other premises of the contractor);
- Provide necessary equipment in the engineer's office: air conditioners - 5 units, refrigerator - 1, other office equipment including microwave, utensils for office, furniture, office equipment: digital camera with color printer, laminate, binding machine, generator for 5 kVA, steel cabinet, baskets

for papers, etc. with preliminary submission of the full information on the manufacturer, guarantee for a minimum of 1 year of service, for engineers approval;

Imbarova S.
Specialist on social and environmental impact

Approval Permitting Documents for Lot 3

| Title of the document | Information and the document status |
|--|--|
| Aktobe – Makat road, km | Разрешение на эмиссии в окружающую среду № KZ 10VD00092057 от 12.04.2018г. |
| "Environmental Impact Assessment (EIA)" of the project | Received on 05/30/2018 KZ65VDC00070584 |
| Act on the right of permanent land use for a land plot of 62.24 hectares for the reconstruction of the highway "Aktobe - Atyrau - the border of the Russian Federation (Astrakhan) | The documentation is presented by the Customer as part of the tender documentation |
| Borrow pits and status of work on them | Permission KZ65VDC00070584 dated 30.05.2018 borrow pits in the Baigan district from 9 to 18 career. The permit for development and production was received on May 30, 2013 by the term until 30.07.2020. |
| Environmental monitoring | The contract with LLP HidroEkoResurs-L was signed on April 17, 2018. The laboratory has the certificate of accreditation KZ.I.05. dated 17.04.2013. The baseline report is submitted on May 21, 2018. |
| Services on removal and utilization of solid waste and other waste products | Not concluded. In progress |
| EMP with 10 Action Plans for Environmental Protection | Detailed EMP is approved on 19.07.2018. |
| For special water use | Well of technical water for PK 440 + 00. At PK 270 + 00 of the Production Base there is a well for Drinking water and for technical. Up to 50 cubic meters per day special water use is not registered. Two hydrological wells were drilled and two more wells are drilling. The contract № 01 dated 02.04.2018. and additional agreement No. 1 to the contract. №1 dated 02.2018. |

Information on the submitted permits

Submitted to PMC – 

None 

| Contractor | Section | Activity / Object | Detailed EMP | Ectraction permit | Permission for emission | Waste utilization contract | Envir.monitoring contract |
|------------|---------|-------------------|------------------------|--|--|---------------------------------------|---------------------------|
| Todini | 1 | Road Construction | Approved 30.06.2018 | | Recieved 20.04.18 | Contract No 02/05-18 or 02.05.2018 | Contract dated 17.04.18 |
| | | Borrow pits | | Recieved 28.04.18 | Permits for 3 borrow pits are included in the construction issue of 20.04.18 | | |
| | | Base camp | | | | | |
| | | ACP, CBP, CSP | | | | | |
| Akkord | 2 | Road Construction | | | Received 1.06.2018 | | Contract dated 05.04.18 |
| | | Borrow pits | | Recieved 07.06.18 Recieved 27.04.2018 | | | |
| | | Base camp | | | | | |
| | | Production base | | | | | |
| Todini | 3 | Road Construction | Approved 30.06.2018 | | Recieved 12.04.18 | Contract No 02/05-18 dated 02.05.2018 | Contract dated 17.04.18 |
| | | Borrow pits | | Recieved 28.04.18 | Permits for 3 borrow pits are included in the construction issue of 20.04.18 | | |

Annex 21

Matrix of main environmental impacts at various stages of construction

| No. | Aspects of | The impact on the environment | | | | | | | | |
|----------|--|-------------------------------|-------------------------------------|--------------------|-------------------|---|----------------------------|--------------------------------------|--|--|
| | | Atmosphere | Surface waters | Underground waters | Mineral resources | Soil | Flora | Fauna | Land resources | Settlements |
| 1 | Activity: construction (preparatory work) | | | | | | | | | |
| 1.1 | Working machinery | Air pollution | - | - | - | - | - | - | Withdrawal of land resources for roads | The creation of new jobs |
| 1.2 | Water usage and water drainage | - | Fresh water consumption, wastewater | - | - | - | - | - | - | Water extraction from organized water intake |
| 1.3 | Waste formation and disposal | - | - | - | - | Topsoil removal, its storage and subsequent use in re-cultivation | Local vegetation reduction | Local destruction of animal habitats | Local temporary withdrawal for storage of building materials | Participation in the Organized Ordered Waste Management System, ie the disposal of waste at the SHW landfill |
| 1.4 | Earthworks section construction | - | - | - | - | Topsoil removal, its storage and subsequent use in re-cultivation | Local vegetation reduction | Local destruction of animal habitats | Local temporary withdrawal of land plots | The creation of new jobs |
| 2 | Activity: Road construction | | | | | | | | | |
| 2.1 | The polluting emissions | Air pollution | - | - | - | Soil contamination | - | - | - | Pollution of the working area air |

| No. | Aspects of | The impact on the environment | | | | | | | | |
|-----|--------------------------------|-------------------------------|----------------|--------------------|-------------------------|---|----------------------------|--------------------------------------|-------------------------------------|---|
| | | Atmosphere | Surface waters | Underground waters | Mineral resources | Soil | Flora | Fauna | Land resources | Settlements |
| 2.2 | Water usage and water drainage | - | - | - | - | - | - | - | - | Water extraction from organized water intake |
| 2.3 | Waste formation and disposal | - | - | - | - | Soil disturbance during temporary placement | Local vegetation reduction | Local destruction of animal habitats | Local temporary withdrawal of lands | Organization of an orderly system of waste management |
| 2.4 | Earthworks | - | - | - | Disorders of the bowels | Topsoil removal, its storage and subsequent use in re-cultivation | Local vegetation reduction | Local destruction of animal habitats | Local temporary withdrawal of lands | - |

| A register of Complaints - Records of the Consultant for Supervision of Construction and Contractor | | | | | | | | | | |
|---|------------|---|--|-------------------------------|------|--|---|--------------------------|---|----------------------|
| | | | | | | | | | | LOT 1 |
| Reg. number of complaints | Date | Name | Address | Contact phone number | Sex | Description of the complaint | The name of the person who received the complaint | Complaint type (A, B, C) | If resolved, the outcome of the resolution | Resolution status |
| 1 | 28.12.2017 | Bigaliev A. head of Department of architecture and urban planning | Aktobe region, Shubarkuduk vill., Zheltoksan str., 5 | 2 32 49 temirarhstroi@mail.ru | male | request for assistance in the preparation of project documentation for 160 - 220 m | Aituganova Nurgul (CSC office manger) | (A) | Yes, the information provided on electronic media | Closed on 30.12.2017 |
| 2 | 10.01.2018 | Salimgerey K., head of Department of land relations of Temir district | Shubarkuduk vill., Zheltoksan str., 5 | 2 21 22 | male | Information request on project road limits on km 140-204. Location of the cattle pass, entrance / exit roads | Aytuganova Nurgul (CSC office manager) | (A) | ref. No. 001-ATB/OTH- 2018 | Closed on 13.01.2018 |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| register of Complaints - Records of the Consultant for Supervision of Construction and Contractor Lot 3 | | | | | | | | | |
|--|---|---|--------------------------------|-----------------------------|---|---|--|--|---|
| # | Date | Name | Address | Contact phone number | Sex | Description of the complaint | The name of the person who received the complaint | Complaint type (A, B, C) | If resolved, the outcome of the resolution |
| 1 | Kadyrov Adil, Senior Inspector for ODTI | Baiganinsky district, Karaulkeldy village | 8 702 492 21 90 8 7777 67 4886 | male | passing the site on 23.00 he pays attention to the dust. The place did not specify. | Temirbek Zh.T. Engineer for traffic safety engineer CSC | B | on June 12 site inspection. From the general contractor - the environmental specialist, from the Subcontractor - the environmental specialist, from the CNS - the safety specialistengineer, the environmental specialist and Social Safeguards Specialist | Resolved on 12.06.2018 |

Environmental Protection Plan at the Feasibility / Design Phase

Table F-1: EPP for mitigation prior to construction

| Item | Potential impact/ problem | Mitigation measure | Responsibilities/Responsibles | Comments on the implementation status |
|--------------------------------|---|---|---|--|
| Air quality and climate | Impact on air quality from stationary sources | The location of borrow pits, developments and asphalt-concrete plants must be approved by the Engineer and the regional territorial departments for environmental protection (RTDEPP) prior to construction. It is necessary to make efforts to ensure that the location of these facilities is as close as possible to the Project road in order to avoid unnecessary mileage and potential dust generation from transport during construction work. In addition, quarries, soil development and asphalt plants should not be located less than one kilometer from any locality or sensitive site. | <ul style="list-style-type: none"> Contractor chose the location The engineer and (RTDEPP) approved the location. | <ul style="list-style-type: none"> Done, Permission documents were received on April 20 and 28, 2018. The Engineer has reviewed and approved the location of the objects |
| | Impact during construction | The Contractor is responsible for the development of the Air Quality Management Plan (AQMP), which must be submitted to the Engineer prior to commencement of work. The plan should describe measures that must be taken to minimize dust generation (for example, by spraying water on nonasphalt roads, sheltering heaps of materials and drilling and blasting operations using small charges, etc.), and types, service life and the requirements for the equipment used. The plan should also provide for emergency work in case of emissions of toxic pollutants. The Emergency Response Plan (ERP) should be prepared during the design phase and should be part of the EPP. | <ul style="list-style-type: none"> Contractors have prepared AQMP The engineer studied and approved ERP within the framework of the EPP (Environmental Protection Plan) | <ul style="list-style-type: none"> Prepared and approved |
| | Deterioration of pavement | An assessment is required to be done to determine if an adjustment needs to be made to the pavement in the event of possible temperature | <ul style="list-style-type: none"> Designers | <ul style="list-style-type: none"> Taken into account in the |

| | | | | |
|-------------------|--|--|---|---|
| | technical condition | increase on 5°C (for example, adjustment of lower layer of asphalt pavement or replacement of mineral aggregate). | | project documentation |
| | Corrosion of steel reinforcement in concrete structures | To assess the possibility of using advanced concrete-containing materials and structures in order to increase the service life of concrete objects and their resistance to climate change. | • Designers | • Taken into account in the project documentation |
| | Damage to roads and drainage systems as a result of flooding | Assess the frequency of floods in the past 50 years for all bridges and road dams and develop measures to mitigate the risk of flooding in all sections of the reconstructed road. Increase the throughput of lateral and transverse drainage ditches in the event of severe flooding. | • Designers | • Taken into account in the project documentation |
| | Increase in the case of roads, bridges and supporting infrastructure erosion | Assess the layout of dams, road embankments, bridge supports, etc. to determine whether additional protection/reinforcement is needed to retain additional water and to contain the increasing flow of water. | • Designers | • Taken into account in the project documentation |
| Topography | Existing borrow pits | With respect to existing borrow pits, the Engineer will conduct an examination to confirm that those objects that have been selected for use by the Contractor do work or can work properly. It will also be necessary to analyze licenses for exploitation of soil development. The license must clearly indicate the validity period for the operational period of the quarry. An engineer must also be provided with a copy of the agreement between the operator and the Contractor. | • The Contractor provides a copy of the agreements / licenses to the Engineer. • The engineer approves borrow pit. | • The work was carried out during the mobilization period |
| | New borrow pits | For any new borrow pit it is necessary to obtain the required permits prior to the commencement of construction work at these facilities, including the approval of the RTDEPP and the Engineer. The selected objects | • The contractor chooses borrow pit and applies for approval in the | • The work was carried out during the mobilization period |

| | | | | |
|-------------------------|---------------------------|--|--|---|
| | | should be located as close to the Project road as possible to avoid unnecessary mileage. In this case, borrow pits should not be located at a distance less than one kilometer from any locality or sensitive object. The location of borrow pits should be indicated in the Contractor's EPP. In addition, the Contractor shall ensure that quarries and crushing plants are located at least one kilometer away from populated areas in order to avoid noise and dust, and where possible, such facilities should be located on state-owned lands. | <ul style="list-style-type: none"> RTDEPP and any other supervisory authority. The engineer analyzes location of borrow pit, the availability of licenses and approvals from the RTDEPP. | <ul style="list-style-type: none"> For Lot 1 and 3 in the period of February - April 2018, Lot 2 completed work in June 2018. |
| Soil / Hydrology | Existing soil borrow pits | With respect to existing borrow pits, the Engineer will conduct an examination to confirm that those objects that have been selected for use by the Contractor do work or can work properly. It will also be necessary to analyze licenses for exploitation of soil development. The license must clearly indicate the validity period for the operational period of the quarry. The engineer must also be provided with a copy of the agreement between the operator and the Contractor. | <ul style="list-style-type: none"> The Contractor provides a copy of the agreements / licenses to the Engineer. The engineer approves borrow pit. | <ul style="list-style-type: none"> During the period of mobilization on site |
| | New borrow pits | If the Contractor needs to open a new borrow pit, he will have to obtain all necessary permits from the supervisory authorities and prepare a Plan of Measures for the borrow pit (PMB), which must be submitted to the Engineer prior to construction. The EPP should indicate the location of all proposed borrow pits. The location of the borrow pit must be approved by the Engineer and RTDEPP. Borrow pit should not be located closer than 500 meters from protected areas of any kind. The location of the soil development shall be indicated in the Contractor's EPP. | <ul style="list-style-type: none"> The contractor selects a borrow pit and applies for approval by the RTDEPP and any other regulatory authorities. The engineer analyzes borrow pit location, licenses and approvals from the RTDEPP. | <ul style="list-style-type: none"> The work was carried out during the site mobilization period |

| | | | | |
|--|---|---|--|--|
| | Selecting the location of the asphalt plant | A new asphalt plant (AP) must not be installed within one kilometer of the settlement, a protected area or sensitive objects. The location of the AP shall be indicated by the Contractor in the EPP. Location of the AP should be approved by the Engineer and RTDEPP. | <ul style="list-style-type: none"> • The contractor selects a borrow pit and applies for approval by the RTDEPP and any other regulatory authorities. • The engineer analyzes borrow pit location, licenses and approvals from the RTDEPP. | <ul style="list-style-type: none"> • The work was carried out during the mobilization period, permission documents received |
| | Choose of site for base camp construction | <p>The Contractor is responsible for the preparation of the Construction Camp Plan, which is part of the EPP. The Plan should indicate proposed systems and location of related facilities at object, including latrines, storage areas, etc. The Contractor must ensure that the Plan meets the following conditions:</p> <ul style="list-style-type: none"> • Rainwater in the area must be collected and removed from the site by means of a suitable and properly designed temporary drainage system and disposed of in such a place and in such a way that it does not cause pollution or harmful effects. The drainage system must be equipped with oil and grease traps. • Water for sanitation or washing should not be discharged directly into surface waters. For the wastewater in the territory of the construction camp, septic tanks must be provided. The waste water from septic tanks must be regularly removed and disposed of by licensed contractors. • Disposal of materials such as lubricating oils and the like in underground and surface water bodies will be prohibited. • Storage areas for liquid materials should not have a direct drain into the surface water. • Spills of lubricating oils and fuel must be immediately eliminated, and spill cleanup materials must be constantly available. | <ul style="list-style-type: none"> • The engineer studies and approves site plan | <ul style="list-style-type: none"> • The work was carried out during the mobilization period |

| | | | | |
|--|--|---|--|--|
| | | <ul style="list-style-type: none"> • The construction camp and work sites should be equipped with latrines that do not pollute the surface waters, and should be connected to septic tanks or to water treatment facilities. • Discharge of construction water with a cargo of precipitation directly into surface water bodies will be prohibited. Construction water with a load of precipitation must be discharged into sedimentation tanks or tanks before final discharge. • Flushing of concrete mixers at construction sites will be prohibited, unless a special washing area is provided for this purpose (for example, at the bridge construction site) for this purpose. Flushing should be hermetic, and its discharge should be carried out at 75% fullness. • Spill response equipment should be available at the facility. The following conditions must be met in order to avoid negative effects due to unsatisfactory storage of fuel and chemicals: <ul style="list-style-type: none"> ○ Refueling must only be carried out in strictly designated areas. ○ All fuel and chemicals on site (if stored there) should be stored on a sealed base within the embankment and enclosed by a fence. The storage area should be located away from watercourses and wetlands. The base and walls of the shaft must be waterproof and have sufficient power to hold 110% of the volume of the tanks. ○ Filling and refueling must be strictly controlled in accordance with official procedures and should be carried out on sites enclosed by the shaft in order to prevent spills / leaks of liquids that could cause contamination. ○ All valves and refueling guns must be protected from unauthorized interference and vandalism, and must be turned off and securely locked until they are used. ○ Contents of all containers or drums must be clearly marked. Measures should be taken so that contaminated drains do not enter directly into the drainage or watercourses. ○ Discharge of lubricating oils and other potentially hazardous liquids to land or water will be prohibited. | | |
|--|--|---|--|--|

| | | | | |
|--|-----------------------|--|---|--|
| | | <ul style="list-style-type: none"> ○ In case of emergency spillage, it must be immediately eliminated, and all clearance materials must be stored in a safe place and that they can be disposed of in an approved location for the disposal of hazardous waste. <p>Facility plans should be designed so that, as far as possible, all temporary construction facilities are located at a distance of at least 50 meters from the watercourses, reservoirs or canals. If the Engineer deems it necessary, the Contractor will have to equip the washing pit or platform for washing the wheels and / or vehicles away from the facilities. If such a requirement is voiced, the Contractor will have to ensure that all vehicles are carefully washed (the body and wheels must be cleaned of sand and dirt) before leaving the construction site. The contractor will have to provide the necessary facilities for cleaning at the site and ensure that the water and debris resulting from such cleaning are not discarded outside the site.</p> | | |
| | Drilling of the wells | Contractor must obtain all necessary permits prior to drilling any wells. | <ul style="list-style-type: none"> • The contractor receives permits • Engineer examines permits before drilling. | <ul style="list-style-type: none"> • The need for drilling wells there is on Lot 3. The work on obtaining permits in the progress |
| | Bridge construction | All new bridges should be designed for 75 years of operation. Works on the reconstruction and repair of bridges should be designed for 50 years of operation. The design load and design solutions for all structural elements must comply with the design standards for bridges provided for in the Special Requirements of the Employer. Finally, the design solutions for the bridges and the layout should be aesthetically pleasing and in harmony with the surrounding landscape. | <ul style="list-style-type: none"> • Project designer | <ul style="list-style-type: none"> • Taken into account in the project documentation |
| | Soil contamination | The Contractor is responsible for the development of the Emergency Response Plan (ERP), which should cover storage of hazardous materials, oil spills and workplace accidents. The plan should describe process of resolving such situations and the subsequent reporting, and organizational structures (including those with designated officials) | <ul style="list-style-type: none"> • Contractor develops ERP • Engineer examines and approves ERP in the EPP | <ul style="list-style-type: none"> • Developed during the mobilization phase • The Engineer reviewed and |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|-----------------------|---------------------------|---|--|---|
| | | should be indicated. The plan should be submitted to the Engineer for approval in the composition of the IEE. | | approved the EMP plans |
| | Soil erosion | To reduce the impact of erosion, design solutions for the Project should ensure that slopes of embankment are calculated taking into account strength of the ground and other parameters, as provided in the technical specifications, in order to reduce slipping or soil erosion. | <ul style="list-style-type: none"> • Project designer | <ul style="list-style-type: none"> • Taken into account in the project documentation |
| Land use | Loss of property and land | MID should prepare a Land Acquisition and Resettlement Plan (LARP), obtain its approval from ADB, and then implement this plan and redeem land at the start of construction work. | <ul style="list-style-type: none"> • MID prepared the LARP, as well as an additional framework LARP • ADB approves LARP | <ul style="list-style-type: none"> • Completed before the start of work on the site. In 2015 LARP, and LARP Verification Report in 2016 |
| Waste and dump | Waste disposal | <p>The Contractor is responsible for developing the Waste Management Plan (WMP) to manage all the waste. The plan, which is part of the EPP, should include the following provisions relating to safe handling and disposal:</p> <ul style="list-style-type: none"> • Solid domestic waste • Food waste • Inactive waste • Recycled waste • Plastics • Metals • Wood • Construction waste • Hazardous waste • Liquid waste <p>The plan should also include provisions for the disposal of excess waste. The plan should specify where the dump will be found, and the methods and locations for its disposal.</p> | <ul style="list-style-type: none"> • The contractor will prepare an WMP • The Engineer will examine and approve the WMP as part of the EPP | <ul style="list-style-type: none"> • Developed during the mobilization phase • The Engineer reviewed and approved the EMP plans |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|--|------------------------------|--|---|--|
| Health and Safety | Health and safety of workers | The contractor will be required to prepare a Health and Safety Plan (HSE) in the EPP for safety of workers. The plan should include a provision on how to behave in the event of an accidental release of toxic gases. | <ul style="list-style-type: none"> • The contractor will prepare HSE • The Engineer will study and approve the HSE as part of the EPP | <ul style="list-style-type: none"> • Developed during the mobilization phase • Engineer approved |
| | Traffic safety | The Contractor shall ensure that all road safety issues are taken into account at the design stage, including: <ul style="list-style-type: none"> • Protective fences • Road signs • Pedestrian crossings • Artificial road irregularities | <ul style="list-style-type: none"> • The engineer will study and approve desing documents. | <ul style="list-style-type: none"> • Developed during the mobilization phase • Engineer approved |
| Physical and cultural resources | | The contractor must establish a temporary fence around the cemetery at km 374. | <ul style="list-style-type: none"> • The contractor will install a fence. • The engineer will approve the fence. | <ul style="list-style-type: none"> • On this lot, the contract is temporarily stopped |
| Requirement of the EPP | EPP development | The contractor will prepare EPP in accordance with the requirements of this EPP. In particular, the EPP should contain sections related to: <ul style="list-style-type: none"> • Physical environment management <ul style="list-style-type: none"> - Soils - Water - Air • Environmental management <ul style="list-style-type: none"> - Flora - Fauna - Protected areas • Management of economic characteristics <ul style="list-style-type: none"> - Infrastructure - Transport - Land use - Agriculture • Management of social and cultural resources <ul style="list-style-type: none"> - Communities, health and education institutions | <ul style="list-style-type: none"> • The contractor will prepare EPP • The engineer will study and approve EPP | <ul style="list-style-type: none"> • Prepared and coordinated by the Engineer |

| | | | | |
|--|---|--|--|--------|
| | | <ul style="list-style-type: none"> - Historical and cultural sites • - Noise <p>In addition, the EPP shall contain specific plans as an attachment for managing the following parameters:</p> <ul style="list-style-type: none"> • Soil management plan • Air Quality Management Plan • Water Quality Management Plan • Noise management plan • Waste management plan • Emergency response plan • Dust reduction plan • Plan of the construction camp of the facility • Health and Safety Plan <p>Each section should provide a description of the exact location of the required mitigation / impact monitoring measures, an indication of the person responsible for mitigation / impact monitoring, the timetable and methodology for reporting. The IEE shall be submitted within 30 days after the award of the contract. Construction can not be started until the EPP is approved by KazAvtoZhol-Atyrau / KazAvtoZhol-Aktobe and the Engineer.</p> | | |
| | Inclusion of articles in tender documents | The Contractor is responsible for ensuring compliance with the requirements of this EPP. A special section on environmental protection will be included in the main bidding documents indicating that the Contractor is responsible for compliance with the requirements of this EPP. The EPP itself will be included as an attachment to the contract and tender documents. | • COR will ensure that the EPP is included in the Tender Documents | • Done |

Environmental protection plan during construction phase
mitigation measures during construction phase were submitted.

| Item | Potential impact / problem | Mitigation measure | Responsible | Comment on implementation status |
|--------------------|---|---|--|---|
| Air quality | Open waste burning of | Contractor shall ensure that garbage and other materials will not be burned at the facility by the open method without permission of the Engineer. | <ul style="list-style-type: none"> The contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor Observes Engineer controls |
| | Fuel emissions | Contractor shall ensure that without prior approval of the Engineer, there will be no stoves, boilers and other similar equipment or installations using fuel that can produce air pollutants. | <ul style="list-style-type: none"> Contractor must comply with the requirement. Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor Observes Engineer controls |
| | Exhaust gases from construction equipment | Contractor must ensure that construction equipment is in satisfactory condition and is equipped with pollution control devices. Equipment (including pollution control devices) must be inspected by the Engineer regularly to ensure that it is in working order and such checks shall be recorded by the Contractor and the Engineer as a component of environmental monitoring. In addition, Contractor shall: <ul style="list-style-type: none"> Make sure that engines do not run idle; Prohibit use of equipment and machinery that leads to unnecessary contamination (i.e. visible smoke) at the Project work sites; Ensure that procured material is placed under roof and covered with tarpaulins or other suitable material to avoid its presence in the air. | <ul style="list-style-type: none"> Contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor maintains in satisfactory condition. But equipment is not equipped with monitoring devices |
| | Emissions of volatile substances from quarries and ACP. | Contractor shall ensure that conveyor belts of auxiliary structures (eg quarries) are equipped with wind panels, and the conveyor overpasses and exit areas from the loading hopper are hermetically sealed to minimize dust formation. All conveyors carrying materials that can create dust must be completely closed and equipped with belt cleaners. | <ul style="list-style-type: none"> Contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Fail to comply |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|--------------|--|---|---|---|
| | Dust from bypass roads, gravel roads, open soil areas and storage facilities | <p>Contractor shall ensure that the following measures are taken to reduce dust generation:</p> <ul style="list-style-type: none"> • All trucks transporting materials to and from the facility must be covered with canopies made of tarpaulins or any other material (which must be well fixed) to avoid the debris and/or materials from the vehicle falling out or blowing off; • Reclamation work must be completed, including final compaction, as soon as possible in accordance with best practice to limit formation of dust blown by the wind. • On sites of regular movement of vehicles, a solid surface is necessary; and • Effective watering should be ensured (for example, all roads within the construction site of the facility should be watered at least twice a day and more if necessary to control dust generation, in accordance with the requirements of the Engineer). | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • The contractor partially provided canopies, watering is being done irregularly |
| Soils | Erosion | <p>Contractor is responsible to ensure:</p> <ul style="list-style-type: none"> • Materials for laying around bridges and culverts were the least subject to erosion. • Resumption of vegetation cover in open areas, including: (i) selection of fast-growing and non-prone species of local varieties of vegetation; (ii) the rapid resumption of vegetation cover on all slopes and embankments, except where geotextile coverage is provided; (iii) laying a fibrous carpet to stimulate vegetation growth. | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor.. | <ul style="list-style-type: none"> • Construction of bridges not started |
| | Contamination due to spills or hazardous materials | <p>Contractor shall ensure that:</p> <ul style="list-style-type: none"> • All fuel and chemicals (if any) are stored on a sealed base within the encumbrance and are fenced. The storage area should be located away from watercourses and wetlands. The base and walls of the shaft must be waterproof and have sufficient power to hold 110% of the volume of the tanks. • Repair yard of the construction camp was built on an impermeable solid foundation with adequate drainage to collect spills; repair and maintenance of vehicles should not be carried out outdoors. • Filling and refueling must be strictly controlled in accordance with official procedures. Under all refueling points oil separators should | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • In the process of construction and arrangement of repair areas <p>At the production base of Lot 1 there are facts of spillage of fuel on the surface of the soil,</p> |

| | | | | |
|-----------|-----------------------|--|---|---|
| | | <p>be installed. Waste oils must be stored and disposed of by a licensed contractor.</p> <ul style="list-style-type: none"> • All valves and refueling guns must be protected from unauthorized intervention and vandalism, and must be turned off and securely locked until they are used. • The contents of all containers or drums must be clearly marked. Measures should be taken so that contaminated sewage does not enter the soil. • Do not store bitumen drums or containers full or used on open soil. They should be stored only on an impermeable hard surface. • The sites where bitumen is used must be built on an impermeable solid foundation to prevent oil dripping into the soil. | | The container for fuel and lubricants is not installed in accordance with the requirements and norms. |
| Hydrology | Drainage and flooding | <p>Contractor shall ensure that the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • During the construction phase, the Contractor will have to construct, maintain, dismantle and remediate, as necessary, temporary drainage facilities and take all necessary precautions to avoid harm in the event of flooding or siltation from the work sites. | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • Observe • Controlled |
| | Water supply | <p>Contractor shall ensure that only legal sources are used for supply of technical water during construction work. He must also ensure that drinking water for construction camps and workers meets required water quality standards.</p> | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • Observe • Controlled |
| | Bridge construction | <p>Contractor should consult with the relevant RTDEPP and regional territorial fishery inspectorates regarding the spawning period of the fish in the bridge construction site. Contractor shall ensure that all work is carried out at those times when, this is the least likely to affect fish spawning. In addition, in respect of bridge construction work, the Contractor shall:</p> <ul style="list-style-type: none"> • Remove flow of water from bridge supports. • Ensure construction of jumper, silt, dam during the construction phase in water flows. • Water removal and jumper clearing must be done to avoid siltation by pumping out of the bridges into a sump or an insulated container. | <ul style="list-style-type: none"> • Contractor must comply with requirement. • Contractor consults with the RTDEPP and regional territorial fishery inspectorates. • Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • Not started |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|-------------------------------------|---|---|--|--|
| | Soil resources | <p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> Immediately after the completion of the work, the re-cultivation of the borrow pits should be carried out in full compliance with all applicable standards and specifications. The mechanisms for the discovery and use of soil resources contained provisions on liability. The excavation and recultivation of borrow pits and adjacent areas should be carried out in an environmentally friendly manner, satisfactory for the Engineer, before they are finally accepted and agreed upon for payment under the terms of the contract. The additional borrow pits will not be opened until the recultivation of those borrow pits that are no longer used. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> In progress |
| Flora and fauna | Loss of flora | <p>The contractor shall ensure that the correct size of the cattle underpasses is constructed in the correct place. Preliminary the cattle underpasses will be required in the following settlements area:</p> <ul style="list-style-type: none"> Shubarkuduk Nogaity | <ul style="list-style-type: none"> The contractor must comply with the requirement The engineer will approve the final location. | <ul style="list-style-type: none"> Not started yet |
| | Impact on the Key Ornithological Territories (KOT) | <p>A base camp or construction facilities, such as the ACP, can not be built at a distance of less than 5 km from the KOT in Saghiz.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement The engineer will approve the final location. | <ul style="list-style-type: none"> Observed Controlled |
| Land use | Base camp and other auxiliary facilities | <p>The contractor will have to coordinate all work on the construction of the base camp with land use in the near-by territory. The contractor is also responsible for ensuring that the camp site is kept clean and in order with respect for the rights of local land users. If the camp is located outside of the right-of-way, it will be necessary to sign agreements with local land users on temporary use of property, and after construction these lands must be restored in a predetermined time to a state acceptable to owners.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| Transport and infrastructure | Overlapping roads, bypass roads and blocking access roads | <p>Contractor have to:</p> <ul style="list-style-type: none"> Ensure the presence of all diversion signs and ensure the appropriate maintenance of bypass roads in order to prevent their negative impact on private land. All bypass roads must be agreed with the Engineer. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the | <ul style="list-style-type: none"> Observed Controlled |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|---------------------------|-------------------------------------|---|---|--|
| | | <ul style="list-style-type: none"> The Contractor is responsible for ensuring that all access roads are opened during the execution of the Project for at least 50% of the daytime during construction and 100% of the time after completion of the construction work for the day. | activities of the Contractor. | |
| | Electrical systems and gas pipeline | During construction, the Contractor shall ensure that all electrical and gas supply systems function normally, this may require the provision of temporary power lines while the existing masts and wires are relocated. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| Waste and disposal | Disposal | Under no event the Contractor shall dump the surplus material into private land without the owner's permission and the Engineer's approval. In addition, the superfluous soil should not fall out or collide in the river in any place. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| | Agregate solid and liquid waste | <p>The Contractor is responsible for the following:</p> <ul style="list-style-type: none"> Providing garbage containers at each site; The maintenance of all construction sites in cleanliness, order and safety and provision and maintenance of the necessary facilities for temporary storage of all waste prior to their removal and final disposal; Training and briefing of all personnel on the methods of waste disposal within the framework of the introductory environmental training briefing; and Collection and transportation of non-hazardous waste to all approved sites for disposal. The sites for waste disposal should be coordinated with local akimats and RTD EPP. A local specialized company, if any, may be contracted for the collection of domestic and general garbage in the camp and its subsequent transportation to landfills approved and licensed by the RTD EPP. | <ul style="list-style-type: none"> The contractor must comply with the requirement. The contractor consults with the RTD EPP. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| | Asphalt | Designers should consider the possibility of using recycled asphalt for the needs of other projects in the region. | <ul style="list-style-type: none"> Designers offer options for use in the DED | <ul style="list-style-type: none"> In progress |

| | | | | |
|--------------------------|-----------------|---|---|--|
| | | | <ul style="list-style-type: none"> The Contractor execute the technical solutions included in the DED | |
| | Hazardous waste | <p>The protocols for the disposal, handling and storage of hazardous waste should be described in the Contractor's Waste Management Plan. Hazardous waste disposal sites should be coordinated with the RTD EPP. The contractor shall collect waste hydrocarbons, including lubricating oils, for safe removal from the facility for reuse, processing, processing or disposal at temporary storage areas and further to areas approved by the RTD EPP, or transferring them to a licensed operator that has an environmental permit to work with hazardous waste.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement. The contractor consults with the RTD EPP. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| Health and Safety | H&S for workers | <p>Contractor is responsible for:</p> <ul style="list-style-type: none"> A safety briefing program. It is necessary to develop a training program on safety precautions, which should include a course of preliminary introductory briefing on EHS. All workers must attend an introductory briefing on EHS during the first week of work at the facility and have periodic training on EHS. Meetings on EHS. Meetings on EHS should be held regularly once a month and should be attended by the person responsible for EHS issues from subcontractors, unless otherwise agreed by the Engineer. EHS inspection. The contractor must regularly inspect, checked and repair all equipment according to EHS, as well as scaffolding, railing, work platforms, winches, ladders and other means of access, lifting, lighting, signs and security equipment. Lighting and signs must be clean and readable. Damaged, contaminated, improperly installed or disabled equipment must be repaired or replaced immediately. Protective equipment and clothing. Protective equipment and clothing should be available at the facility. Measures should be taken to effectively monitor the correct use and necessary replacement of such equipment and clothing, and all necessary means of protection must be installed on all construction vehicles and machinery used at or around the facility. First aid post. A fully equipped first aid base must have climate control so that a temperature of + 20 ° C is maintained inside the | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Programs and plans developed by the contractor Approved by the Engineer Implementation control |

| | | | | |
|--|---|---|--|--|
| | | <p>building. The engineer must ensure the availability of emergency medical services.</p> <p>The contractor must coordinate this work with local health authorities and must achieve documented agreement with them on the use of local hospitals and other local institutions.</p> | | |
| | H&S of Subcontractor | <p>All subcontractors must be provided with a copy of the EPP. Its provisions should be included in all subcontracts in order to ensure compliance with the requirements of the EPP at all subcontracting levels. All subcontractors should appoint a person responsible for EHS who must be on the Site for the entire period of work for the relevant subcontract, unless otherwise approved by the Engineer in writing. In the event that the Engineer gives approval, the Engineer, without prejudice to other duties and responsibilities, shall ensure that, to the extent practicable, employees of subcontractors at all levels are familiar with the relevant sections of the EPP.</p> | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • Engineer in working order controls the activities of the Contractor and Subcontractor | <ul style="list-style-type: none"> • Observed • Controlled |
| | HIV AIDS | <p>The Contractor shall subcontract an approved supplier to conduct an HIV training and education course for the Contractor's personnel and local people no later than two weeks after the Contractor's personnel arrive at the Site and repeat this program every four months.</p> | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • The service provider conducts training. • The engineer is studying the program. | <ul style="list-style-type: none"> • In progress |
| Historical and archaeological territories | Impact on historical and archaeological sites | <p>To avoid possible negative effects on historical and cultural resources, the Contractor shall:</p> <ul style="list-style-type: none"> • In case of discovery of accidental finds during construction, apply procedures in accordance with Kazakhstan legislation and guidelines, in particular, as specified in Article 39, paragraph 2 of the Law on the Protection and Use of Historic and Cultural Heritage in the Republic of Kazakhstan, which provides that "In the case of discovering objects that have historical, scientific, artistic and other cultural value, individuals and legal entities are obliged to suspend further work and notify | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> • Observed • Controlled |
| Noise | Noise and vibration during construction | <p>The Contractor shall provide the following:</p> <ul style="list-style-type: none"> • Control at the source, i.e. It is required that all exhaust systems are kept in good working order; Only properly designed engines and | <ul style="list-style-type: none"> • The contractor must comply with the requirement. | <ul style="list-style-type: none"> • Observed • Controlled |

| | | | | |
|--|--|---|--|--|
| | | <p>input silencers were used, and that the equipment was regularly serviced;</p> <ul style="list-style-type: none"> • Monitoring at the facility, i. It is required that stationary equipment should be as far as possible from sensitive land users; only equipment was selected that would not have an undesirable noise effect; and noise barriers were provided where possible; • Work near sensitive objects should be limited to short-term activities; • Time and activity limits, i.e. work should be planned in such a way that they coincide with those periods when the impact on people will be minimal; work hours and work days should be limited to the least sensitive hours. Hours of work should be approved by the Engineer taking into account possible noise impact on local residents or other activities. Construction work should be strictly prohibited from 22.00 to 6.00 in localities. When working near sensitive objects, such as apartment houses, kindergartens or medical facilities, the hours of work of the Contractor should be limited to the period from 8.00 to 18.00; • Informing the population, i.e. notification of the public about construction work should include a description of the noise impact; the methods for handling complaints should also be indicated. If possible, sensitive objects should be avoided (ie crushing plants, operators, etc.). Landfills for disposal and routes for travel should be coordinated with local authorities. | <ul style="list-style-type: none"> • Engineer in working order controls the activities of the Contractor. | |
|--|--|---|--|--|

Environmental protection plan during construction phase for Lot 2
mitigation measures during construction phase were submitted.

| Item | Potential impact / problem | Mitigation measure | Responsible | Comment on implementation status |
|--------------------|---|---|--|---|
| Air quality | Open waste burning of | Contractor shall ensure that garbage and other materials will not be burned at the facility by the open method without permission of the Engineer. | <ul style="list-style-type: none"> The contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor Observes Engineer controls |
| | Fuel emissions | Contractor shall ensure that without prior approval of the Engineer, there will be no stoves, boilers and other similar equipment or installations using fuel that can produce air pollutants. | <ul style="list-style-type: none"> Contractor must comply with the requirement. Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor Observes Engineer controls |
| | Exhaust gases from construction equipment | Contractor must ensure that construction equipment is in satisfactory condition and is equipped with pollution control devices. Equipment (including pollution control devices) must be inspected by the Engineer regularly to ensure that it is in working order and such checks shall be recorded by the Contractor and the Engineer as a component of environmental monitoring. In addition, Contractor shall: <ul style="list-style-type: none"> Make sure that engines do not run idle; Prohibit use of equipment and machinery that leads to unnecessary contamination (i.e. visible smoke) at the Project work sites; Ensure that procured material is placed under roof and covered with tarpaulins or other suitable material to avoid its presence in the air. | <ul style="list-style-type: none"> Contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> Contractor maintains in satisfactory condition. But equipment is not equipped with monitoring devices |
| | Emissions of volatile substances from quarries and ACP. | Contractor shall ensure that conveyor belts of auxiliary structures (eg quarries) are equipped with wind panels, and the conveyor overpasses and exit areas from the loading hopper are hermetically sealed to minimize dust formation. All conveyors carrying materials that can create dust must be completely closed and equipped with belt cleaners. | <ul style="list-style-type: none"> Contractor must comply with the requirement. The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> In progress |

| | | | | |
|-------|--|---|---|--|
| | Dust from bypass roads, gravel roads, open soil areas and storage facilities | <p>Contractor shall ensure that the following measures are taken to reduce dust generation:</p> <ul style="list-style-type: none"> • All trucks transporting materials to and from the facility must be covered with canopies made of tarpaulins or any other material (which must be well fixed) to avoid the debris and/or materials from the vehicle falling out or blowing off; • Reclamation work must be completed, including final compaction, as soon as possible in accordance with best practice to limit formation of dust blown by the wind. • On sites of regular movement of vehicles, a solid surface is necessary; and • Effective watering should be ensured (for example, all roads within the construction site of the facility should be watered at least twice a day and more if necessary to control dust generation, in accordance with the requirements of the Engineer). | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • The contractor partially provided canopies, watering is being done irregularly |
| Soils | Erosion | <p>Contractor is responsible to ensure:</p> <ul style="list-style-type: none"> • Materials for laying around bridges and culverts were the least subject to erosion. • Resumption of vegetation cover in open areas, including: (i) selection of fast-growing and non-prone species of local varieties of vegetation; (ii) the rapid resumption of vegetation cover on all slopes and embankments, except where geotextile coverage is provided; (iii) laying a fibrous carpet to stimulate vegetation growth. | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor.. | <ul style="list-style-type: none"> • Construction of bridges not started |
| | Contamination due to spills or hazardous materials | <p>Contractor shall ensure that:</p> <ul style="list-style-type: none"> • All fuel and chemicals (if any) are stored on a sealed base within the encumbrance and are fenced. The storage area should be located away from watercourses and wetlands. The base and walls of the shaft must be waterproof and have sufficient power to hold 110% of the volume of the tanks. • Repair yard of the construction camp was built on an impermeable solid foundation with adequate drainage to collect spills; repair and maintenance of vehicles should not be carried out outdoors. • Filling and refueling must be strictly controlled in accordance with official procedures. Under all refueling points oil separators should | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • In the process of construction and arrangement of repair areas |

| | | | | |
|-----------|-----------------------|--|---|--|
| | | <p>be installed. Waste oils must be stored and disposed of by a licensed contractor.</p> <ul style="list-style-type: none"> • All valves and refueling guns must be protected from unauthorized intervention and vandalism, and must be turned off and securely locked until they are used. • The contents of all containers or drums must be clearly marked. Measures should be taken so that contaminated sewage does not enter the soil. • Do not store bitumen drums or containers full or used on open soil. They should be stored only on an impermeable hard surface. • The sites where bitumen is used must be built on an impermeable solid foundation to prevent oil dripping into the soil. | | |
| Hydrology | Drainage and flooding | <p>Contractor shall ensure that the following conditions are fulfilled:</p> <ul style="list-style-type: none"> • During the construction phase, the Contractor will have to construct, maintain, dismantle and remediate, as necessary, temporary drainage facilities and take all necessary precautions to avoid harm in the event of flooding or siltation from the work sites. | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • Observed • Controlled |
| | Water supply | <p>Contractor shall ensure that only legal sources are used for supply of technical water during construction work. He must also ensure that drinking water for construction camps and workers meets required water quality standards.</p> | <ul style="list-style-type: none"> • Contractor must comply with the requirement. • The Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • In the precess of base camp construction |
| | Bridge construction | <p>Contractor should consult with the relevant RTDEPP and regional territorial fishery inspectorates regarding the spawning period of the fish in the bridge construction site. Contractor shall ensure that all work is carried out at those times when, this is the least likely to affect fish spawning. In addition, in respect of bridge construction work, the Contractor shall:</p> <ul style="list-style-type: none"> • Remove flow of water from bridge supports. • Ensure construction of jumper, silt, dam during the construction phase in water flows. • Water removal and jumper clearing must be done to avoid siltation by pumping out of the bridges into a sump or an insulated container. | <ul style="list-style-type: none"> • Contractor must comply with requirement. • Contractor consults with the RTDEPP and regional territorial fishery inspectorates. • Engineer in working order controls activities of the Contractor. | <ul style="list-style-type: none"> • Not started |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|-------------------------------------|---|---|--|--|
| | Soil resources | <p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> Immediately after the completion of the work, the re-cultivation of the borrow pits should be carried out in full compliance with all applicable standards and specifications. The mechanisms for the discovery and use of soil resources contained provisions on liability. The excavation and recultivation of borrow pits and adjacent areas should be carried out in an environmentally friendly manner, satisfactory for the Engineer, before they are finally accepted and agreed upon for payment under the terms of the contract. The additional borrow pits will not be opened until the recultivation of those borrow pits that are no longer used. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> In progress |
| Flora and fauna | Loss of flora | <p>The contractor shall ensure that the correct size of the cattle underpasses is constructed in the correct place. Preliminary the cattle underpasses will be required in the following settlements area:</p> <ul style="list-style-type: none"> Shubarkuduk Nogaity | <ul style="list-style-type: none"> The contractor must comply with the requirement The engineer will approve the final location. | <ul style="list-style-type: none"> Not started yet |
| | Impact on the Key Ornithological Territories (KOT) | <p>A base camp or construction facilities, such as the ACP, can not be built at a distance of less than 5 km from the KOT in Saghiz.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement The engineer will approve the final location. | <ul style="list-style-type: none"> Observed Controlled |
| Land use | Base camp and other auxiliary facilities | <p>The contractor will have to coordinate all work on the construction of the base camp with land use in the near-by territory. The contractor is also responsible for ensuring that the camp site is kept clean and in order with respect for the rights of local land users. If the camp is located outside of the right-of-way, it will be necessary to sign agreements with local land users on temporary use of property, and after construction these lands must be restored in a predetermined time to a state acceptable to owners.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| Transport and infrastructure | Overlapping roads, bypass roads and blocking access roads | <p>Contractor have to:</p> <ul style="list-style-type: none"> Ensure the presence of all diversion signs and ensure the appropriate maintenance of bypass roads in order to prevent their negative impact on private land. All bypass roads must be agreed with the Engineer. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the | <ul style="list-style-type: none"> Observed Controlled |

CAREC Corridors 1 and 6 Connector road (Aktobe-Makat) Reconstruction Project, km 160-330"

| | | | | |
|---------------------------|-------------------------------------|---|---|--|
| | | <ul style="list-style-type: none"> The Contractor is responsible for ensuring that all access roads are opened during the execution of the Project for at least 50% of the daytime during construction and 100% of the time after completion of the construction work for the day. | activities of the Contractor. | |
| | Electrical systems and gas pipeline | During construction, the Contractor shall ensure that all electrical and gas supply systems function normally, this may require the provision of temporary power lines while the existing masts and wires are relocated. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> In progress |
| Waste and disposal | Disposal | Under no event the Contractor shall dump the surplus material into private land without the owner's permission and the Engineer's approval. In addition, the superfluous soil should not fall out or collide in the river in any place. | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Observed Controlled |
| | Agregate solid and liquid waste | <p>The Contractor is responsible for the following:</p> <ul style="list-style-type: none"> Providing garbage containers at each site; The maintenance of all construction sites in cleanliness, order and safety and provision and maintenance of the necessary facilities for temporary storage of all waste prior to their removal and final disposal; Training and briefing of all personnel on the methods of waste disposal within the framework of the introductory environmental training briefing; and Collection and transportation of non-hazardous waste to all approved sites for disposal. The sites for waste disposal should be coordinated with local akimats and RTD EPP. A local specialized company, if any, may be contracted for the collection of domestic and general garbage in the camp and its subsequent transportation to landfills approved and licensed by the RTD EPP. | <ul style="list-style-type: none"> The contractor must comply with the requirement. The contractor consults with the RTD EPP. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> In progress |
| | Asphalt | Designers should consider the possibility of using recycled asphalt for the needs of other projects in the region. | <ul style="list-style-type: none"> Designers offer options for use in the DED | <ul style="list-style-type: none"> In progress |

| | | | | |
|--------------------------|-----------------|---|---|--|
| | | | <ul style="list-style-type: none"> The Contractor execute the technical solutions included in the DED | |
| | Hazardous waste | <p>The protocols for the disposal, handling and storage of hazardous waste should be described in the Contractor's Waste Management Plan. Hazardous waste disposal sites should be coordinated with the RTD EPP. The contractor shall collect waste hydrocarbons, including lubricating oils, for safe removal from the facility for reuse, processing, processing or disposal at temporary storage areas and further to areas approved by the RTD EPP, or transferring them to a licensed operator that has an environmental permit to work with hazardous waste.</p> | <ul style="list-style-type: none"> The contractor must comply with the requirement. The contractor consults with the RTD EPP. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Not done |
| Health and Safety | H&S for workers | <p>Contractor is responsible for:</p> <ul style="list-style-type: none"> A safety briefing program. It is necessary to develop a training program on safety precautions, which should include a course of preliminary introductory briefing on EHS. All workers must attend an introductory briefing on EHS during the first week of work at the facility and have periodic training on EHS. Meetings on EHS. Meetings on EHS should be held regularly once a month and should be attended by the person responsible for EHS issues from subcontractors, unless otherwise agreed by the Engineer. EHS inspection. The contractor must regularly inspect, checked and repair all equipment according to EHS, as well as scaffolding, railing, work platforms, winches, ladders and other means of access, lifting, lighting, signs and security equipment. Lighting and signs must be clean and readable. Damaged, contaminated, improperly installed or disabled equipment must be repaired or replaced immediately. Protective equipment and clothing. Protective equipment and clothing should be available at the facility. Measures should be taken to effectively monitor the correct use and necessary replacement of such equipment and clothing, and all necessary means of protection must be installed on all construction vehicles and machinery used at or around the facility. First aid post. A fully equipped first aid base must have climate control so that a temperature of + 20 ° C is maintained inside the | <ul style="list-style-type: none"> The contractor must comply with the requirement. Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> Programs and plans developed by the contractor Approved by the Engineer Implementation control |

| | | | | |
|--|---|---|--|--|
| | | <p>building. The engineer must ensure the availability of emergency medical services.</p> <p>The contractor must coordinate this work with local health authorities and must achieve documented agreement with them on the use of local hospitals and other local institutions.</p> | | |
| | H&S of Subcontractor | <p>All subcontractors must be provided with a copy of the EPP. Its provisions should be included in all subcontracts in order to ensure compliance with the requirements of the EPP at all subcontracting levels. All subcontractors should appoint a person responsible for EHS who must be on the Site for the entire period of work for the relevant subcontract, unless otherwise approved by the Engineer in writing. In the event that the Engineer gives approval, the Engineer, without prejudice to other duties and responsibilities, shall ensure that, to the extent practicable, employees of subcontractors at all levels are familiar with the relevant sections of the EPP.</p> | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • Engineer in working order controls the activities of the Contractor and Subcontractor | <ul style="list-style-type: none"> • Observed • Controlled |
| | HIV AIDS | <p>The Contractor shall subcontract an approved supplier to conduct an HIV training and education course for the Contractor's personnel and local people no later than two weeks after the Contractor's personnel arrive at the Site and repeat this program every four months.</p> | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • The service provider conducts training. • The engineer is studying the program. | <ul style="list-style-type: none"> • In progress |
| Historical and archaeological territories | Impact on historical and archaeological sites | <p>To avoid possible negative effects on historical and cultural resources, the Contractor shall:</p> <ul style="list-style-type: none"> • In case of discovery of accidental finds during construction, apply procedures in accordance with Kazakhstan legislation and guidelines, in particular, as specified in Article 39, paragraph 2 of the Law on the Protection and Use of Historic and Cultural Heritage in the Republic of Kazakhstan, which provides that "In the case of discovering objects that have historical, scientific, artistic and other cultural value, individuals and legal entities are obliged to suspend further work and notify | <ul style="list-style-type: none"> • The contractor must comply with the requirement. • Engineer in working order controls the activities of the Contractor. | <ul style="list-style-type: none"> • Observed • Controlled |
| Noise | Noise and vibration during construction | <p>The Contractor shall provide the following:</p> <ul style="list-style-type: none"> • Control at the source, i.e. It is required that all exhaust systems are kept in good working order; Only properly designed engines and | <ul style="list-style-type: none"> • The contractor must comply with the requirement. | <ul style="list-style-type: none"> • Observed • Controlled |

| | | | | |
|--|--|---|--|--|
| | | <p>input silencers were used, and that the equipment was regularly serviced;</p> <ul style="list-style-type: none"> • Monitoring at the facility, i. It is required that stationary equipment should be as far as possible from sensitive land users; only equipment was selected that would not have an undesirable noise effect; and noise barriers were provided where possible; • Work near sensitive objects should be limited to short-term activities; • Time and activity limits, i.e. work should be planned in such a way that they coincide with those periods when the impact on people will be minimal; work hours and work days should be limited to the least sensitive hours. Hours of work should be approved by the Engineer taking into account possible noise impact on local residents or other activities. Construction work should be strictly prohibited from 22.00 to 6.00 in localities. When working near sensitive objects, such as apartment houses, kindergartens or medical facilities, the hours of work of the Contractor should be limited to the period from 8.00 to 18.00; • Informing the population, i.e. notification of the public about construction work should include a description of the noise impact; the methods for handling complaints should also be indicated. If possible, sensitive objects should be avoided (ie crushing plants, operators, etc.). Landfills for disposal and routes for travel should be coordinated with local authorities. | <ul style="list-style-type: none"> • Engineer in working order controls the activities of the Contractor. | |
|--|--|---|--|--|

Photo Annex



Works on the installation of residential modules on the base camp of the Contractor in the settlement Karaylkeldi KM 242 + 00 (Lot 2)



The first part of ACP "Marini" arrives in Karauylkeldi settlement KM 242 + 00 (section Lot 2)



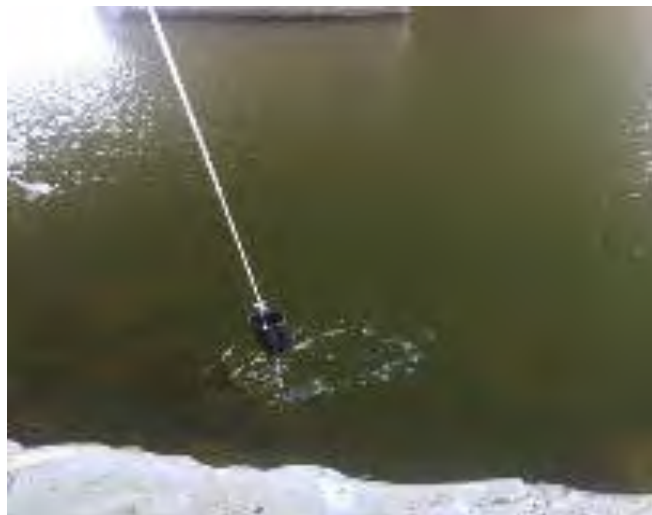
Road section Lot 1 km 160. Sampling of soil, basic measurement April 2018.



Road section Lot 1 km 190. Measurement of noise and vibration level, basic measurement April 2018.



Bridge over the river Shieli



Sampling of Shiely water



dosimetric control on KM 160



Instrumental measurement of noise and vibration on production base CH 130



Sampling of soil on KM 275 Lot3, May 2018



Dosimetric control at the Nogait Production Base, May 2018



Instrumental measurements of noise and vibration in the residential area of Nogayty



Installation of the ACP based on Nagaity, May 2018 Lot 3



Excavation on the borrow pit CH 244+83



Instrumental measurements of noise and vibration
KM 235 road section Lot 2



Sampling on the section of road KM
236 Lot 2