REPUBLIC of KAZAKHSTAN
MINISTRY OF TRANSPORT AND COMMUNICATIONS
COMMITTEE OF ROADS

CONSTRUCTION SUPERVISION OF THE TARAZ BYPASS SECTION IN ZHAMBYL OBLAST, INVESTMENT PROGRAM PROJECT 5
(ADB Loan # L2824-KAZ, MFF CAREC Transport Corridor I)

BI-ANNUAL ENVIRONMENTAL MONITORING REPORT - Jan. 2014

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Bi-annual Environmental Monitoring Report

Project Number: 41121-053
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KAZAKHSTAN: MFF CAREC Transport Corridor 1 (Zhambyl Oblast Section) [Western Europe-Western People's Republic of China International Transit Corridor] Investment Program - Project 5

(Financed by the Asian Development Bank and Government of Republic of Kazakhstan)

Prepared by Kocks Consult GMbH for the Asian Development Bank (ADB)

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EXECUTIVE SUMMARY

The Project 5 (Taraz Bypass Road Construction) of the CAREC Transport Corridor I within Kazakhstan territory entails the following: **(i) upgrading of a two-lane road to a four lane Category IB (km. 483.3 – km. 491); (ii) construction of new Taraz Bypass along a new alignment (Pk 0+00 – Pk 560+70); and (iii) Rehabilitation of Existing Taraz City Bypass & Two Sections of Merke - Tashkent Road between New Bypass & Old Bypass (Km 491 – Km 536)** The project is within Zhambyl Oblast north of Taraz City and within the transition zone between the Tian-Shan Mountains to the south, the Central Asian Steppe to the north, the lowlands between the Kyrgyz Mountain Range to the east, the Talas Alatau Range to the south, the Karatau Range to the west and the Muynkum (also spelled Mojynkum) Desert to the north.

Construction is supervision is being undertaken under FIDIC with environmental supervision and monitoring scopes. The Contractor is obligated to obtain regular parameter measurements of water quality, noise/vibration and air quality, the results of which are submitted regularly to the Engineer. Environmental monitoring of the Engineer is done primarily by the International Environmental Specialist with field coordination with a local environmental consultant.

This initial reporting serves as the **First Bi-Annual Environmental Monitoring Report covering the July-December 2013 period**. During the field inspection of the International Environmental Specialist, a number of issues were identified and discussed in a brief seminar held on 26 July 2013

PART I: INTRODUCTION

1. PRELIMINARY INFORMATION

1.1. Project Background and Objective of the Environmental Monitoring

The Taraz Bypass construction of the Almaty-Taraz highway within the Zhambyl oblast is part of the Republic of Kazakhstan's (RoK) Western Europe–Western PRC Corridor (the Corridor) investment program. The primary aim of the Project is to improve the road sections within the country, which is part of the of the Central Asia Regional Economic Cooperation (CAREC) Transport Corridor 1. The Project hopes to provide efficient transport network in Zhambyl Oblast in particular and to the country in general. The Project components are designated as "Starts[1]" and presented as follows:

Table 1: General Project Description

START	Description	Category	from	To	Length
Start 1	Construction of New Concrete Road	1B	Km	Km 491	Km 7.7
Start 2	Construction of New Asphalt Road	IIB	Pk 0.0	Pk. 560+70	Km 56.07
	Rehabilitation of Merke - Tashkent Road	IIB	Km 491.0	Km 504.0	Km 13.0
	Rehabilitation of Existing Bypass	IIB	Km 504.0	Km 528.0	Km 28.0
	Rehabilitation of Merke - Tashkent Road	IIB	Km 528.0	Km 536.0	Km 8.0
Total					**Km 112.77**
	Rehabilitation of Road maintenance Depot Building				**1 Nos.**

Through standard competitive bidding, a Contractor, JSC "KCC Engineering & Construction Co. Ltd" was selected by the Employer and to be supervised by Kocks-KECC-Almaty Joba-Quality Plan Joint Venture, as the Engineer. Construction supervision includes environmental monitoring, the main purpose of which is ensure that the environmental mitigation measures during construction are implemented through supervision by the Engineer during the construction phase. Environmental issues also are anticipated to be identified in advanced for avoidance and ensure timely completion of the project. The construction contract with KCC was signed on 28 March 2013 between the Employer and the Contractor and official commencement date for construction was 07 August 2013. The Project road is shown in the ensuing page.

1.2. The Project Area

The Project is located 483 km southwest of Almaty within the southern portion of Zhambyl Oblast in southern Kazakhstan (Province). The new Bypass Road section will circumvent the City of Taraz, and in addition road improvements will be done on the old bypass. The new road project section will not be within the Taraz City boundary but traversing the surrounding Rayons of Baizak and Zhambyl

[1] The designation of "**Start**" was introduced in the Engineer's Quarterly Report - October 2013 to 31 December 2013. Previous reports refers to three Sections: Section 1 – Km 483.3 to Km 491; Section 2: Pk 0.0 to Pk 560.7 (New Road); Section 3 – Km 491 to Km 536 (Merke - Tashkent Road and Existing Bypass)

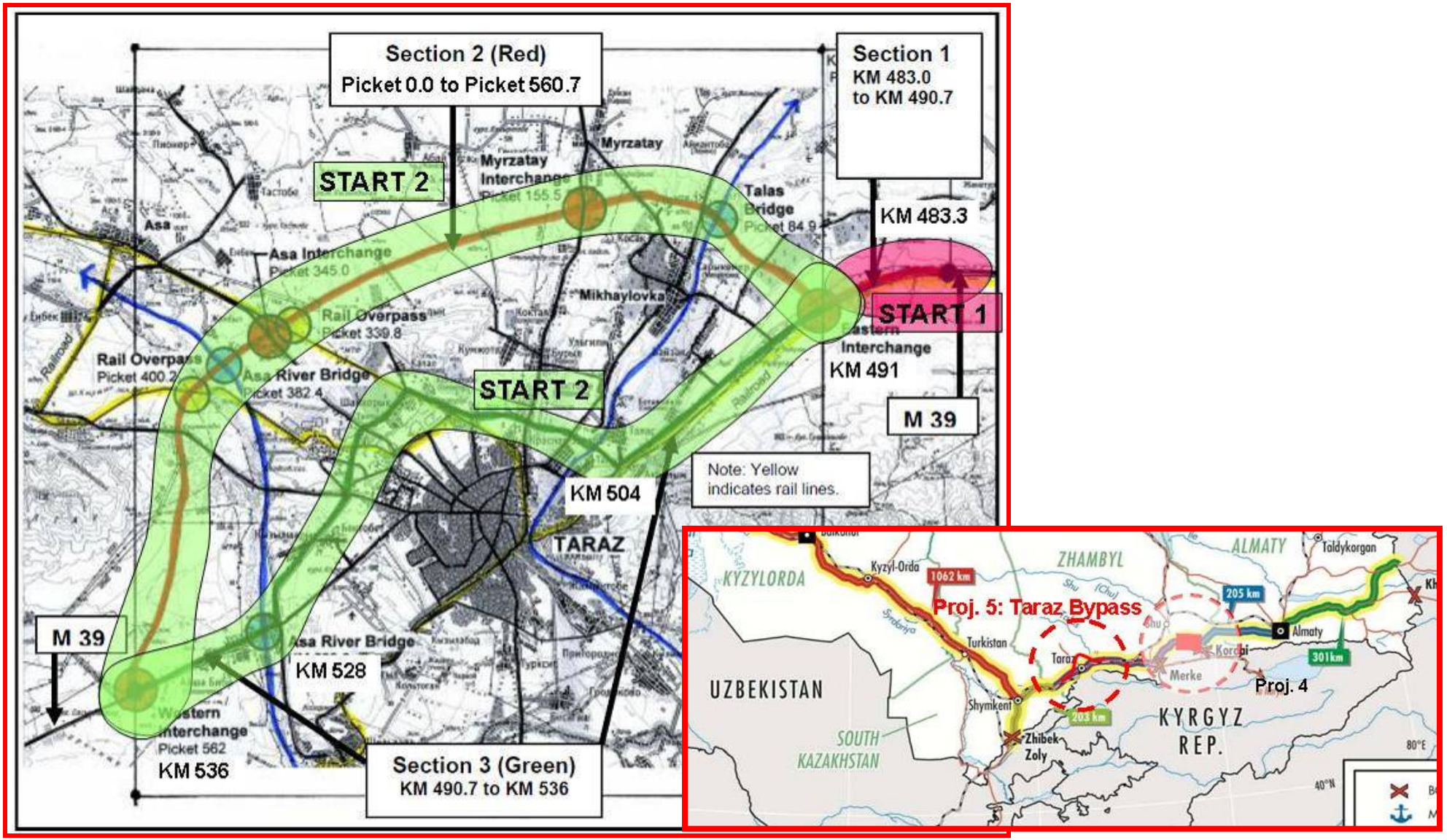


Figure 1: Map of the Project Road

2. PROJECT DESCRIPTION

The technical description of the Project and its components are as follows:

I. START 1: Construction of New Concrete Road - km. 483.3 – km. 491 (7.7 km)

The Merke – Tashkent road up to km. 483.3 is already newly built Concrete Road currently in operation. Included in the Taraz City Bypass Project, the next 7.7 km section up from Km 483 to Km 491 will be upgraded to same configuration replacing the existing asphalt pavement with concrete.

Geometric Details of new road is as follows:

- Width of Embankment top – 27.5m
- Carriageway width – 20m - (2 x 3.75)+5.0+(2*3.75)
- Number of Lanes – 4
- Shoulder Width – 3.75 on either side. (0.75m concrete & the rest in earth)
- Embankment Slope Ratio - 1:1.5 to 1:4 depending on the height of the Embankment
- Cross-fall – 2.0%
- Shoulder Cross-fall – 4%

Key Components:

Length of Road	7.7 km
Culverts	8 nos.
Bridges	None
Embankment Filling	161,000 m3
Sub Base (t = 230 mm)	90,800 m3
Lean Concrete Base (t= 180 mm)	34,200 m3
Concrete Pavement (t= 250 mm)	309,768 m3

II. START 2: Construction of New Taraz City Bypass

A. Pk. 0+00 to Pk 560+70 (56.7 km)

No heavy vehicle is permitted through the City of Taraz. Hence, currently all heavy vehicles are diverted to existing Bypass Road at Km 491 along the Merke – Tashkent Road and connect with main route at Km 528. The diversion of heavy traffic from the City of Taraz City roads helps to maintain the city free of traffic congestions and improve traffic safety.

The Existing Bypass Road is in operation for more than 50 years already. Routine Maintenance, Periodic Maintenance and improvement of isolated sections carried out time to time helped to maintain Bypass in motorable conditions. However, a considerable length of this old bypass shows heavy rutting and depressions owing to the increased intensity of heavy transport in recent times. Rapid expansion of city demands detour of heavy transport before the limits of existing bypass. Hence, this new bypass road is being constructed.

Geometric Details of New Bypass is as follows:

- Width of Embankment top – 15.0m

- Carriageway width – 7.5m (2 x 3.75) in each direction
- Number of Lanes – 2
- Shoulder Width – 3.75 on either side.
- Embankment Slope Ratio - 1:1.5 to 1:4 depending on the height of the Embankment
- Cross-fall – 2.0%
- Shoulder Cross-fall – 4%

Key Components

Length of Road	56.07 km
Culverts	121 Nos.
Bridges over Rivers	3 Nos.
Small Bridges	3 Nos.
Overpasses over Railway	2 Nos.
Overpasses in Interchanges	4 Nos.
Interchanges	4 Nos.
Embankment Filling	2.9 Million m3
Sub Base (t = 230mm & 375 mm)	283,500
Lean Concrete lower Base (t= 150 mm)	107,200 m3
Coated Aggregate Upper Base (t= 120mm)	78,000 m3
HMA- Binder Course (t= 90mm)	60,500 m3
SMA – Wearing Course (t= 60 mm)	40,000 m3

B. Rehabilitation of Existing Taraz City Bypass & Two Sections of Merke - Tashkent Road between New Bypass & Old Bypass (Km 491 – Km 536)

Existing Taraz bypass has undergone routine and periodic maintenance from time to time. However, due to heavily loaded traffic for considerably long period, the existing bypass requires pavement rehabilitation. This has been included in the Contract.

Two Sections of Merke-Tashkent Road between Old Bypass and New Bypass also to be rehabilitated under the Contract.

Key Components:

Length of Existing Bypass	28 km
Length of Merke –Tashkent from Km 491 to Km 504	13 km
Length of Merke –Tashkent from Km 528 to Km 536	8 km
Patching of Potholes	14,500 m2
Correction of Ruts & Depressions using HMA	1,800 m3
HMA Wearing Course	25,500 m3
SMA Wearing Course in selected locations	276 m3

3. PREVIOUS CONSTRUCTION ACTIVITIES AND PROJECT PROGRESS

The construction activities for the Taraz Bypass project road officially commenced in summer of 2013. The construction works consisted mainly of excavation, cut-filling, compaction, fill of surface granular materials (SGM), and laying of lean concrete pavement and some upper layers pavement for the New Bypass Road. In addition, major construction works were done on the bridges, box and pipe culverts. In this period, a number of borrow pits and quarry were operated

located in the vicinity of the project road. In addition, several small borrow pits were also used as material sources but are now closed due to limited materials in those areas.

The Contractor's camp and Engineer's office was initially located within the Start 1 (or Section 1) but by September 2013 both moved to a building located at Promzona (industrial zone) in the suburbs of Taraz City. The Contractor operates 1 concrete batching plant and two asphalt mixing plants near Pk 400 of the New Bypass Road.

PART II: ENVIRONMENTAL MONITORING

4. ENVIRONMENTAL MONITORING FRAMEWORK

4.1. Environmental Characteristics of the Project Area[2]

Based on the ADB environmental screening criteria, the project was judged to be Category A project with limited impact to the existing environment. With its financing, the design and implementation of the Taraz Bypass Project must comply with the relevant environmental and social safeguards of the ADB, including the ADB's Safeguard Policy Statement (2009), as well as all applicable RoK laws and regulations. Accordingly, prior to commencement of the project, the Environmental Documents and accompanying EMP were prepared and formed part of the Contract Documents for the construction.

The project site is said to be within the transition zone between the Tian-Shan Mountains to the south and the Central Asian Steppe to the north, the lowlands between the Kyrgyz Mountain Range to the east, the Talas Alatau Range to the south, the Karatau Range to the west and the Muynkum (also spelled Mojynkum) Desert to the north. The Project Area's underlying geology is complex and generally described in terms of plate tectonics such that mountains in the area are still on the uplift. The area is also seismically active, with recent earthquake measuring 6-7 on the Richter Scale, with a major earthquake experienced in May 2003 with an intensity of eight on the Richter and epicentre near Kulan (approximately 130 km east of Taraz City).

The land relief along the project road consists of mountains running parallel south of Section 1 (Start 1); moderately steep hills to the south of Section 2 (Start 2-A); and flat lands along Section 3 (Start 2-B). The project road mostly traverses alluvial plain deposited by the discharges of the rivers and streams emanating from the mountains to the south. The Taraz Bypass is also within the within the catchments of the Talas and the Asa Rivers and their tributaries, which are both are part of the larger Chu-Talas watershed.

The flora along the Right-of-Way of the project road consists mainly of agricultural products, especially along Section 1 (Start 1) and Section 2 (Start 2-A). Section 3 (Start 2-B) is an existing road and heavily travelled, and the adjacent land devoted to agricultural uses, expanding settlements and residential. The Project Area beyond the ROWs is characterized mainly of low diverse meadow vegetation with predominantly germanous plants and herbs and halophytic-germanous vegetation, and with no known reports of threatened or endangered plant species or habitats. There is no natural forest lands along the entire ROW, but the thriving trees in the project site consist mainly of poplar, elm, sometimes birch and maple.

There is no threatened or endangered animal species known to exist in the potential area of impact (PAI). However, indigenous mammals typically found in the undisturbed portions of the Kazakh Steppe include rodents such as ground squirrels (*Citellus)*, hamsters *(Cricetus, Cricetulus, Podopus)*, voles *(Microtus)*, birch mice *(Sicista)*, lemmings *(Lagurus)*, marmots (Marmota bobac); and lagomorphs such as pikas *(Ochotona)* and hares (*Lepus)*. Wolf *(Canis lupus)*, foxes (*Vulpes vulpes, V. corsac)* and Siberian polecat *(Mustela eversmanni)* are typical steppe carnivores. Important listed species are saiga antelope *(Saiga tatarica)* as critically endangered (CR) and the giant mole-rat *(Spalax giganteus)* as vulnerable (VU); however these species are very unlikely in the vicinity of the proposed ROWs.

Reptiles that exist in the general area include the common lizards (*Lacerta agilis*) and vipers (*Vipera ursini)*; amphibians include toads (*Bufo viridis*) and frogs (*Rana arvalis*). Four species of

[2] Information was based on the IEE Report for the Project.

Vipera ursini are found in the area, more likely in Talas and Asa Rivers or area wetlands that are listed as threatened; four species of *Bufo viridis* are also listed as threatened.

The local climate is abrupt continental dry, with hot summer and moderately cold winter. Spring seasons is short and warm with frost still occurring in late months of May, while the autumn is dry and warm. Frost free conditions last to around a minimum of 160 days within a normal year. The region's peak values for temperature recorded over the past 22 years are a maximum temperature of 44°C in summer and a minimum of -40°C in winter. The average annual rainfall ranges from 360mm to 465mm, whereby 187-252 mm falls during the warm period (April-September). During February and March strong snow storms (blizzards) from southwest to southern directions frequently occur.

The Taraz Bypass Project is located and entirely contained within Zhambyl Oblast and inside two Rayons: Baizak and Zhambyl; and is on the periphery of Taraz City. Zhambyl Oblast has a population of 1.0221 million people recorded in 2009 with population accounts for 40 percent urban and population 60 percent rural.

Resources in Zhambyl Oblast include its mineral deposits and areas suitable for both crop production and the raising of livestock. In Sections 1 and 2, the grazing of livestock and crop production (both rain-fed and irrigated) are predominant activities, while in area along Section 3 are a mix of agricultural uses, urban expansion and particularly in the western portion large scale heavy industrial activities (some of which appear defunct).

The Project Environmental Document submitted to ADB mentioned about the presence of 6 archaeological sites within this 400-meter wide area (200 m either side of the centerline of the ROW). These were subjected to further archaeological investigations and studies prior to allowing the Contractor to proceed in the construction.

4.2. Methodology for Environmental Monitoring in Construction Supervision

As stipulated in the Contract for the project, the Contractor will adhere to the requirements of the environmental aspects of the contract document particularly in the General Conditions of Contract (FIDIC) as follows:

4.8 – Safety Procedure
4.18 – Protection of Environment
4.15 – Access Route
4.24 – Fossils
6.7 – Health & Safety

In addition, detailed requirements are found in the Technical Specifications particularly the following:

Section 106 – Protection of Environment

A. General
B. Fuel & Chemical Storage,
C. Water Quality
D. Air Quality.
E. Noise, Earthwork,
F. Preservation of Antiquities,
G. Preservation of Antiquities

H. Environmental Enhancement

Section 113 – Diversion and Traffic Control Measures – mainly the B. Traffic Management Plan

The initial obligation of the Contractor is to formulate a project Environmental Management Plan (EMP) based on the findings contained in the 2008 Environmental Impact Assessment (EIA) Report. The Contractor submitted such document but was found to be too generic for the project. Hence, the Contractor was asked to submit a detailed site/project specific Environmental Management Plan based on the EIA that was provided, and conforming to the Contract documents. As the work progresses, the Consultant shall monitor the Contractor's compliance with the Environmental Management Plan and report upon impacts encountered and mitigation measures employed and make further recommendations as deemed necessary.

In general, as stipulated in the ToR for the Construction Supervision on the environmental aspect the Consultant shall "Carry out the following duties related to environmental mitigation measures during construction (a) to ensure that all the environmental mitigation measures required to be implemented are incorporated in the contract documents; (b) supervise and monitor the implementation of environmental (management)/mitigation plan (EMP); and (c) in case of unexpected environmental impacts, coordinate with the Project Director and PMC to recommend necessary measures to the Committee of Roads and ADB for Implementation". Based on this the Environmental specialist shall establish coordinative work with relevant staff of the Consultant and the Contractor to ensure that environmental issues are recognized prior to or discovered during work implementation. The EMP for the project/s or component projects shall be the basis of the monitoring and accordingly, the Contractor should complete and submit their project EMP to the Engineer for approval as soon as possible. Coordinative communication channels shall be established according to the following work coordination chart:

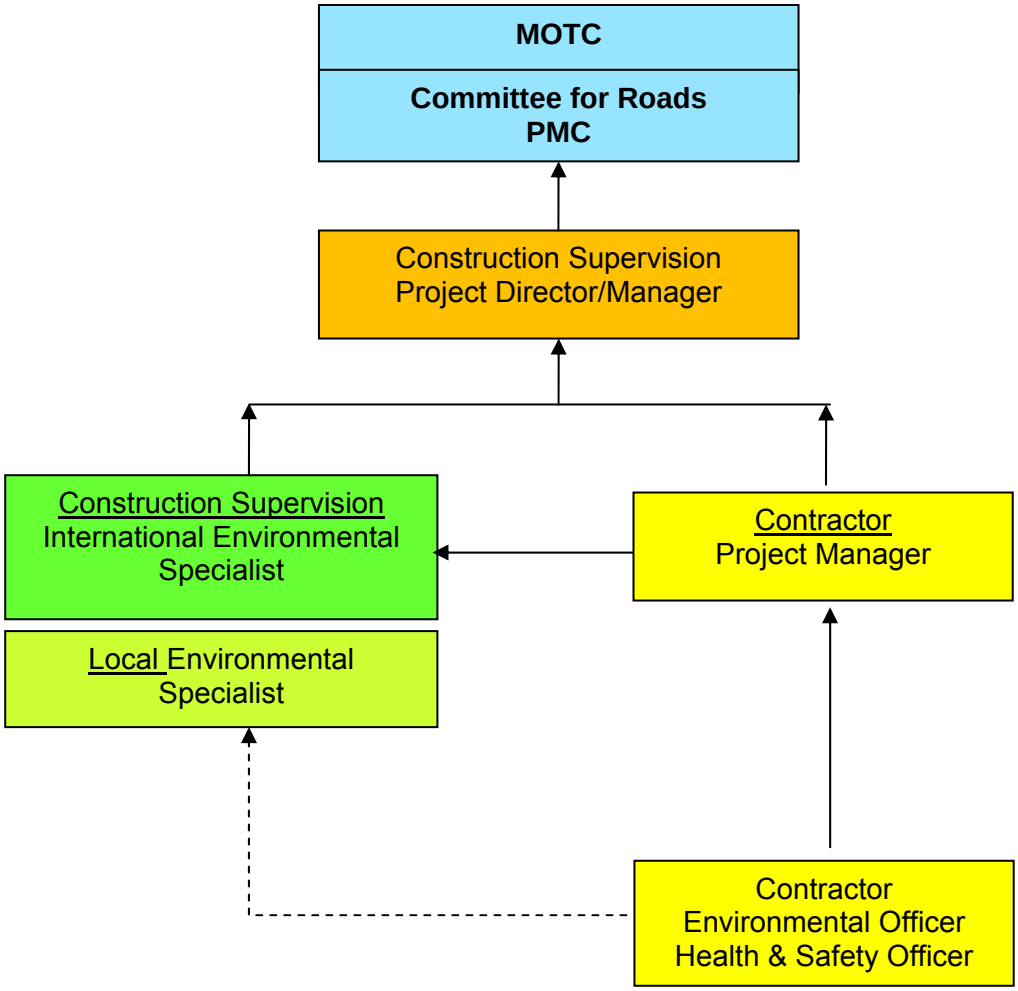


Figure 2: Work Coordination Arrangement

Specific tasks shall be undertaken by the Environmental Specialist as follows (E. Detailed Scope Item 22):

- "Manage and coordinate the update, implementation and monitoring of an initial Environmental Examination or Environmental Impact Assessment (IEE/EIA) as required by the Financing Framework Agreement (FFA) and loan agreement". The Environmental Specialist will ensure that the EMP, as a dynamic document, is updated corresponding to every phase of the project implementation and that the Contractor shall be directed to produce additional details as deemed necessary.
- "Set-up internal monitoring system on the project's environmental issues and requirement". Monitoring protocols shall be established and will be explained to the Engineer's and Contractor's staff to be incorporated in the day-to-day monitoring activities. Periodic environmental reporting shall be required on the part of the Contractor as well.
- "Coordinate relevant parties, including civil society organizations, on environmental requirements of the Project". Information dissemination shall be accomplished through reporting to the Client as well as formation of summary reports for inspection of interested project stakeholders and groups within the impact areas.
- "Closely monitor project sites against unexpected environmental impacts". Planning is essential and such unexpected impacts can be anticipated with the inspection of the

Contractor's Method Statements. Every Method Statement should indicate potential impacts and their corresponding measures to eliminate and mitigate them.

- "Monitor Contractor's compliance to EMP". Since this is a commitment of the Client, the regular monitoring shall be done by the Local Environmental Specialist in compliance with the EMP and the directives of the International Environmental Specialist.
- "Advice the Project Director and PMC on environmental problems and /or requirements and recommend mitigation measures". The International and Local Environmental Specialist shall project future issues that may arise and advise the Project Director and PMC on the necessary steps to be undertaken. Field coordination shall be under the oversight work of the Local Environmental Specialist while project management level coordination work shall be performed by International Environmental Specialist.
- "Prepare report on EMP implementation and contractors compliance". Periodic reporting as required by the Client/s shall be prepared in accordance with reporting schedule of the Engineer / Consultant. This shall be a collaborative work between the local and international environmental specialist.
- "Take part in project performance monitoring and evaluation activities, develop key indicators, and perform surveys". The environmental specialists shall assess and survey the project site/s and compile necessary information which can form part of the key indicators as part of the project performance monitoring.
- "Assess and prepare capacity building program on environmental issues". Necessary training materials shall be prepared and training/s can be provided by both Local and International Environmental Specialist as part of the Capacity Building Component.

The next salient steps will be to operationalize these objectives and tasks to enable an efficient and effective environmental monitoring. Corresponding to delineation of roles and responsibilities, reporting procedure shall be set-up. Coordinative meetings shall be done to be abreast with the fulfillment of requirements of Client government and ADB.

4.3. Environmental Monitoring Procedures of the Contractor

The Contractor started monitoring the physical environment at the vicinity of the project road in July 2013. The parameters being monitored are (i) noise and vibration, (ii) water quality, (iii) air quality and (iv) flora and fauna monitoring. These indicators form the **Baseline monitoring parameters** for the project road which can be referred to in the course of the construction of the project as well as during its operation. The basic procedures are described below:

- **Noise and vibration –** Measurement for noise and vibration is performed monthly along the project road construction in around 9 selected stations where active construction and impacts are expected to be felt. The Norms on protection of the environment from noise and vibration are in accordance with the established standards. Monthly readings taken on noise and vibration were not exceeding the norms.
- **Water quality –** There are two rivers that cross the road construction site – Talas and Asa Rivers. Accordingly, bridges are being constructed as required by the project. Since July 2013, water quality readings were done in these rivers. Generally, the readings indicated that the changes in water quality were non-threatening and any increase in concentrations can be due to seasonal usage of water from the downstream regions.
- **Air quality –** Air quality is controlled along the whole road construction sections by obtaining readings in around 11 selected stations. In addition air quality was obtained at operational quarries for the particular month. Readings on atmospheric air quality is compliant with standards and do not exceed maximum permissible concentration.

- **Monitoring of fauna and flora –** Monitoring of fauna and flora is carried out by direct observation. The habitats of rare animals and birds are not disturbed, as the construction progresses along the project section. Flora along the vicinity of the road is largely affected by dust and traffic emissions.

In addition, a number of pertinent sites are also monitored by the Contractor for any impacts of the construction activities. Such impacts will be recorded and mitigated in accordance to the EMP. Such sites are as follows:

- **Quarries and Borrow areas –** The environmental monitoring on the quarry areas will be done for any potential local contamination to the ground and/or surface water, such as oil spills, solid and liquid waste discharges and related worker's safety impacts. This will be the focus of succeeding monitoring.
- **Bridge and Interchange sites –** Subcontractors who implement works on bridges across the rivers Talas and Asa should be reminded of potential water contaminations, while those constructing interchange bridges should be aware of ground contamination, and safety for workers, pedestrians and motorist.
- **Contractor Camp / Subcontractors temporary camps –** The conditions of these camps were inspected. Non-conformance of the camp conditions should be mitigated as soon as possible.
- **Concrete plant, crusher plant, asphalt plant –** These are critical facilities which need frequent monitoring in terms of air, noise, petroleum and chemical spills, solid waste and workers' safety.

Maps showing these monitoring points are shown in the next pages.

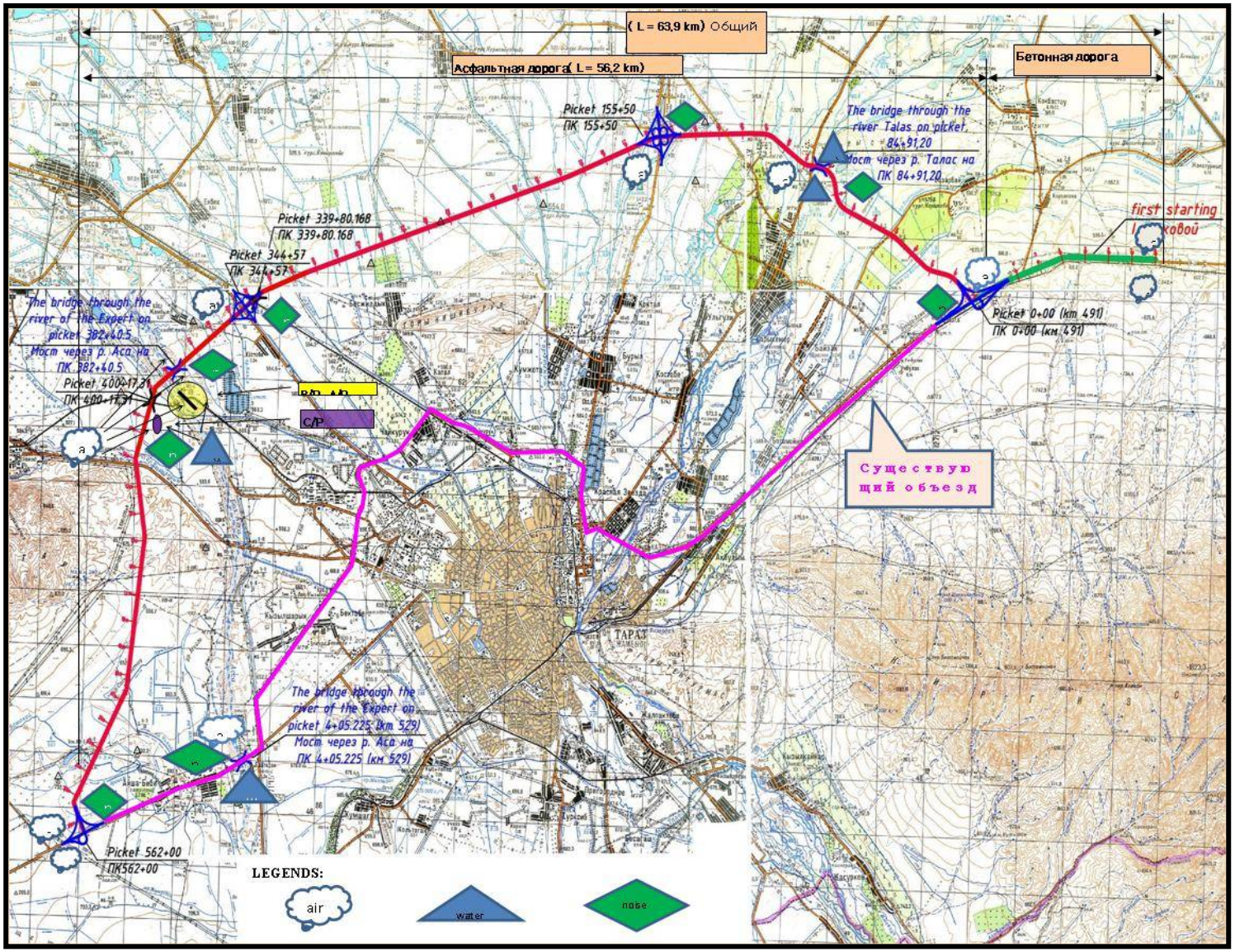


Figure 3: Environmental Parameter Sampling Locations along the Project Road

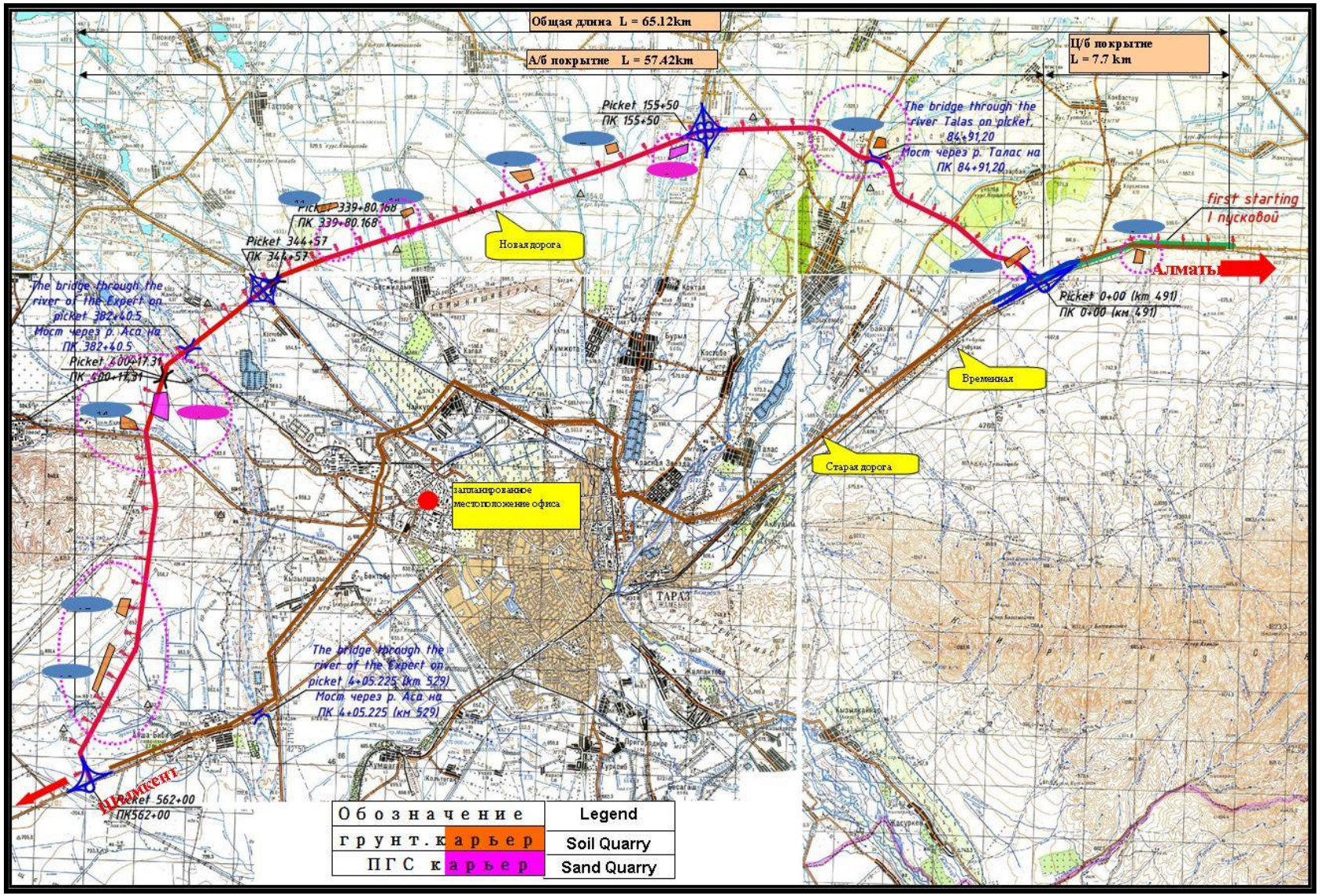


Figure 4: Environmental Parameter Sampling Locations at Quarry Sites

4.4. Contractor's Health and Safety Management

In the aspect of health and safety the main Contractor requires all subcontractors to assign personnel to be:

1. "responsible person for performance of construction and assembly works "
2. "responsible person for fire protection"
3. "responsible person for safety work performance of an erecting crane"
4. "responsible person for gas supply"
5. "responsible person for electricity supply"
6. "responsible person for provision special cloths and other facilities for individual protection of workers"

In case of accident, the Contractor is to submit brief summary about the accidents as part of the monitoring activities for the previous month the monitoring of observance of traffic rules should become more stringent consisting of the following:

1. Mitigation of dust especially at bypass road
2. Installation of road signs on speed limit.
3. Regular checking of journals of mechanics and medics of subcontractors on the control of alcohol and drugs by drivers before going to the site.

In addition the following safety issues need to be monitored:

- **Use of PPE (including replacement, according to climatic conditions)** - summer and winter personal protective equipment (PPE) has been provided. Chiefs must control and strictly watch the worker's security with certified special clothes and PPE, which includes the usage, and wear-out date of clothes. Violations on PPE non-usage, alcohol and drug intoxication would result to immediate dismissal of worker.

- **Dust and noise exposure** - The additional water-carriers were engaged to reduce the dust in summer months. Prolonged exposure to harmful conditions should be minimized consisting of poor air quality, mechanical vibrations (noise, vibration, ultra-sound and others) and emissions (ionizing, electromagnetic, laser, ultra-violate and others) on work places.

- **Operations of Equipment and trucks** - All equipment of the site should have necessary copies of documents and testing certificates. Working dump trucks should have their vehicle registration certificate and drivers should have driving license. Every day drivers are to be checked on alcohol drinking and blood pressure levels. The Contractor checks technical status of vehicles that transport people and carries out systematic trainings to drivers for Road traffic regulations and safety road.

- **Construction Hazards (heights, electric shocks, etc.)** - The subcontractor's chief should be given instructions or orders on safety compliance. Protection to workers should be provided such as for electrical protection, electric tool, gas protection, harnesses and safety belts.

- **Emergency procedures / Coordination with outside Medical Facilities** – During emergency an action plan for first aid and delivery of injured person to Taraz City Hospital is to be operationalized. In case of fire the evacuation action plan is to be carried out. Telephone numbers of the Emergency department and ambulance service should be readily available.

A listing of the previous job-related accident on the reported by the Contractor is shown below:

Table 2: List of Previous Job-related Accidents

Occurrence Date/Time	Description
June 25, 2013 / 5:00 PM	The driver Mr. Habibov M., vehicle Audi C4 H 786 VAM was going to Almaty and tried to overtake a car and hit another car (VAZ 2106) coming from opposite direction which then went out of the carriage way.
June 6, 2013 / 6:30 AM	The driver of a VAZ 2106 was behind a heavy KAMAZ truck going to Taraz. Due to high speed beyond the highway limit, the driver of the VAZ lost control and swerved from the concrete pavement to asphalt pavement and hit the tail end of the truck which caused it to turn over.
June 9, 2013 / 3:00 PM	Audi C4 A 459 SAN was going to Taraz when its break system failed at the point when the road changed from asphalt to concrete pavement. It smashed up the concrete safety barrier and consequently flipped over.
May 29, 2013 / 5: 31 AM	The driver of Gazel (GAZ 310221) was following a heavy truck which was going to Taraz. The Gazel hit the truck's tail due to non-observance of safe distance and was wedged into the driver's cabin. The peopled from the Emergency Department had to pull him out.
July 26, 2013 / 4: 30 PM	A dump truck (Sinotruck KZ715ADA 08) stopped at the roadside for mechanical problem. A bus (X175BWD) was going from Astana to Shymkent at high speed and smashed the back of the dumptruck. The bus was carrying 28 passengers and 2 drivers, and out of which 10 persons were injured with 3 persons have to be brought to the hospital for serious injury.
July 25, 2013 / 11:30 AM	The driver of a Mercedez, Satishev A.R., was driving to Almaty. Suddenly a Kamaz entered the road without giving way and both collided.
Oct. 7, 2013 / 7:20 AM	A cargo truck (KAMAZ 3Y4 BUA, Trailer 0978XD, Driver –Tristaev R.A.) going to Shimkent lost its break, detached its trailer and turned over.
Nov. 21, 2013 / 8:00 PM	Audi C4 (H684 UBM) and dumptruck ZIL (H432 HFM) were going to Shimkent. The dumptruck reduced suddenly and the Audi C4 was behind rammed into it and caused traffic jam.

5. PERFORMED ENVIRONMENTAL MONITORING ACTIVITIES

In mid July 2013, the International Environmental Specialist of the CSC was mobilized to the site. Joint inspection was done by the specialist with the environment and health & safety staff of the Contractor. Construction sites, material sites, and plants were inspected. Due to staff reshuffling, the local environmental specialist[3] was mobilized in mid August 2013.

[3] The local environmental specialist is Mr. Erzahan Shedreyev

5.1. Monitoring Activities of the Contractor

The Contractor, JSC "KCC Engineering & Construction Co. Ltd", mobilized their environmental staff and health & safety staff at the start of construction activities. More active monitoring in the form obtaining parameter readings on air quality, noise and vibration, water quality and observations on flora and fauna started in July 2013. Monthly parameter readings and observation with summary report were compiled. The results of the previous monitoring activities are shown below:

Air Quality: Measurements were done monthly and at 11 sampling stations along the project road and at operational quarry sites for a particular month. The results show that air quality is below the limit (MPC - Maximum Permissible Concentration) as observed in the Table below, indicating that the project is not impacting the air quality of the immediate vicinity.

Table 3: Air Quality Measurements

Parameter		NO2 (mg/m3)	SO2 (mg/m3)	CO (mg/m3)	Dust (mg/m3)
MPC Values		0.085	0.5	5	0.5
July	Pk 0+00 (Starting Point Interchange)	0.005	0.004	0.002	0.007
	Pk 84+91.2 (Talas Bridge)	0.001	0.002	0.005	0.003
	Pk 155+50 (Myrzatay Interchange)	0.010	0.010	0.011	0.014
	Pk 344+57 (Asa Interchange)	0.006	0.0026	0.0135	0.010
	Pk 400+60 (Quarry)	0.003	0.002	0.013	0.005
	Pk 400+17 Concrete Plant	0.007	0.002	0.016	0.020
	Pk 382+40 (Asa Bridge)	0.002	0.0045	0.020	0.016
	483 km (Starting point)	0.012	0.003	0.019	0.014
	529 km (Asa Bridge, Aysha – Bibi)	-	-	-	-
	536 km (road point construction)	0.003	0.0035	0.019	0.012
	Pk 560+70 (End Point Interchange)	0.001	0.004	0.015	0.013
August	Pk 0+00 (Starting Point Interchange)	0.042	0.0053	0.019	0.0088
	Pk 84+91.2 (Talas Bridge)	0.001	0.0023	0.009	0.0093
	Pk 155+50 (Myrzatay Interchange)	0.0075	0.0081	0.012	0.0153
	Pk 344+57 (Asa Interchange)	0.006	0.008	0.017	0.012
	Pk 400+60 (Quarry)	0.004	0.006	0.018	0.014
	Pk 400+17 Concrete Plant	0.008	0.004	0.016	0.020
	Pk 382+40 (Asa Bridge)	0.005	0.0056	0.021	0.015
	483 km (Starting point)	0.006	0.0045	0.0175	0.011
	529 km (Asa Bridge, Aysha – Bibi)	0.004	0.002	0.021	0.107
	536 km (road point construction)	0.003	0.0075	0.017	0.0105

Parameter		NO2 (mg/m3)	SO2 (mg/m3)	CO (mg/m3)	Dust (mg/m3)
MPC Values		0.085	0.5	5	0.5
	Pk 560+70 (End Point Interchange)	0.004	0.007	0.0225	0.013
September	Pk 0+00 (Starting Point Interchange)	0.002	0.0025	0.014	0.006
	Pk 84+91.2 (Talas Bridge)	0.001	0.001	0.003	0.085
	Pk 155+50 (Myrzatay Interchange)	0.006	0.008	0.019	0.018
	Pk 344+57 (Asa Interchange)	0.005	0.004	0.013	0.011
	Pk 400+60 (Quarry)	0.003	0.005	0.010	0.011
	Pk 400+17 Concrete Plant	0.005	0.003	0.016	0.016
	Pk 382+40 (Asa Bridge)	0.005	0.004	0.018	0.014
	483 km (Starting point)	0.0025	0.005	0.013	0.011
	529 km (Asa Bridge, Aysha – Bibi)	0.004	0.005	0.021	0.011
	536 km (road point construction)	0.004	0.005	0.017	0.011
	Pk 560+70 (End Point Interchange)	0.0035	0.005	0.0145	0.008
October	Pk 0+00 (Starting Point Interchange)	0.0035	0.005	0.0145	0.005
	Pk 84+91.2 (Talas Bridge)	0.002	0.003	0.004	0.014
	Pk 155+50 (Myrzatay Interchange)	0.006	0.007	0.018	0.0125
	Pk 344+57 (Asa Interchange)	0.004	0.003	0.015	0.011
	Pk 400+60 (Quarry)	0.003	0.004	0.015	0.018
	Pk 400+17 Concrete Plant	0.006	0.004	0.024	0.019
	Pk 382+40 (Asa Bridge)	0.004	0.004	0.0135	0.013
	483 km (Starting point)	0.003	0.004	0.008	0.0085
	529 km (Asa Bridge, Aysha – Bibi)	0.006	0.006	0.023	0.0125
	536 km (road point construction)	0.0055	0.005	0.017	0.0135
	Pk 560+70 (End Point Interchange)	0.0065	0.0055	0.012	0.008
	Ground quarry №16	0.0225	0.120	0.272	0.108
	Ground quarry №15	0.016	0.110	0.328	0.228
	Ground quarry №14	0.010	0.147	0.205	0.176
	Ground quarry №11	0.005	0.0065	0.0215	0.016
	Ground quarry №10	0.018	0.011	0.050	0.070
	Ground quarry №8	0.006	0.008	0.060	0.019
	Ground quarry №7	0.009	0.019	0.039	0.128
	Ground quarry №6	0.007	0.011	0.127	0.233
	Ground quarry №4	0.009	0.0155	0.058	0.113

Parameter		NO2 (mg/m3)	SO2 (mg/m3)	CO (mg/m3)	Dust (mg/m3)
MPC Values		0.085	0.5	5	0.5
	Ground quarry №2	0.002	0.003	0.007	0.058
	Sand gravel mixture quarry №2p	0.007	0.068	0.113	0.134
November	Pk 0+00 (Starting Point Interchange)	0.0045	0.0055	0.0135	0.013
	Pk 84+91.2 (Talas Bridge)	0.003	0.004	0.0065	0.008
	Pk 155+50 (Myrzatay Interchange)	0.0075	0.0055	0.0125	0.0095
	Pk 344+57 (Asa Interchange)	0.005	0.0045	0.015	0.009
	Pk 400+60 (Quarry)	0.002	0.005	0.011	0.017
	Pk 400+17 Concrete Plant	0.006	0.005	0.009	0.018
	Pk 382+40 (Asa Bridge)	0.004	0.006	0.012	0.010
	483 km (Starting point)	0.004	0.004	0.008	0.006
	529 km (Asa Bridge, Aysha – Bibi)	0.006	0.005	0.021	0.009
	536 km (road point construction)	0.007	0.005	0.018	0.013
	Pk 560+70 (End Point Interchange)	0.007	0.006	0.017	0.009
	Ground quarry №16	0.009	0.007	0.021	0.017
	Ground quarry №15	Suspended	_	_	_
	Ground quarry №14	Suspended	_	_	_
	Ground quarry №11	Suspended	_	_	_
	Ground quarry №10	Suspended	_	_	_
	Ground quarry №8	Suspended	_	_	_
	Ground quarry №7	Suspended	_	_	_
	Ground quarry №6	Suspended	_	_	_
	Ground quarry №4	Suspended	_	_	_
	Ground quarry №2	0.002	0.006	0.009	0.020
	Sand gravel mixture quarry №2p	Suspended	_	_	_
December	Pk 0+00 (Starting Point Interchange)	0.004	0.005	0.012	0.006
	Pk 84+91.2 (Talas Bridge)	0.004	0.003	0.011	0.009
	Pk 155+50 (Myrzatay Interchange)	0.007	0.007	0.011	0.011
	Pk 344+57 (Asa Interchange)	0.008	0.0055	0.016	0.012
	Pk 400+60 (Quarry)	0.006	0.006	0.018	0.016
	Pk 400+17 Concrete Plant	0.004	0.006	0.011	0.008
	Pk 382+40 (Asa Bridge)	0.004	0.005	0.010	0.008
	483 km (Starting point)	0.004	0.004	0.008	0.005
	529 km (Asa Bridge, Aysha – Bibi)	0.006	0.009	0.018	0.010

Parameter		NO2 (mg/m3)	SO2 (mg/m3)	CO (mg/m3)	Dust (mg/m3)
MPC Values		0.085	0.5	5	0.5
	536 km (road point construction)	0.007	0.006	0.014	0.008
	Pk 560+70 (End Point Interchange)	0.005	0.006	0.015	0.009

Noise: Noise measured at the sites is **below** the limit which indicates that noise had been effectively controlled by the Contractor.

Table 4: Noise Measurements

Sampling Point (km)	Max. Allowable value (dBa)	Jul	Aug	Sep	Oct	Nov	Dec
Pk 0+00 (Starting Point Interchange)	75	41.6	41.3	43.8	44.8	46.2	48
Pk 84+91.2 (Talas bridge)	75	43.7	39.9	40.8	42.8	47.6	46.8
Pk 155+50 (Myrzatay interchange)	75	42.3	39.4	40.9	43	44.5	42.9
Pk 344+57 (Asa Interchange)	75	44.7	44	33.6	45.2	47.9	47
Pk 400+60 (Quarry)	75	43.4	45.3	45.5	43.8	46.2	45.6
Pk 400+17 Concrete Plant	75	42.8	45.4	44.9	45.4	46.9	46.7
Pk 382+40 (Asa Bridge)	75	42.5	46.9	46.1	46.2	47.5	46.9
483 km (Starting point)	75	41.5	41.5	46.7	44.6	46.6	47.5
529 km (Asa Bridge, Aysha –Bibi)	75	-	46.4	43.8	44.6	46.8	46.4
Aisha-Bibi village	75	-	-	-	39.6	39.3	42.1
Myrzytai village	75	-	-	-	41.5	41.5	41.1

Water Quality: Measurements results for water quality are generally acceptable with the 22 parameters for each sample from the water sampling stations. In December 2013, there are already 9 water quality stations being monitored. The results are **below** the MPC (Maximum Permissible Concentration) Values indicating that the project is not impacting the water quality of the immediate vicinity.

Table 5: Water Quality Measurements (Jul. - Sep. 2013)

			July									August									September								
No	Parameter	MPC Values	Crusher (STA 400+60)	Batching Plant (STA 400+17)	Bridge and Tales river STA 84+91.2	Bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Surykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	bridge Aisha Bibi village, km 384+40	Crusher (STA 400+60)	Batching Plant (STA 400+17)	Bridge and Tales river STA 84+91.2	Bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Surykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	Bridge Aisha Bibi village, km 384+40	Crusher (STA 400+60)	Batching Plant (STA 400+17)	Bridge and Tales river STA 84+91.2	Bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Surykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	Bridge Aisha Bibi village, km 384+40
1	pH	6.5-8.5	7.2	6.8	8.3	-	-	-	-	-	-	7.35	6.5	6.815	7.545	-	-	-	-	-	7.75	6.75	7.025	6.975	6.5	7.4	7.3	-	-
2	Na+K	200	39.1	39.1	23.91	-	-	-	-	-	-	29.3	34.13	28.695	25.9	-	-	-	-	-	21.75	35.72	33.035	23.295	87.6	20.1	46.61	-	-
3	K		0.35	0.35	2.37	-	-	-	-	-	-	0.41	1	0.91	0.075	-	-	-	-	-	0.5	0.9	3.7	0.5	0.5	0.6	7.19	-	-
4	Ca	180	82.4	82.4	47.6	-	-	-	-	-	-	72.9	58.4	46.825	44.55	-	-	-	-	-	58.63	41.6	52.1	41.955	40.13	52.9	36.35	-	-
5	Mg	50	14.8	14.8	18.07	-	-	-	-	-	-	26.75	26.9	29.51	25.4	-	-	-	-	-	22	26.8	33.7	27.82	31.2	21.67	42.7	-	-
6	Cu	1	0.0016	0.003	0.006	-	-	-	-	-	-	0.003	0.005	0.008	0.055	-	-	-	-	-	0.006	0.007	0.008	0.006	0.0008	0.003	0.005	-	-
7	Zn	5	0.05	0.05	0.119	-	-	-	-	-	-	0.07	0.07	0.147	0.14	-	-	-	-	-	0.076	0.11	0.127	0.125	0.06	0.08	0.11	-	-
8	Pb	0.03																											
9	Mn	0.5	0.044	0.035	0.073	-	-	-	-	-	-	0.055	0.04	0.095	0.17	-	-	-	-	-	0.07	0.08	0.115	0.075	0.08	0.08	0.09	-	-
10	As	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	отсут	отсут	-	-	-
11	P	5	28.9	28.02	30.12	-	-	-	-	-	-	2.64	1.35	2.55	3.935	-	-	-	-	-	4.98	4.63	4.735	4.135	4.09	4.18	4.85	-	-
12	Cr	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Fe	0.3	0.183	0.125	0.304	-	-	-	-	-	-	0.209	0.226	0.289	0.255	-	-	-	-	-	0.217	0.213	0.251	0.236	0.244	0.184	0.206	-	-
14	Cl	350.5	10.19	6.3	9.81	-	-	-	-	-	-	6.28	10.9	12.315	7.575	-	-	-	-	-	5.95	8.25	12.54	4.58	7.13	2.3	3	-	-
15	S	500	95.82	101.92	78.865	-	-	-	-	-	-	81.7	84.9	84.95	61.68	-	-	-	-	-	74.75	77.7	80.965	48.975	136.7	79.99	70.66	-	-
16	Ammonia nitrogen	2	-	-	0.735	-	-	-	-	-	-	-	-	0.625	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Nitrates	45	16.7	31	8.1	-	-	-	-	-	-	7.96	12.8	6.035	4.69	-	-	-	-	-	8.09	10.5	6.86	2.755	14.89	4.21	7.21	-	-
18	F	1.2	0.33	0.54	0.65	-	-	-	-	-	-	0.44	0.77	0.565	0.665	-	-	-	-	-	0.51	0.68	0.67	0.69	0.88	0.73	0.45	-	-
19	Oil	0.1	0.048	0.045	0.455	-	-	-	-	-	-	0.06	0.008	0.405	0.13	-	-	-	-	-	0.04	0.02	0.008	0.007	0.006	0.01	0.008	-	-
20	Suspended solids	0.25	-	-	0.21	-	-	-	-	-	-	-	-	0.34	0.43	-	-	-	-	-	-	-	0.41	0.73	0.2	-	-	-	-
21	COD	30	5.6	5.6	9.8	-	-	-	-	-	-	8	6.8	10.25	11.59	-	-	-	-	-	5.8	7.5	12.2	10.96	9.08	1.03	9.88	-	-
22	BOD	6	2.4	2.4	4.65	-	-	-	-	-	-	3.8	3	4.95	5.6	-	-	-	-	-	2.5	3.5	5.85	5.75	4.3	5.3	4.7	-	-

Table 6: Water Quality Measurements (Oct. - Dec. 2013)

No	Parameter	MPC Values	October									November									December								
			Crusher (STA 400+60)	Batching Plant (STA 400+17)	Bridge and Talas river STA 84+91.2	Bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Sarykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	Bridge Aisha Bibi village, km 384+40	Crusher (STA 400+60)	Batching Plant (STA 400+17)	bridge and Talas river STA 84+91.2	bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Sarykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	Bridge Aisha Bibi village, km 384+40	Crusher (STA 400+60)	Batching Plant (STA 400+17)	Bridge and Talas river STA 84+91.2	Bridge in Aisha Bibi village km 529	Site camp of "Mostospetsstroy-Astana"	Site camp of "Safi Road Construction"	Site camp of "MTS Company" in Sarykemer village	Site camp of branch "KCC Engineering & Construction Co., Ltd" in Taraz	Bridge Aisha Bibi village, km 384+40
1	pH	6.5-8.5	7.82	7.76	7.15	7.1	7.5	-	6.8	-	7	6.5	7.76	8.19	8.155	6.5	6.5	7.62	77.69	8.07	7.8	7.68	7.95	8.25	6.75	7.75	7.73	7.84	8.29
2	Na+K	200	20.88	30.49	34.26	31.8	20.1	-	23.55	25.16	25.8	27.21	30.49	30.52	26.145	92.92	23.32	49.39	38.6	26.95	25.3	24.6	28.2	28.54	99.4	20.4	50.22	40.1	28.7
3	K		0.7	1.98	3.35	3.15	0.7	-	0.5	0.8	0.8	2.25	1.98	1.7	2.16	1.32	2.28	7.5	2.4	1.55	2	1	1.5	1.845	1.55	0.6	5.1	1.8	1.9
4	Ca	180	53.07	64.33	51.5	51	53.1	-	43.41	50.4	46.7	58.42	64.33	52.1	52.94	48.8	62.17	79.1	59.13	50	49.8	55.8	47.65	55.635	55.1	53.4	68.9	60.22	52.4
5	Mg	50	20	23.38	39.17	33.75	22.7	-	30.22	22.53	31.4	20.04	23.38	33.7	22.05	24.98	18.35	36.85	28.71	29.5	21.5	21.8	31.255	23.9	26.5	21.77	45.2	30.44	32.35
6	Cu	1	0.008	0.003	0.0035	0.0045	0.007	-	0.003	0.007	0.008	0.006	0.003	0.0045	0.006	0.0007	0.0006	0.009	0.005	0.009	0.007	0.005	0.008	0.008	0.005	0.001	0.005	0.006	0.005
7	Zn	5	0.088	0.1	0.145	0.14	0.13	-	0.16	0.15	0.11	0.06	0.1	0.115	0.158	0.008	0.015	0.15	0.11	0.125	0.05	0.09	0.075	0.142	0.014	0.02	0.1	0.14	0.08
8	Pb	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Mn	0.5	0.05	0.04	0.105	0.11	0.09	-	0.05	0.03	0.07	0.04	0.04	0.06	0.13	0.03	0.05	0.03	0.05	0.07	0.03	0.03	0.065	0.109	0.03	0.04	0.04	0.03	0.07
10	As	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	P	5	5	5	4.75	4.72	4.86	-	4.86	4.63	4.55	4.93	5	4.9	4.69	5	4.68	4.08	4.8	4.84	4.88	4.9	4.86	4.94	4.88	5	4.12	5	4.74
12	Cr	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Fe	0.3	0.255	0.203	0.168	0.178	0.177	-	0.258	0.204	0.234	0.211	0.203	0.164	0.214	0.187	0.204	0.163	0.196	0.242	0.189	0.144	0.149	0.181	0.193	0.175	0.172	0.177	0.252
14	Cl	350.5	5.05	8.05	11.79	8.36	2.7	-	5.09	5.9	5.14	5.83	8.05	12.205	4.97	5.38	2.8	3	6	5.36	5.99	5.66	11.995	4.035	7.44	4.24	3.5	5.27	5.65
15	S	500	72.08	78.5	79.55	64.9	80.22	-	48.34	46	57.8	74.7	78.5	77.9	63.69	55.7	80.1	75.8	51	68.6	61.42	36.28	80.85	66.77	113.7	79.7	80.2	57.11	68.045
16	Ammonia nitrogen	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Nitrates	45	7.25	10.1	6.98	4.96	4.35	-	2.41	4.34	3.8	8.09	10.1	5.4	4	3.64	4.2	6.44	4.05	4.15	5.2	5.63	5.685	3.94	3.23	3.93	4.34	5.13	3.06
18	F	1.2	0.66	0.66	0.82	0.76	0.75	-	0.76	0.76	0.86	0.58	0.66	0.63	0.69	0.67	0.73	0.45	0.64	0.725	0.5	0.43	0.67	0.312	0.271	0.23	0.37	0.22	0.135
19	Oil	0.1	0.03	-	0.0055	0.031	-	-	0	0	0.1	-	-	0.007	0.03	-	-	-	-	0.008	-	-	0.025	0.06	-	-	-	-	0.03
20	Suspended solids	0.25	-	-	0.315	0.265	0	-	-	-	0.2	-	-	0.21	0.25	-	-	-	-	0.27	-	-	0.235	0.26	-	-	-	-	0.215
21	COD	30	55.3	6	11.05	11.4	12.4	-	10.4	6.8	13	5	6	11.4	10.9	6.9	6.5	6	5.5	11	5.8	5.8	10.9	12.15	7.5	7	6.4	6	11.05
22	BOD	6	2.5	2.5	5.35	5.5	6	-	5.3	3	6	2.2	2.5	5.4	5.1	3.3	2.8	2.7	2.6	5.4	2.7	2.3	5.15	5.77	3.5	3.3	3	2.9	5.4

5.2. Environmental Audit of the Engineer

The International Environmental Specialist of the Engineer conducted audit on the required documents from the Contractor. The submitted project EMP was found to be too generic and lacking pertinent focused on the requirements of the project. The specialist advised the environmental staff of the Contractor to improve the EMP for subsequent submission. The project EMP should be based on the project EIA and should respond to the requirements of the Contract and the Technical Specifications. Accordingly, the specialist provided guidance for the revision of the EMP. A well written EMP ensures clear understanding on the part of the Contractor and consequently better management of the environment.

Periodic environmental audits will be undertaken by the Engineer's environmental specialist and necessary guidance shall be provided. Bi-annual Environmental Reports shall be compiled by the Engineer to be submitted within one month after each six-month period. Violations to the EMP and shall be considered non-conformance situation necessitating writing Non-conformance letter by the Engineer to the Contractor. Frequent violations can lead to serious repercussions and sanctions by the Engineer to the Contractor.

In addition, method statements should also contain elaboration of needed mitigation measures for impacts perceived by either the Contractor and/or the Engineer. This shall be checked by the Engineer under advisement of the Environmental Specialist prior to execution of sensitive or critical portions of the project.

The Environmental Specialist has inspected the construction sites including other sites such as Contractor's camp, borrow pits and river quarry. Environmental issues were noted and discussed with the Contractor's environmental staff. A compilation of these issues was prepared in a power point and presented in brief seminar with the Engineer and Contractor's staff on 26 July 2013.

PART III: ENVIRONMENTAL MANAGEMENT

6. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The primary objective of the Environmental Management Plan (EMP) is to avoid, reduce, or at least minimize the adverse environmental impacts that could result from the activities during the implementation and operation of the project. Accordingly, the EMP considered all phases of the Project cycle, namely the detailed design, construction and operational phases of the Project. It consists of various mitigation measures needed to be undertaken in the course of the Project cycle

During the construction phase, certain situations would have come up which may not have been anticipated by the Contractor. It is for this reason that the project EMP is considered as a dynamic document which need to be revised by the Contractor as the need arises.

7. OBSERVED ENVIRONMENTAL IMPACTS

During the mobilization of the International Environmental Specialist in July 2013, joint inspections with the Contractor's staff were conducted at various sites. The areas inspected were the construction sites along the project road, SubContractor's camp, archeological sites, dumpsites, borrow pits and river quarry. The observed environmental issues were noted and discussed with the Contractor's environmental staff for clarification within the framework of the EIA, Contractual provisions and technical specifications. Photos were taken on a number of them and shown in Annex A. In addition, these issues on the environment, including health and safety, were then compiled for a power point presentation (See Annex B) and presented in brief seminar with the Engineer and Contractor's staff on 26 July 2013.

Environmental monitoring has been continuing with the deployment of local environmental specialist, whose main duties is to oversee the impacts generated and monitor the measures being implemented. In addition, critical issues were encountered at the dumpsite at Pk 110 and had to be dealt with separately. The environmental issues relevant to the construction activities and dumpsite are discussed separately in the sections below.

7.1. Environmental Issues Relevant to Construction

The issues gathered within the period along with the corresponding measures are summarized in the Table below:

Table 7: Observed Issues During the Environmental Inspections

No.	Description of EHS Issue	Description of Proposed Measures
1	Excessive Dust at the worksites – During dry periods, excessive dust was generated by traffic of trucks and equipment. This is can have short and long term health impacts to workers. (Photo No. 1)	The Contractor should water the work area more frequently in dry periods to minimize the generation of dust, in compliance with the environmental requirements.
2	Trucks without cover – A number of dumptrucks of the Contractor or subcontractor are without cover and containment barrier. This can be hazardous as these trucks run in local roads as well. (Photo No. 2)	The Contractor should inspect all dump trucks are equipped with cover and containment barriers to avoid any accidents along the road and to prevent any materials from dropping from the trucks.

No.	Description of EHS Issue	Description of Proposed Measures
3	Reinstatement Plan needed for borrow pits – The project uses a number of borrow pits for road embankment. Excavation without plan would lead to difficulty in reinstating the sites. (Photo No. 3)	The Contractor should formulate and submit to the Engineer a Reinstatement Plan for all borrow pits. Implementation of the plan shall be prior to demobilization.
4	Improper handling or oil/lubricants – Lubricants and oil during maintenance of equipment are spilled on the ground. This leads to ground contamination and eventually groundwater contamination. (Photo No. 4)	The Contractor should instruct his subcontractors to avoid contamination of the ground and handle oil/lubricants properly.
5	Workers without proper Personnel Protective Equipment (PPE) – Workers were not wearing helmets and work boots. (Photo No. 5)	The Contractor should instruct his subcontractors that PPE should be worn at all times at the work place to minimize accident and health hazards.
6	Dumping of excess concrete at Asa Interchange worksite – Excess concrete cement mix was found to have been dumped in the surroundings. (Photo No. 6)	The Contractor should inform his subcontractors not to dump any excess concrete just anywhere. All un-permitted dumping should be removed by the Subcontractors.
7	Bitumen reservoir without secondary containment – Bitumen reservoir does not have containment works around it, such that any spill gets directly into the ground and contaminate the soil and eventually groundwater. (Photo No. 7)	The Contractor should construct secondary containment system to eliminate the risk of spill onto the ground.
8	Accumulation of garbage at the quarry & crusher site – Garbage have been accumulating at the site, resulting in unsanitary condition. (Photo No. 8)	The Contractor should regularly haul away garbage to improve the sanitary condition of the worksites.

7.2. Environmental Issues Pertaining to the Dumpsite at Pk 110

In July 2013, during the mobilization of the International Environmental Specialist, the issue on the dumpsite was dealt with in a detailed manner. A closer investigation of the site was undertaken and the issue was comprehensively elaborated upon technical instruction from ADB's Environmental Specialist[4]. The issues were described as follows:

1. The dumped garbage materials were found outside of the property of the private dumpsite owner.
2. The road's alignment actually runs through the property of the Akhimat. Hence, the garbage materials were illegally dumped within the Akhimat's property.
3. Based on Contractors' survey, the property line of the private dumpsite is around 350 m to the right edge of the road. The Akhimat's property was divided in one big portion at the right-hand-side and small portion at the left-hand-side. The distance from the left edge of the road to the edge of the Akhimat's property at the left-hand-side is around 20 m. (see attached map and photos).
4. The perceived plan as of now is to task the Contractor to move the garbage out of the Road Right-of-way (ROW) into the adjacent areas. Whatever garbage that will remain at the

[4] Mr. Nurlan Djenchuraev, ADB Environmental Specialist.

smaller area of the Akhimat's property will have to be moved by the private owner of the dumpsite, as this is his responsibility; this holds also for all the garbage illegally dumped within Akhimat's property. **Effectively, the project will only clear the garbage from within the ROW.**

5. Since the garbage will still be remaining adjacent to the ROW, the generation of methane and spontaneous combustion will continue and threat on traffic and people will persist.
6. The legal-environmental issues are as follows:
   (i) Under Kazakhstan sanitary regulations, a garbage dumpsite is considered Class I dangerous object and accordingly requires 1000m of protection (buffer) distance. The distance between the project road and the dumpsite is only 350 meters – hence now appears to be an issue.
   (ii) The dumpsite was given permit in October 2012 to operate for 5 years. The locational conflict may result in the closure of the dumpsite.
   (iii) The current access road will be crossing the project road. Due to the construction and later the operation of the road, the access road to the dumpsite will be affected - a new access road will have to be decided for the continued operation of the dumpsite.
   (iv) All garbage materials should be dug out entirely, and perhaps even deeper since these materials would have mixed with the original soil.
   (v) This garbage dumpsite was not mentioned in the project IEE; guidelines would have to be formed with respect to excavation, handling and moving of garbage within the boundary of the existing dumpsite. This can be extra task and mobilization time for the international environmental specialist of the Construction Supervision Consultant.
   (vi) The Employer and GoK would have to be notified regarding this issue and be assisted in formulating measures and options on the operational and locational conflict of the dumpsite and the project road.

The following Photos and Diagrams depict the issues at the dumpsite.

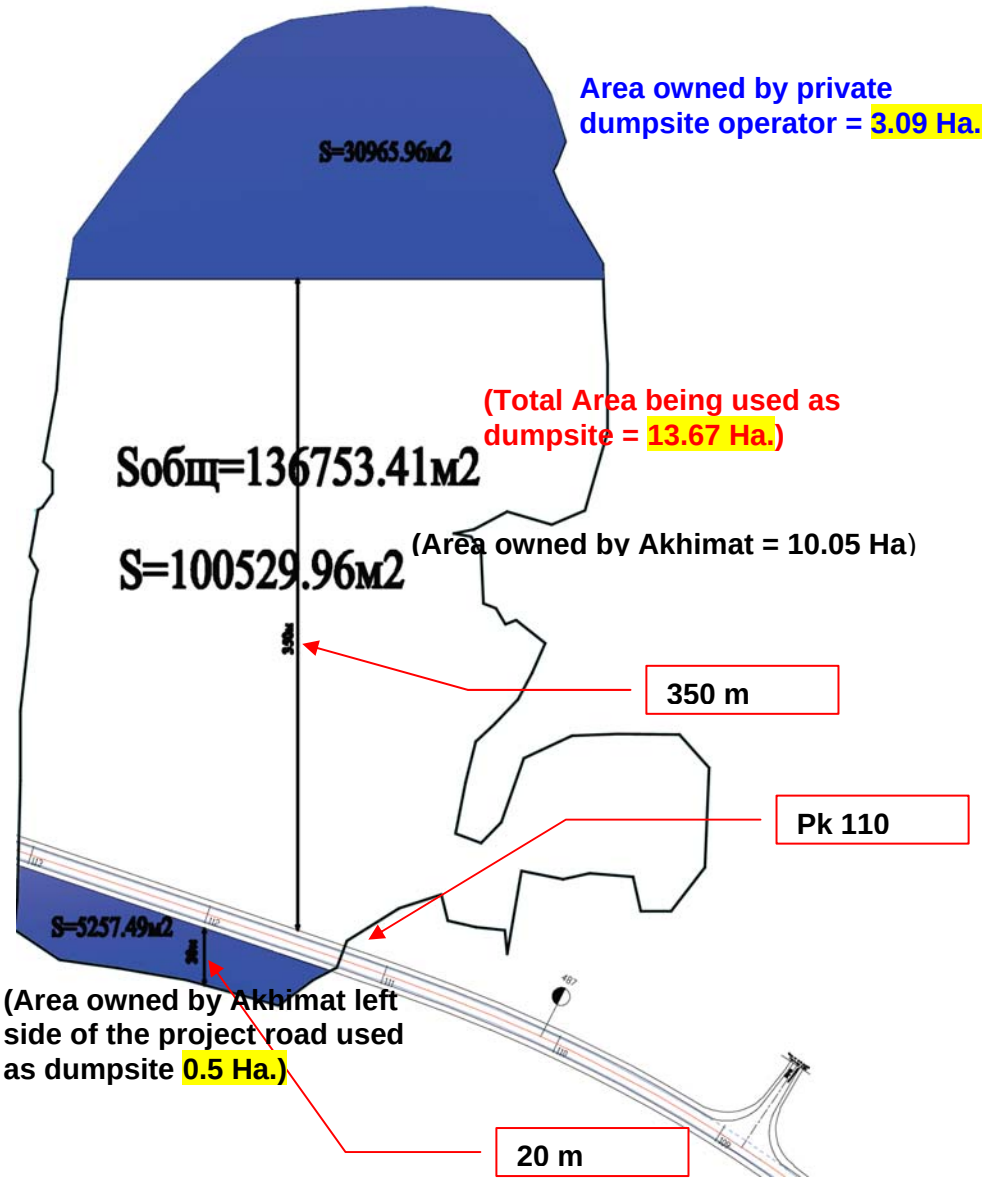


Figure 5: Layout of the Dumpsite with the Project Road

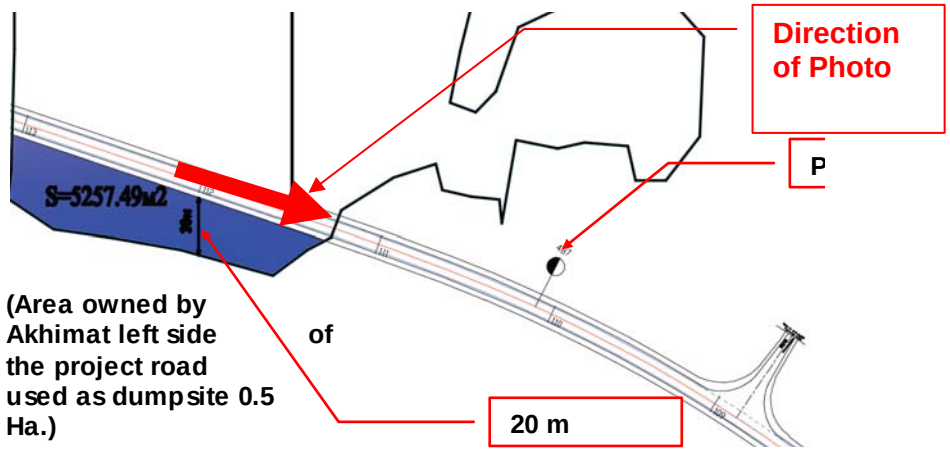


Figure 6: Layout of the Dumpsite with the Photo Project Road (1)

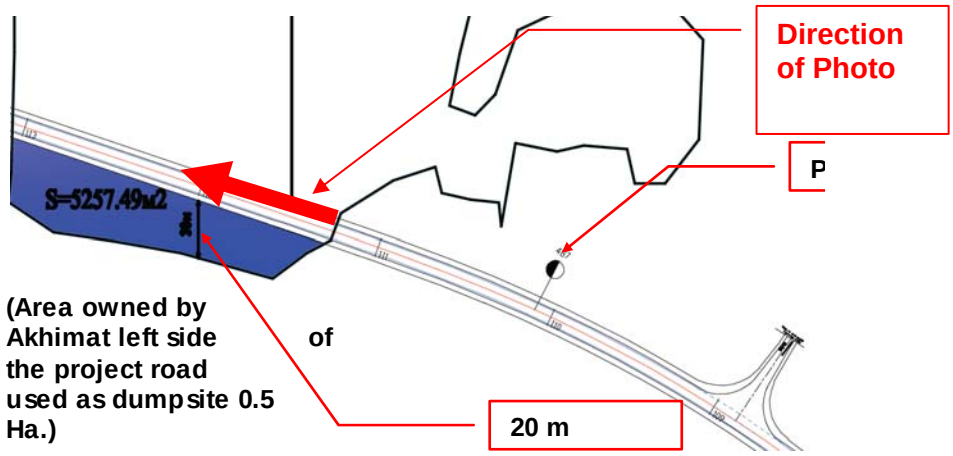


Figure 7: Layout of the Dumpsite with the Photo Project Road (2)

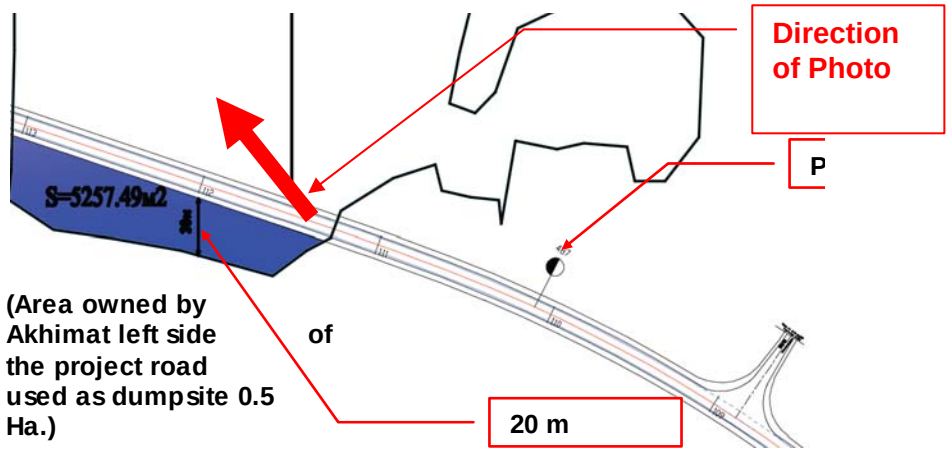


Figure 8: Layout of the Dumpsite with the Photo Project Road (3)

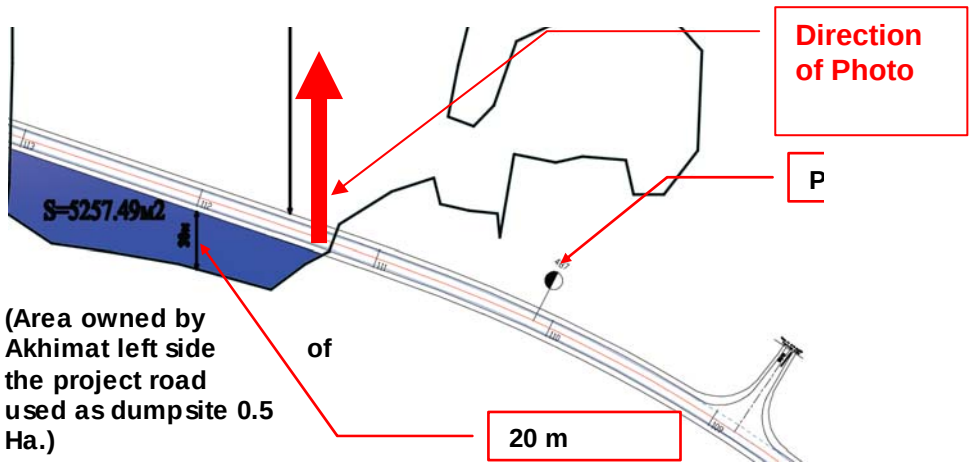


Figure 9: Layout of the Dumpsite with the Photo Project Road (4)

Upon presentation of the elaborated issues to the Client, a teleconference was done on 12 August 2013, participated by ADB, PMC and the Engineer, wherein an agreement was reached for an Environmental and Social Assessment Report to be prepared regarding dumpsite at Pk110 with the following tasks (See Annex C):

1. Assess how significant are the potential impacts and risks of the dumpsite to the road. Has it caused soil contamination, water or groundwater pollution, other impacts?

2. Assess the potential solutions, and propose the most optimal one to address the issue

3. Update the EIA, and EMP, and Resettlement Plan (if needed) and submit them to ADB.

The major difficulty encountered was the performance of physico-chemial tests for dumpsite soil samples to ascertain the level of contamination. Despite this obstacle, in response to this directive, the International Environmental Specialist drafted and submitted on a preliminary report[5] detailing the test to be undertaken in accordance to the reference standards and methods as follows:

1. Testing methods will be carried out in accordance with sanitary-epidemiological requirements by certified accredited laboratory in the system of Kazakhstan accreditation for compliance to requirements of ST RK ISO/MEK 17025-2007 "General requirements to competence of testing and calibrating laboratories."

2. Resolution of Republic of Kazakhstan # 168 dated on 25th of January 2012 of Approval of Sanitary regulation "Sanitary-Epidemiological requirements to air of rural and urban settlements, soil and its safety, maintenance of urban and rural settlements' territory and work conditions with the sources of physical factors, impacted on humans". According to clause 5 of Resolution "Sanitary-Epidemiological requirements to soil, Sanitary norms of permissible concentration of chemicals in soil, pollution levels and degree of danger for population health" are given in Tables 1, 2 Appendix 11 of Present Sanitary Regulations. Appendix 11 to Sanitary regulation "Sanitary-Epidemiological requirements to air of rural and urban settlements, soil and its safety, maintenance of urban and rural settlements' territory and work conditions with the sources of physical factors, impacted on humans". Table #1 Sanitary Norms of Permissible Concentration of chemicals in soil.

At the moment, the laboratory test results for the soil and water sample obtained by the Contractor from the dumpsite are being awaited. These results will be the basis for the subsequent course of actions to be taken by the Engineer and the Contractor in order to deal appropriately with problem. It is recognized that among the important objectives are as follows:

1. Assess the level of contamination of the site and determine if there are impacts to the road.

2. Should there be perceived impact, propose most optimal solution to address the potential problem.

3. Come up with additional measures to protect the health and welfare of the people who can be affected by the presence of the dumpsite, e.g. local population, construction workers, etc.

[5] Kocks Consult. DUMPSITE ASSESSMENT PRELIMINARY REPORT - AUGUST 2013

4. Determine ways to contain the ill-effects of the dumpsite to the environment and eliminate any further threats which may persist during the operation of the road.

Pending the obtaining of test parameters in the report recommended subsequent steps are as follows:

1. From the laboratory test results, certain measures will have to be conceptualized to minimize or eliminate impacts to the road. Technical consultation will be done among the Engineers technical experts particularly, the quality and material engineer, pavement engineer, environmental specialist and to be coordinated by the Team Leader/Resident Engineer. Depending on the findings, the assessment and coordination work may take some time. Since this is a unique situation, the Engineer (or Project Director) may decide to involve outside experts to participate in the assessment. The involvement of outside experts will require new cost allocation which can be treated as cost variation to the consultancy contract.

2. Based on the assessment, the Engineer will generate options appropriate for the issues identified and recommend an optimal solution for their execution. Depending on the gravity of the issues, coming up with options may require some time. It is to be understood that such issues should have been detected and discovered in the design stage such that the road designers would have assessed them in view of the design. Accordingly, one possible course of action would have been varying the road alignment to avoid entirely this problem. It was the impression that during the survey for the design, the issue was non-existent hence, not really foreseen by the designers. With the discovery of the problem, the current road design may be inadequate and the opinions of the designers should be incorporated in the deliberation of the problem and formation of the optimal solution.

3. As this issue was not mentioned in the EIA/EMP, the proper way to deal with it in the perspective of environment, health and safety is to present this information in the EIA document baseline information and correspondingly incorporate measures in the EMP. One issue that was brought up by Kocks' Project Director was that modifying the EIA/EMP is not in the Consultancy Contract and is considered additional scope of work. The EIA/EMP is a contractual document handed over by the Client to the Engineer for implementation. There seem to be no argument that a modification is necessary and proper, and this can be addressed by the following options:

    (i) Come up with a variation on the consultancy scope of the Engineer. This will enable the Engineer provide appropriate resources and time needed for such work.

    (ii) Engage the previous EIA preparer to update their document in response to the issues pose by the dumpsite. In addition, the previous social specialist can also be engaged to determine if any resettlement plan is required.

    (iii) Engage a separate and new firm to update the EIA/EMP which will be coordinated by the Engineer and with oversight control of the PMC/MOTC.

Recent inspection shows that the garbage have been removed from the right-of-way by the Contractor and are stockpiled at the north side of the road. Contamination still do exists and has still to be resolved by the relevant agencies. This can be considered as future environmental work activities for the dumpsite area.

7.3. Resolution of the Archeological Burial Sites

During the initial assessment of the alignment and with prior information for the Project IEE/EMP it was discovered that seven (7) archeologically important tombs had not been investigated at the time of approval of Project. During the initial implementation period, further investigation works confirmed that only two (2) tombs are located within the zone of 50 m from the road, which is in accordance with the Laws of RK requires mandatory investigation. This has been confirmed by final conclusion forwarded by experts' archaelogical report.

Accordingly, the Engineer requested the Contractor to provide three (3) quotations for undertaking archaelogical investigations based on conclusion № AR-13/21 dated 18 June 2013 and from which the Engineer approved the Subcontractor with the lowest proposal. Following such approval, the Contractor confirmed that research work had been started on 13th August 2013 and would be finished within 13 days. On 03 September 2013, the Contractor submitted the Final Report on research works of above mentioned tombs by experts.

The Report stated that the above mentioned tombs was removed from list of historical important monuments and confirmed by representative of "National Agency of Preservation and Rehabilitation of Historical Monuments" and with the same letter Contractor confirms that construction works would be started on 5th September 2013. With this process, the issue on the archaelogical burial site was resolved.

Figure 10: Archaeological burial sites that was investigated at Pk 428+426 & 428+78

8. ENVIRONMENAL NOTICES AND LETTERS

During the previous period, the CS Consultant (The Engineer) had been actively monitoring the Contractor's performance in the environmental and social aspects. Issues were identified and communicated formally to the Contractor and PMC in the form of official letters. A listing of such letters on the environmental aspects and their status is shown below:

Table 8: Letters from the Engineer on Environmental and Social Issues

Letter No.	Dated	Ref.
130828-RE-SAI-049	28 Aug. 2013	Test on Garbage Dump for Contamination-Payment
130902-RE-SAI-052	02 Sep. 2013	Submission of Special Dumpsite Report Hard copies
130913-RE-SAI-055	13 Sep. 2013	Additional Testing of dumpsite – Variation 5 Cost Proposal for Additional Testing
130930-RE-KCC-134	30 Sep. 2013	Envi. Monitoring Report-New Location for Air & Water Quality Test
131010-RE-KCC-146	10 Oct. 2013	Safety in Batching and Asphalt Plants (Request for Nomination of Responsible Staff in Concrete Batching Plant, Asphalt Plant and Crusher Plant)
130926-RE-KCC-131	26 Sep. 2013	Inspection in the Crusher Plant – 12 September 2013
130913-RE-KCC-126	13 Sep. 2013	Envi. Monitoring Report-New Location for Air & Water Quality Test
130817-RE-KCC-091	17 Aug. 2013	Additional Testing to the Dumpsite
130801-RE-KCC-091	01 Aug. 2013	Comments on the Contractor's EMP or CEAP
130730-RE-KCC-063	30 Jul. 2013	Described Issues with the Crusher, Asphalt/Concrete Batching Plants
130730-RE-KCC-062	30 Jul. 2013	Described Issues with the Dumpsite
130621-RE-KCC-042	13 Jun. 2013	Disposal Dump
130611-RE-KCC-035	11 Jun. 2013	EMP-Section 106 of the Technical Specifications
130611-RE-KCC-016	11 Jun. 2013	Health and Safety – Sub Clause 6.7 of GCC
130506-RE-KCC-033	06 May 2013	Non-Availability of Environmental Impact Assessment Report – Contractor's Claim

The Contractor's letters to the Engineer is listed below.

Table 9: Letters from Contractor on Environmental and Social Issues

Letter No.	Dated	Ref.
2013-010	17 April 2013	Appointment of Environmental Manager
2013-010	31 May 2013	Discovery of Archaeological Memorials
2013-039	05 June 2013	Waste Landfill Deposition Process
2013-041	07 June 2013	Request Approval of Plan on Monitoring and Decreasing the Influence on Environment
2013-046	14 June 2013	Request for road coordinates for executing archaeological expertise

Letter No.	Dated	Ref.
2013-051	18 June 2013	Work Delay due to Discovered Archaeological Monument
2013-052	18 June 2013	Request to Reflect Fire Prevention Ploughing works and Chemical Treatment against depredators in the Project
2013-057	20 June 2013	Work Delay due to Delays of the Instructions concerning Waste Landfill
2013-074	27 June 2013	Calculation for Rubbish Removal Works
2013-085	08 July 2013	Permits for cutting-off Trees & Plants
2013-139	14 August 2013	Implementation of works on investigation of archaeological memorials
2013-146	20 August 2013	Submission of Environmental Monthly Report for July
2013-169	12 August 2013	Report Regarding the Additional Analysis of Waste Landfill
2013-193	12 September 2013	Submission of Environmental Monthly Report for August
2013-246	22 October 2013	Submission of Environmental Monthly Report for September
2013-289	12 November 2013	Information on responsible people for Safety & Fire Safety for the Plants
2013-305	25 November 2013	Measures Taken for elimination of Infringements of Safety in Crushers
2013-308	28 November 2013	Submission of Environmental Monthly Report for October
2013-332	14 December 2013	Submission of Environmental Monthly Report for November

9. CORRECTIVE ACTION PLANS

The issues identified above need to be responded by the Contractor in a timely manner. Some of the issues are easy to resolve and few were indeed corrected promptly by the Contractor. All of the corrective measures corresponding to the issues raised were presented in Table 7: Observed Issues during the Environmental Inspections.

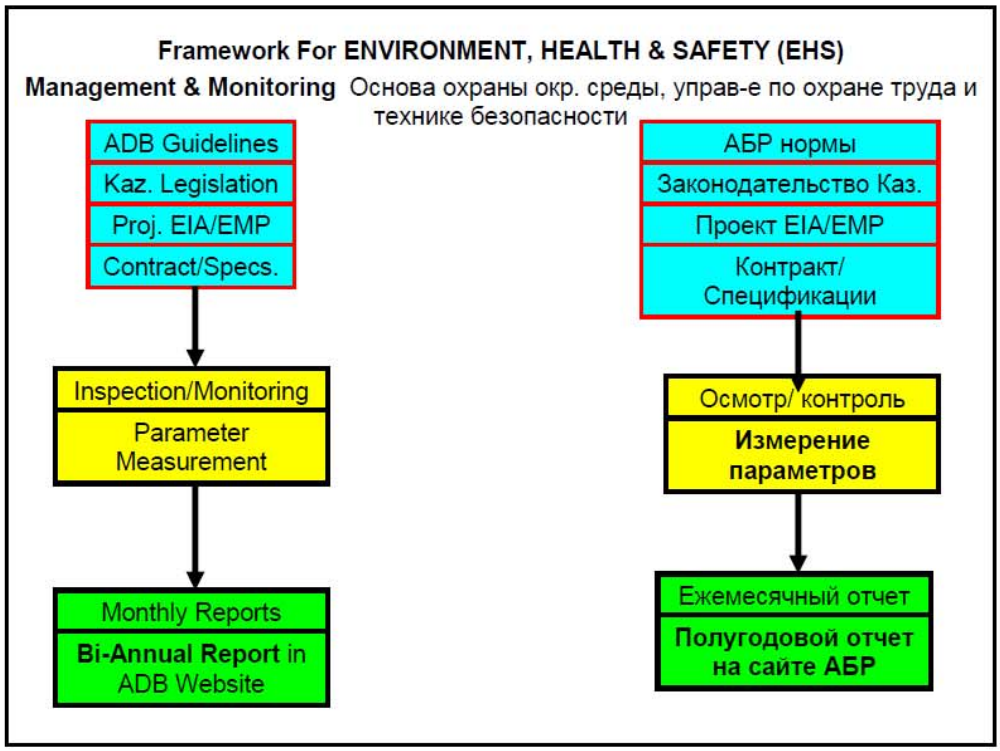
The critical issue that can be dealt with effectively at this time is the issue of the dumpsite at Pk 110. Final determination of what needs to be done have to be decided by the proponents of the project. Future activities will be undertaken in consultation with the PMC, ADB and the Client.

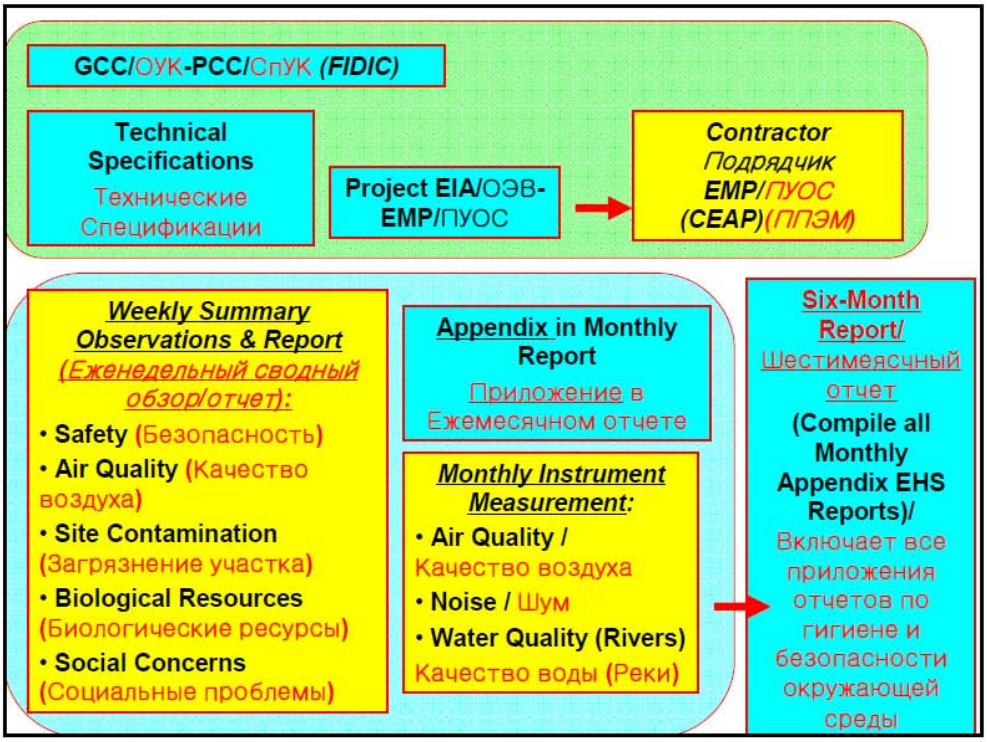
In addition, the project EMP has also to be revised. Guidance was already provided by the International Environmental Specialist and the Contractor's Environmental staff has initiated the revision. Also the Contractor's monthly environmental reports require technical discussions for more clarity in presenting how the issues were resolved by the Contractor. The Borrow Pit Reinstatement Plan should be started soon by the Contractor.

ANNEXES

ANNEX A:
PowerPoint Presentation for Seminar Workshop on 26 July 2013


KOCKS INGENIEURE
KECC
ALMATY JODA LLP
quality planning
(ADB 2824 KZ)
Seminar No. 1 on
Environmental, Health and Safety Management & Monitoring
For Taraz Bypass Section
АБР (2824 KZ)
Семинар № 1 по окр. среде, охране труда, технике безопасности и мониторингу на проекте «Обход г. Тараз»
아시아 개발 은행 (2824 KZ)
TARAZ BYPASS 공사 환경 및 안전 기술 회의
Environmental Seminar and Workshop
1


Framework For ENVIRONMENT, HEALTH & SAFETY (EHS)
Management & Monitoring
Основа охраны окр. среды, управ-е по охране труда и технике безопасности
ADB Guidelines
Kaz. Legislation
Proj. EIA/EMP
Contract/Specs.
Inspection/Monitoring
Parameter Measurement
Monthly Reports
Bi-Annual Report in ADB Website
АБР нормы
Законодательство Каз.
Проект EIA/EMP
Контракт/ Спецификации
Осмотр/ контроль
Измерение параметров
Ежемесячный отчет
Полугодовой отчет на сайте АБР


GCC/ОУК-PCC/СпУК (FIDIC)
Technical Specifications
Технические Спецификации
Project EIA/ОЭВ-EMP/ПУОС
Contractor Подрядчик EMP/ПУОС (CEAP)(ППЭМ)
Weekly Summary Observations & Report (Еженедельный сводный обзор/отчет):
• Safety (Безопасность)
• Air Quality (Качество воздуха)
• Site Contamination (Загрязнение участка)
• Biological Resources (Биологические ресурсы)
• Social Concerns (Социальные проблемы)
Appendix in Monthly Report
Приложение в Ежемесячном отчете
Monthly Instrument Measurement:
• Air Quality / Качество воздуха
• Noise / Шум
• Water Quality (Rivers) Качество воды (Реки)
Six-Month Report/ Шестимесячный отчет
(Compile all Monthly Appendix EHS Reports)/ Включает все приложения отчетов по гигиене и безопасности окружающей среды


Weekly Monitoring Form
Форма еженедельного мониторинга
Name of Inspector : Signature :
Date :
Time :
Location :
Description of Environmental Concern :
Succeeding Protocols / Steps :
For Immediate Action by Contractor
For Discussion with Contractor
For Discussion with CSC Team
Photos :
Items to be Inspected at Subcontractor's Sites / Пункты, которые в обязательном порядке проверяются на стройплощадке субподрядной организации:
1. Garbage Management / Бытовые отходы
2. Soil Contamination / Загрязнение почвы
3. Workers' Facilities / Условия , созданные для рабочего персонала
4. Personnel Protective Equipment (PPE) or Clothes / Индивидуальные Средства Защиты (ИСЗ) или снаряжение

Specific Provisions for ENVIRONMENT, HEALTH & SAFETY (EHS) Management & Monitoring

Спец. обеспечение по охране окружающей среды, управлению по охране труда и технике безопасности

FIDIC-GCC-PCC:

4.8 – Safety Procedure
4.18 – Protection of Environment
4.15 – Access Route
4.24 - Fossils
6.7 – Health & Safety

Technical Specs:

106 – Protection of Environment *(Fuel & Chemical Storage, Water Quality, Air Quality, Noise, Earthwork, Preservation of Antiquities, Environmental Enhancement)*

113 – Diversion and Traffic Control Measures *(Traffic Management Plan, etc.)*

FIDIC-GCC-PCC:

4.8 – процесс безопасности
4.18 – Охрана окружающей среды
4.15 – доступ маршрута
4.24 - Ископаемые
6.7 – охрана здоровья и техника безопасности

Технические спецификации:

106 – Охрана окр. среды *(Топливо и хранения химических веществ, качество воды, качество воздуха, шум, Земляные работы, сохранения древностей, оздоровления окружающей среды)*

113 – Объездные дороги и меры по регулированию движения (план регулирования дороги, и.т.д.)

Status of KCC EMP

MAIN REPORT –Subject to Comments by the CS Environmental Expert
ОСНОВНОЙ ОТЧЕТ – Завершен; Одобрен и подлежит обновлению

SPECIFIC SUPPLEMENTAL ENVIRONMENTAL PLANS:
СПЕЦИАЛЬНЫЕ ДОПОЛНИТЕЛЬНЫЕ ПЛАНЫ ПО ЭКОЛОГИИ:

- **Water Quality Management Plan/** План по управлению качеством воздуха
- **Dust Management Plan/** План по управлению уровнем пыли
- **Noise Management Plan/** План по управлению шумом
- **Borrow Pit Management & Re-instatement Plan/** Управление карьерами и План по восстановлению
- **Campsite/s Management Plan/** План по управлению местом размещения лагеря
- **Solid Waste Management Plan/** План по управлению твердыми отходами
- **Hazardous Waste Management Plan/** План по управлению вредными отходами
- **Soil Management Plan/** План по управлению почвенными ресурсами
- **Traffic & Safety Management Plan/** План по управлению безопасности на дороге
- **Health (HIV/AIDS) & Safety Mgnt. Program/** План по управлению охраной труда

Parametric Monitoring/ Параметрический Мониторинг

Parameter Параметры	Frequency Частота проведения	Remarks Примечание
Air Quality Качество воздуха	Once a month & Final Inspection Один раз в месяц/ Заключительная проверка	To be submitted after 2 working days Предоставляет по завершении двух рабочих дней
Water Quality Качество воды	Once a month & Final Inspection Один раз в месяц / Заключительная проверка	Water from worksites and camps Вода со строй площадки и вахтовых городков
Noise Уровень шума	During pile driving / once a month / Final Inspection Во время забивки свай / Один раз в месяц/ Заключительная проверка	To be submitted after 2 working days Предоставляет по завершении двух рабочих дней

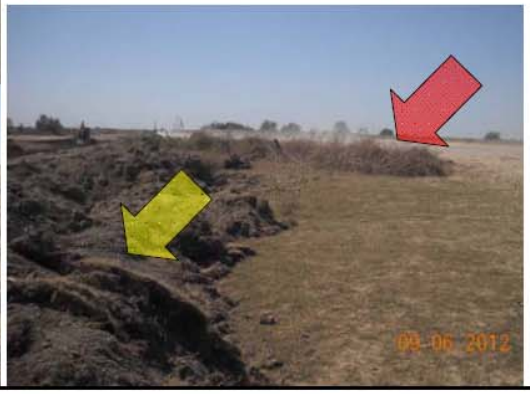



Top Soil Shall Be Reused
(Specs. 106-F)

Плодородный слой земли должен заново использоваться *(ТС106-F)*

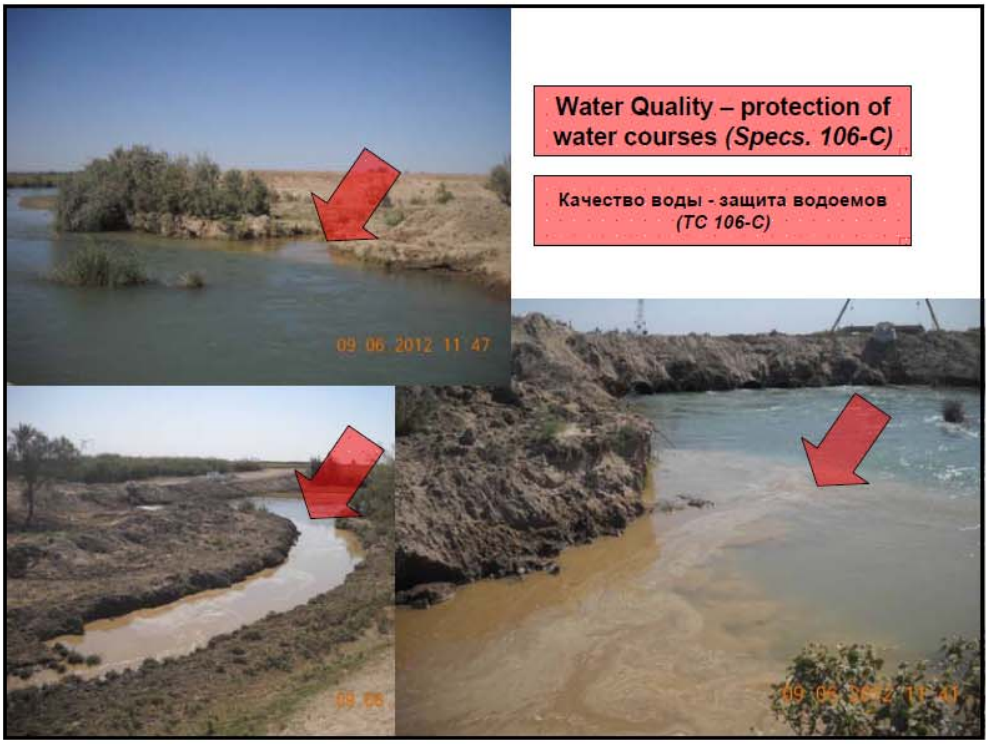
Reinstatement with Natural Vegetation (Specs. 106-H)

Восстановление с естественной растительностью (ТС106-Н)

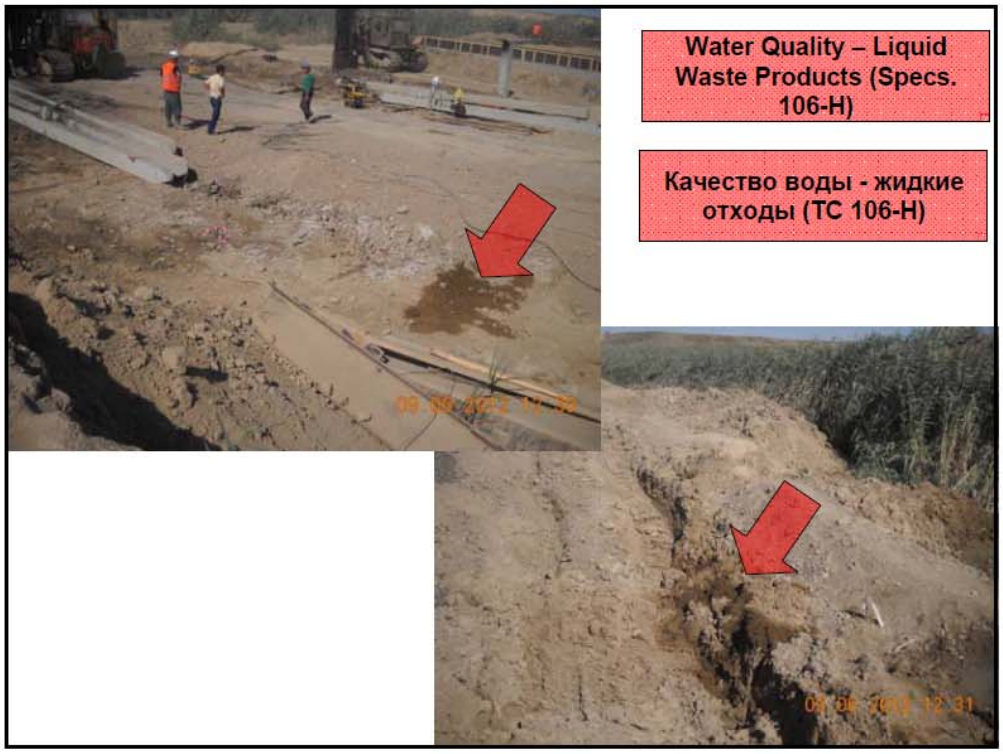




TOPSOIL SHOULD BE CONSERVED AND SPREAD OVER THE AREA DURING REINSTATEMENT/ ПЛОДОРОДНЫЙ СЛОЙ СКЛАДИРУЕТСЯ, ЗАТЕМ РАСПРЕДЕЛЯЕТСЯ ПО ВСЕЙ ТЕРРИТОРИИ ВО ВРЕМЯ РЕКУЛЬТИВАЦИИ
07 17 2013 16 50


09 06 2012 11:33
Water Quality – protection of water courses (Specs. 106-C)
Качество воды - защита водоемов (ТС 106-С)


Water Quality – protection of water courses (Specs. 106-C)
Качество воды - защита водоемов (ТС 106-С)

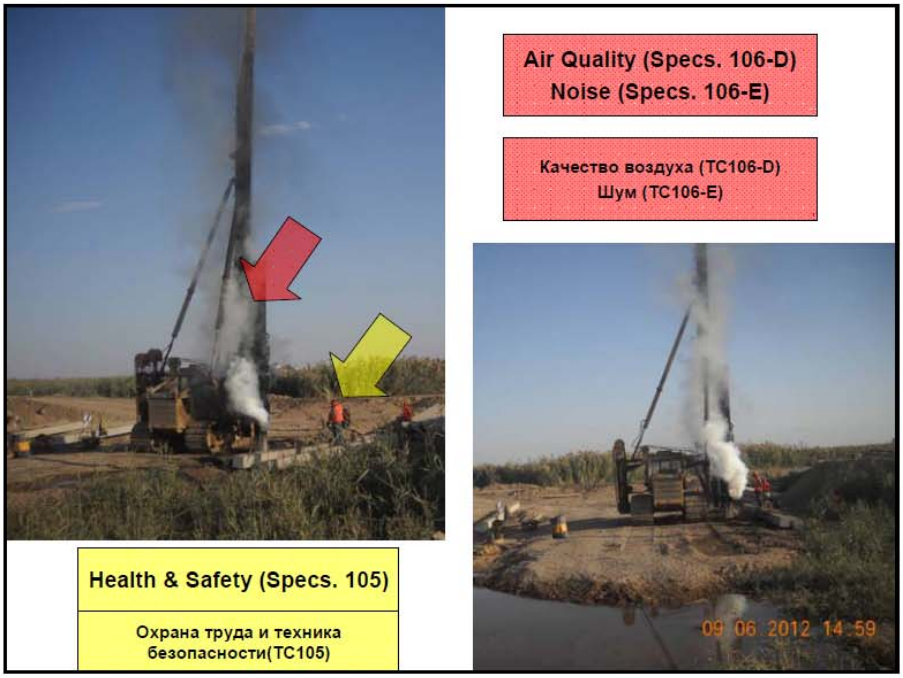

Reinstatement of Affected Areas (Specs. 106-H)
Восстановление нарушенных районов(ТС106-Н)


Water Quality – Liquid Waste Products (Specs. 106-H)
Качество воды - жидкие отходы (ТС 106-Н)

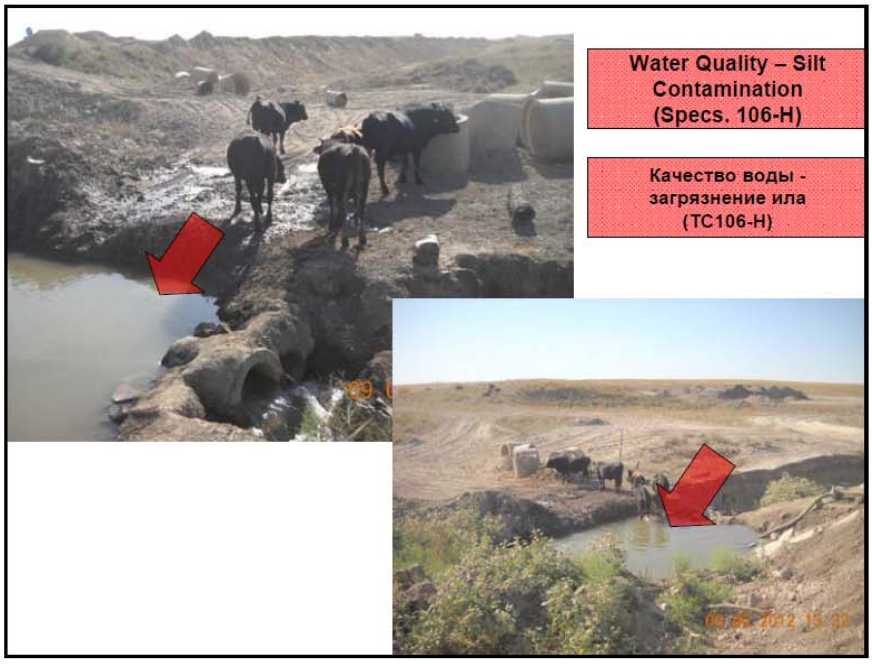

ENVIRONMENTAL ISSUE/
ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ
Burning of Garbage at Bridge No. 4/
Сжигание мусора на мосту №4

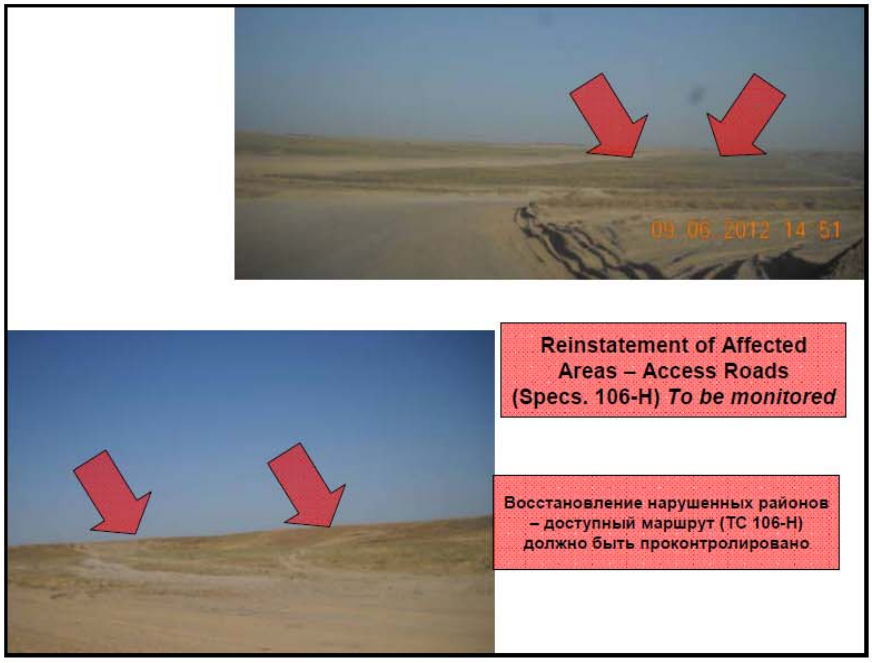
TO CONTROL DUST – SPRAY WATER AT LEAST TWICE A DAY/ КОНТРОЛЬ ПЫЛЕОБРАЗОВАНИЯ- ПОЛИВ ДОРОГ КАК МИНИМУМ ДВА РАЗА В ДЕНЬ

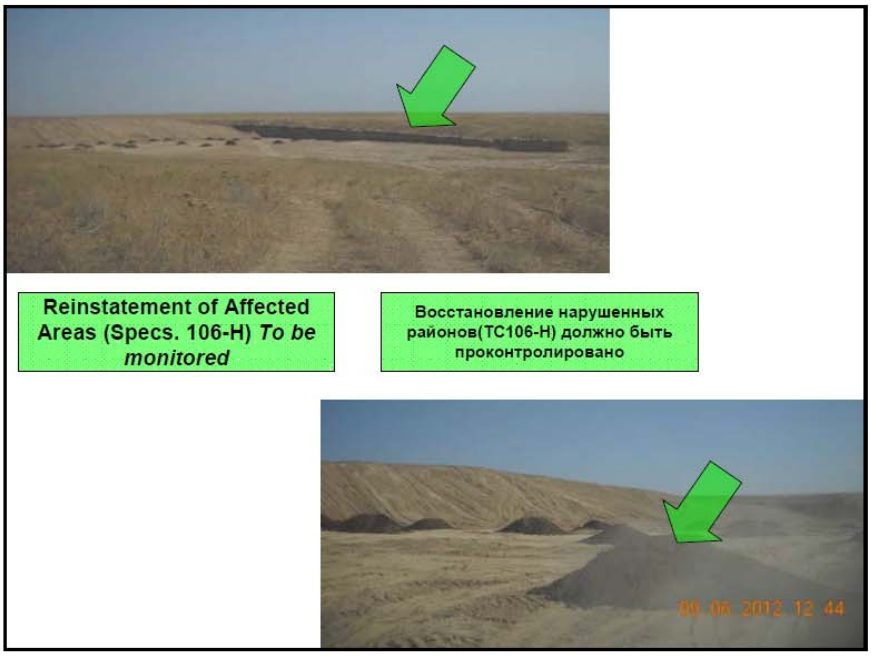
UNCOVERED DUMPTRUCKS WHEN TRANSPORTING SOIL/ САМОСВАЛЫ, НЕПОКРЫТЫЕ ПОЛОГОМ ПРИ ТРАСПОРТИРОВКЕ ГРУНТА

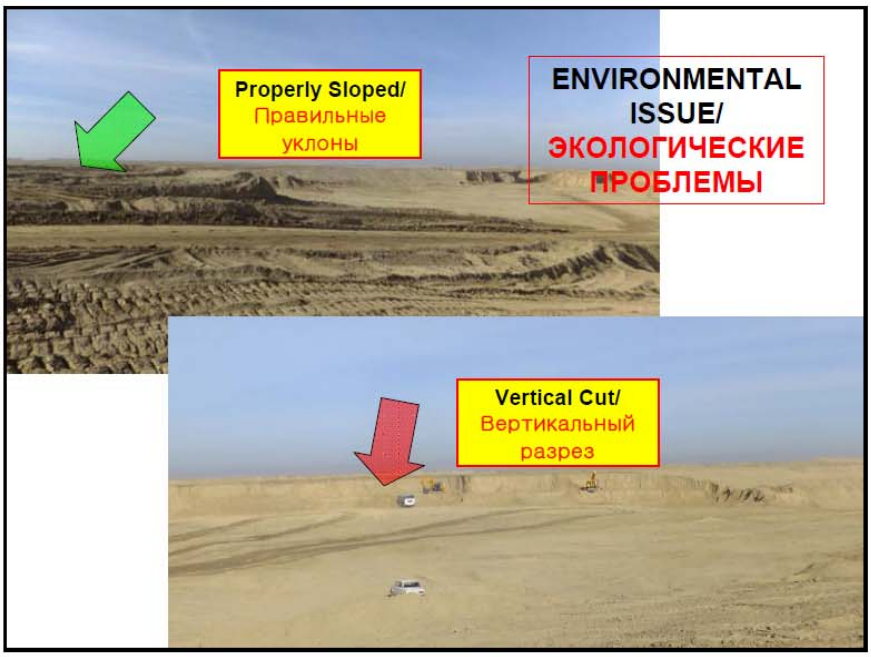

Air Quality (Specs. 106-D)
Noise (Specs. 106-E)
Качество воздуха (ТС106-D)
Шум (ТС106-E)
Health & Safety (Specs. 105)
Охрана труда и техника безопасности(ТС105)
09 06 2012 14:59


ENVIRONMENTAL ISSUE/
ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ
Silt Contamination at Box Culvert at Km 306+670/ Заиливание квадратной водопропускной трубы на км 306+670
11.15.2012 17:35


Water Quality – Silt Contamination (Specs. 106-H)
Качество воды - загрязнение ила (ТС106-H)


09.06.2012 14:51
Reinstatement of Affected Areas – Access Roads (Specs. 106-H) To be monitored
Восстановление нарушенных районов – доступный маршрут (ТС 106-H) должно быть проконтролировано


Reinstatement of Affected Areas (Specs. 106-H) *To be monitored*
Восстановление нарушенных районов(ТС106-Н) должно быть проконтролировано


Properly Sloped/
Правильные уклоны
ENVIRONMENTAL ISSUE/
ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ
Vertical Cut/
Вертикальный разрез


Waste Management / Распоряжение с отходами


Fuel and Chemical Storage (Specs. 106-B) To be inside impervious base with a bund
Топливо и хранения химических веществ (Specs. 106-B) Хранить топливо на жестком непроницаемом фундаменте


General Provisions (Specs. 106-A) buffer area needed
Общее положение (Спец. 106-A) необходима буферная зона
General Provisions (Specs. 106-A) Fix tanks – Safety
Общее положение (спец.100-А) Исправить безопасность генератора


SAFETY ISSUE/
ПРОБЛЕМА БЕЗОПАСНОСТИ
Improper Work Shoes/
Неправильная рабочая обувь


09.06.2012 1
Health & Safety (Specs. 105)
Охрана труда и техника безопасности (ТС105)
09.06.2012 11 50


Health & Safety (Specs. 105)
Охрана труда и техника безопасности (ТС105)
09.06.2012 11:51


Traffic (Specs. 113)
Safety on the Road
Дорога (Спец. 113)
Тех. Безопасности
Obstruction Removed
Препятствие удалено


Traffic (Specs. 113) Safety on the Road
Дорога (Спец. 113)
Тех. Безопасности на дороге
Determine the Cause and prevent from happening again
Определить случай и предотвратить очередное происшествие


SAFETY ISSUE/
ПРОБЛЕМЫ
БЕЗОПАСНОСТИ
Too Narrow for traffic at Bridge No. 2 Diversion Road (Safety Concerns)/
Слишком узкая объездная дорога на мосту №2 (Проблемы безопасности)


SAFETY ISSUE/
ПРОБЛЕМЫ
БЕЗОПАСНОСТИ
De-stabilized temporary Crossing at Bridge No. 3/
Нестабильный временный переезд на мосту №3

OTHER IMPORTANT ITEMS / ЗНАЧИМЫЕ ПУНКТЫ

- All roads within the construction areas of the Site shall be sprayed at least twice each day. / Все дороги, расположенные в пределах строительной площадки, должны поливаться водой как минимум два раза в день.
- Borrow pits will be developed so as not to cause drainage or visual intrusion or cause problems such as mosquitoes or water contamination / Разработка карьеров должна проводиться таким образом, что бы избежать проблем с дренированием или визуальной интрузией, а так же такими проблемами как москиты или загрязнение воды
- Pit restoration will follow the completion of works subject to final acceptance and payment under the terms of contracts. / Рекультивация карьеров проводится после завершения работ при условии окончательной приёмки и оплаты согласно условиям контракта

IN CASE OF EMERGENCY, CALL THESE NUMBERS / В случае экстренной ситуации, звоните по следующим номерам:

1. **101 – FOR FIRE** / Пожарная Служба
2. **103 – MEDICAL AND HEALTH CONCERNS** / Скорая помощь

PHOTOS OF ENVIRONMENTAL SEMINAR ON 26 JULY 2013

ANNEX B:
Photos of Environmental, Health and Safety Issues

Photo No. 1: Excessive dust at the worksites

Photo No. 2: Truck without cover

a

Photo No. 3: Borrow Pits should have Reinstatement Plan

Photo No. 4: Improper handling of oil/lubricants

b

Photo No. 5: Workers without proper Personnel Protective Equipment (PPE)

Photo No. 6: Dumping of excess concrete at Asa Interchange worksite

Photo No. 7: Bitumen reservoir without secondary containment

Photo No. 8: Accumulation of garbage at the quarry & crusher site

d

Photo No. 9: Parametric Monitoring in July 2013

Photo No. 10: Parametric Monitoring in August 2013

e

Photo No. 11: Parametric Monitoring in September 2013

Photo No. 12: Parametric Monitoring in October 2013

f

Photo No. 13: Parametric Monitoring in November 2013

Photo No. 14: Parametric Monitoring in December 2013

ANNEX C:
Important Letters Relevant to Environmental Issues

SAI Consulting Engineers Pvt. Ltd.
Kazakhstan

Business Centre "DERZHAVA" Kabanbai batyr Ave No: 2/2, Office No: 401, Astana 010000.
Telefax: +7-7172-243908 | Email: pmcadbkz@gmail.com

PROJECT MANAGEMENT CONSULTANT
CAREC Transport Corridor I, Taraz-Korday Section

Ref. No. TL/DC/General/1282/2013 **Date: August 15, 2013**

CSC Project 5 – Kocks **Team Leader** **Mr. Upali Hewage**	Chu rayon, Kainar village upalihewage@yahoo.com csp_7e.kocks@yahoo.com
CC: MOTC	

Re: *Loan 2824-KAZ, International Transport Corridor CAREC I "Western Europe – Western China", Investment program, Construction Supervision Services, Taraz bypass:* **Environmental and Social Assessment report regarding Dumpsite on Pk110**

Dear Sir,

As was it was agreed on teleconference on August 12, 2013, an Environmental and Social Assessment Report regarding dumpsite at Pk110 shall be prepared and submitted no later than **September 1st, 2013,** with the following tasks:

1. Assess, how significant are the potential impacts and risks of the dumpsite to the road. Has it caused soil contamination, water or groundwater pollution, other impacts?
2. Assess the potential solutions, and propose the most optimal one to address the issue.
3. Update the EIA, and the EMP, and Resettlement Plan (if needed) and submit them to ADB.

To facilitate this, please **engage your Local Environmental Specialist for one month** and provide **home based support from International Environmental Specialist** at the earliest day possible.

However, based on advice of the Client, if Kocks wishes to engage International Environmental Specialist to the site for this particular task, it shall be at their own expense.

Yours sincerely,

Kimo Karini
Team Leader
PMC-ADB