

Semi-Annual Environmental Monitoring Report

Loan No: 3524

#8 Semi-annual Report

Semestral Report (January - June 2022)

July 2022

**Georgia: Rehabilitation of Dzirula–Kharagauli–Moliti–Pona–
Chumateleti**

Secondary Road Section (50Km)

Prepared by: PYUNGHWA Engineering Consultants Ltd and Yoshin Engineering Corporation and Roads Rehabilitation Modernization Supervision Direction Ltd, for Roads Department of the Ministry of Regional Development and Infrastructure of Georgia and Asian Development Bank

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ACRONYMS & ABBREVIATIONS

ADB	Asian Development Bank
EMP	Environmental Management Plan
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
Km	Kilometer
PIU	Project Implementation Unit
RD	Roads Department
SEMP	Specific Environmental Management Plan

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1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi-annual Environmental Monitoring Review of Rehabilitation of Dzirula – Kharagauli – Moliti – Pona – Chumateleti Secondary Road Section (50Km).

2. This report is the eighth Semi-annual EMR for the project and covers January – June 2022 reporting period.

1.2 Headline Information

3. Project design review and construction activities have been commenced in September 18, 2018 (BSGLOT1). There is protected area near the project related road section. The shortest distance between Borjomi-Kharagauli National Park (BKNP) and the existing project road is approximately 1.3 km. BKNP is separated from the existing project by a river gorge, which prevents the transposition of flora and fauna. The shortest distance between BKNP and the existing project road is approximately 1.3 km. BKNP is separated from the existing project by a river gorge, which prevents the transposition of flora and fauna. Therefore, the project will have no direct impacts on the biodiversity of the BKNP. During the project design review by the CS have been confirmed that the project will have no direct impacts on the biodiversity of the BKNP (IEE). However, construction contractor selected appropriate access roads to avoid disturbance of the protected area and provide site staff with special training to prevent poaching.

4. Second Contractor “AKKORDICIC” (Lot 2) started mobilization and set up office at Chumateleti and their activity started on 31st May 2019.

5. No non-compliances have been identified during the reporting time period. CC Akkord completely abandoned site and CC BSG stopped activity in December 2021. Up to now activities are not recommenced.

6. It is envisioned, that the road, when improved, will enhance connectivity to a number of towns and villages at the foothills of the mountain ranges and will act as alternate route to parallel segments along E60. Also, positive impact of the project is local population’s involvement in the road construction process.

2. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

7. The project road is a 50.244 km west to east secondary road, starting from E-60 in Dzirula and ending at E-60 junction at Chumateleti. Most of the project road is within Imereti Region with a few kilometers within Shida Kartli Region, through a gorge with mountain ranges with on both the northern and southern part. It is envisioned that this road, when improved, will enhance connectivity to a number of towns and villages at the foothills of the mountain ranges and can act as alternate route to parallel segments along E-60.

8. For implementation purposes the project was divided into 2 separate sections (lots) of about 25 km each. First section (Lot 1) (Construction Contractor: Black Sea Group) covers above road from Dzirula (km0+000) to Moliti (km 24+620). The details of the proposed road project are:

- Rehabilitate and pavement of the project road from Dzirula to Kharagauli according Georgian National Standard for Public Motor Roads (SSTGzebi2009), Geometrical and Structural Requirements with 40 km/h design speed. The pavement within Kharagauli town is planned to execute minimum 4cm asphalt surface course after milling over the area.
- Replacement or repairing of 9 bridges and 102 culverts.
- Construction of side drains and other drainage structures.
- Provision of retaining walls and river protection measures, where necessary.
- Provision of adequate road signing and marking.
- Provision of safety barriers.

9. Second section (Lot 2) (Construction Contractor: Akkord ICIC) covers the above road from Moliti (km 24+620) to Chumateleti (km 50+244). The details of the proposed road section are:

- Rehabilitation and pavement of the project road from Moliti to Chumateleti according to Georgian National Standard for Public Motor Roads (SST Gzebi 2009), Geometrical and Structural Requirements with a design speed of 40km/h.
- Construction of 13 new bridges
- Construction of 86 pipe culverts and 6 box culverts.
- Construction of side drains and other drainage structures.
- Provision of retaining walls and river protection measures, where necessary.
- Provision of adequate road signing and marking.
- Provision of safety barriers.

10. AKKORDICIC has been selected as the Construction Contractor for LOT 2 (Km 24+620 - Km 50+244), agreement has been concluded 04.12.2018. Mobilization is ongoing (started in June 2019), construction activities are commenced but far behind planned schedule. there are no works during the reporting period (Jan-Jun 2022).

11. The road is to be designed according to Georgian geometric design standard, and accordingly, it shall be sufficient to carry the traffic loading efficiently and with the vehicles from the opposite directions can pass safely. The design elements for the cross section of the two-lane road are as follows:

- Number of lanes: 2
- Linewidth: 3.00 m
- Carriageway width: 6.00m

- Width of shoulder: 1.00 m
- Increase of shoulder on embankment 0.50m
- Total road width: 9.00m

12. The preliminary road design was carried out considering following design philosophy.

- The standards to be applied will follow the Georgian geometric design standard for the selected design speed of 40 km/h, with some flexibility in application when the strict application of the standards would result in an excessively costly technical solution.
- In general, the design follows the existing alignment wherever possible and considers the existing structures. Where the existing alignment does not correspond to the proposed parameters, certain improvements depending on topography, presence of built-up areas and structures are considered.
- The vertical alignment has been maintained in general, with improvements to the sight distances, where the existing topography allow for improvements. To accommodate new pavement layers, the road elevations have increased accordingly where possible.
- The design will result in a cost effective construction, considering the low traffic volumes on the road and the economic viability of the design.

13. The map of the project road is given in the **Figure 1** below.

Fig. 1: Map of Project Road

Figure 1: Location Map of the Project Road



14. The project is classified as category B for the environment under ADB's Safeguard Policy Statement (2009). Project implementation period is: 2018-2020. The Extension of

Time for Completion has been decided by the Amendment No.6 (20th October 2020) that is extended up to 22nd May 2021 as same as Engineer reported in his review by its letter No. PEC/RD/DCSRS/20-269 dated on 11th September 2020. On 1st December of 2020, Contractor sent a letter (No. DZM/BSG-OUT-MNG-COR-0257) attached with signed Amendment No.6 dated on 20th October of 2020 in which he stated, that besides the signature of the Amendment No.6 the works cannot be completed by 22nd May 2021 and an additional time extension will be necessary.

15. An IEE was submitted to the Ministry of Environment and Natural Resources Protection for approval by the Road Department of the Georgia on 20 November 2017, and it was approved by MoEPA on 1 December 2017. Lot1 and Lot 2 contractor have obtained all relevant required permits and clearances. The required permits, clearances, status, and validity are presented in the **Table 1** below:

Lot 1 permit Description	Date of approval	Status
Permit for the emissions of hazardous substances into ambient air from stationary sources for batching plant.	Approved Letter N3389/0; 24.04.18.	Valid
Waste management plan	Approved Letter N43/6680; 22.10.18.	Valid
Surface Water extraction	Approved Letter№ 587/01; 10.07.18.	Valid

Lot 2 permit Description	Date of approval	Status
Permit for the emissions of hazardous substances into ambient air from stationary sources for batching plant.	Approved Letter N5273/01; 20.06.18.	Expired
Waste management plan	Approved Letter N43/6680; 22.10.18.	Expired
Permit for the tree cutting	Approved Letter N5/7515; 05.02.2020.	Valid

16. The current Semi-annual Environmental Monitoring Report covers the period from January-June 2022.

2.2 Project Contracts and Management

17. Consultancy Services (CS) Contract was awarded to JV of Pyunghwa Engineering Consultants Ltd, Yoshin Engineering Corporation and Roads Rehabilitation and Modernization Supervision Direction Ltd for three phases of the project:

- a. Phase 1–Design review, to be completed in a period of five weeks.
- b. Phase 2–Construction Supervision and Project Management. The period is for 33months.
- c. Phase 3–Defects Notification Period, two years (24months).

18. The TOR for the Consultancy Contract contains the following tasks for the Environmental Specialists:

- Ensure that the provisions of the approved Environmental Management Plan are reflected;
- in the Contractor’s contract site environmental management plan (SEMP) prior to its acceptance by the Engineer, the Employer and ADB, and there after ensure that the Contractor complies in every respect with the provisions of the SEMP;
- Develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring, and submit periodic reports based on the monitoring data and laboratory analysis reports. These reports will be included as an annex to the Consultant’s Monthly Report;
- Develop a program for hands-on training of Contractor’s staff in implementing the SEMP. Conduct Post-Construction Environmental Audit and prepare post-construction environmental audit report with filled environmental audit checklist;
- Collection of photo materials of the condition of sites abandoned by the contractor;
- During the reporting period (Jan-Jun 2022) SC carry out monitoring of the abandoned sites and work with local authorities for road maintenance.

19. All mitigation measures during construction was implemented respectively by the contractor companies: Black Sea Group LTD and AKKORDICIC. Each contractor company had environmental and safety officers responsible for HSE issues during construction process. Construction companies are monitored by the supervision consultant (PYUNGHWA) environmental specialist – Shalva Bosikashvili and Environmental Specialist of RD ADB Ms. Luiza Bubashvili. Environmental Specialists of SC and RD conducted routine observations and surveys of project sites. During the reporting period the HSE staff of both CCs was not on the construction sites. Only CS team was on site during the reporting period.

Table 2: Summary of Site Visits During the Reporting Period (Jan-Jun 2022)

Date of Site Visit	Staff	Detailed Findings	Required Actions	Date of Report Submitted and to whom
16.01.2022	No CC Staff	NA	NA	NA
10.02.2022	No CC Staff	NA	NA	NA

02.03.2022	No CC Staff	NA	NA	NA
11.04.2022	No CC Staff	NA	NA	NA
19.05.2022	No CC Staff	NA	NA	NA
25.06.2022	No CC Staff	NA	NA	NA

20. The both Contractors prepared Site Specific and Topic Specific EMPs under the guidance of the Supervision Consultant, approved by SC, reviewed and verified by RD before the commencement of civil works.

21. The list of prepared SEMP and Method Statements (MS) for lot 1 and lot 2 is given in **Table 3**.

Table 3.List of Site Specific Environmental Management Plans and Method Statements

	Plan / Method Statement
1	Site Specific Environmental Management Plan
2	Environmental Management Plan (updated)
3	Waste Management Plan (Construction Phase)
4	Emergency Response Plan
5	Spill Management Plan
6	Wastewater Management Plan
7	Chance Find Procedure
8	Labor Management Procedures
9	Clearance Cultivation Restoration Plan
10	Aggregate and Borrow Pit Management Plan
11	Topsoil Disposal and Erosion Management Plan
12	Air Quality Management Plan
14	Bridge Construction Management Plan
15	Spoil Disposal Management Plan
15	Method Statement for Temporary Roads
17	Method Statement for River Crossings

22. These plans are detailed and set out how the project will address potential issues identified in the impact assessment process and ensure that specific mitigation and monitoring measures are fully implemented.

23. The names and contact details of environmental staff involved in the environmental management are presented in the **Table 4** below:

Table 4: Description of staff involved in environmental management

Organization	Position	Name	Nationality	Tenure
Construction Contractor Akkord	Environmental Specialist	Farid Bairamov Cell: +995 595909638 Farid.bairamov@inbox.ru	Azerbaijani	16months Absent during the reporting period
Construction Contractor BSG	Environmental Specialist	Levan Kereselidze Cell: 599004082	Georgian	16months Absent during the reporting period
Supervision Consultant Pyunghwa Engineering Consultants Ltd, Yoshin Engineering Corporation and Roads Rehabilitation and Modernization Supervision Direction Ltd	Environmental Specialist	Shalva Bosikashvili sbosikashvili@yahoo.com Cell: +995 595 116041	Georgian	16months
ADB/RM	Head Office, Environmental Specialist, Portfolio, Results, Safeguards and Gender Unit (PSG), CWRD.	Ninette R. Pajarillaga npajarillaga@adb.org		
	ADB National Environmental Safeguards Consultant	Name: Giorgi Kobaladze Cell: +995599689834 e-mail: gkobaladze.consultant@adb.org	Georgian	

	Associate Safeguards Officer Georgia Resident Mission Asian Development Bank	Nino Nadashvili Cell: +995 595 070442 nnadashvili@adb.org	Georgian	
Roads Department PIU	Environmental Safeguard Consultant under ADB financed Projects	Luiza Bubashvili Cell:+995595219141 Web: www.georoad.ge likabubashvili@yahoo.com	Georgian	

24. Summary of civil works up to Dec 2021 for both contracts and works' progress is summarized in **Table 5**.
25. No progress has been made during the reporting period (Jan-Jun 2022).

Table 5: Summary of Civil Works Contracts and Work's Progress for Rehabilitation of Dzirula-Kharaqauli-Moliti-Pona-Chumateleti Secondary Road Section (50km)

Scope	Contractor	Signed	Approval Date		Environmental Personnel		Civil Works		Progress as of	
			SSEMP	COVID-19 HSMP	Environmental Officer	Health and Safety Officer	Start	End	30Jun 2020	31Dec 2021
Dzilula-Moliti road section from km 0+000 to km24+620	Company Black Sea Group LLC	04 Dec. 2017	08 Feb. 2019, Submitted to RD for approval Approved 12.02.2019	Prepared by SC Approved 25.11.2020	Beka Pangani	Beka Pangani	18 Sep. 2018	22 May 2021	(66.16 %) 62.71%	(100%) 81.39%
Moliti-Chumateleti road section from km 24+620 to km 50+244	Akkord Industry Construction Investment Corporation OJSC	04 Dec. 2018	11 June 2020, Submitted to RD for approval (Rev.05) Approved 18.06.2020	Prepared by SC Approved 25.11.2020	Oleg Tabatadze	Oleg Tabatadze	31 May 2019	16 Nov. 2021	(51.53 %) 10.68%	(71.52 %) 11.92%

Note: The Month/Years in brackets are planned schedule.

COVID-19 HSMP = COVID-19 Health and Safety Management Plan, ERP = Emergency Response Plan, SSEMP = site-specific environmental management plan

2.3 Project Activities during the Current Reporting Period

26. Contract for the consultant's services signed on 01.08.2018, construction activities have been commenced on 18.09.2018 for Lot 1.

27. Construction activities are not ongoing for LOT1 (BSG) up to now. BSG stopped activity in December 2021.

28. For the second lot (LOT 2) no construction activities were carried, Contractor abandoned the Site completely.

29. Site HSE inspections for construction works have been carried out since very beginning of the project. Site HSE Inspection Dates given in **Table 6**.

Table 6. Site HSE Inspection Dates

SAEMRNo.	Coveringperiod	SiteHSEInspectionDates
1	Jul-Dec 2018	24.10;24.12;
2	Jan-Jun 2019	02.02;15.03; 23.05
3	Jul-Dec 2019	15.09; 20.10; 24.11
4	Jan-Jun 2020	22.01; 12.02; 09.03; 12.05
5	Jul-Dec 2020	25.07; 12.08; 23.09; 15.11
6	Jan-Jun 2021	07.02; 22.03; 14.04; 25.05
7	Jul-Dec 2022	09.08; 11.09; 24.10; 23.11
8	Jan-Jun 2022	05.04; 22.05

Progress of Work LOT1 (BSG)

30. No progress in implementing of construction activities during January-June 2022 reporting period

Progress of Work, LOT 2 (AkkordICIC)

31. No progress in implementing of construction activities during January-June 2022 reporting period.

2.4 Description of Any Changes to Project Design and Work Scope Variation Orders, LOT1/2

32. No variation orders issued for LOT1/2.

2.5 Description of Any Changes to Agreed Construction methods

33. During the reporting time period, the Contractors (LOT1/LOT2) did not make any

major changes in the construction method and design which may influence environmental effects to the project area.

3. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

34. The Supervision Consultant (SC) supervises and monitors the project construction process. The SC should have Environment Specialists (International & National.)

35. International consultant has not been mobilized during the reporting period. SC Environmental Specialist (National) prepares semi annual environmental monitoring reports required by ADB and monitors the Construction Contractors HSE performance.

3.2 Site Monitoring/Audits

36. Site HSE inspections have not been undertaken during reporting period (January-June) 2022, because of no activity on both lots.

37. Implementation Status of Corrective Actions proposed in the previous environmental monitoring report (July-December 2021) is provided in the **Table 7** below.

Table 7: Implementation Status of Corrective Actions proposed in the last environmental monitoring report (July-December 2021)

	Issue	Required Action	Responsibility	Timing (Target Dates)	Description of Resolution and Timing (Actual)	If not yet resolved, indicate the reason why and specify further required action and timeframe.
1	LOT 2 Construction materials (precast concrete, rebar, timber, sand and gravel) left uncontrolled on the ground surface alongside the road	Remove spoil and dispose	HSE field Officer	14.07.2021	Not corrected, CC Akkord abandoned the construction site.	CC Akkord completely abandoned site (CC's contract was terminated and new contractor was not selected yet).
2	LOT 2 Different waste is scattered alongside the road (spoil, timber, tree roots, domestic solid waste etc)	Remove spoil and dispose	HSE field Officer	14.07.2021	Not corrected, CC Akkord abandoned the construction site	CC Akkord completely abandoned site (CC's contract was terminated and new contractor was not selected yet).

Note: Existing non-compliances partially corrected by the local municipality. All non-compliances completely will be corrected by new CC, selected by the biding procedure. Please see below photos of the abandoned sites LOT2:



3.3 Issues Tracking (Based on Non-Conformance Notices)

38. No activity at both lots, thus no non-compliance notices issued during the reporting period.

39. 5 non-compliances have been identified at the abandoned Lot 2, during HSE inspection 01.07.2022 (Annex6 Non-compliance Notice). 4 issues closed with local municipality. 1 issue is not closed (open pits left without hard barrier and relevant warning signs)

Table 8. Summary of Issues Tracking Activity for Current Period

Summary Table	
Total Number of Issues for Project	71
Number of Open Issues	5
Number of Closed Issues	58
Percentage Closed	81
Issues Opened This Reporting Period	5
Issues Closed This Reporting Period	4

3.4 Trends

40. No activities on both lots. Grievance redress system is established, the grievance boxes are located at the entrance of the Company Office in Kharagauli and entrance of the Camps (Kharagauli and Sagandzile).

41. For LOT2 Engineer sent 3rd Notice to correct dated on 24th May 2021 regarding Contractor's failure such as stoppage of works and demobilization of all resources from the site, Contractor has continued the suspension of works and moreover, abandoned the site completely. LOT1 CC BSG stopped road maintenance in January 2022.

42. To identify trends in environmental issues, information from previous Bi-Annual EMR is used. The summary of the issues is provided in the **table 9** below.

Table 9: Summary of identified trends in environmental issues

Semi-Annual EMR No	Total No of Issues	New Issue/ Concern During Reporting Period	% issues Closed	% issues closed rate

Semi-Annual EMR No	Total No of Issues	New Issue/ Concern During Reporting Period	% issues Closed	% issues closed rate
1. July 2018 – December 2018	2		100%	0%
2. January – June 2019	12		75%	25%
3. July 2019 – December 2019	12		67%	33%
4. January - June 2020	4		0%	0%
5. July-December 2020	54		66.6%	0%
6. January - June 2021	62		87%	0%
7. June-December 2021	71		81%	0%
8. January-June 2022	71	5	80%	0%

Below see tables of baseline data for water quality also tables of dust/noise baseline and relevant Georgian Standards

Table 10 Surface water quality Baseline

N	River	Oxygen	SuspendedParticles	TPH	e-coly
1	Dzirula	8.3	128.3	0.02	5200
2	Jijaura	8.4	23.1	0.01	2600
3	Legvanura	8.0	28.4	0.01	1800
4	Chkhirimela (Middlepart)	7.8	56.9	0.03	4700
5	Chkirimela (upperpart)	8.1	30.6	0.01	1900

Table 11 Georgian Standards for Surface Water Quality

N	Parameter	Allowed concentrations	Unit
General Parameters			
1	ph	6.5-8.5	-
2	Turbidity	-	NTU
3	Total suspended solid	-	Mg/l
4	Total dissolved Solids	1000	Mg/l
5	Hardness	-	mgeqv./l
6	BODS	6 b	Mg/l
7	COD	30	Mg/l
8	Chloride	350	Mg/l
9	Alkalinity	-	Mg/l
Major ions			
10	Sodium	200	Mg/l
11	Calcium	180	Mg/l
12	Potassium	-	Mg/l
13	Sulphate	500	Mg/l
Microbiology			
14	Total coliforms	-	in 1 dm ³
15	E-coli	5000	in 1 dm ³
16	Fecal streptococci	-	in 1 dm ³
Metals (Total)			
17	Iron – Fe	0.3	Mg/l
18	Zinc - Zn	1	Mg/l
19	Cadmium - Cd	0.001	Mg/l
20	Copper - Cu	1	Mg/l
21	Nickel-Ni	0.1	Mg/l
22	Arsenic - As	0.05	Mg/l
23	Lead – Pb	0.05	Mg/l
24	Chrome - Cr	0.5	Mg/l
25	Manganese-Mn	0.1	Mg/l
26	Mercury	0.0005	Mg/l
27	Aluminum – Al	0.5	Mg/l
28	Antimony - Sb	0.05	Mg/l
29	Barium - Ba	0.1	Mg/l
30	Boron - B	0.5	Mg/l
31	Selenium - Se	0.01	Mg/l
Source: Maximum Admissible Concentrations of the harmful substances in surface water are provided in the Environmental Quality Norms approved by the Order #297N Ministry of Labour, Health and Social Protection, (16.08.2001) (as amended by the Order No 38/nof of the same Ministry of 24.02.2003)			

Table 12 Dust and Noise baseline

N	Measurement Points	Dust PM2.5	Dust PM10	Noise DB Amax
1	DzirulaSchool	33 67	39 98	48.9 53.2
2	SghandzileSchool	29 168	34 218	51.2 55.4

Table 13 Georgian Standards for Ambient Air Quality

Pollutants	Maximum permissible concentrations (mg/m3) average time	
	Maximal concentration for 30 minutes	Average daily concentration
Nitrogen Dioxide	0.085	0.04
Sulfur Dioxide (SO ₂)	0.5	0.05
Carbon Oxide	5.0	3.0
Inorganic Dust	0.3	

Source: Law of Georgia on Public Health, the environmental qualitative norms are approved by Decrees of the Minister of Labor, Health and Social Affairs of Georgia (Decrees Nos. 297/N of 16.08.2001, including the changes made to it by further decrees of the Ministry Nos. 38/N of 02.24.2003, 251/N of 09.15.2006, 351/N of 12.17.2007). and rule for calculation of index of pollution of atmospheric air with hazardous pollution (#89, 23 October 2001) Minister of Environment Protection and Natural Resources

Note: see baseline monitoring points in the Annex 3

43. Construction works are stopped for LOT 1/2, CC AKKORD has abandoned construction site's have not recommenced work up to now.

3.5 Unanticipated Environmental Impacts or Risks

44. So far unanticipated environmental impacts/risks are not identified. New COVID cases have not been identified during the reporting period.

4. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

45. Environmental monitoring started immediately after the commencement of civil works in September 2018. (Please see annex 4 EMP per IEE and Annex 5 CC BSG Lot1 EMP per SEMP). Similar data is not given for LOT2, because contract with CC Akkord has been eliminated.

46. According to the project IEE, periodic parametric measurements of air, noise and water quality for both lots should be carried out by the construction contractor according appropriate schedule. Locations of measurements are defined by the method statement for particular area.

Surface Water Quality

Frequency per SEMP	Technique	Oxygen	Suspended Particles	TPH	e-coly	Turbidity
Weekly	Visual					
Monthly	Sampling					

Dust and Noise/Vibration

Frequency per SEMP	Technique	Vibration DBV	Dust PM2.5	Dust PM10	Noise DB Amax
Monthly	Instrumental Measurement				
According Complain	Instrumental Measurement				

47. Parametric measurements have not been carried out because of no activities on the construction sites. Therefore, no measurement results available to compare with baseline data and applicable standards.

48. During the reporting period the construction contractors (Lot 1 and Lot 2) did not conduct monitoring. BSG LOT 1 suspended activity during the reporting period also Environmental Manager left company and not replaced with new person. LOT2Akkord completely abandoned site.

49. No instrumental monitoring was conducted during the reporting period because there were no on-going works.

4.2 Summary of Monitoring Outcomes

50. Last parametric measurements have been carried out on 04.07.2020. During the

reporting period the construction contractors (Lot 1 and Lot 2) have not conducted instrumental monitoring measurements because there are no activities at both lots.

[Lot1]

51. Engineer sent two times its request to Contractor but still no submittal by Contractor.

Letter ref. no.PEC/RD/DCSRS/21-149 dated on 22nd June 2021

Letter ref. no.PEC/RD/DCSRS/21-177 dated on 9th July 2021

[Lot 2]

52. Engineer sent two times its request to Contractor but still no submittal by Contractor.

Letter ref. no .PEC/RD/DCSRS/Lot2/21-074 dated 22nd June 2021

Letter ref. no. PEC/RD/DCSRS/Lot2/21-078 dated 12th July 2021

53. Next parametric measurements will be performed according to CCs approved SEMP.

54. Generally Monthly HSE inspections have been carried out to monitor HSE culture and performance at the construction sites. Frequently identified issues in previous reporting period are: Unacceptable housekeeping, heavy equipment operation without banksman, outdoor power generators working without drip trays and sufficient fire extinguishers, huge spoil/waste stockpiles, HSE standards violation, trees damage.

55. SC and RD will monitor the improvements under the project and reflect findings in the next Semi- annual EMR as of June–December 2022 reporting period. Contract for Lot2has been terminated and CC Akkord left construction sites with existing non-compliances (**Table 7**). CS works with local municipalities to reinstate the road to its pre-existing condition.

4.3 Material Resources Utilization

56. BSG obtained licenses for gravel and sand extraction (N10000836;N1000948; N1000491. N10000686). The quarry processing projects within these licenses have been prepared and approved by the ministry of economic. CC for the Lot1 have not used any quarry during the reporting period. Contract with Lot 2 CC Akkordhas been terminated and CC completely abandoned construction site and have not used any quarry during the reporting period.

4.3.1 Current Period

57. For current reporting time period water, gas and electricity consumption is given below:

LOT1

No activity

LOT 2
No activity

4.4 Waste Management

58. For Lot 1 CC the waste segregation and disposal procedure established. Appropriate waste containers for hazardous and domestic waste are installed and labeled. The warehouse for hazardous waste is arranged at the Kharagauli camp site (Lot 1). The agreement was signed with local cleaning service and domestic waste is removed twice a week, also for hazardous waste disposal agreement has been concluded with relevant licensed company "Ecomedi". For LOT2 waste have not been generated during the reporting period, because contract with CC akkord has been eliminated and CC Akkord abandoned site.

4.4.1 Current Period

59. Insignificant amount of hazardous waste (~50kg) kept in warehouse at Kharagauli camp **(special room with concrete floor and locked metal gate with warning)** So there is no possibility of soil or ground water contamination. "Ecomedy" (licensed company) will remove and dispose hazardous waste from the construction sites. Domestic waste from the sites removed and disposed by the licensed contractor (Kharagauli Cleaning Service). During the reporting period spoil removal/disposal works were not carried out (LOT1).

60. **Please see below photos of the Hazardous Waste Storage and domestic waste containers.**



61. Spoil dumping areas agreed with local landowners and formal agreements concluded. Small volume of the hazardous waste is kept under the shelter at the containers camp and finally will be deposited by the licensed contractor "Ecomedi" LOT1. Non-hazardous waste disposed by the Kharagauli Municipal cleaning service.

62. 10 MT domestic waste disposed by the Kharagauli Municipal Cleaning service and 50k hazardous waste (kept in hazardous waste warehouse). CC LOT 2 has not provided any information regarding waste disposal, CC Akkord completely abandoned the site.

4.5 Health and Safety

63. No accidents/nearmisses have been reported during the reporting period, because of no activity on the construction sites.

4.5.1 Community Health and Safety

64. BSG assigned H&S officer (Nick Jashiashvili) to oversee H&S performance at the construction sites and camps. During this reporting period no accidents have been identified and recorded in the H&S log book. Because no activities were carried out.

4.5.2 Worker Safety and Health

65. During this reporting period no accidents have been recorded. Log books for HSE accidents prepared and kept at the camp site. CS carried out monitoring of the construction sites (despite of no work) and collaborated with the local municipality to maintain road.

66. Oleg Tabatadze was assigned as H&S officer for LOT 2 to oversee H&S performance at the construction sites and camp. During this reporting period no accidents/near misses have been identified and recorded in the H&S log book. (Because of no activity)

67. All H&S procedures associated with COVID-19 pandemic and recommended by WHO and Georgian government are addressed and followed .H&S plan has been updated according to ADB request. Special COVID 19 Emergency Response plan has been elaborated by CCs on 26.11.2020.

4.6 Training

68. HSE induction training was provided to the contractor's relevant staff during the previous reporting period. Relevant training given to the personnel involved in the hazardous waste handling. Specific training regarding flora and fauna protection have been provided to the site staff. During the Jan-Jun 2022 reporting periods no training was carried out.

4.7 Grievance Redress Mechanism

69. 2 complaints received during the reporting period by SC. Both of them are still under review. For the details, please see ANNEX 2.

5. FUNCTIONING OF THE SEMP

5.1 SEMP Review

70. SEMP for LOT 1 was approved on 12.02.2019. SEMP for LOT 2 was approved on 18.06.2020. During preparation of SEMP existing EMP was used as a baseline document by CCs.

71. Based on previous SAEMRs used mitigation measures are effective and there is no need for corrections or alternatives. So, no changes needed in the mitigation measures of the Environmental Management Plan at the moment. SEMP for both Lots have been updated according to ADB's requirements and include anti-COVID – 19 Measures.

6. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

72. During the reporting Jan-Jun 2022 period, the Contractors BSG (LOT1) and CC Akkord (LOT2) suspended their activities on the construction sites. Contract with CC Akkord was terminated and CC completely abandoned the site

6.2 Opportunities for Improvement

73. Provide relevant site staff with housekeeping and pollution prevention trainings, also provide field staff with H&S trainings, namely: i) Heavy Equipment Operation, ii) PPE, iii) Tripping & Slipping Hazards, iv) Deep Excavation Safety, v) Fire Safety etc.

74. Relevant corrective actions will be elaborated with new CC Lot2 and open issues will be closed as soon as new CC will start construction activities.

75. Received 2 complains will be resolved during next reporting period.

7. SUMMARY AND RECOMMENDATIONS

7.1 Summary

76. It should be highlighted that during the reporting time period the HSE performance of the Contractor was not satisfactory. The actions of the Contractor didn't have any negative effect on biodiversity and no poaching actions were evident. No safety accident or near misses were identified. 2 grievances received from the local habitants and recorded in relevant logbook.

77. During the January-June 2022 reporting period no construction activities were implemented on Lot 1 and Lot2.

78. Generally Environmental Monitoring Specialist of Pyunghwa Engineering Consultants Ltd, Yooshin Engineering Corporation and Roads Rehabilitation and Modernization Supervision Direction Ltd, Mr. Shalv aBosikashvili conducted monthly

monitoring of project sites. He also developed Semi-Annual environmental monitoring reports based on the monthly reports and submitted to RD.

79. Generally monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements for Rehabilitation of Dzirula – Kharagauli –Moliti – Pona – Chumateleti Secondary Road project.

80. Environmental Specialist of RD, Ms. Luiza Bubashvili performed monitoring of CS and contractor’s performance in accordance with the requirements of approved IEE/EMPs, SEMP.

81. In accordance with the IEE, and the accompanying Environmental Monitoring Plan (EMP), the Contractor is required to undertake parametric measurements and observations on air quality, surface water quality, noise and socio-cultural resources.

82. The issues identified during this monitoring period are summarized in **Table 14**.

**Table 14. Issues Identified During the Monitoring Period (January-June 2022)
(including the pending issues from the previous report(s))**

	Issue	RequiredAction	Responsibility	Timing (TargetDates)
	LOT 1:			
1.	No Activity during the reporting time period			
	LOT 2			
1.	Construction materials (precast concrete, rebar, timber, sand and gravel) left uncontrolled on the ground surface alongside the road.	Construction materials should be placed at the dedicated area and covered with tarpaulins.	Contractor	Resolved with local Municipality
2.	Different waste is scattered alongside the road (spoil, timber, tree roots, domestic solid waste etc.).	Contractor should improve waste management alongside the road.	Contractor	Resolved with local Municipality
3.	Deep cuts, trenches and pits, are without relevant barriers and warning signs	Contractor should install hard barriers and warning signs around deep	Contractor	Not resolved. CC Akkord abandoned site (The contract was terminated and new contractor was not

		holes.		selected yet).
4.	Oil drums outdoor, leaking backhoe and scattered waste at the construction base	Hazardous liquid should be placed at special dedicated area for hazardous materials.	Contractor	Resolved with local Municipality
5.	Cracks on the ground surface at the spoil disposal area (landslide hazard).	Conduct survey of ground and in case of landslide hazard elaborate relevant mitigation measures.	Contractor	Resolved with local Municipality

7.2 Recommendations

83. The following activities are planned for the next July-December 2022 reporting period:

LOT1

- According ADB requirement quarterly parametric measurements of the air/water quality and noise/vibration should be scheduled and performed in time;
- Undertake trainings for housekeeping improvement and pollution prevention;
- Undertake H&S Trainings: Heavy equipment working procedure, PPE issues, rebar capping, deep excavations and cuts hazard prevention, nighttime warning signs.
- Undertake monthly HSE Inspections
- With local municipality and new CC Lot2 correct all non-compliances for Lot2.
- Resolve 2 complains received during the reporting period

LOT2

- **After the Bidding procedure new contractor company** should be provided with induction training and informed about their responsibilities in HSE sphere.

ANNEXES:

Annex 1 - Site Photos

Slight landslides alongside the road Lot1



Annex 2 – Complaints

#	Project	Form (verbal/written)	Recipient	Date Received	Location (section / KP)	Community (City / Village)	Soc/E nv&H SE	Name & contact of Complainant	Complaint Category	Complaint Description	Resolution Description	Resolution	Resolution Date	Substantiated	Status	Days open	Comments
102	KCMP (Secondary RP)	Written	RD	18.01.22	km 18+710	Khara gauli R. Tabu kashv ilistr. N4	Social	Latsa bidze Giorgi ID 5600 1000 056 Tel.: 5954 5195 2	Restriction or loss of accesses	In the process of road rehabilitation works, the Contractor has dumped construction waste on the road in the village Didvake without permission. The applicant requests to	On 25.01.2022 the mentioned issue was studied in place and corresponding Minutes was prepared. The Employer was also informed about this issue in writing on 02.02	Under review		Pending	Open	43	

										remove construction waste from the road.	.2022						
103	KCMP (Secondary RP)	Written	RD	08.02.22	km 37+735 - km 37+810	Khara gaulivillage Golatubani	Social	Japari dze Davit ID 5000 1002 523 Tel.: 5112 1192 9	InclusioninL ARP	Mr. Japari dze Davit states, that in the process of road construction, Contractor organization has cut the part of his land plot and plants	On 14.02.2022 the mentioned issue was studied in place together with the author of the letter and the representative of Khara gauli Municipality City hall, corresponding minutes was prepared	Under review		Pending	Open	22	

Annex 3 - Surface water and dust baseline sampling points

წყლის სინჯვის ადგილის ადგილები
Water sampling places



პირველი ადგილები
LEGEND



საპროექტო გზა
Desing Road

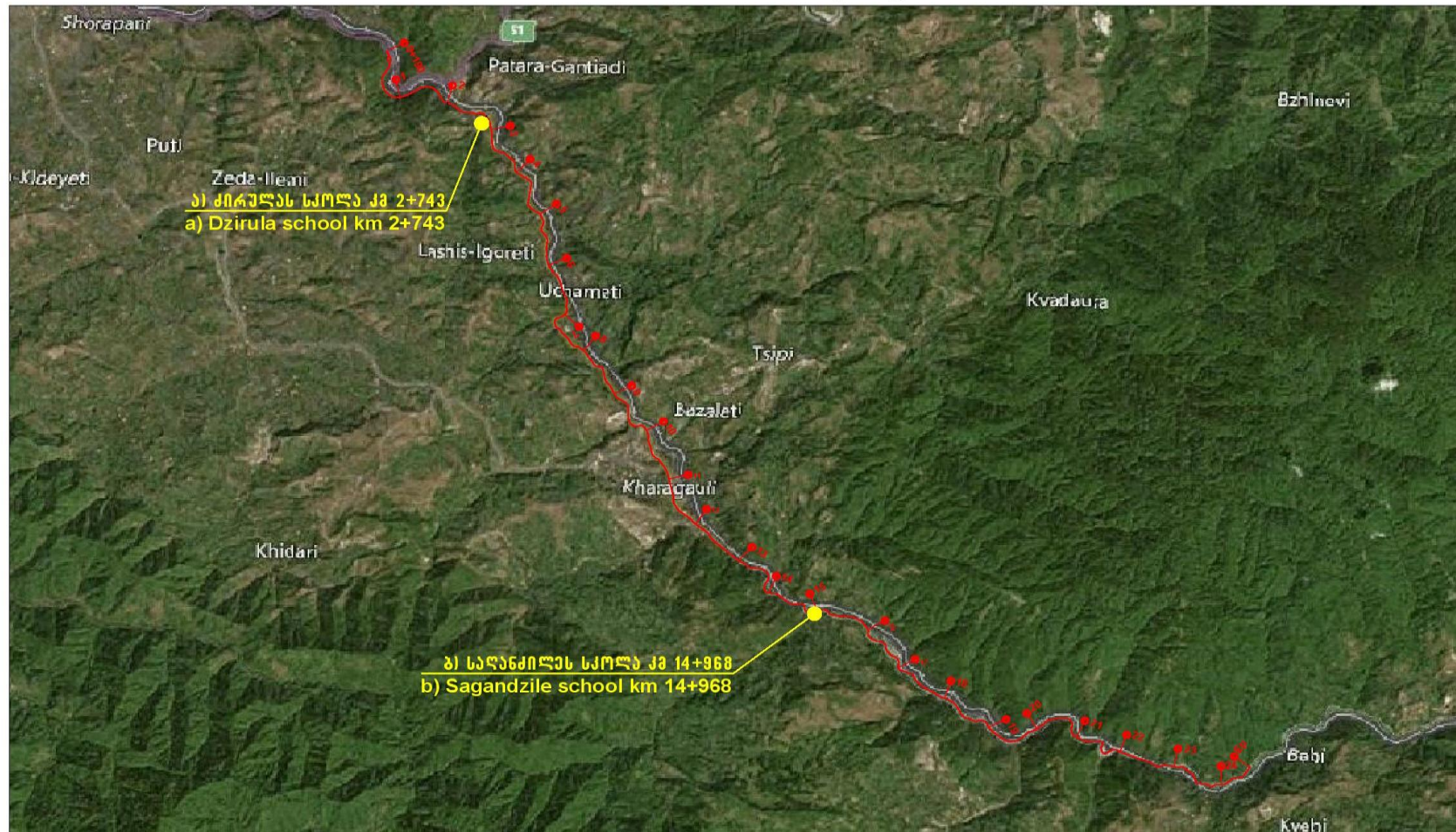


წყლის სინჯვის ადგილის ადგილები
Water sampling places



17 კილომეტრი
kilometres

მტვრის სინჯების აღების ადგილები
Place of dust sampling



პირობითი აღნიშვნები
LEGEND

- საპროექტო გზა
Desing Road
- მტვრის სინჯის აღების ადგილი
Place of dust sampling
- 17 კილომეტრი
kilometres

**Annex 4 – EMP per IEE/ Environmental Management Plan
EMP–Construction Phase Mitigation**

EMP: Construction Phase Mitigation			
Subject	Potential	Mitigation Measure	Responsibilities
Topography	Cut and Fill Requirements	<p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> • Deposition areas should be ascertained by the Contractor prior to cutting or excavations. Temporary and permanent storage of materials should be confined to government owned land and in no circumstances should be dumped on agricultural or productive lands (without owner's written permission) or to any water course including irrigation channels. • In the event of any spoil or debris from construction works being deposited in any of the aforementioned areas or any silt washed down to any area, then all such spoil, debris or material and silt shall be immediately removed and the affected land and areas restored to their natural state by the Contractor to the satisfaction of the Engineer. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors deposition/ dumping activities. • Approvals for waste disposal sites to be sought from the Concerned Agencies by the Contractor.
	Quarries	<p>Suitable Borrow areas have been identified in the Feasibility Study and are described in this IEE. These borrow areas are already in operation. Therefore environmental impacts concerning potential disfigurement of landscape, vegetation losses and damage to access roads are kept to a minimum. Prior to start material extraction the contractor submit his SSEMP through the Construction Supervisor(CS) to the Executing agency of the PIU indicating the location of the proposed extraction site as well as rehabilitation measures and implementation schedule for the borrow are as and access roads. Rehabilitation measures may not be necessary for borrow areas still in operation after road works have finished. The SSEMP needs to address the sensitive issues of avoidance of transportation through residential areas as far as technically feasible and closure rehabilitation.</p> <ul style="list-style-type: none"> • For purpose of surface water protection material stockpiles shall be located at least 100 m away from surface waters. • For dust suppression unpaved access road shall be watered during critical dry periods with in vicinity of settlements. <p>Should the Contractor decide to establish his own quarry, he will be responsible for the entire facility with respect to all permitting and environmental requirements. Prior to opening of any quarry or rock crushing facility, the Contractor will require approval from the relevant Concerned Agencies and the Engineer to ensure that land owners are adequately compensated for land use and that the sites are not located in an area likely to cause significant detriment to the local environment. To ensure that this is the case Contractors should ensure that quarries and crusher plants are:</p> <ul style="list-style-type: none"> • Located at least 300 meters from urban areas to prevent noise and dust impacts. 	<ul style="list-style-type: none"> • Concerned Agencies to approve locations. • Contractor to obtain necessary permits. • Engineer to review permits and approvals prior to the opening of the site. • Contractor to submit Quarry Reinstatement Plan to the Contractor; Engineer to review and approve. • Engineer to inspect the reinstatement work on the quarry area by the Contractor

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		<ul style="list-style-type: none"> • Located outside of agricultural land; and • Where possible located on government owned lands. • Quarry area should be reinstated prior to the completion of the project. • Silt-laden water should be retained in sedimentation ponds to allow silt materials to settle; water-recycling should be considered to minimize turbidity in receiving waters. • A Quarry Site Reinstatement plan should be presented by the Contractor to the Engineer. The Quarry Site Reinstatement Plan must be approved by the Engineer with the concurrence of the RD prior to operating quarry sites by the Contractor. 	
	Borrow Pits.	<p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> • Borrow Pit restoration according to the SSEM will follow the completion of works 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities. • Contractor to submit Quarry Reinstatement Plan to the Contractor; Engineer to review and approve. • Engineer to inspect the reinstatement work on the borrow pit by the Contractor
	Use of other materials	All material which will be excavated up stream from blocked culvert areas may be used as base material. This material shall be tested by the Contractor and Engineer for its suitability as base material before it may be used. The Contractor must use such material first before using any other quarry or borrow pit within 3km from any such alluvial deposit.	<ul style="list-style-type: none"> • Engineer to test material before use as base material.
Soil and Ground water Quality	Contamination due to Spills or Hazardous Materials	<p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> • All fuel and chemical storage (if any) shall be sited on an impervious base within bund and secured by fencing. The storage area shall be located away from any watercourse or wetlands. The base and bund walls shall be impermeable and of sufficient capacity to contain 110 percent of the volume of tanks. • The construction camp maintenance yard shall be constructed on impervious Layer with adequate drainage to collect spills; there shall be no vehicle maintenance activities on open ground. • Filling and refueling shall be strictly controlled and subject to formal procedures. Drip pans shall be placed under all filling and fueling areas. Waste oils shall be stored and disposed of by a licensed contractor. • All valves and trigger guns shall be resistant to unauthorized interference and vandalism and be turned off and securely locked when not in use. • The contents of any tank or drum shall be clearly marked. Measures shall be taken to ensure that no contaminated discharges enter any soils. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		<ul style="list-style-type: none"> • Areas using bitumen shall be constructed on impervious Layer to prevent seepage of oils into the soils. 	
Surface Water And Hydrology	Drainage and Flooding	During the construction phase the Contractor is required to construct, maintain, remove an drain state as necessary temporary drainage works and Take all other precautions necessary for the avoidance of damage by flooding and silt washed down from the Works.	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.
	Construction Camp sand Storage Areas	<p>The Contractor shall ensure the following conditions are met:</p> <ul style="list-style-type: none"> • Wastewater arising on the site shall be collected and safely disposed • There shall be no direct discharge of sanitary or wash water to surface water. Disposal of materials such as, but not limited to, lubricating oil and onto the ground or water bodies shall be prohibited. • Liquid material storage containment areas shall not drain directly to surface water. • Lubricating and fuel oil spills shall be cleaned up immediately and spill clean-up shall be materials be maintained at the storage area. • Construction and work sites will be equipped with sanitary latrines that do not pollute surface waters. • Discharge of sediment-laden construction water directly into surface watercourses will be forbidden. Sediment laden construction water will be discharged into settling lagoons or tanks prior to final discharge. • Spill clean-up equipment will be maintained on site. The following conditions to avoid adverse impacts due to improper fuel and chemical storage: <ul style="list-style-type: none"> - Fueling operations shall occur only within containment areas. - All fuel and chemical storage (if any) shall be sited on an impervious Base with in bund and secured by fencing. The storage area shall be Located away from any watercourse or wetlands. The base and bund walls shall be impermeable and of sufficient capacity to contain 110 percent of the volume of tanks. - Filling and refueling shall be strictly controlled and subject to formal procedures and will take place with in areas surrounded by bunds to contain spills/leaks of potentially contaminating liquids. - The contents of any tank or drum shall be clearly marked. Measures shall be taken to ensure that no contaminated discharge enter any drain or watercourses. - Disposal of lubricating oil and other potentially hazardous liquids onto the ground or water bodies will be prohibited. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		<ul style="list-style-type: none"> - Should any accidental spills occur immediate clean-up will be undertaken and all cleanup materials stored in a secure area for disposal to as it authorized for hazardous waste. • If determined warranted by the Engineer, the Contractor shall provide a wash pit or a wheel washing and/or vehicle cleaning facility at the exits from the sites. If so requested, the Contractor shall ensure that all vehicle are properly cleaned (bodies and tires are free of sand and mud) prior to leaving the site areas. The Contractor shall provide necessary cleaning facilities on site and ensure that no water or debris from such cleaning operations is deposited off-site. 	
	Bridge Construction	<p>The Contractor shall ensure provision/or performance of the following:</p> <ul style="list-style-type: none"> • Contractor should provide additional measures to catch debris from falling into the river; • Structural elements should be casted far from the river to prevent concrete mix from getting into the water. 	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Engineer to routinely monitor Contractors activities.
Air Quality	Open burning of waste materials	The Contractor shall ensure no burning the materials will occur on the Site with out permission no the Engineer.	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Engineer to routinely monitor Contractors activities.
	Fuel Emissions	Contractor shall ensure that no furnaces, boilers or other similar plant or equipment using any fuel that may produce air pollutants will be installed without prior written consent of the Engineer.	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Engineer to routinely monitor Contractors activities.
	Exhaust emissions from the operation of construction machinery	<p>The Contractor shall ensure construction equipment shall be maintained to a good standard and fitted with pollution control devices. The equipment (including the pollution control devices) will be checked at regular intervals by the Engineer to ensure they are maintained in working order and the inspection result will be recorded by the Contractor Engineer as part of environmental monitoring. In addition, the Contractor shall:</p> <ul style="list-style-type: none"> • Discourage of the idling of engines; • Prohibit the use of equipment and machinery that causes excessive pollution (i.e. visible smoke) at project work sites; • Ensure material stockpiles being located in sheltered areas and be covered with tarpaulins or other such suitable covering to prevent material becoming airborne. 	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Engineer to routinely monitor Contractors activities.
	Fugitive	Quarries and asphalt plant will be located at sufficient distance to any	<ul style="list-style-type: none"> • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
	emissions from quarries and asphalt plants.	Settlements Therefore no impacts due to fugitive emissions are expected.	
	Dust generated from haul roads, Unpaved roads, exposed soils And material stockpiles.	<p>The Contractor shall ensure that the following dust suppression measures shall be instituted:</p> <ul style="list-style-type: none"> • Areas of reclamation shall be completed, including final compaction, as quickly as possible consistent with good practice to limit the creation of wind-blown dust. • Hard surfaces will be required in areas with regular movements of vehicles; and • Effective use of water sprays will be implemented (e.g., all unpaved roads within the construction areas of the Site shall be sprayed during critical dry periods at least twice each day, and more if necessary to control dust to the satisfaction of the Engineer). 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.
Noise Generation	Construction Noise and Vibration	<p>The Contractor shall ensure provision of the following:</p> <ul style="list-style-type: none"> • Source Controls, i.e., requirements that all exhaust systems will be maintained in good working order; properly designed engine enclosures and intake silencers will be employed; and regular equipment maintenance will be undertaken; • Site Controls, i.e. Requirements that stationary equipment will be placed as far from sensitive land uses as practical; selected to minimize objectionable noise impacts; and provided with shielding mechanisms where possible; • Work near Sensitive Receptors shall be limited to short term activities as far as technically feasible; • Community Awareness, i.e., public notification of construction operations will incorporate noise considerations; methods to handle complaints will be specified. Disposal sites and haul routes will be coordinated with local officials; • Use of low volume charges will reduce the potential for vibration induced damage to structures; and in the event of damage proven to be due to the contractor's activities, owners of structures will be fully compensated. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.
Introduced Geo-Hazards	Slope Stabilization	<p>The Contractor shall be responsible for the following:</p> <ul style="list-style-type: none"> • Final forming Andre-vegetation will be completed by the Contractor as soon as possible following fill placement to facilitate regeneration of a stabilizing ground cover. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		<ul style="list-style-type: none"> Trenching will be used where necessary to ensure successful establishment of vegetation. Seeding with a fast growing crop and native seed mix will occur immediately after fill placement to prevent scour and to encourage stabilization; 	
	Erosion	<p>The Contractor will be responsible for ensuring:</p> <ul style="list-style-type: none"> Material that is less susceptible to erosion will be selected for placement around bridges and culverts. Re-vegetation of exposed areas including; (i) selection of fast growing and grazing resistant species of local flora;(ii) immediate-vegetation of all slopes and embankments if not covered with gabion baskets;(iii) placement of fiber mats to encourage vegetation growth, although due to the arid conditions in most of the road, this may only be feasible where there is regular rainfall or other natural water supply. 	<ul style="list-style-type: none"> Contractor to implement mitigation Engineer to routinely monitor Contractors activities.
Bridges and Waterways	Demolition of existing structural components	<ul style="list-style-type: none"> Contractor should provide additional measures to catch debris from falling into the river 	<ul style="list-style-type: none"> Contractor to implement mitigation measures; Engineer to check and ascertain correct results
	Construction of superstructure	<p>The Contractor shall ensure provision/or performance of the following:</p> <ul style="list-style-type: none"> Excavation methodologies should be done to minimize stockpiling near flowing water; Temporary rock protection should be provided to prevent soil materials to be washed away. When casting structural elements on site, spillage into the water should be prevented by installing proper measures to catch any spill; Structural elements should be casted far from the river to prevent concrete mix from getting into the water. 	<ul style="list-style-type: none"> Contractor to implement mitigation measures; Engineer to check and ascertain appropriate results are attained
Processing Plants and Camp sites	Water contamination	<p>Prior to construction start the SEMP shall be submitted which ensures the following:</p> <ul style="list-style-type: none"> Reinstatement of site after completion of works; Minimization of impacts regarding air quality and noise is prevented because the construction facilities are located at sufficient distance to any sensitive receptors; 	<ul style="list-style-type: none"> Contractor to implement mitigation measures; Engineer to check and ascertain appropriate results are attained
	Air Quality and noise issues		
	Contaminated effluents		

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
	Defacement of the topography Resource Competition with village residents	<ul style="list-style-type: none"> Waste water will be collected and safely disposed, therefore ground and surface water pollution from contractor facilities is avoided. Complaints from communities should be properly and promptly responded to; 	
Transportation Of Construction Materials and Wastes	Droppings of materials wastes Spills from haul trucks Dust from uncovered trucks	<p>The Contractor shall ensure provision/performance of the following:</p> <ul style="list-style-type: none"> Liquids transported to or from the sites should be placed in sealed containment; Soil, gravel and stone should be covered with tarp or any material that can effectively prevent the dropping; Drivers should abide by safe driving practices, especially through communities; Driver and Contractor's personnel should ensure that materials are being safely loaded, hauled and unloaded. Emergency spillage and clean-up procedure should be drafted by the Contractor and approved by the Engineer 	<ul style="list-style-type: none"> Contractor to implement mitigation measures; Engineer to check and ascertain appropriate results are attained
Biological	Loss of flora	<p>The Contractor shall ensure the following conditions are met:</p> <ul style="list-style-type: none"> Each tree removed by the Contractor should be replaced by at least two new saplings of the same species or other at suitable locations, all as designated by the tree owner. Tree translocation should be explored and done when. Dead saplings should be replaced as soon as possible. Not Rees should be cut in the area without written permission from the Engineer. Supplying appropriate and adequate fuel in workers' camps to prevent fuel-wood collection from unauthorized sources. 	<ul style="list-style-type: none"> Contractor to implement mitigation Engineer to routinely monitor Contractors activities.
	Impacts to Fauna	Work crew should be alerted that faunal species should not be killed and be allowed to escape during work execution.	<ul style="list-style-type: none"> Contractor to instruct his personnel not to harm wildlife Engineer to routinely monitor Contractors activities.
Sensitive Areas	Protecting BKNP	The Engineer to ensure here arena detrimental impacts to protected areas, particularly the BKNP, should the Contractor opt to open new borrow pits. The Contractor shall be required to obtain approval from the MoENRP and local concerned agencies.	<ul style="list-style-type: none"> Contractor to obtain necessary permits Engineer to routinely monitor Contractors activities.
Construct ion and Domestic Waste	Waste in Construction Camps and other ancillary facilities	The Contractor shall also be responsible to maintain and clean-up campsites and respect the right so floc all and owners. If Located outside the RoW, written agreements with local and owners for temporary use of the property will be required and sites must be restored to a	<ul style="list-style-type: none"> Contractor to implement mitigation. Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		Level acceptable to the owner within predetermined time period.	
	Spoil	Under no circumstances shall the Contractor dump excess materials on private lands with out permission on of the owner and approval from the Engineer.	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Concerned Agencies to approve any waste disposal to the River. • Engineer to routinely monitor Contractors activities.
	Inert Solid & Liquid waste	<p>The contractor shall be responsible forth following:</p> <ul style="list-style-type: none"> • Provide refuse containers at each worksite; • Maintain all construction sites in cleaner, tidy and safe condition and provide and maintain appropriate facilities as temporary storage of all wastes before transportation and final disposal; • Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process, and • Collect and transport non-hazardous wastes to all approved disposal sites. The sites for waste disposal shall be agreed with the local municipal authorities and Concerned Agencies. A specialized company may be contracted, if available to ensure collection of domestic and general waste from camps and temporary storage areas and transportation to landfills approved and licensed by the Concerned Agencies. 	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Concerned Agencies to approve any waste disposal site. • Engineer to routinely monitor Contractors activities.
	Asphalt	<p>Waste from the operation of asphalt should be managed properly.</p> <p>Reinstatement of the site will bed one after the project completion according to this stipulations in the SSEMP.</p>	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Engineer to routinely monitor Contractors activities.
	Hazardous Waste	Any hazardous waste will be collected and safely disposed according to the stipulations in the SSEMP. Disposal locations of hazardous wastes should be agreed with the Concerned Agencies.	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Concerned Agencies to approve any waste disposal site. • Engineer to routinely monitor Contractors activities.
Worker's Safety	Worker Health & Safety	<p>The Contractor shall be responsible for provision of:</p> <ul style="list-style-type: none"> • Safety Training Program. A Safety Training Program is required and shall consist of an Initial Safety Instruction Course. All workmen shall be required to attend safety instruction course within their first week onsite and Periodic Safety Training Courses. • Safety Meetings. Regular safety meetings will be conducted on a monthly basis and shall require attendance by the safety representatives of Subcontractors unless otherwise agreed by the Engineer. • Safety Inspections. The Contractor shall regularly inspect, test and maintain all safety equipment, scaffolds, guardrails, working platforms, hoists, ladders and other means of access. 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		<ul style="list-style-type: none"> • Safety Equipment and Clothing. Safety equipment and protective clothing are required to be available on the Site at all material times and measures for effective enforcement of proper utilization and necessary replacement of such equipment and clothing, and all construction plant and equipment used on or around the Site shall be fitted with appropriate safety devices. • First Aid facilities. A fully equipped first aid base shall be climatically controlled to maintain the temperature of the inside of the building at 20 degrees. Arrangements for emergency medical services shall be made to the satisfaction of the Engineer. <p>The Contractor shall coordinate with local public health officials and shall reach a documented understanding with regard to the use of hospitals and other community facilities.</p>	
	Sub-contractor's /Suppliers EMP Compliance	All sub-contractors/ suppliers will be supplied with copies of the SSEMP. Provisions will be incorporated into all sub-contracts to ensure the compliance with the SSEMP at all tiers of the sub-contracting. All sub-contractors will be required to appoint safety representative who shall be available on the Site throughout the operational period of the respective sub-contract unless the Engineer's approval to the contrary is given in writing. In the event of the Engineer's approval being given, the Engineer, with out prejudice to their other duties and responsibilities, shall ensure, as far as is practically possible, that employees of subcontractors of all tiers are conversant with appropriate parts of the SSEMP.	<ul style="list-style-type: none"> • Contractor to implement mitigation • Contractor to enforce compliance to his Subcontractors/Suppliers and shall be overall responsible • Engineer to routinely monitor Contractors and sub-contractors activities.
	HIV/AIDS Awareness	The Contractor shall subcontract with an Approved Service Provider to Provide an HIV/AIDS Awareness Program to the Contractor's Personnel and The Local Community as soon as practicable after the Contractor's Personnel arrive at the Site but in any case within two weeks after the Contractor's Personnel arrive at Site.	<ul style="list-style-type: none"> • Contractor to implement mitigation. • Service Provider to implement training. • Engineer to review program.
Community Safety	Traffic Safety	It is important that truck drivers and equipment operators understand the importance of maintaining road safety especially at road junction points.	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
		appropriate locations; and flagmen should be assigned at critical spots. Monitoring of this aspect can be conducted jointly by the Contractors' Management and the Construction Supervision personnel.	
	Road closures, existing bridge closure, diversions and blocking of access routes	<p>The Contractor shall ensure that:</p> <ul style="list-style-type: none"> • He shall be responsible for provision of all road diversion signs and ensure that diversion roads do not impact negatively upon private lands. • Any diversions shall be agreed upon by the Engineer. • Notices of delays, due to blasting(if any),shall be posted in villages within ten kilometers of the blasting area so villagers can plan their travel times accordingly. • The Contractor should make blasting at regular period in the day so that the population in the valley becomes aware of the most likely delay periods. • The Contractor shall be responsible for ensuring that all access routes are kept open during Project works for at least 50% of the day during construction works and 100% of the time after construction works are completed for the day. Any temporary existing bridge closure should be communicated to affected people ahead of time 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities. • Contractor to provide plan for any existing bridge closure
	Electrical Systems	During construction the Contractor shall ensure that all power lines be kept operational, this may include the provision of temporary transmission lines.	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.
Cultural, Historical Monuments and Archaeo-	Impacts to Historical and archaeological areas	<p>To avoid potential adverse impact to cultural, historic and archaeological resources, the Contractor shall:</p> <ul style="list-style-type: none"> • Instruct his personnel to work with care near cultural monuments, and 	<ul style="list-style-type: none"> • Contractor to implement mitigation • Engineer to routinely monitor Contractors activities.

EMP: Construction Phase Mitigation			
Subject	Potential Impact/Issue	Mitigation Measure	Responsibilities
logical Sites		<ul style="list-style-type: none"> In the event of unanticipated discoveries of cultural or historic artifacts (movable or immovable) in the course of the work, the Contractor shall take all necessary measures to protect the findings and shall notify the Engineer and the Concerned Agencies. If continuation of the work would endanger the finding, project work shall be suspended until a solution for preservation of the artifacts is agreed upon. 	
Impact to Households	Impairment of access Livelihood Impact Hampered Mobility	During construction, access should be maintained by providing temporary detour, by-pass or diversion paths for vehicles and people in the area. This should be with proper notification and consultation with the local population	<ul style="list-style-type: none"> Contractor to implement mitigation measures; Engineer to check and ascertain appropriate results are attained
	Health and Nuisance	<ul style="list-style-type: none"> Suppression of dust by regular spraying of soil at the site will be necessary. Noise should be minimized by equipping equipment with mufflers and proper maintenance. Usage of equipment should be scheduled in order to minimize noises. Blasting, if to be done, should be properly announced and safety measures to the people be implemented. 	
	Potential Employment difficulty	Contractor should be encouraged to hire local labor, including women in the 14 villages	

Annex 5 EMP per CC BSG SEMP

Environmental Monitoring Matrix: Construction Phase

Object of monitoring	Control/Sampling Point	Technique	Frequency/Time	Target	Entity responsible for Monitoring
Possession of official approval or valid operating license and permits	Supplier of materials (asphalt, cement and gravel)	Inspection	Before an agreement for the supply of materials is formalized	Existence of relevant documentations	Supervising Agency
Truck loads covered/ wetted Air pollution due to the dust and fumes related to the Material Transport	Construction site and access road	Supervision	Daily Unannounced inspections during work hours	Assure compliance with HSE requirements. Ensure safety, and minimize traffic disruption	Constructing Contractor, RD, Supervising Agency
Top-soil storage reinstatement, Erosion control Landscape destruction Visual impacts	Construction site	Supervision	Daily (Unannounced inspections during work hours); From top-soil stripping – to completion of the works	Assure compliance with construction standards, environmental norms and EMP provisions	Constructing Contractor, RD, Supervising Agency
Rivers Visual Inspection Turbidity	Within Rivers Upstream and downstream of worksite and at worksite	Observation Instrumental measurement of water turbidity, COD, BOD, TPH upstream and downstream	To be conducted prior to construction, periodically during construction (once per week for Turbidity) and following construction completion in the river.	Assure that turbidity is not excessively higher during construction than natural levels in the river. Confirm that other parameter levels have not been exceeded and to confirm that mitigation measures are working or need adapting	Constructing Contractor, RD, Supervising Agency, MEPA
Noise and vibration levels (refer to dedicated Noise and Vibration Monitoring Plans for further detail)	Construction Site Near the residential buildings	Inspection, compliance monitoring (equipment in use approved, engine maintenance, usage of mufflers, night time work	Periodic (as detailed in noise and vibration monitoring plan)	Assure compliance with HSE requirements, good condition of standard construction machinery and limiting the works near settlements	Constructing Contractor, RD, Supervising Agency, MEPA

		limitations and other provisions of EMP), monitoring of noise continuously at a representative residence near construction activities, noise and vibration measurement by special device		<p>Compliance with the noise and vibration standards</p> <p>Compliance with the recommendations adopted by the additional studies on assessment and prevention of vibration impacts on the structural integrity of buildings.</p> <p>Admissible thresholds: Noise – 55dBA(Daytime) – 45 dBA (Night time) Vibration 74 dBV (Daytime)</p>	
Vibration Admissible thresholds: Vibration 74 dBV (Daytime)	Construction site Near the residential buildings	Supervision (refer to dedicated Noise and Vibration Monitoring Plans for further detail)	Unannounced Inspections (as outlined in noise monitoring plan); following complaints	Assure compliance with HSE requirements.	Constructing Contractor, Supervising Agency,
Dust and Air pollution (solid particles, suspended solids, flying heavy metal particles) (dust, CO) Criteria: MAC for dust 0.15mg/m3 For cement dust – 0.5mg/m3	Near residential buildings Along the whole alignment of the road	Visually and instrumentally (dust, CO)	Daily During material delivery and periodically (weekly) in dry periods during construction	Assure compliance with HSE requirement, assure compliance with environmental norms and EMP provisions	Constructing Contractor, RD, Supervising Agency

And MAC for CO).5 mg/m3					
Traffic safety/ Vehicle/ pedestrian access Visibility/ appropriate signs	Construction site	Observation	Once per week in the evening	Assure compliance	Constructing Contractor, RD, Supervising Agency
Material and waste storage, handling, use Water and soil quality (suspended solids, oils, etc.)	Material and waste storage sites; Run off from site; material storage areas; wash down areas	Observation Instrumental measurement of water turbidity, COD, BOD, TPH upstream and downstream	During material delivery and periodically during construction (average 1/week), especially during precipitation (rain/ snow/ etc.). Quarterly during construction	Assure pollution abatement; Assure compliance with construction standards, environmental norms and EMP provisions	Constructing Contractor, RD, Supervising Agency – instrumental
Waste Management	All construction sites, Camps	Observation	Once per week	Assure pollution Abatement, Assure compliance with, construction standards, environmental norms and EMP provisions	Constructing Contractor, RD, Supervising Agency
Equipment maintenance and Fueling Water and soil quality (suspended solids, oils, fuel, etc)	Refueling and equipment maintenance Facilities, Run off from site, material storage areas	Observation	During material delivery and periodically during construction (average 1/week), especially during precipitation (rain/ snow/ etc).	Assure pollution abatement	Constructing Contractor, RD, Supervising Agency,
Impacts on archaeological sites and remnants	All earthwork sites	Observation	Permanent/daily	Assure cultural heritage protection	Archaeologist from MoCS Constructing Contractor, Supervising

					Agency,
biological recontamination during earthworks near pestholes of soil infections (e.g. anthrax);	All earthwork sites	Observation	Permanent/daily	Assure health protection	Constructing Contractor, RD, Supervising Agency, Veterinary Department of the MEPA
Protection of infrastructure elements	Crossings of power lines, pipelines;	Observation	During construction activities at the sites of concern	Assure infrastructure protection	Constructing Contractor, RD, Supervising Agency,
Offset tree planting Program	TBD	Observation	During Construction period	Assure offset of damage to flora and landscape	Constructing Contractor, RD, Supervising Agency, MEPA
Reinstatement of work sites	work sites, road alignment, used quarries, camp sites	Observation	During Construction period, after completion of works at concrete site	Reinstatement of work sites not taken by RoW	Constructing Contractor, RD, Supervising Agency,
Disposal of construction wastes	work sites, road alignment, used quarries, camp sites	Observation	During Construction period, after completion of works at concrete site	Ensure pollution prevention and landscape protection;	Constructing Contractor, RD, Supervising Agency,
Personal Protective equipment. HSE issues Organization of traffic by-pass	Construction site	Inspection	Unannounced (Daily) inspections during works	Assure compliance with HSE requirements	Constructing Contractor, RD, Supervising Agency,

Annex 6 Non-Compliance Notice

Non-Compliance Notice

Project: Construction Supervision of Rehabilitation of Dzirula – Kharagauli –Moliti – Pona – Chumateleti Secondary Road Section (50 Km) –Lot 2	<p style="text-align: center;">Non-compliance Notice</p> <p>Rehabilitation of Dzirula – Kharagauli –Moliti – Pona – Chumateleti Secondary Road Section (50 Km) –Lot 2 (Contractor-Akkord ICIC)</p>
Contract No: SRIP/CS/QCBS-01	
Contractor: Akkord ICIC	
Reference: LOT 2 construction sites	
<p>This notice is to advise the prime Contractor, on the referenced Contract, of the following notice on health, safety and environmental measures to be implemented urgently.</p>	
<p><u>GENERAL COMMENT FOR ALL SITES:</u> Site internally should be arranged properly and cleaned regularly. All construction materials and wastes should be properly segregated and stored adequately, Oil spills should be prevented, Oil spill response kits should be placed at the appropriate locations, Housekeeping must be improved, H&S culture should be established and maintained.</p> <p><u>NON-COMPLIANCE at the Lot 2 construction sites</u></p> <ul style="list-style-type: none"> - Construction materials (precast concrete, rebar, timber, sand and gravel) left uncontrolled on the ground surface alongside the road - Different waste is scattered alongside the road (spoil, timber, tree roots, domestic solid waste etc.) - Deep cuts, trenches and pits, are without relevant barriers and warning signs - Oil drums outdoor, leaking backhoe and scattered waste at the construction base - Cracks on the ground surface at the spoil disposal area (landslide hazard) <p><i>Construction materials (precast concrete, rebar, timber, sand and gravel) left uncontrolled on the ground surface alongside the road</i></p>	



Different waste is scattered alongside the road (spoil, timber, tree roots, domestic solid waste etc)



Deep cuts, trenches and pits, are without relevant barriers and warning signs



Oil drums outdoor, leaking backhoe and scattered waste at the construction base



Cracks on the ground surface at the spoil disposal area (landslide hazard)





All these conditions have to be remedied by the prime Contractor (Akkord ICIC).

Date of site visit:01.07.2022

Shalva Bosikashvili - Environmental specialist - Roads Rehabilitation and Modernization Supervision Direction Ltd,

Luiza Bubashvili - Environmental Safeguard Consultant under ADB financed Projects (RD)