Biannual Environmental Monitoring Report

Loan Number: 3273-GEO (SF)

Reporting period: February-June, 2017

GEORGIA: GEORGIAN SUSTAINABLE URBAN TRANSPORT INVESTMENT PROGRAM - Tranche 4

(Financed by the Asian Development Bank)

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ABBREVIATIONS

ADB	Asian Development Bank
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP	Environmental Management Plan
EPSM	Engineering Procurement and Construction Management
GoG	Government of Georgia
SUTIP	Georgian Sustainable Urban Transport Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund
MFF	Multi-tranche Financing Facility
MoENRP	Ministry of Environmental and Natural Resources Protection
MoRDI	Ministry of Regional Development & Infrastructure
SSEMP	Site-Specific Environmental Management Plan

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1. PART I. INTRODUCTION

1.1. Preliminary Information

Program Background

1. Upgrading and improvement of local transport and transport-related infrastructure plays a significant role in the development of Georgia infrastructure. To this effect a number of important activities have been implemented and financed from the budget of Georgia and from other sources. Recently several significant programs, financed through state budget, loans and grants, have been implemented with this regard.

2. The Sustainable Urban Transport Investment Program (SUTIP) is financed by ADB under a multitranche financing facility (MFF), and is aimed at promoting a sustainable, integrated, socially-affordable and cost-efficient urban transport system in cities of Georgia, to energize the economy and improve the quality of life of citizens. Projects involve rehabilitation and repair of existing infrastructure (mainly roads and the underground railway), provision of new facilities (roads, tunnels, junctions, bridges, a Metro extension and etc) and capacity building.

3. The program will provide efficient, reliable and affordable urban transport infrastructure and services, thereby increase economic growth potential and competitiveness of urban communities, and improve livelihoods of over 1.5 million people (approx. 35% of Georgian population). The program will also: (I) improve urban, environment and communities' access to economic opportunities and to public and social services; (II) promote efficient and sustainable urban transportation; and (III) generate income and employment opportunities.

4. SUTIP - Tranche 4 was developed as the government's response to the transportation problems in urban areas, which include large traffic volumes causing increasing delays, as a result of previous under-investment in infrastructure maintenance and expansion.

5. The MDF is the executing agency of the program, and is responsible for the general coordination and implementation of projects, for negotiating with ADB and with appropriate ministries and agencies of the Borrower. MDF is directly responsible for planning, designing, civil works on construction and rehabilitation of all subprojects in the frame of program.

Program Area

6. SUTIP - Tranche 4 comprises (i) urban infrastructure improvement, including one subproject: Batumi Coastal Protection; (ii) institutional strengthening, including management information system for MDF; and (iii) project management facility, including incremental administration and consulting services for audit, safeguards monitoring, and feasibility studies and detailed engineering design for sustainable urban transport projects. The government, through the Ministry of Finance, has submitted on 15 April 2015 the periodic financing request for Tranche 4, requesting a loan of $20 million from ADB's ordinary capital resources. These investments will improve the urban environment, strengthen economic and tourism development, and regional integration.

7. Sustainable Urban Transport Investment program Tranche 4 was approved on 25 August 2015, signed on 26 October 2015, and declared effective on January 8, 2016. It comprises a loan of $20

million from ADB's Ordinary Capital Resources. Tranche 4 is scheduled for completion by 31 December 2019, with a loan closing on 30 June 2020. Tranche 4 consists of one subproject and non-physical components.

8. Under the Sustainable Urban Transport Investment program Tranche 4, subproject ongoing now, is:

   - **Batumi Coastal Protection**

Batumi Coastal Protection project - overview

9. Coastal improvement is one of the priorities among other infrastructural projects, which will facilitate the future development of the Batumi City and region. The proposed project is aimed at protecting the Batumi coast against erosion, which is affecting the coastline southwest of Batumi, over a length of about 5 km. Along this section a number of properties has been lost already in the past. Without adequate protection measures coastal erosion will continue and as a consequence the investment climate for tourism development could be negatively influenced.

10. The evaluation of the alternatives to protect the coast against the erosion affecting the southern section of the littoral has shown that a soft intervention, featuring recirculation of the sediment between the northern section of the littoral (where it accumulates due to natural transport pattern) and the southern portion (from where it is removed due to erosion), is the most efficient way to protect and restore the beach.

11. Therefore, the main intervention aiming at stabilizing this portion of the Batumi coastline features artificial nourishment in the southern portion of the littoral, just north of the airport, spread over a beach length of approximately 2,000 m, using material taken from the northern part of the coastline (where beach accretion is occurring). The modelling studies have shown that the volume of materials needed to maintain the stability of the southern part of the coastline is 30,000m^3/y.

    The following maps show the general location of the Project activities:

12. In addition to sediment recirculation, the beach in the South, suffering erosion, will also be protected by a revetment and enlarged over a stretch about 2 km long. Both sediment from recirculation (gravel) and sediment from excavation (needed to build the revetment) will provide nourishment to this southern portion of the littoral. In particular, in this first intervention, the gravel material from recirculation (approximately 30,000 m3) will be used to form the toe of the new enlarged beach.

    Site Location with GPS:

x=41 37.0371'N, y=41 35.0911'E	x=38.5445'N, y=41 37.1968'E
x=41 37.1117'N, y=41 35.1117'E	x=41 38.5392'N, y=41 37.2038'E
x=41 36.5740'N, y=41 35.0988'E	x=41 38.5427'N, y=41 37.2091'E
x=31 36.5842'N, y=41 35.0637'E	x=41 38.5276'N, y=41 37.2190'E

13. A monitoring program has also been foreseen, to provide the information needed to analyze the possibility to re-orientate the river discharge towards North, in order to minimize the loss in the canyon of the sediments transported by the river Chorockhi.

14. The Environmental Category of the proposed project for Batumi coastal protection is B (ADB's Safeguard Policy Statement, 2009), which refers to projects not having significant irreversible or permanent negative environmental impacts during or after construction. For this category of Projects ADB requires the preparation of Initial Environmental Examination (IEE).

15. On October 16, 2014 the contract between MDF and Technital, regarding the "Consulting services for-Batumi Coastal Improvement project", was signed. The Contract Agreement for Civil works, with Struijk

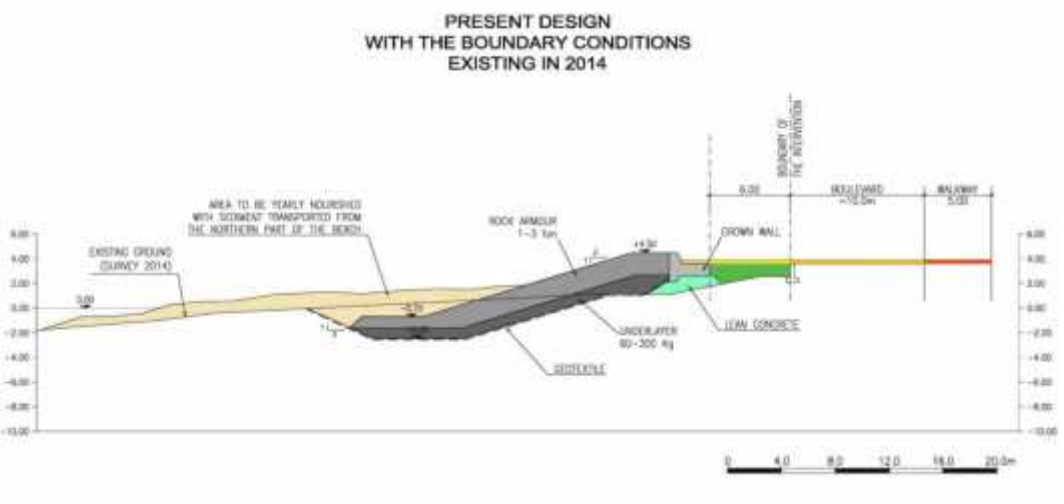
Group as Construction Contractor, was signed on 15 November 2016.

16. Commencement date for civil works is defined as February 1, 2017. Before starting any construction activities, Construction Contractor was required to develop Site Specific Environmental Management Plan (SSEMP), which was developed and approved as by Supervision Company and MDF, as well as by ADB.

17. Specific components of contraction activities, which are considered under the SSEMP are as follows:

- Excavation of approximately 130.000 m3 along 1.800 m of beach, prior to revetment construction;
- Construction of an approximately 1.800 m long stone revetment running parallel to the boulevard, with cross section extending from -2.45 m MSL (foundation level) to + 4.5 m MSL;
- Construction of a seawall at the top of the revetment, for a 1800 m length approximately;
- Dredging/excavation of no. 1 (one) trench across the shoreline, approximately 2000 m long, for sourcing 30.000 m3 of sediment;
- Pumping of the 30.000 m3 of dredged / excavated material on the backshore of the areas to be nourished;
- Shift seawards of the 30.000 m3 of dredged / excavated material to form the temporary toe berm of the new beach;
- Placement of approximately 120.000 m3 of sand and gravel for beach nourishment;
- Morphological monitoring activities;
- Execution of all finishing works required by the Engineer;
- Preparation of “as built” Drawings;
- Execution of the monitoring and modelling activities on river Chorockhi;
- Preparation of pumping equipment for storage after work completion.

18. The position of the coastline, the water depth and the position and elevation of the boulevard have been investigated through a bathymetric and a topographic survey carried on in the year 2014 extended to the entire length of the Batumi beach. The results of these site surveys have been used for the selection of the optimum solution and for the preparation of the detailed design.



19. During the last two years the coastline north to the breakwater built in the period between 2014

and 2016 has suffered unexpected erosion causing the shift back of the coastline position by 10-20 meters with the consequence of important damages to the boulevard and to the supporting structures of the boulevard that were not designed to support a direct wave attach.

20. The well-known erosion process that during the past decades was in the order of 1 or 2 meter per year has been increased in the last 2 or 3 years reaching erosion values from 5 to 10 times greater. In the last three years, severe erosion has occurred and that the storm occurred last February has heavily damaged the boulevard.

21. The cause of this sudden increase of the erosion rate is the reflection of the waves hitting the breakwater with the consequent loss of sediments on greater depth and the reduction of sediments supplied in the north direction. The reflection is induced mainly by the position of the breakwater that is built very near the shoreline and by its rather steep slope.

1.2. Construction activities and projects' progress during the reporting period

Civil works at Batumi Coastal Protection

22. As it was mentioned above, the commencement date of works was established on February 1th 2017. Contractor was requested to mobilize all necessary equipment on-site. Estimated time for the completion of works is 600 days.

23. Emergency works on the damaged boulevard, were requested by MDF to the Contractor, in order to restore the stability of the embankment under and in front of the boulevard. They are outside the original scope of work of the contractor being outside the contract area.

24. The urgent works to restore the boulevard have been already started while the protection works included in the construction contracts could start soon. The two interventions have the same objective: to guarantee the protection of the land and the use of the coastline. But in order to really achieve it the two interventions must be studied together. It is necessary a comprehensive assessment, including all components that might have contributed to an intrinsic and extrinsic synergic action to the destructive path, in order to find the reasons to solve the issues in a permanent way.

25. But the stability of a coastal structure requires a comprehensive approach including all components that can have a synergic contribution. For this reason MDF asked to Technital to revise the original design in order not only to restore the protective function of the revetment but also to incorporate the actual embankment as integral part of the design.

26. The following activities have been carried out during the reporting period:

- Mobilization work, clean-up of camp area, construction of camp site.
- Arrangement of the temporary storage area for hazardous, plastic, paper and general wastes in the back side of the camp yard;
- Extra Bathymetric Survey has been done, the survey was started from north side of the southern part of project (near boom-boom pier) and finished to the south side (near airport), however the previous bathymetric survey has been carried out from third party company named RATIO Survey.
- Installation of the three site banners along the site was completed;
- During the period between May 22 and May 29 the Consultant has provided the contractor the instruction to restart the site activities by nourishment of the eroded material and for the filling in the area of the boulevard;
- Nourishment beach and backfilling of eroded area of the boulevard (additional works).
- Taking away debris and placing in stockpile.

27. It's important to notice that no construction activities in relation with existing contract scope have been started yet. "Extra works" are not included in IEE/SSEMP yet. Information about extra works will be included in the updated SSEMP, which will be prepared and presented together with project re-design final documentation, probably by end of July. Therefore, only baseline measurements of noise were implemented under environmental monitoring activities in this regard.

28. Regarding the 'extra works' (backfilling of the boulevard) which was asked by local government Municipality (Batumi) and confirmed with MDF, was started on 03.03.2017 with volume 45 000m3 and completed on 23 April 2017. Nourishment was started on 02.06.2017 and 47% of works is already completed. Volume is 50 000m3. 'Extra works' will be finished when situation will be the same as it was in 2014.

29. It should be noted that, no activities envisaged under the existing contract have been started yet. Beside above mentioned, extra Bathymetric Survey has been done by the Contractor. The survey was started from north side of the southern part of project (near boom-boom per) and finished to the south side (near airport). Installation of three banners along the site was completed as well.

30. Process of the re-design is ongoing and new DD, which draft is already presented to the MDF, will be approved soon.

1.3. Changes of project organization and environmental management team

31. The MDF is the projects' executing, implementing and disbursing agency. MDF has overall responsibility for the projects' management - including environmental, planning and supervision. New Executive Director of MDF Galaktion Buadze was assigned on November 30, 2016 by the

Georgian Prime Minister's Decree.

32. MDF is responsible for general implementation of all safeguards tasks and guarantee that potential adverse environmental impacts arising from the Projects are minimized by implementing mitigation measures presented in the Initial Environmental Examination (IEE) or SSEMP, as applicable.

33. Management of safeguards issues is carried out by the MDF through Environmental and Resettlement Unit, established in October 2014. From that time, number of Environmental and Resettlement team members has increased from 6 to 13 and currently consists of: Head of Unit, 4 environmental safeguards specialists, one social and gender specialist, 6 resettlement specialists. There are also two ADB's individual consultants – one on environmental safeguards and one on resettlement issues, who are the members of Environmental and Resettlement Unit. Until October 2014, Environmental and resettlement safeguards team was consisting of 3 environmental safeguards and 2 resettlement specialists, one of which was the ADB's national consultant on resettlement issues. Environmental and Social Safeguards team had a Team Leader who was an advisor to Executive Director of MDF on environmental and social safeguards issues.

34. The Environmental and Resettlement Unit is involved in addressing of environmental and social safeguard issues throughout the entire projects' cycles. The Environmental and Social Specialists of the MDF, are responsible for management of the environmental and social aspects associated with development of all donor funded projects for which MDF is the responsible Executing Agency (EA). Local Environmental Consultant –Nino Nadashvili, was recruited in September 2015, and designated to supervise ADB projects, review the IEEs/EIAs, EMPs, and SSEMPs of projects and carry out supervision of the construction performance based on approved EMPs, EIAs, and environmental standards in accordance with ADB "Safeguard Policy Statement" (2009) requirements' and acting Georgian Legislation.

1.4. Relationship with contractors, owner, lender etc.

35. The main institutions involved in IEEs/EMPs/SSEMPs implementation and monitoring, are the executing agency (EA) - MDF, the Supervision Consultant (SC)- Technital, the Construction Contractors -Struijk and to a lesser extent the Ministry of Environmental and Natural Resources Protection and Municipal Authorities. EA (MDF) and SCs are responsible for ensuring monitoring of the projects' implementation at the construction stage. Ministry of Environmental and Natural Resources Protection has the authority for periodic audits but should not be considered as a party responsible for monitoring according to this IEE and EMPs.

36. The supervisor company (SC), or consultant staff, of works commissioned by MDF is responsible to establish strong field presence in the Project area and keep a close eye on the course of works. Along with ensuring consistency with the design and ensuring quality of works, the supervisor is mandated to track implementation of EMP/SSEMP by the contractor and reveal any deviations from the prescribed actions.

37. The Consultant's staff, as outlined within the Consultant's proposal, consists of an international Project Team, formed by TECHNITAL and a national team of experts, formed by Saunders Group Ltd.

38. With respect to this stage, the Supervision Team falls conveniently into two groups as follows:

International	National
Coastal Management Specialist/Team Leader	Coast Protection Engineer/Deputy TL
Coast Protection engineer	Hydraulic engineer
Geotechnical Engineer	Geotechnical Engineer
Environmental specialist	Sea Hydrologist
	Environmental specialist
	Quantity surveyor

39. The Consultant's main technical departments involved in the execution of this project are: Marine & Coastal Engineering, Hydraulic Engineering, Geotechnical Engineering, Environmental Engineering, Quality Assurance and Quality Control, and Construction supervision.

40. Each of the above departments provides assistance in its specific field by mobilizing qualified short term experts at the request of the Team Leaders.

41. Backstopping is ensured by Italian headquarter of TECHNITAL, which can provide substantial support through its own organization and resources. Short term experts to assist the Project Team will be drawn within these resources.

42. The local support staff includes also Junior Engineers, CAD experts, drivers and secretarial staff, translator/interpreter, and any other staff deemed necessary for the efficient operation of the site office (quantity surveyor, inspectors, technicians, etc.).

43. The key experts mobilized for the supervision stage are listed in following Tables.

International Key expert for the supervision Stage		
K1	Fernando Bersano	Tem Leader/Senior civil engineer
K2	Luca Beghini	Coastal Protection Engineer
K3	Cristina Zago	Environmental Specialist
National Key expert for the supervision Stage		
K4	Eldar Menagarisvhili	Deputy resident/Coast protection engineer
K5	Andrew Webb	Quantity Surveyor
K6	Alexandre Abzianidze	Environmental specialist
K7	Malkhaz Vardosanidze	Site Inspector/Quality Control specialist

44. As foreseen by the Contract No. SUTIP2/C/QCBS/7-2013 between MDF and Technital, dated October 16th 2014, for the Environmental supervision for the construction site (4.2 Construction Supervision, (a) International Team, Non Key Experts, Environmental Specialist) the following tasks and responsibilities are requested:
    - Coordination and liaison with Government/Employer;
    - Reports preparation;
    - carry out environmental monitoring and management of project implementation;
    - help ensure the implementation of environmental management practices at each stage of the construction;
    - develop an environmental auditing protocol for the construction period, regularly supervise the environmental monitoring;
    - submit periodic reports based on the monitoring data and laboratory analysis reports;

- implementation of environmental mitigation measures during construction period.

45. Construction Supervision Company is preparing quarterly progress reports, which cover the implementation of the SSEMP, discrepancies from the SSEMP and list all HSE relevant incidents and accidents that occur during the implementation; Submits periodic reports based on the monitoring data and laboratory analysis.

46. A Non-Compliance Notice has to be issued to the contractor if the SC requires action to be taken. The contractor is required to prepare a corrective action plan which needs to be implemented by a date agreed with the SC.

47. Construction contractor is obligated to follow EMP/SSEMP and good construction practice. In order to meet this obligation, a contractor has established environmental management team and procedures. The Contractor has appointed an Environmental Manager (EM) – Mamuka Shaoshadze, which is a r member of the construction management team based on site for the duration of the contract.

48. Duties and responsibilities of the Environmental Manager of the Construction Contractor are:

- To Identify all Environmental Impacts for each activity;
- To ensure compliance with all project standards, statutory requirements and permit conditions
- To lease with government authorities on environmental issues;
- To coordinate Environmental information flow between Client and Suppliers/Sub-Contractors.
- Implementation of, and adherence to, all pre-construction, pollution prevention, waste management, water supply, aggregates, fauna and visual management requirements outlined in this plan;
- Ensuring relevant permits are in place for site specific activities;
- Implementation and supervision of the monitoring program;
- Record keeping and reporting on a daily basis to the Project Manager
- Maintenance of records;
- Ensure Training Department presents well founded and appropriate environmental training
- To plan and ensure implementation of all monitoring activities and evaluates results;
- To ensure any corrective or preventative action is implemented in wise time;
- Keep Project personnel fully informed of all environmental concerns and issues;
- Close supervision of Sub-Contractors.

49. Thus, key responsibilities of the Contractor are preparation of the Site-Specific Environmental Management Plan (SSEMP) for approval by the Employer (EA) prior to the Contractors taking possession of the construction site; Ensure that the SSEMP is implemented effectively throughout the construction period; Carry out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for managing environmental impacts; Allocate the budget required to ensure that such measures are carried out. Construction contractor is responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any clearances/permits/licenses which are required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relations with suppliers, local authorities, affected communities, etc.

50. The Contruction Contractor submits reports of the carrying out of such measures to the employer on a monthly basis; Coordinating community relations issues through acting as the Contractor's community relations focal point (proactive community consultation, complaints investigation and grievance resolution); Establishing and maintaining site records of:

- Weekly site inspections using check-lists based on SEMP;
- Environmental accidents/incidents including resolution activities;
- Environmental monitoring data;
- Non-compliance notifications issued by the SC;
- Corrective action plans issued to the SC in response to non-compliance notices;
- Community relations activities including maintaining complaints register;
- Monitoring reports;
- Routine reporting of SEMP compliance and community liaison activities;
- Adhoc reporting to the Employer's Engineer of environmental incidents/spillages including actions taken to resolve issues.

51. MDF ensures availability of all environmental information and facilitates environmental supervision of the project. The MDF's local environmental specialist's responsibilities in respect of implementation of the IEE/SSEMP, are to: ensure that all relevant IEE/SSEMP requirements (including environmental designs and mitigation measures) are duly incorporated into the project bidding documents; Assist Contractors to obtain necessary permits and/or clearance, as required, from any relevant government agencies (NEA, etc); Ensure that all necessary regulatory clearances are obtained before commencing any civil work on the project; Ensure, that contractors have access to the EMP and IEE report and understand their responsibilities to mitigate environmental problems associated with their construction activities and facilitate training of their staff in implementation of the EMP; Approve the Site-Specific Environmental Management Plan (SEMP) prepared by the Contractor before he takes possession of construction site; Time-to time monitor the contractor's implementation of the SEMP in accordance with the environmental monitoring plan by conducting site monitoring visits; The MDF through its Local Environmental Consultant, reports to the ADB in every 6 months on the status of environmental compliance of construction works by preparing semi-annual Environmental Monitoring Reports. In case unpredicted environmental impacts occur during the project implementation, prepare and implement as necessary an environmental emergency program in consultation with relevant government agencies and ADB.

2. PART II: ENVIRONMENTAL MONITORING

52. With reference to MFF Sustainable Urban Transport Investment Program – Tranche 4 Environmental Assessment and Review Framework (EARF) is stated that an IEE/EMP will be a part of the overall project monitoring and supervision and will be implemented by the Contractor with oversight from the Supervision Consultant (the Engineer) and MDF.

53. IEE/EMP is an integral part of construction contracts. MDF requires the Construction and its Supervision Companies to implement construction activities in accordance with the environmental management plan, according to which SSEMP was developed.

54. Based on the EMP/SSEMP requirements, monitoring measures of projects includes construction

site supervision, verification of permits, monitoring of compliance of the contractors' performance and specific monitoring of environmental impacts like noise, dust, soil contamination, landscape structure, construction waste, radiation, flora and fauna, water pollution, air emissions and etc. conducted by Contractor's and Engineer's environmental management specialists.

55. The objects of monitoring, the sampling points, techniques, frequency of measurements and, targets, as well as entity responsible for monitoring, as indicated in SSEMP, are described in Annex 1.

56. Construction site is not surrounded by agricultural land of locals. However dust generation control measures should be followed along the roads and spaces near the lands adjacent to the open greening areas. Avoidance damage to trees, palms will be strictly observed.

57. Baseline campaigns and measurements for obtaining of baseline data, as it is required by IEE/SSEMP, were implemented. Information regarding conducted baseline campaigns is provided below:

Baseline Campaigns

58. Georgia/international threshold limits are indicated in the table 1 below.

Table 1: Georgia/international threshold limits

Environmental Aspect	Parameter	Performance Indicator	
Air Emission	Nitrogen (IV)Dioxide	40(pg/m^3) (0.026ppm) annual	200 (pg/m^3) (0.11ppm) hour
	Sulphur Dioxide	0,5 (mg/m^3) max	0,05 (mg/m^3) Daily Average
	Carbone Monoxide	30 mg/m3 (25 ppm) hour max	3 (mg/m^3) Daily Average
Dust	PM 10	20 PG/m3 annual mean	300 pg/m3 24 - hour mean
Noise	Noise levels for residential (Hotels, Schools, Hospitals) areas	55 Maximum Admissible level La max dBA (7am-10pm)	45 Indicative level La dBA (7am-11pm)
Water Turbidity	Weighted particles	5 mg/l Min	200 mg/l Max

59. The selected instrumentations for monitoring are provided under the table 2:

Table 2: Selected instrumentations for monitoring

Matrix	Instruments	Approved	Action required/notes
Turbidity	HACH TSS portable instruments	yes	calibration test is approved
Noise	PCE 322A	yes	calibration certificate is approved
Meteorological station	-----	-----	device installed by local government is used

Air gases and dust	Casella CEL-712 Micro dust Pro Dust Monitor Gas Alert Micro 5 PID Multi Gas Detector	yes	National Environmental Agency will conduct permanent measurements first week of each month

60. Instrumentations selected and approved for the next monitoring phase are in Attachment 4.

61. The baseline survey accounted for measurements of air (CO, CO2, NOx and PM10), noise level and water turbidity were conducted by CC before starting of 'extra works'. Measurements were implemented by National Environmental Agency (NEA) on March 3, 2017. Results are under WB Guidelines and Georgian established standards. Information about Conducted measurements and their parameters and results are provided under Attachment 1.

62. Obtained data resulted in accordance with Georgian standards for gases and PM10, but above the threshold limits for noise. As for water turbidity obtained data show a range of suspended solid between 9.6 mg/l at Alphabet Tower up to 54.4 mg/l close to the airport. Values typical of a coastal environment.

63. Thus, a first baseline survey for the noise, performed on 23rd February 2017 by the National Environmental Agency (NEA) of the MENRP Georgia, after strong windy day, was influenced by high sound levels, which reflected on the results of measurements. Therefore, CC has decided to conduct the additional noise baseline measurements, which were carried out from 04.24. 2017 to 04.28.2017, by Contractor "Struijk" Group itself.

64. Noise level results, acquired on the 23.02.2017, were in the range from 76.4 dBA at Alphabet tower to 86.3 dBA at restaurant BUM BUM sampling point (map and coordinates are provided below). No meteorological data were acquired. Without meteorological data it was impossible to understand the reason of the exceedance of the threshold limit (wind and waves could account for that values but meteo data need to be acquired simultaneously).

65. A second noise baseline campaign was held by Mamuka Shaoshadze from 24.04.2017 to 28.04.2017. Three samplings for each day were performed at morning, noon and evening and at 3 sampling points School Liceum Taoba, hotel Magnolia, Shota Rustaveli University were monitored.

A Sound Level Meter PCE 322A was used. Sampling was instantaneous (three time spot/day) and not time continuous during the sampling campaign as foreseen in IEE. No meteorological data were acquired. Noise levels resulted in the range 50.1 dBA (at School Liceum Taoba, the 25.04 at noon) – 68.8 dBA (at Shota Rustaveli University, the 24.04 in the morning). Again, recorded noise levels, even if in a lower range compared to the previous sampling campaign, are above the threshold limits for noise (55 dBA Maximum Admissible Level, 7 am-11 pm). Due to the absence of meteo data it is not possible to correlate obtained values to meteorological conditions.

66. Considering that the two baseline campaigns were conducted with time spot of measures, and looking at obtained data, it was preferable for the next sampling campaigns to perform 1 week of continuous monitoring and collect simultaneously meteorological data as foreseen by IEE.

67. Environmental Manager of CC conducted (third time) noise measurements during 5 days in order to identify and quantify noise level of workplace for community. The sampling took place at 3 (three) locations, three times a day (morning, noon and evening) at all sections there the activities were in progress. Locations: 1 - School lyceum “Taoba”; 2 - Hotel “Magnolia”; 3 - Shota Rustaveli University. During measurements Device: Sound Level Meter PCE-322A was used. Measurement data are provided under the Attachment 2.

68. In accordance with the ‘Law on public health’, the environmental qualitative norms are approved by Decrees of the Minister of Labor, Health and Social Security 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 09.15.1006, 351/N of 12.17.2007).

69. Based on the results of the tests conducted in three places (3 - School Lyceum "Taoba"; 2 - Hotel "Magnolia"; 3 - Shota Rustaveli University), **Baseline noise level is under the norm of Georgian and WB standards** (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 09.15.1006, 351/N of 12.17.2007);

70. Two walkover surveys were implemented within the project - on 24.02.2017 and on 01.06.2017 by Jimsher Mamuchadze and existing terrestrial fauna species were observed and identified. Surveys were conducted within the project alignment area. Lutra lutra – red list specie- was observed in the delta of Chorokhi river, by watching of 20-60x60 monocular optical telescope from the distance of 1-2 km, from working area. No activities are implemented or planned to be implemented in the areas of river Chorokhi delta in future, which is in 2 -2.5 km distance from construction area.

71. Currently, none of from identified existing species are doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected. Survey is attached to the document as Attachment 3.

Cultural Heritage

72. Contractor “Strujik” Group Georgia attention is directed to the Georgian Ministry of Culture and Monument Protection of Georgia, which provides for the preservation of potential historical architectural, archaeological or cultural resources. Contractor “Strujik” Group Georgia will conform to the applicable requirements of as it relates to the preservation of cultural resources.

73. Permanent supervision will be provided while excavation activities will be in progress.

Vegetation and soil

74. There is no top soil in the areas where the contractor has to work. These areas are already free of topsoil.

No trees will be cut.

Hazardous and Non-hazardous Waste and Spoils

75. Constructions works generate different type wastes starting from garbage, recycle waste, house hold waste and construction and demolition debris, including, small quantities of hazardous waste generated mainly from the vehicle maintenance activities (liquid fuels, lubricants, hydraulic oils, chemicals and etc).

76. Waste Management Plan was approved by "Saunders Group" Ltd, MDF (Municipal Development Fund) and director of construction contractor "Struijk Group Georgia LLC". There were installed three different waste bins in the temporary waste area. Proper signs are Installed: Hazardous waste, General waste, paper waste, plastic waste, smoking area, temporary hazardous waste area, grievance box, do not burn, WC, keep area clean and etc. Temporary hazardous waste area has been arranged with two layers of Polyethylene. Area is fenced with metal fence and locked.

PPE

77. In general terms, personnel wear adequate PPE during the working process as per the project HSE requirements.

Choroki river monitoring

78. Choroki river monitoring, as described in Technical Specification of the Detailed design (May 2016), foresee to understand if it is possible to shift northwards the mouth of the river, in order to enhance the supply of sediment available for the beaches. For this purpose it is important to achieve a good knowledge of the behaviour of the Chorokhi River, therefore it is envisaged to investigate the nature of sediment transport and the sediment transport capacity in natural condition and in the presence of dams.

79. Targets of this study are:

- Understand the present characteristics and behaviour of the river, in terms of geology of the riverbed, hydrology of the watershed, flow capacity, transport capacity, topography;
- Determine the type of sediment transport;
- Determine the morphological and morphodynamics effects of the renovation work.

80. In order to reach the targets of the study, the following steps shall be undertaken:

- Data Collection: collection of geological information of the region, hydrological data concerning the river and its catchment, available data on water and sediment discharges.
- Integration of the data collected: in particular a geotechnical survey, shall be provided at the beginning of the work, to understand to define the characteristics of the soil and in particular the material forming the riverbed, and sediment load.

- Monitoring activities: a topographic survey, water level measurement and bedload survey in different periods of the year shall be provided to understand the river morphology and its evolution, and to estimate the sediment load of Chorokhi river.
- Validation: implementation of a 2D model for the validation of assumptions made regarding the morphological behaviour of the river by means of numerical models.
- Identification of possible interventions: identification of a solution to increase the supply of sediment from the river, towards north, to replace the original role of the river to the sediment balance. The study shall provide at least 3 options of intervention, and include but not limit, the analysis of various options (in terms of directions and widths), to redirect the Chorokhi outfall more towards North, in order to avoid that a large part of the sediments transported by the river is lost in the deep canyon located in front of the river mouth.
- 3D Model: implementation of a 3D model of the river mouth, to model in particular the interventions identified and proposed.

81. Once the morphological behavior of the Chorokhi River and its influence over the equilibrium of the littoral zone has been understood, possible interventions aiming to reduce the negative effects of the anthropic interference on the river system and restore the original role of the river in the coastal sediment balance can be investigated.

82. The evaluation of morphological and morphodynamic effects of any interventions proposed on the river system can be carried out by means of numerical and physical models.

83. At the moment, Contractor has selected the surveyor Nikoloz Beruchashvili and SC has to approve it after the Skype call, which will be carried out in July.

3. PART III: ENVIRONMENTAL MANAGEMENT

3.1. The environmental management system, site-specific environmental management plan (SEMP) and work plans

84. Following the award of the contract and prior to construction commencing the Contractor has reviewed the EMP and developed this into a detailed Site-Specific Environmental Management Plan (SSEMP) that amplifies the conditions established in the EMP that are specific for the project, the tasks involved and schedule of construction activities.

85. Detailed information on management plans and their statuses is provided in the table 3 below:

Table 3: Statuses of Management Plans

3.2. Site Inspection and audits

Plans/Reports	Status	Date of Submission	Comments
SSEMP Draft 1	Submitted	20.02.2017	Under Review
SSEMP Draft 2	Submitted	27.02.2017	Under Review
SSEMP Draft 3	Submitted	14.03.2017	Under Review
SSEMP Draft 4	Submitted	24.03.2017	Under Review
SSEMP Draft 5	Submitted	03.04.2017	Under Review
SSEMP Draft 6	Submitted	28.04.2017	Under Review
SSEMP Draft 7	Submitted	12.05.2017	Under Review
SSEMP Draft 8	Submitted	22.05.2017	Under Review
SSEMP Final	Submitted	06.06.2017	**Approved**
Emergency Situation Response Plan D1	Submitted	20.02.2017	Under Review
Emergency Situation Response Plan D2	Submitted	07.04.2017	**Approved**
Waste Management Plan D1	Submitted	27.02.2017	Under Review
Waste Management Plan D2	Submitted	23.05.2017	**Approved**
Site-Specific Health and Safety Management Plan D1	Submitted	28.02.2017	Under review
Site-Specific Health and Safety Management Plan D2	Submitted	10.04.2017	**Approved**
Health, Safety, Environment & Social Training	Submitted	09.03.2017	Conducted
Health, Safety, Environment & Social Training	Submitted	06.04.2017	Conducted
Health, Safety, Environment & Social Training	Submitted	06.06.2017	Conducted
Baseline Test Results (Air, Noise, Water turbidity)	Submitted	27.03.2017	Conducted
Baseline test for Noise	Submitted	24.04.2017 - 28.04.2017	Conducted
Site re-entry walk over survey_01	Submitted	23.03.2017	Conducted
Site re-entry walk over survey_02	Submitted	01.06.2017	Conducted

86. Site supervision and inspections, as well as monitoring of compliance of construction activities are important aspects to ensure the proper implementation of EMP/SSEMP requirements. Environmental management team of Construction and Supervisor Companies carry out permanent supervision activities and monitoring of the project performance in regular base. Time to time, MDF's environmental specialist - Local Consultant and Regional Environmental Consultant of ADB (under RETA 8663), are performing site monitoring visits as well. Basically, in every two month ADB review missions are conducted also.

87. The schedule of conducted audits and monitoring implemented by CC and SC environmental specialists, during the reporting period, is given in the Table 4, below:

Table 4: The schedule of conducted audits and monitoring during the reporting period

Date of Site visits	Organization	Comments

	CC (Totally visits)	SC (Site visits)	
01.02.2017 - 28.02.2017	4 days	4 days	-
01.03.2017 - 31.03.2017	8 days	8 days	-
01.04.2017 - 30.04.2017	8 days	6 days	-
01.05.2017 - 31.05.2017	8 days	6 days	-
01.06.2017 - 30.06.2017	8 days	2 days	-

88. MDF's local environmental consultant is ensuring that the Contractors understand what is to be done and how to rectify and address any environmental issues raised during project implementation process.

89. MDF's local environmental consultant Nino Nadashvili has been regularly performed monitoring of ongoing activities with close cooperation with env. specialist of SC and CC companies, by mailing them and by meetings. Coordination with the Contractor and SC has been performed by checking the Reports (SSEMP, monthly reports, HSE Reports) and following the baseline monitoring and selection of monitoring instrumentation.

90. Kick of Meeting was conducted on February, 6, 2017, at MDF office with participation of CC and SC representatives. During the Kick off meeting Nino Nadashvili talked with CC and SC regarding the env. aspects of the project and required CC to find and hire environmental specialist as soon as possible. It was expressed the urgent to:
    - produce a detailed SSEMP;
    - produce the Environmental Inception Report and start with the environmental measurements foreseen in IEE for the *ante-operam* phase of the construction works.

91. Separate meeting was held with international Environmental Consultant of Supervision Company – Cristina Zago and local environmental Specialist Sandro Abzianidze on February 7, 2017, for detailed discussion and consideration of environmental obligations of the Contractor envisaged under the project and Contract.

92. The meeting was held in the MDF offices at 15:00 of the 7th of February 2017. At the meeting were presented Nino Nadashvili of MDF, Cristina Zago and Sandro Abzianidze of Saunders Group, Salih Gani representative of Struijk and Davit Burnaze local engineer for Struijk.

93. Nino Nadashvili-env. Consultant of MDF draw attention on some aspects of the contractual requirements, as the proper implementation of environmental protection issues envisaged under the Contract (No: P42414-SUTIP4- ICB-01-2016), signed on November 15, 2016 between the Municipal Development Fund of Georgia and Struijk Group.

94. She mentioned, that according to sub-clause 4.18 of Particular Conditions of Contract –Part B, Contractor has to ensure that project is to be carried out in accordance with all applicable laws and regulations of Georgia, ADB's Safeguards Policy Statement (2009) and EMP, including the mitigation measures and monitoring requirements, arising from the environmental assessment and review procedures outlined in the IEE.

95. Nino Nadashvili reminded that the preparation and submission of necessary environmental documentation to the Supervision Company and MDF, are requirements of the Initial Environmental

Examination (IEE) report, which is the integral part of the Contract and that the environmental documentations need to be prepared and submitted by the Contractor to the Supervision Company Technital S.p.A and MDF, prior to any construction activities, under the "Batumi Coastal Protection" project. The Environmental documentation, which needs to be prepared prior to construction works are as follows:

- **Site-Specific Environment Management Plan (SSEMP)** –by February 20, 2017;
- **Emergency Situation Response Plan**, which will also incorporate action plan for pollution prevention at the construction and operation stages – prior of construction works. Deadline: February 20, 2017;
- **Pre-entry and walk over surveys** to be conducted for preventing damage to flora and fauna - In order to identify and protect valuable individuals, endangered species and sensitive habitats, a detailed pre-construction and walk over terrestrial survey should be performed, taking into account the chosen route for the construction vehicles and the footprint of foreseen work yards. Regarding the pre-entry and walk over surveys, the field research should be carried out after the construction area will be marked, but before of any preparation of area to work. Prior to commencement of activities, the territory should be inspected in the areas where avifauna (*Chiropteran*) shelters could be located. If such shelters are discovered, activities within the territory should be avoided and/or artificial shelters arranged for the *Chiropteran*. Particular attention needs to be paid in the area close to the mouth of the Chorokhi river, known as a sensitive area.
- **HS Management Plan** needs to be developed, were workers training issues will be reflected also;
- **Waste Management Plan** according to Georgian new "Waste Management Code" (article 14), has to prepared describing in details hazardous waste management, particularly, asbestos management and submit it for approval as foreseen by law according to the generated waste amount. According to the same law (article 15) Contractor should hire the Environmental Manager, whose name will also be submitted to the MoENRP officially. Waste Management Plan needs to be prepared during the one month after the Commencement Date;
- **Development of Monitoring programs**: monitoring of air quality, noise, water turbidity, terrestrial habitats will begin before or with start of construction activities and will be performed during construction activities permanently in accordance to established schedule and parameters. Baseline data should be collected for implementation of air quality and noise monitoring prior to construction activities. Monitoring measures will be conducted according to the IEE details and they have to comply with existing regulations and requirements of national laws and international standards;
- **Grievance Redress Mechanism (GRM)** – in accordance with the ADB SPS 2009 requirements, a Grievance Redress Mechanism should be set up for the Project, to deal with both – the environmental and social issues. MDF as the Executive Agency will facilitate the grievance resolution by implementing a project-specific Grievance Redress Process. Grievance Focal Points should be selected from the local residents as community representatives, prior to construction activities, which functions are to address concerns and grievances of the local communities and affected parties. The sufficient number of GFPs for the Project is 1-2 persons. Any complaint should be recorded in Complaints Log Book, which will be available at the Camp site and in the Gamgeoba office, with the presence of the GFP. A public meeting it is foreseen before the commencement of works to advice population about starting of works, duration of works and activities to be performed.

96. Mrs. Nino Nadashvili put Strujik attention to the mitigation measures that need to be implemented in case of threshold exceedance limits. Due to the location of the construction areas close to populated areas Contractor has to ensure adherence to admissible noise levels specified in the Table 7.8 of the IEE - 55 db A - in the daytime (from 7hr. until 23 hr.) and 45 db A – in night hours (from 23 hr. until 7hr.). In case of exceeding the mentioned limits, Contractor has to elaborate additional mitigation measures. Moreover, it is necessary to conduct the monitoring during all seasons year-round. Contractor has also to ensure protection of qualitative conditions of environment during the transport operation, at the adjoining areas.

97. Struijk promised to find an environmental expert in the very next days and submit the SEMP within the required time.

98. During reporting period 4 Site visits were implemented by MDF's local env. Consultant.

99. During reporting period, by the international environmental specialist Cristina Zaggo also was performing monitoring activities. Following supervision meeting were performed by her:

100. During the first visit from 6.02.2017 to 12.02.2017 :

- Kick off meeting at 16:00 of 6th February 2017, at MDF Office Agmashenebeli St. Tbilisi
- starting meeting at 15:00 of 7th February 2017, at MDF Office Agmashenebeli St. Tbilisi
- coordination meeting with Struijk engineers on 10th February at Batumi project office.

101. The international environmental expert of SC has implemented site inspection and audit quarterly. She has done quarterly visits and prepares the quarterly reports. Her last visit was implemented from 26.03 to 01.04.2017. During the visit the following visits were conducted by her:

- coordination meeting with Saunders (Alexandre Abzianidze) at Saunders' office the 27th of March
- coordination meeting with MDF (Nino Nadashvili and Sandro Abzianidze) at Tbilisi MDF's Office the 28th of March.

102. Coordination with the Contractor has been performed by checking the Reports (SSEMP, monthly reports, HSE Reports) and following the baseline monitoring and selection of monitoring instrumentation.

103. Environmental Specialist of Construction Company – Mamuka Shaoshadze was hired on 10.02.2017. He is permanently on site and implementing daily inspections of construction activities in regular base. Inspection is carried out by Environmental Specialist in accordance to SSEMP and special check-lists. Completed check-lists are available at camp site. He prepares monthly reports and submits to MDF and SC.

104. Local environmental specialist Alexandre Abzianidze was recruited by the SC in February, as well. He conducts site-monitoring visits 2 times per week and supervise and monitor implementation of the SSEMP during construction activities.

105. During the reporting period a series of meetings were held in Batumi by MDF and SC environmental Specialists (including weekly meetings). During the meetings the comparison between the proposed works and the effective executed works have been made and the summary

of these is weekly updated in the 'Instruction issued for Contractor'. The meeting of the 30.03.2017 was important for the environmental management because a series of points were discussed.

- The need of acquiring monitoring instrumentation or hiring an environmental agency for monitoring activities was discuss with Contractor.
- Looking at baseline data performed in February, noise values resulted above the threshold limits. Due to the absence of meteo data (which could explain the high registered values), the noise baseline needs to be redone, with the same instrumentation that will be used in the following monitoring phase.
- Contractor showed the acquired *noise device* for monitoring. The device resulted suitable but a calibration test/documentation was required.
- It was reminded to Contractor the need to compare air (gases, dust, noise) data to *meteorological data* that need to be collected simultaneously, as foreseen in IEE/EMP. Contractor found a meteo station close to the working area, and he was looking for acquiring those data.
- Regarding *air (dust and gases*) Contractor showed his own device, but it resulted not suitable due to the required monitoring range concentration and due to the fact that the device didn't account for dust concentration sensors.
- *Turbidity*. Contractor was looking for instrumentation.
- Possible location for baseline and monitoring station were discussed and possible receptors (school, university, houses) were identified. Particularly, the school present close to the working area of the southern part, was selected as suitable for air and noise impacts. The necessity to sample same sites for baseline and monitoring phase was reminded to Contractor.

106. Currently all monitoring activities are implementing in accordance to prepared monitoring plan, which is available under this report at tables5 and 6.

107. During March 20-22 ADB Mission met with MDF, the contractor and the Engineer on site. The contractor is mobilized onsite and started physical works (extra works) along the eroded coastal sections next to the boulevard.

3.3. Non-compliance notices and corrective actions

108. Identification of problematic issues and non-compliance notice during site inspections is the responsibility of Environmental Specialists of Construction and Supervision Companies. During reporting period the number of site visits has been implemented by environmental specialists of Construction and Supervision Companies in order to check environmental compliance of construction works.

109. In case of any deviations of EMP/SSEMP requirements corrective actions and mitigation measures are applied. All mitigation measures during pre- and construction phases of SPs are implemented by construction contractors according to EMP/ SSEMP.

110. Non-compliances observed during the reporting period, corrective actions required and their current statuses are provided below in the Table 5.

Table 5: Non-compliance notices and corrective actions

Date of submission	Description of Non-Compliance	Area	Corrective action required	Performance Date of Corrective actions
21.03.2017	The hydraulic pipe of excavator was damaged and operator started to repair the damaged part. There were approximately 3(three) litres of hydraulic oil were spilled on the road filled material (gravel).	Near of base camp area	– The contaminated area to be cut and polluted material to be collected to special hazardous waste area; – Insure final disposal/treatment with waste management licensed company; – Absorbent pads to be used for prevention more leakage from excavator's hydraulic pipe; – Contaminated grave with oil were approximately 50 kg.	**Closed** The Contractor improved the situation contaminated area was cleaned and polluted materials were collected and put in the yellow bags and plastic barrels, disposed temporary hazardous waste area; Response (20170321_Environmental incident report N1_BCP_MS) Date: 21.03.2017
31.03.2017	The pipe inside of excavator caterpillar was damaged, which caused the leakage of oil. Approximately 8 (eight) litres of oil were spilled on the filling materials (gravel) on the site.	Nearby base camp area	– The contaminated area to be cut and polluted material to be collected to special hazardous waste area; – Insure final disposal/treatment with waste management licensed company; – Absorbent pads to be used for prevention more leakage from excavator's hydraulic pipe; – Approximately 450 kg.	**Closed** The Contractor improved the situation contaminated area was cleaned and polluted materials were collected and put in the yellow bags and plastic barrels, disposed temporary hazardous waste area; Response(20170331_Environmental incident report N2_BCP_MS) Date: 31.03.2017
16.06.2017	Driver of the dumper truck was unloading dump truck when suddenly hydraulic pump collapsed and dump bed fall back on the body of the truck and lead to the damage of the vehicle and contaminate soil with oil.	300 m from base camp area	– The contaminated area to be cut and polluted material to be collected to special hazardous waste area; – Insure final disposal/treatment with waste management licensed company; – Absorbent pads to be used for prevention more leakage from excavator's hydraulic pipe; – Contaminated grave with oil were approximately 570 kg; – Contaminated gravel to be disposed in special temporary hazardous waste area on camp site.	**Closed** The Contractor improved the situation contaminated area was cleaned and polluted materials were collected and put in the yellow bags and plastic barrels, disposed temporary hazardous waste area; Response(20170616_Environmental incident report #3_BCP_MS) Date: 16.06.2017

3.4. Actions taken to reflect the findings of ADB mission during reporting period

ADB Mission conducted on 20-22 March 2017

111. During March 20-22 as it was mentioned above ADB mission has conducted site visit at Batumi coastal protection project. The Mission met with MDF, SC and CC and requested the contractor and engineer to hold monthly meetings with local government, MDF, and relevant NGO and community, in case of necessity, to resolve any project related issues and report progress. The Mission advised to obtain prior permission if the contractor wishes to work during the summer period. MDF should seek ADB's assistance prior to approving working during summer months.

112. The consultant informed that sea erosion has changed the bathometry of the area since the detailed design. The Mission informed that remaining tetrapods from Anaklia coastal project could be utilized for any mitigation measures by in the project area if needed. Mission reminded that all contractual obligations should strictly be met and any cause of potential delay should be flagged upfront with appropriate mitigation measure and action plan.

113. It was agreed with Mission that activities under the subproject in the next three months include: topographic and bathometric surveys, submitting method statement, preparation of site specific environmental management plans and obtaining licenses for transport and storage of borrow material.

Status of Agreed Actions/Recommendations

- New topographic and bathometric surveys have been conducted;
- Site specific environmental management plans were prepared and approved;
- Borrow materials are obtained from licensed Suppliers –'Rase LTD' (Contract N000117, 21.03.2017) and 'Orbi Group' (Contract N 000141, 02.06.2017). Contracts are available at the camp site. Because of big size they are not attached to this report.

ADB Mission conducted by K. Dgebuadze (RETA/ADB International-Regional Environmental Consultant) on 11 April 2017:

114. The RETA International-Regional Environmental Consultant met with MDF Environmental Consultant, Contractors (JV Cobra; Assignia/Spain and Technital/Sounders) and Supervision Consultants (Eurostudio S.L. and Struijik) representatives. Site visits were conducted to L3273: Tranche 4 - Batumi Coastal Improvement Project.

115. Findings during environmental site visit were as follows:

Generic:

- The quality of monthly environmental reports prepared by CC should be improved for the next submission period for both subprojects in April 2017;
  Status: reporting quality still needs improvement.

- Areas still needing improvement include: hazardous waste management at campsite for Batumi Coastal Improvement Project
  Status: There is special place arranged for storing the hazardous waste at campsite.

- First draft of SSEMP for Batumi Coastal Improvement Project was submitted on time and is under improvement.
  Status: SSEMP was revised several times and it was approved by SC, MDF and ADB RETA consultant.

  Specific:

- There is a mobilization stage under the project. Camp is constructed and kept clean. Site is fenced, fire fitting facility is installed and oil spill kit is exist on the site;

- Construction Contractor: CC (Struijik) hired National Environmental Manager – Mamuka Shaorshadze (from 10th February, 2017) on a part time job, he undertakes permanent monitoring using weekly checklists and prepares monthly environmental monitoring reports and submits to SC and PIU. Till today two monthly reports were prepared and submitted to PIU;

- Supervision Consultant: National Environmental Specialist (Sandro Abzianidze) was hired on a part time job by the SC (Technital/Sounders) from 9th of Januaray 2017. He prepares quarterly reports together with International Environmental Specialist (Kristina Zago) hired by Sounders and submits to PIU;

- Requested documents/contracts: All requested documents are kept at camp site, among them: IEE, monthly monitoring reports, monitoring checklists, licenses, contracts with subcontractors, complaints log book and records of trainings. First draft SSEMP was prepared by CC and submitted to SC and PIU on 20th of February 2017. At present SSEMP is under improvement. All contracts with subcontractor companies are signed and kept at the camp. Contract with Ltd. "Rase" for delivering of stones was signed on 1st March 2017. Contract with "Sanitari" Ltd for hazardous waste disposal will be signed in April 2017.

- Waste Management: Household waste as well as plastic and paper is collected in special waste bins and periodically disposed by Batumi Municipal Service on a contractual base. Hazardous waste area is well established with concrete ground, roofing, fencing and drainage system (Fig.6). Hazardous waste such as contaminated soil, solvents, materials used in oil spill cleanups and etc. is collected in closed drams and passed to a licensed operator company "Sanitari" Ltd., which has the permit on operation of the hazardous waste. At present, there is 450kg contaminated soil kept in the drums to be disposed by "Sanitari" in April 2017;

- One non-compliance was observed during the site monitoring visit, in particular: the generator unit on the territory of camp running on diesel was not placed on a secondary tank. In case of diesel spill, there is a danger of the soil and underground waters pollution. The Mission recommended Contractor to place generator on the secondary drip tray with the volume at least 110% of the generator diesel capacity. Implementation of corrective actions should be reflected in April's 2017 monthly environmental report as well as in Jan-Jun 2017 BAEMR;

  Status: Contractor did not use the generator for 2 months, only in middle of June 2017, the generator was worked. Contractor provided the drip tray and Generator was placed in it. Currently the generator is fully in compliance with the environmental standards. Photo is attached to the document.

- Monitoring (noise, air, water): Based on the contract between CC and National Environmental Agency baseline measurements of air, noise and water have been done in March 2017 and results will be reflected in April's 2017 environmental monitoring report as well as in Jan-Jun 2017 Bi-annual EMR;

- GRM: GRM system is under establishment. Complaints log book is existed in the camp site and in the Batumi Municipality. Grievance box is also installed at the camp site.

3.5. Consultation and Complaints

Grievance Redress Mechanism

116. During the projects implementation several issues, related to the environmental and socials safeguards and disputes on entitlement processes', might be occur due to the Projects activities. For example, intensive schedule of construction activities, inappropriate timing of construction vehicle flow, waste, noise and air pollution from construction activities, ecological disturbances, cultural conflicts between migrant workers, are some of the environmental and social safeguard issues that are likely to be raised from the Project activities.

117. In order to provide a direct channel to the affected persons for approaching project authorities and have their grievance recorded and redressed in an appropriate time frame, Grievance Redress Mechanism was established with efforts of MDF within the projects.

118. Complaints' registration journal is created and available at construction sites. The copy of journal with mobile numbers of relevant persons Grievance Focal Pointes - Social Manager of SC Maia Khandurdieva and Kakhaber Beridze (local resident) is placed at local Municipality as well. Complaints' from the people, regarding the environmental safeguard issues in case of their disturbance and inconvenience, because of improper or inadequate implementation of SSEMP, can be accepted in both places. Complaints' will be registered in database system, assigning compliant number with date of receipt. Complaints' will be investigated and complainant will be informed about time frame in which the corrective action will be undertaken, in case if the raised problem is realistic.

119. Register and resolve grievances that fall under direct responsibility of Contractor (CC) and can be effectively addressed at level of CC and Supervision Consultant (SC), without involvement of MDF or latterly the ADB.

120. Grievances to be handled at the level of CC or SC include:
    - Social concerns related to contractor activity;
    - Environmental management;
    - Community safety.

121. MDF, as EA, facilitates the grievance resolution by implementing a project-specific Grievance Redress Process (GRP). It will deliver grievances to relevant authorities, in case if such grievances are sent to MDF. The official administrative bodies are obliged to respond to the grievances that have been received from population or other interested parties in accordance with the requirements of the Administrative Code of Georgia.

122. According to the existing legal and administrative system in Georgia, there are several entities responsible for addressing environmental complaints of population and interested parties. The administrative bodies directly responsible for environmental protection within the projects area are: MoE, municipal offices (gamgeoba) and Tbilisi and Batumi City Halls. The affected population and stakeholders may send their grievances, related to the project-induced environmental impacts directly to the mentioned administrative bodies responsible for environmental protection.

123. For effective implementation of grievance redress mechanism (GRM), every month Stakeholders Engagement Meetings are held at project area with participation of GFPs and CC and SC stuff. During the meetings several different issues are being discussed and considered by participants.

124. Issues raised and considered during stakeholders engagement meetings, within reporting period, are as follows:

- Installation of additional banner with final image of the beach at the site (on May, 23)
- Access road near Boom-Boom beach (on May, 23);
- Open second entrance for the tourists (on June, 23).

125. Following solutions were found for the raised concerns on the meetings:

- Additional banner with final image of the beach was installed;
- Access road near Bam-Barum was made;
- Second entrance was opened for the tourists, safety warning signs were installed, area was cleaned from iron and concrete debris;

126. It should be noted that local residents are generally satisfied with arranged issues. However, a group of hoteliers did verbally complain in June 2017. As this complaint was not directly through the GRM, MDF did not receive this complaint until after the reporting period. Nevertheless, measures are now being implemented to resolve this issue and these will be detailed in the next monitoring report.

4. PART IV – ACTION PLAN FOR THE NEXT PERIOD

127. During the next reporting period the following activities will be performed:

128. **Reporting:** New monthly and quarterly reports will be prepared and submitted to the MDF – Q3-Q4-2017;

129. **Implementation of Monitoring Program:** Monitoring measurements of air, water and noise will be conducted during Q3-Q4 2017.

130. SSEMP will be updated together with DD, which re-design process is ongoing. Updated SSEMP will be presented by the SC to the MDF within Q3, 2017.

131. Monitoring program will be implemented in accordance to updated SSEMP. Schedule reflecting planned monitoring activities during Q3 and Q4 , 2017 is provided at the tables 5 and 6 below:

Table 5: Schedule of dates for conducting of monitoring activities during Q3

Q3 Schedule of dates for conducting of monitoring tests (Air, Noise, Water Turbidity, walk over survey)

July, 2017

#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach

August, 2017

#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach

September, 2017

#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach

Table 6: Schedule of dates for conducting of monitoring activities during Q4

Q4 Schedule of dates for conducting of monitoring tests (Air, Noise, Water Turbidity, walk over survey)					
September, 2017					
#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach
October, 2017					
#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach
December, 2017					
#	Test date	Reporting date	Test description	Devices during monitoring	Location
1	First week of Month	Second week of Month	**Atmospheric air samples for chemical analysis** - conducting by ENV Agency	Casella CEL-712 Microdust Pro Dust Monitor GasAlertMicro 5 PID Multi Gas Detector	1 - School lyceum "Taoba" 2 - Hotel "Magnolia" 3 - Shota Rustaveli University
2	First week of Month	Second week of Month	**Noise measurement** - Construction Contractor "Struijk Group Georgia"	PCE-322A	
3	First week of Month	Second week of Month	**Water Turbitity test** - Construction Contractor "Struijk Group Georgia"	TSS Portable handheld measurement instrument for turbidity/solids	Site Beach areas (Where activities will be carried out - Dredging/Excavation)
4	First week of Month	Second week of Month	**Walk over survay**	Counting of the number of species, located on the beach using by 20-60x60 monocular optical bird watching tripod telescope	From the Chorokhi delta to Alphabet Tower along the beach

Annexes

Annex 1: Monitoring Data

Object of monitoring	Control/Sampling Point	Technique	Frequency/time	Target	Entity responsible for Monitoring
Noise	- School lyceum "Taoba" - Hotel "Magnolia" - Shota Rustaveli University	SLM700 Stream Line® Modular Electronic Sounder PCE-322A	- One time before commencing execution of works - One week per month during execu - Regular control (particularly du much "noisy" operations); - Measuring (in case of grievance);	Ensuring compliance with health and safety norms; Minimizing the population disturbance	SC, MDF, Struijk Group
Water Turbidity	- Site Beach areas (Where activities will be carried out - Dredging/Excavation)	Laboratory (ISO 11923:2007) TSS Portable handheld measurement instrument for turbidity/solids	- One time before commencing execution of works - One week per month during execution - During dredging/escavation	Ensuring the protection of the aquatic life and the water quality for recreational use (bathing	SC, MDF, Struijk Group
Terrestrial Biota	- From chorocki delta to Alphabet Tower along the beach	Counting the number of species located on the beach using b 20-60x60 monocular optical bird watching tripod telescope	- One time before commencing execution of works - One day per month during execution	Ensuring the protection of terrestrial biota	SC, MDF, Struijk Group

Atmospheric air	- School lyceum “Taoba” - Hotel “Magnolia” - Shota Rustaveli University	- Casella CEL-712 Micro dust Pro Dust Monitor - Gas Alert Micro 5 PID Multi Gas Detector	- One time before commencing execution of works - One week per month during execution - During the transportation - operations; - In dry weather on a periodic basis	Ensuring compliance with the established quality norms of ambient air quality; Minimizing the impact on the population health	SC, MDF, Struijk Group

Annex 2: Implementation report on the environmental impact assessment (EIA)/initial environmental examination (IEE)/Site Specific Environmental Management Plan (SEMP) mitigation requirements

Reference	Requirement	Action to date	Action required/comment
Noise	The equipment and vehicles should be maintained in good working order; Driving the vehicles at optimal speeds; Instructing the personnel (particularly, the drivers of vehicles and techniques); Registering and responding to grievances (if any); Driving the vehicles along optimal routes and at optimal speeds; Switching off the vehicle drives or running at minimal speed when the vehicles are not used; Carry out noisy operations during day time; Reaching preliminary agreement with the population living near the road about particularly noisy works.	On site Environmental specialists are conducting control (on regular basis)	Regular monitoring has been carried out to provide guaranteed protection of the noise quality. During the period baselines were performed
Dust	Watering of the non-asphalted ground or bare ground surfaces once in four hours on working days and in dry or windy weather; Observing the rules for storing the fill construction material to avoid their dusting in windy weather; Covering trucks when transporting loose materials,	All vehicles are maintained in good working conditions. Drivers are instructed to follow the limitations of driving speed. All noisy operations have been carried out during day time. No grievance has been detected concerning noisy works.	Monitoring of the construction process noise level has been carried out by contractor environmental specialist on regular basis and by supervising environmental specialist. Regular control (particularly during much "noisy" operations); during the period baseline was performed Measuring (In case of grievance); During this period

	when there is probability of dusting; Taking necessary precautions (e.g. avoiding throwing the materials from heights when unloading them) to avoid excess dust emission during the earthworks and loading and unloading the materials; Driving the vehicles at optimal speeds; Washing the vehicle tires (recommended to use commercial services for this purpose); Instructing the personnel (particularly, the drivers of vehicles and techniques); Registering and responding to grievances (if any); Driving the vehicles along optimal routes and at optimal speeds; Switching off the vehicle drives or running at minimal speed when the vehicles are not used.		no grievance or problems has been detected. Technical check-up of machinery before works. The nearest receptor (residential houses) is approximately 50-500 m away from construction site, drivers are maintaining the safe speed limits 30 km/h on main roads and 10 km/h on construction site, there for no noise complains has been detected.
Air Pollution of emissions	The equipment and vehicles should be maintained in good working order; Driving the vehicles along optimal routes and at optimal speeds; Switching off the vehicle drives or running at minimal speed when the vehicles are not used. Instructing the personnel before the start-up of the works.	All vehicles are maintained in good working conditions. Drivers are instructed to follow the limitations of driving speed (On construction site 10 km/h, 30 km/h on main roads). All operations have been carried out during day time.	Monitoring of the construction process noise level is been carried out by contractor environmental specialist on regular basis and by supervising environmental specialist. Regular control (particularly during much high traffic operations); during this period baseline was performed Measuring (In case of grievance); During this period no grievance or problems has been detected.

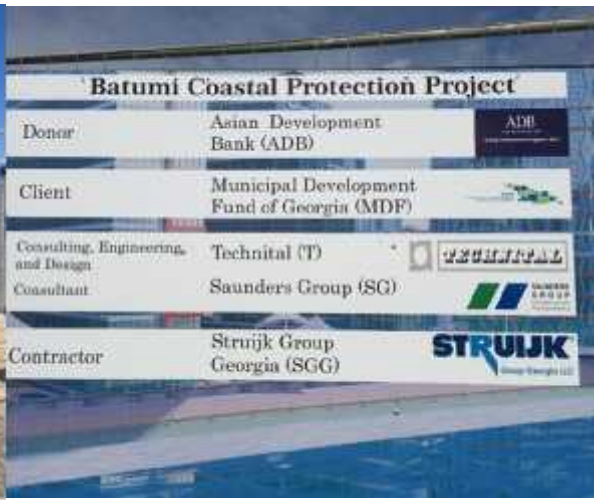
			Technical check-up of machinery before works. The nearest receptor (residential houses) is approximately 50-500 m away from construction site, drivers are maintaining the safe speed limits 30 km/h on main roads and 10 km/h on construction site, there for no noise complains has been detected.
Waste	Visual control of the area; Control over the waste management. Protecting soil and water quality; Reducing the risk of negative visual impact; No dissatisfied population.	Monitoring of waste management issues is being carried out by contractor environmental specialist and by supervising environmental specialist. Regular check-up and inspection; Construction waste is accumulated on construction site in special isolated areas divided by hazardous, domestic and construction waste. Construction company has signed contract with the companies for waste removal. The waste is being removed from construction site buy authorized personal only in accordance of safety regulations.	

Disturbance of the seawater during dredging /excavation	During the works to level the seabed, permanent seawater analyses are needed to identify the degree of the water turbidity; If the degree of the water turbidity is over the thresholds indicated in SSEMP, the works must be stopped and relevant corrective measures must be taken.	Monitoring of the Increased seawater turbidity level is been carried out by contractor environmental specialist on regular basis and by supervising environmental specialist. Permanent visual control;	During dredging/excavation environmental specialists will conduct visual control, taking turbidity analysis. During the period baseline test were performed. No dredging/excavation activities occurred in the period.

Annex 3: Photo

Working area for extra works and filling with materials coming by quarry

Extra works- restoration of eroded bualvar area



Site camp area and singinig Hazardous waste storing area

Waste storing area

Delta of the Choroki River

Chorochi River from the delta toward the first dike

Choroki River immediately up of the first dike


Oil leakage from a scarper 31.03.2017


The broken scraper was removed from the working area (31.03.2017)

Corrective actions immediately applied 31.03.2017

Attachment 1: Baseline survey parameters conducted by NEA

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტრო
MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES PROTECTION OF GEORGIA

გარემოს ეროვნული სააგენტო
NATIONAL ENVIRONMENTAL AGENCY

№ 2/1-230 15 03 2017წ

შპს „სტრუიკ გრუპ ჯორჯია"-ს დირექტორს

ბ-ნ ედვარდ სტრუიკს

ბატონო ედვარდ,

საქართველოს გარემოსა და ბუნებრივი რესურსების დაცვის სამინისტროს ს.ს.ი.პ „გარემოს ეროვნულ სააგენტო"-სა და შპს „სტრუიკ გრუპ ჯორჯია"-ს შორის 2017 წლის 22 თებერვალს გაფორმებული ფმ-№3/171 ხელშეკრულების თანახმად, განვდით ქ. ბათუმში 4 კმ-იანი სანაპირო ზოლის გასწვრივ, თქვენს მიერ მითითებული წერტილებიდან აღებული წყლის სინჯების ქიმიური ანალიზისა და პერში ჩატარებული გაზომვების შედეგებს.

დანართი: 5 გვ.

პატივისცემით,

სააგენტოს უფროსი თამარ ბაგრატია

ს. ეფრემიძის ქუჩა 150, 0112, თბილისი, საქართველო
150 D. AGMASHENEBELI AVE. 0112. TBILISI. GEORGIA
Tel.: +995 32 2439502 FAX: +995 32 2439503
E-mail: info@meteo.gov.ge Web: www.meteo.gov.ge

გარემოს ეროვნული სააგენტო
გარემოს დაბინძურების მონიტორინგის დეპარტამენტი

ატმოსფერული ჰაერის, წყლისა და
ნიადაგის ანალიზის ლაბორატორია

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გარემოს ეროვნული სააგენტო

გარემოს დაბინძურების მონიტორინგის დეპარტამენტი

ატმოსფერული ჰაერის, წყლისა და ნიადაგის ანალიზის ლაბორატორიის ბათუმის ლაბორატორია

ბათუმი, რუსთაველის 51

- გამოცდის ოქმი –
№ ბ.1-2017

გარემოს ეროვნული სააგენტო
გარემოს დაბინძურების მონიტორინგის დეპარტამენტი

ატმოსფერული ჰაერის, წყლისა და
ნიადაგის ანალიზის ლაბორატორია

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გამოცდის ოქმი №8.1-2017

რეგისტრირებული სინჯის ნომერი: №1733, №1739-№1741

გამოცდის ოქმის გვერდების რიცხვი: 4

დამკვეთის სახელი: შპს „სტრუიკ გრუპ ჯორჯია"

დამკვეთის მისამართი: ქ.თბილისი, ვარკეთილის დას., III მასივი, ზემო პლატო, №33ბ, I სართული

ტელ.: 579 74 10 11

შემომტანის მიერ მიცემული ეტიკეტი: N1-N4

სინჯის აღწერა და იდენტიფიკაცია (მატრიცა, ფორმა): ზღვის წყალი

გამოყენებული მეთოდი/ხელსაწყო: წონითი (ISO 11923:2007)

სინჯის მიღების თარიღი: 23.02.17

გამოცდის ჩატარების თარიღი: 23.02.17-28.02.17

გამოცდის ოქმის გაცემის თარიღი: 09.03.2017

№1733 (4)

ბათუმი - ანბანის კოშკი
X-0719703 Y-4615094

№	ინგრედიენტები	ერთეული	მიღებული შედეგები	გამოყენებული მეთოდები
1	შეწონილი ნაწილაკები	მგ/ლ	9.6	ISO 11923:2007

№1739 (3)

ბათუმი - „სარემო"
X-0717983 Y-4613852

№	ინგრედიენტები	ერთეული	მიღებული შედეგები	გამოყენებული მეთოდები
1	შეწონილი ნაწილაკები	მგ/ლ	49.6	ISO 11923:2007

№1740 (1)

ბათუმი - აეროპორტის მიმდებარე ტერიტორია
X-0715580 Y-4610686

№	ინგრედიენტები	ერთეული	მიღებული შედეგები	გამოყენებული მეთოდები
1	შეწონილი ნაწილაკები	მგ/ლ	54.4	ISO 11923:2007

№1741 (2)

ბათუმი - „ბუმ-ბუმ"
X-0716535 Y-4611921

№	ინგრედიენტები	ერთეული	მიღებული შედეგები	გამოყენებული მეთოდები
1	შეწონილი ნაწილაკები	მგ/ლ	40.8	ISO 11923:2007

გარემოს ეროვნული სააგენტო
გარემოს დაბინძურების მონიტორინგის დეპარტამენტი

აბრამიანული პირის, წყლის და
ნიადაგის ანალიზის ლაბორატორია

www.nea.gov.ge

შენიშვნა: გამოცდის შედეგები სადაო გამოცდის ობიექტის მიღების თარიღიდან 14 დღის განმავლობაში.

შემსრულებლები:

თამილა ღლონტი

ბათუმის ლაბორატორიის
მთავარი სპეციალისტი

ირინე ბარამიძე

ლაბორატორიის უფროსი:

ელიზა ბაქრაძე

ქ. ბათუმში 4 კმ-იან სანაპირო ზოლის გასწვრივ
ჰაერის დაბინძურების და ხმაურის ბგერის დონის გაზომვის შედეგები
23.02.2017 მდგომარეობით

ხელშეკრულება-22.02.2017 წლის №მ-3/171 პასუხის დანართი

№	გაზომვის ადგილი	კოორდინატები	კონცენტრაცია				ხმაურის დონე
			მტვერი მგ/მ³	ნახშირბადის მონოოქსიდი მგ/მ³	აზოტის დიოქსიდი მგ/მ³	გოგირდის დიოქსიდი ppm	დბ
1	აეროპორტის მიმდებარე ტერიტორია	371715580 4610686	0,019	0,15	0,001	<0,1	78,1
2	„ბუმ-ბუმ"	371716535 4611921	0,012	0,13	0,001	<0,1	86,3
3	„სანრემო"	371717983 4613852	0,009	0,09	0,001	<0,1	80,4
4	ანბანის კოშკთან	371719703 4615094	0,011	0,59	0,008	<0,1	76,4

გაზომვები ჩატარდა შემდეგი ხელსაწყოების გამოყენებით: გოგირდის დიოქსიდი - GASALERTMICRO 5; მტვერი - CASELLA CEL-712 Microdust Pro; ნარხშირჟანგი და აზოტის დიოქსიდი - ЭЛАН; ხმაური ბგერის დონე - SLM-700.

გაზომვები ჩაატარეთ:
მთავარი სპეციალისტი — სერგო ხაცავა
უფროსი სპეციალისტის
მოვალეობის შემსრულებელი — გიგოლა მორგოშია

შეთანხმებულია:
დეპარტამენტის უფროსი — მარინე არაბიძე

Attachment 2: Noise measurements implemented by Mamuka Shaoshadze

Location			Noise level dBA	Photos of taken during sample	Average Level of Noise (dBA)	
MPC (maximum Permissible concentration) FOR WORKING AREA			80		Daily	Total
	Day 1 24.04.2017	Morning	58.3		57.9	
		Noon	56.8			
		Evening	58.7			

1. 1 - School-lyceum “Taoba”		Morning	58.3					57.6
		Noon	50.1			55.7		
		Evening	58.7					
		Morning	52.2					
		Noon	54.8			53.9		
		Evening	54.8					
		Morning	61.5			(		

		Noon 63.5			
		Evening 61.0			
		Morning52.1			
		Noon 59.0		58.5	
		Evening64.6			
		Morning55.5			
		Noon 55.3			
				56.4	

		Evening	58.5			
	Day 2 25.04.2017	Morning	58.4		56.1	
		Noon	54.8			
		Evening	55.1			
2. **2 - Hotel "Magnolia"**	Day 3 26.04.2017	Morning	53.7		57.4	**55.8**
		Noon	60.4			
		Evening	58.2			

		Morning51.9			
		Noon 52.9		52.5	
		Evening52.7			
		Morning56.2			
		Noon 54.4		57.0	
		Evening60.5			
		Morning68.8			

		Noon	63.5		(	
		Evening	67.5			
		Morning	59.9			
		Noon	62.4		61.2	
		Evening	61.5			
		Morning	59.9			62.6
		Noon	61.0		(	

		Evening	59.5		
	Day 4 27.04.2017	Morning	62.3		
		Noon	63.3		62.0
		Evening	60.6		
	Day 5 28.04.2017	Morning	62.8		
		Noon	63.9		63.1

		Evening	62.6		

Introduction

Under the project Coastal Protection Batumi contractor "Struijk Group Georgia" LLC Environmental Manager conducted noise measurement in order to identify and quantify noise level of workplace for community.

General description

Contractor Environmental representative Mamuka Shaorshadze visited site in order to take measure - noise; The sampling took place at 3 (three) locations, three times a day (morning, noon and evening) at all sections there the activities were in progress. Locations: 1 - School lyceum "Taoba"; 2 - Hotel "Magnolia"; 3 - Shota Rustaveli University.
Device Name: Sound Level Meter PCE-322A.

Noise Standards: In accordance with the 'Law on public health', the environmental qualitative norms are approved by Decrees of the Minister of Labor, Health and Social Security 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 09.15.1006, 351/N of 12.17.2007).

Georgian Noise Quality Standards in Residential Areas

Time	Equivalent Noise Level La eq. dBA	Maximum Admissible Level La max dBA
7am – 11 pm	55	70
11pm – 7am	45	60

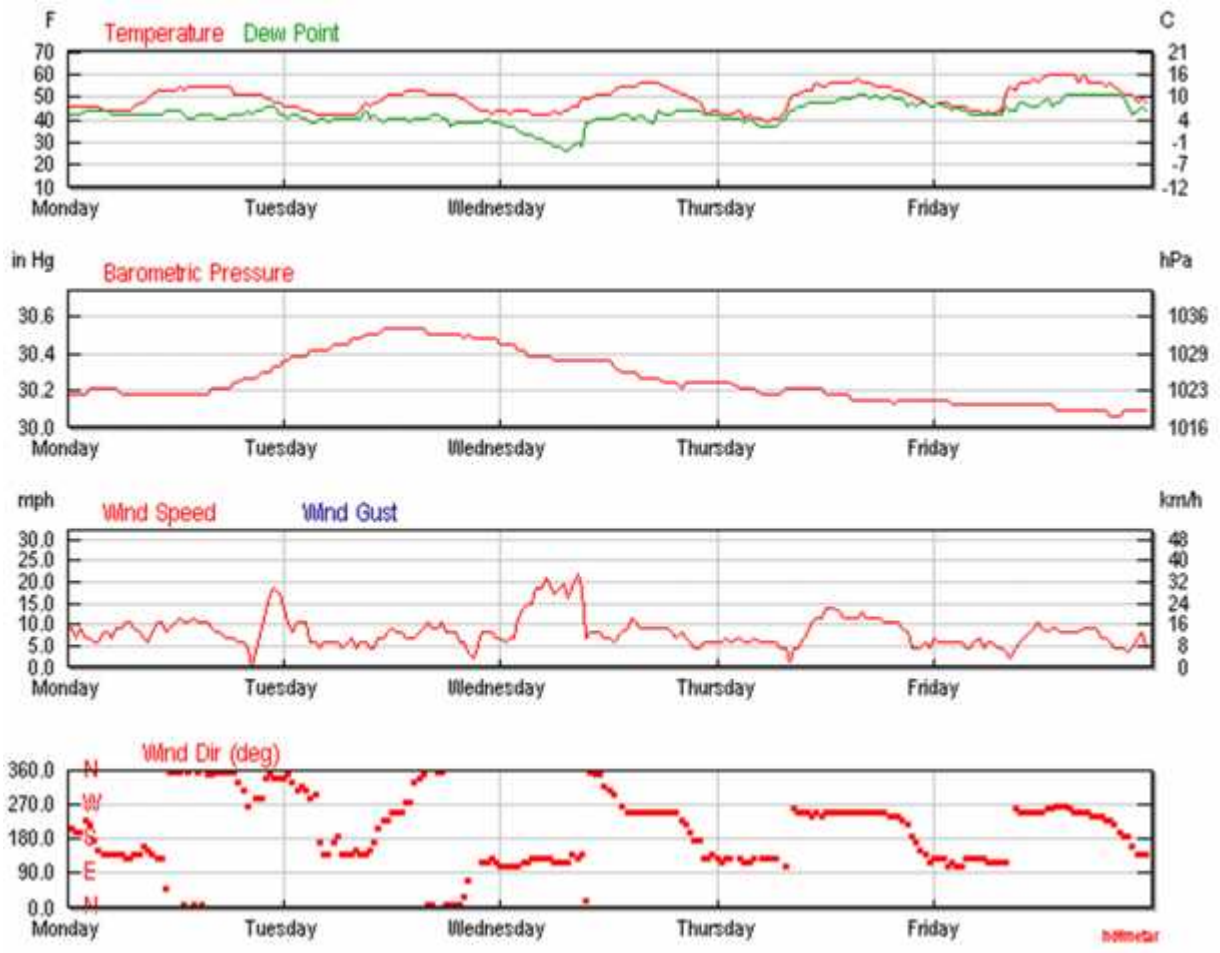
Meteorological Data Batumi, Georgia

Weather History & Observations

2017	Temp. (°C)			Dew Point (°C)			Humidity (%)			Sea Level Press. (hPa)			Visibility (km)			Wind (km/h)			Precip. (mm)	Events
Apr	High	vg	ow	igh	vg	ow	igh	vg	ow	igh	vg	ow	igh	vg	ow	igh	vg	igh	sum	
24	13	0		8			100	8	8	1027	1023	1022	10	0		29	4	-	0.00	Rain

2017	Temp. (°C)			Dew Point (°C)			Humidity (%)			Sea Level Press. (hPa)			Visibility (km)			Wind (km/h)			Precip. (mm)	Events
25	12	9	6	7	5	3	93	81	58	1034	1032	1028	10	0	0	23	3	-	0.00	Rain
26	14	10	6	7	3	-1	100	77	43	1031	1027	1023	-	-	-	35	8	-	0.00	
27	15	9	4	11	8	1	100	85	72	1024	1022	1020	-	-	-	23	1	-	0.00	
28	16	11	6	11	8	6	100	83	59	1021	1020	1018	-	-	-	16	0	-	0.00	

Weather History Graph



The Meteorological data are taken from:
https://www.wunderground.com/history/airport/UGSB/2017/4/24/CustomHistory.html?dayend=28&monthend=4&yearend=2017&req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=&MR=1

Attachment 3: Site re-entry walk over surveys for preventing damage to flora and Fauna

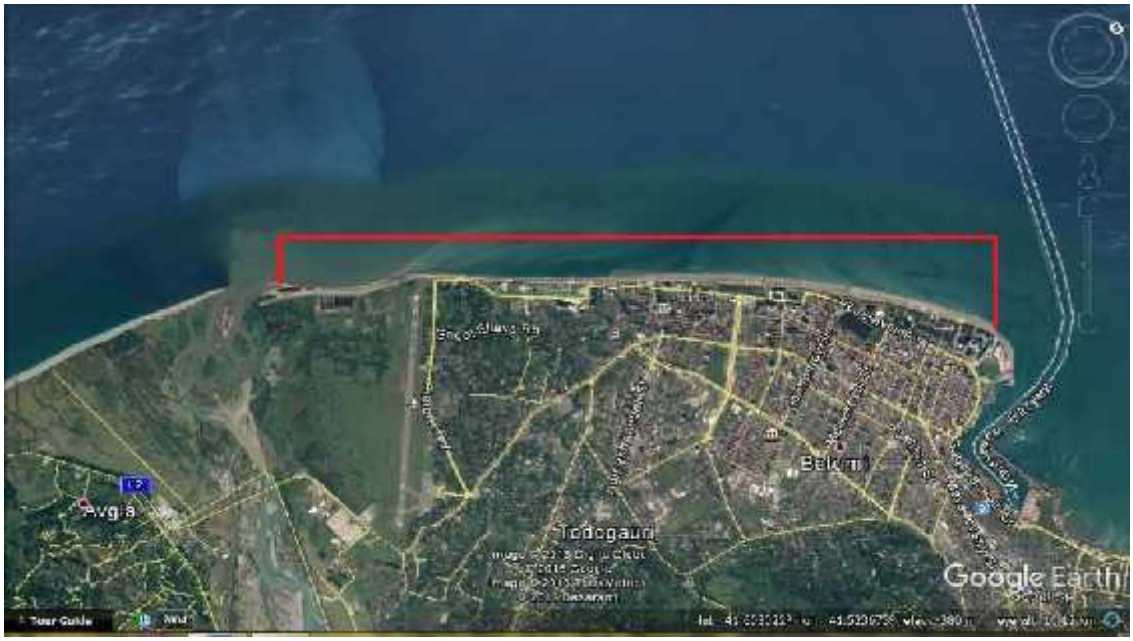
Project: Batumi Costal Protection

Report of: Site re-entry walk over survey (from delta Chorokhi to Alphabet tower) for preventing damage to Fauna

Report N1 (February)

Location - Batumi City
Date: 24th February, 2017

This report reflects information about conducted site re-entry walk over survey on 24th February, 2017 of investigation existing Fauna terrestrial habitats. Investigation site section was covered as sea line as sea parts territories. Please see the investigation location:



During the investigation period weather was sunny. Investigation was conducted from 7 am to 10 pm. The investigation was conducted in the project alignment area.

There were several species of avifauna identified on the mentioned location, please see below the list of table:

#	Georgian Name	Scientific Name	Quantity
1	დიდი კოკონა	Podiceps cristatus	67
2	მცირე კოკონა	Tachybaptus ruficollis	3
3	დიდი ჩვამა	Phalacrocorax carbo	14
4	რუხი ყანჩა	Ardea cinerea	2
5	დიდი თეთრი ყანჩა	Ardea alba	1
6	ქოჩორა ყვინთია	Aythya fuligula	28
7	მერა	Milvus migrans	1

8	ჩვეულებრივი კაკაჩა	Buteo buteo	2
9	მელოტა	Fulica atra	4
10	თეთრი ბოლოქანქარა	Motacilla alba	5
11	სკვინჩა	Fringilla coelebs	2
12	სახლის ბეღურა	Passer domesticus	11
13	რუხი ყვავი	Corvus cornix	8
14	ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1
15	ყვითელფეხა თოლია	Larus michahellis	135
16	ტბის თოლია	Chroicocephalus ridibundus	56

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table. Lutra lutra (GRL specie) was identified in delta of river Chorokhi. It is unlikely to affect project construction works on them. As, no any project construction works are in progress and nothing is planning in the future in the river Chorokhi delta.

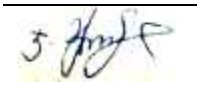
#	Georgian Name	Scientific Name	Quantity
1	წავი	Lutra lutra	4
2	მაჩვი	Meles meles minor	7
3	ნუტრია	Myocastor coypus	8
4	ბუჩქნარის მემინდვრია	Microtus arvalis	14
5	მინდვრის თაგვი	Apodemus agrarius	23
6	ვასაკა	Hyla arborea	15
7	ჩვეულებრივი გომბეშო	Bufo	32
8	მწვანე ბაყაყი	Rana esculenta	27
9	ჩვეულებრივი ტრიტონი	Triturus vulgaris	13
10	ჩვეულებრივი ანკარა	Natrix natrix	4
11	წყლის ანკარა	Natrix tessellata	9
12	კასპიის კუ	Mauremys caspica	2
13	ჭაობის კუ	Emys orbicularis	6

Conclusion:

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Prepared by: Jimsher Mamuchadze

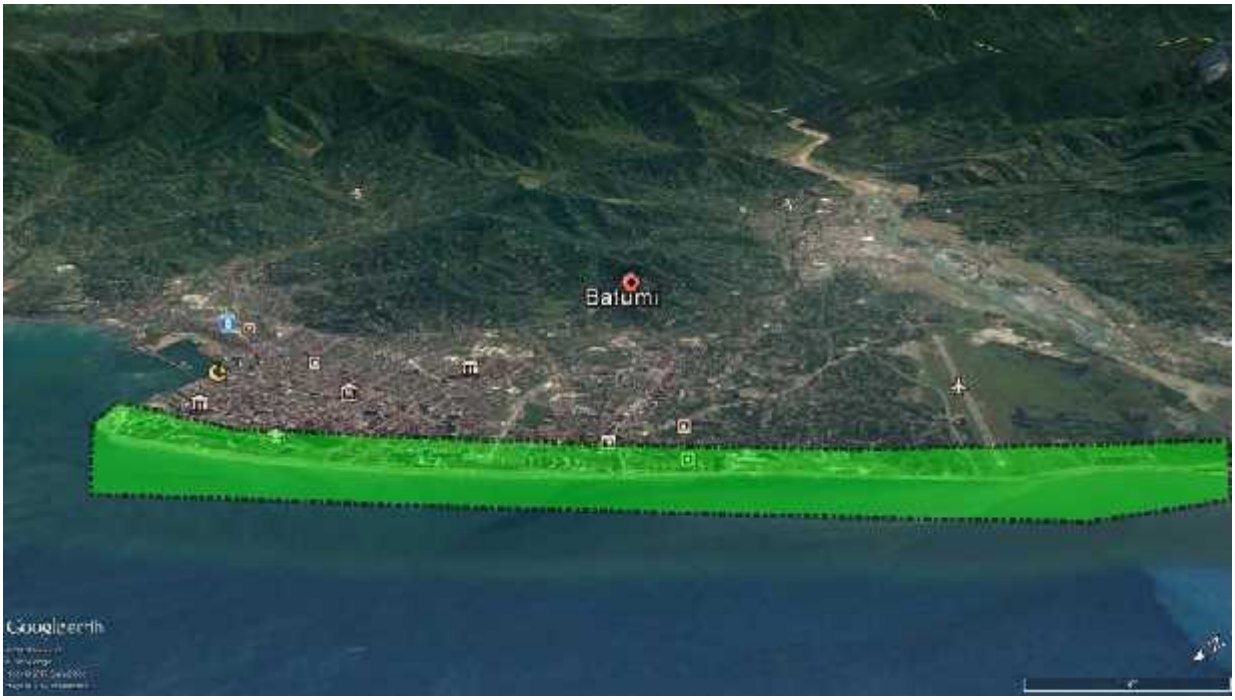
Signature:



Report of: Site re-entry walk over survey (from delta Chorokhi to Alphabet tower) for preventing damage to Flora and Fauna

Location - Batumi City Date:
1st of June, 2017

This report reflects information about conducted site re-entry walk over survey (along the boulevard) on 1st June, 2017 of investigation existing Fauna terrestrial habitats. Investigation site section was covered as sea line as sea parts territories. Please see the investigation location:



During the investigation period weather was cloudy. Investigation was conducted from 7 am to 10 pm. There were several species of avifauna identified on the mentioned location. see below the list of table:

Avifauna		Quantity	
Georgian Name	Scientific Name	Baseline date	Date
		24/02/2017	01/06/2017
დიდი კოკონა	Podiceps cristatus	67	-
მცირე კოკონა	Tachybaptus ruficollis	3	-
დიდი ჩვამა	Phalacrocorax carbo	14	2

რუხი ყანჩა	Ardea cinerea	2	-
დიდი თეთრი ყანჩა	Ardea alba	1	-
ქოჩორა ყვინთია	Aythya fuligula	28	-
ძერა	Milvus migrans	1	-
ჩვეულებრივი კაკაჩა	Buteo buteo	2	-
მელოტა	Fulica atra	4	-
თეთრი ბოლოქანქარა	Motacilla alba	5	1
სკვინჩა	Fringilla coelebs	2	1
სახლის ბეღურა	Passer domesticus	11	4
რუხი ყვავი	Corvus cornix	8	-
ჩვეულებრივი თევზიყლაპია	Sterna hirundo	1	-
ყვითელფეხა თოლია	Larus michahellis	135	-
ტბის თოლია	Chroicocephalus ridibundus	56	-
მებორნე	Actitis hypoleucos	-	1
პატარა წინტალა	Charadrius dubius	-	2
შევარდენი	Falco subbuteo	-	1
ვერცხლისფერი თოლია	Larus cachinnans	-	23
სოფლის მერცხალი	Hirundo rustica	-	40
მთის ბოლოქანქალა	Motacilla cinerea	-	1
შავი ყვავი	Corvus corone	-	1

There were several species of terrestrial mammals habitats identified on the mentioned location, please see below the list of table provided below. Lutralutra (GRL specie) was identified in delta of river Chorokhi. It is unlikely to affect project construction works on them. As, no any project construction works are in progress and nothing is planning in the future in the river Chorokhi delta.

Terrestrial animals		**Quantity**	
Georgian Name	Scientific Name	Baseline date	Date
		24/02/2017	1/6/2017
წავი	Lutralutra	4	1
მაჩვი	Meles meles minor	7	2
ნუტრია	Myocastor coypus	8	1
ბუჩქნარის მემინდვრია	Microtus arvalis	14	5
მინდვრის თაგვი	Apodemus agrarius	23	12
ვასაკა	Hyla arborea	15	4
ჩვეულებრივი გომბეშო	Bufo	32	21

მწვანე ბაყაყი	Rana esculenta	27	13
ჩვეულებრივი ტრიტონი	Triturus vulgaris	13	7
ჩვეულებრივი ანკარა	Natrix natrix	4	2
წყლის ანკარა	Natrix tessellata	9	2
კასპიის კუ	Mauremys caspica	2	1
ჭაობის კუ	Emys orbicularis	6	4
რუხი კურდღელი	Lepus europaeus	-	2
ჩვეულებრივი თხუნელა	Talpa europaea	-	1

Conclusion:

Nowadays, no one from these identified existing spices aren't doing the breeding and nestling near the project working areas. In case of any breeding and nestling period all construction works will be stopped, which may have any potential impact on them and their locations will be marked and protected.

Note: None of the species provided above in the list are in the red list.

Prepared by: Jimsher Mamuchadze Signature: _ Email: Jimshermamuchadze@yahoo.com

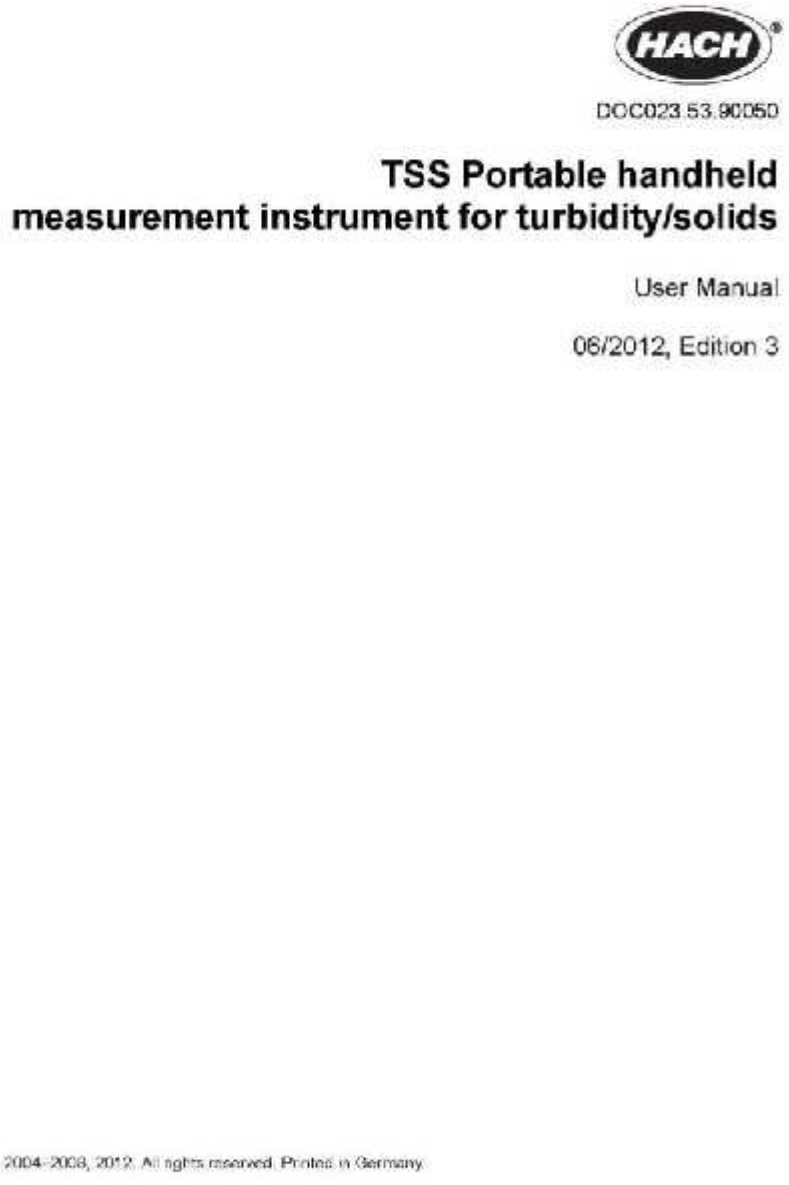
Cell: +995 95 40 66 90

Attachment 4: Proposed monitoring instrumentation

Proposed monitoring instrumentation

TURBIDITY

The following monitoring instrumentation was proposed by Contractor, it was approved.
Waiting for calibration test



DOC023.53.90050

TSS Portable handheld measurement instrument for turbidity/solids

User Manual

06/2012, Edition 3

Section 1 Specifications

These are subject to change without notice.

Performance specifications		
Wavelength	860 nm	
Parameter	Turbidity	Solids (dry matter)
Measurement method	Combined multiple-beam alternating light technique with IR diode system and beam focus	
	2-channel 90° scattered light measurement in accordance with DIN EN 27027 / ISO 7027; additional measurement value verification through six-channel multiple-angle measurement	Modified absorption measurement Six-channel multiple-angle measurement
Measuring range	0.001–9999 FNU (NTU)	0.001–400 g/L (upper limit depends on matrix)
Resolution	0.001 at 0–0.999 FNU 0.01 at 1–9.99 FNU 0.1 at 10–99.9 FNU 1 at >100 FNU	0.001 at 0–0.999 g/L 0.01 at 1–9.99 g/L 0.1 at 10–99.9 g/L 1 at >100 g/L
Precision	Measuring range: 0.001–9999 FNU Accuracy of the measurement value: < 3% or +/- 0.02 FNU (whichever is greater)	Measuring range: 0.001–400 g/L Accuracy of the measurement value: < 4% or +/- 0.001 g/L (whichever is greater)
Reproducibility	<4% of measurement value	<5% of measurement value
Units	FNU, NTU, EBC	ppm, mg/L, g/L, %
Calibration	1 calibration curve (factory calibration)	4 calibration curves
Sample temperature	0–60 °C (32–140 °F), up to 80 °C (176 °F) briefly	
Pressure range	Max. 10 bar	
Display	LCD, alphanumeric, 4 rows of 16 characters	
Input	6 membrane keys, menu with quick access to important functions	
Power supply (rechargeable batteries)	6 rechargeable NiMH batteries (recommended: 1.2 V/min. 1800 mAH)	
Power consumption	Approx. 60 mA	
Data log	Up to 290 measurement values	
Interface	RS 485	
Probe material	Stainless steel, sapphire	
Cable	10 m (33 ft), PUR, ∅ 8.3 mm (0.33 in.); S-2000 connector, 6-pin	
Protection class	Probe: IP68 Control unit: IP 55	
Size	Probe: ∅ 40 mm (1.57 in.), length = 29 cm (11.42 in.) Control unit: 11 x 23 x 4 cm (4.33 x 9 x 1.57 in.)	
Weight	Probe: 1600 g (3.53 lb) Control unit: 560 g (1.23 lb)	
Warranty	2 years	

2.2 Overview of product

The TSS Portable is a handheld measurement instrument for the analytical determination of turbidity and solids in aqueous media.

2.3 Measurement instrument

The instrument stores the recorded data under the corresponding calibration curve. Four calibration curves for solids (C-DS1, C-DS2, C-DS3, C-DS4) and one calibration curve for turbidity (C-TU) are available for selection.

For solids measurements, a specific calibration must be assigned to each measurement point (section 5.1, page 23).

All measurement values are saved with details of the selected calibration curve, the measurement value, the homogeneity, the date and the time.

Various individual parameters for input, signal processing and output can be set in the menu (Section 4, page 15).

2.4 Measuring principle

The measuring principle is based on a combined infrared absorption stray light process, which determines the lowest turbidity value according to DIN EN 27027 just as precisely and continuously as the high sludge content. In so doing, the light scattered sideways by the turbidity particles is measured at an angle of 90°. In the case of solid material, the measurement occurs at an angle of 90° and 120°.

2.5 Probe

The probe contains sensitive optical and electronic components. Care must therefore be taken to ensure that it is not subjected to any hard mechanical impacts. The inside of the probe, and of the display unit, does not contain any components that can be serviced by the user.

www.pce-group-europe.com

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SOUND LEVEL METER
INSTRUCTION MANUAL

PCE-322A