Compliance Environmental Audit Report

November 2014

GEO: Urban Services Improvement Investment Program – Tranche 2
(Mestia Water Supply Headwork)

Prepared by United Water Supply Company of Georgia LLC of the Ministry of Regional Development and Infrastructure for the Asian Development Bank.

43405-024 MFF-GEO Urban Services Improvement Investment Project-Tranche 2

Subproject 1: Mestia Water Supply Headwork

Compliance Environmental Audit Report

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ABBREVIATIONS

ADB - Asian Development Bank

EA- Executing Agency

EIA- Environmental Impact Assessment

EIP- Environmental Impact Permit

EMP- Environmental Management Plan

EMR - Environmental Monitoring reports

DC - Design Consultant

DREP - Division of Resettlement and Environmental Protection

GoG- Government of Georgia

GRC- Grievance Redresses Mechanism

IA- Implementing Agency

IEE- Initial Environmental Examination

IPMO- Investment Program Management Office

DC- Design Consultant

MC- Management Consultant

MoENRP - Ministry of Environment and Natural Resources Protection

MoRDI- Ministry of Regional Development & Infrastructure

SIEE- Summary Initial Environmental Examination

SC - Supervision Consultant

UWSCG- United Water Supply Company of Georgia

USIIP - Urban Service Improvement Investment Program

WSS- Water Supply & Sanitation

WWTP - Waste Water Treatment Plant

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EXECUTIVE SUMMARY

1. The Urban Services Improvement Investment Program (the Investment Program) will improve water supply and sanitation (WSS) services in Georgia's urban centers, which includes provincial capitals, secondary towns and economically important towns. The Investment Program will include (i) infrastructure improvement to rehabilitate, improve, and expand WSS services; (ii) enterprise resource planning and management to improve the service utility s efficiency and sustain investments in the long-term; and (iii) Investment Program management and implementation support. Georgia has a population of 4.43 million and serves as an important nodal point for inter-regional trade flows connecting the South Caucasus and landlocked Central Asia with the Black Sea and Mediterranean basins.

2. Situated in the north bordering Russia, Mestia is an important cultural and tourism centre in Georgia. The service levels of water supply are low with partial coverage, high system losses, and poor water quality at consumer end. With the government initiative to develop Mestia as a major tourist destination, the water demand is likely to grow significantly. This subproject will expand the system and improve the service standards, with a daily supply of potable water in adequate quantity (203 lpcd). The subproject is designed to meet the projected demand of 2040. This will be achieved by: (i) creating infrastructure to tap water from a new source (Mestiachala River); (ii) laying of transmission pipes and (iii) construction a water treatment plant, a reservoir and laboratory facilities.

3. The subproject activities were partly located in the town and in the surrounding hills. The new drinking water intake located in the Mestiachala River was built about 6,5 km north of Mestia. The intake structure consiste of a Tyrolean weir builtin the river bed. A transmission pipeline, DN 300mmof total length 10.7 km was installed from this intake structure to the new storage reservoir of Zarghazi (first section) and from there to the existing distribution reservoir of Lanchavil (second section). The first section run along existing tracks downriver of the intake, surrounded by pastures and partly by forests, up hill to Zarghazi reservoir. The second section runs upward the Lanchavil reservoir. A mainpipeline bridge was installed along this second section, and allowed to fed by gravity the Lancahvil reservoir (original design required a water pumping station which could be cancelled by using this bridge crossing).

4. Within the scope of the project Compliance Audit was conducted on 1-7 September, 2014.The Compliance Audit Report is being prepared to comply with the 2009 ADB's SPS and Georgian legislation, including Safeguards Requirement and aims to identify past and present concerns from the production and business activities of Project Company that related to impacts on environment. Determines were actions in accordance with ADB and Georgian legislation requirements and prepare a Corrective Action Plan ("CAP") containing necessary remedial actions, approximate budget and time frame for resolution of any noncompliance.

5. The compliance environmental audit of Mestia Water Supply HeadworkProject was done in several stages:

- ✓ At stage one so called table audit was conducted and the available materials were studied;
- ✓ At stage two, the meetings with the Project participants with different degrees of responsibility for meeting the environmental requirements and monitoring were held;
- ✓ At stage three, visit to the site and collection of evidences was accomplished.

6. Based on the projects documents review and conducted site visits the Consultant revealed the following **general findings:**

1. The main beneficiaries of the improved system were the citizens of Mestiawho was provided with a constant supply of better quality water, which serves a greater proportionof the population, including urban poor (and tourists as well). This improve the quality oflife of people as well as raising standards of both individual and public health as theimprovements in hygiene reduced the incidence of disease associated with poorsanitation. This lead to economic gains as people away from work less andwill spend less on healthcare, so their incomes will increase;

2. In terms of environment at the project implementation stage strong negative impact on environment was not expected. According to the ADB instructions the project fell under Category B. According to Georgia legislation Environmental Impact Assessment document preparation and obtaining relevant permit was not necessary for project implementation;

3. All documents developed under the project (Loan Agreement, PAM, Contracts) included the obligation to implement the project according to the ADB SPS 2009 as well as pursuant to the environmental requirements stipulated in Georgia legislation;

4. No incidents have occurred during the construction stage and no complaints have been initiated by the residents;

5. All project implementing units had hired environmental specialist with relevant qualifications;

6. At the project implementation stage permanent trainings were held for construction contractor, as well as those specialists of all organizations involved in the project that dealt with environmental issues;

7. Under the project UWSCG and SC environmental specialists performed permanent environmental monitoring. Non-compliances identified by them adequately and corrective actions were planned. The effectiveness of corrective actions were also controlled by the above-mentioned specialists;

8. For better management of the construction camp construction company had to prepare a number of environmental management plans. The construction company had not prepared the above-mentioned plans;

9. If we do not consider the small section (on the territory adjacent to the new reservoir), restoration works have been performed satisfactorily. According to the explanation of Contractor restoration works have been performed on the mentioned section, but it is impossible to visually see the result. Notably, there exists photo material about conducting restoration works on the mentioned territory;

10. Inert waste has not been produced in large quantities during the construction process. Inert waste was derived in the course of project works just on the territory of the construction of a new reservoir and the mentioned waste was fully used on the new reservoir territory, in the process of covering the reservoir with soil according to the technical design;

11. Contractor has not opened a new construction camp under the mentioned project. Contractor uses the construction camp owned thereof. Further, the mentioned camp has not been closed down following the completion of the project.

7.Along with the above-mentioned findings the consultant made the following recommendation:

1. In 2015, SC has to carry out additional inspection of the mentioned territory in order to determine the effectiveness of conducted restoration works.

1. INTRODUCTION

1.1 Background Information on the Project

8.Georgia applied for a loan from the Asian Development Bank (ADB) towards the cost of the Urban Services Investment Program. Part of this loan was used for payments under the contract named – “Mestia Water Supply Headwork”. This sub-project is located in Mestia Town, the administrative centre of Svaneti Region, in north-eastern part of Georgia, bordering Russia. Geographically, it is located at 42o 42’06” E and 43o 04’30” N, about 430 km northwest of Tbilisi. Regional location of Mestia is shown in Map 1.

Map 1: Project Location Area

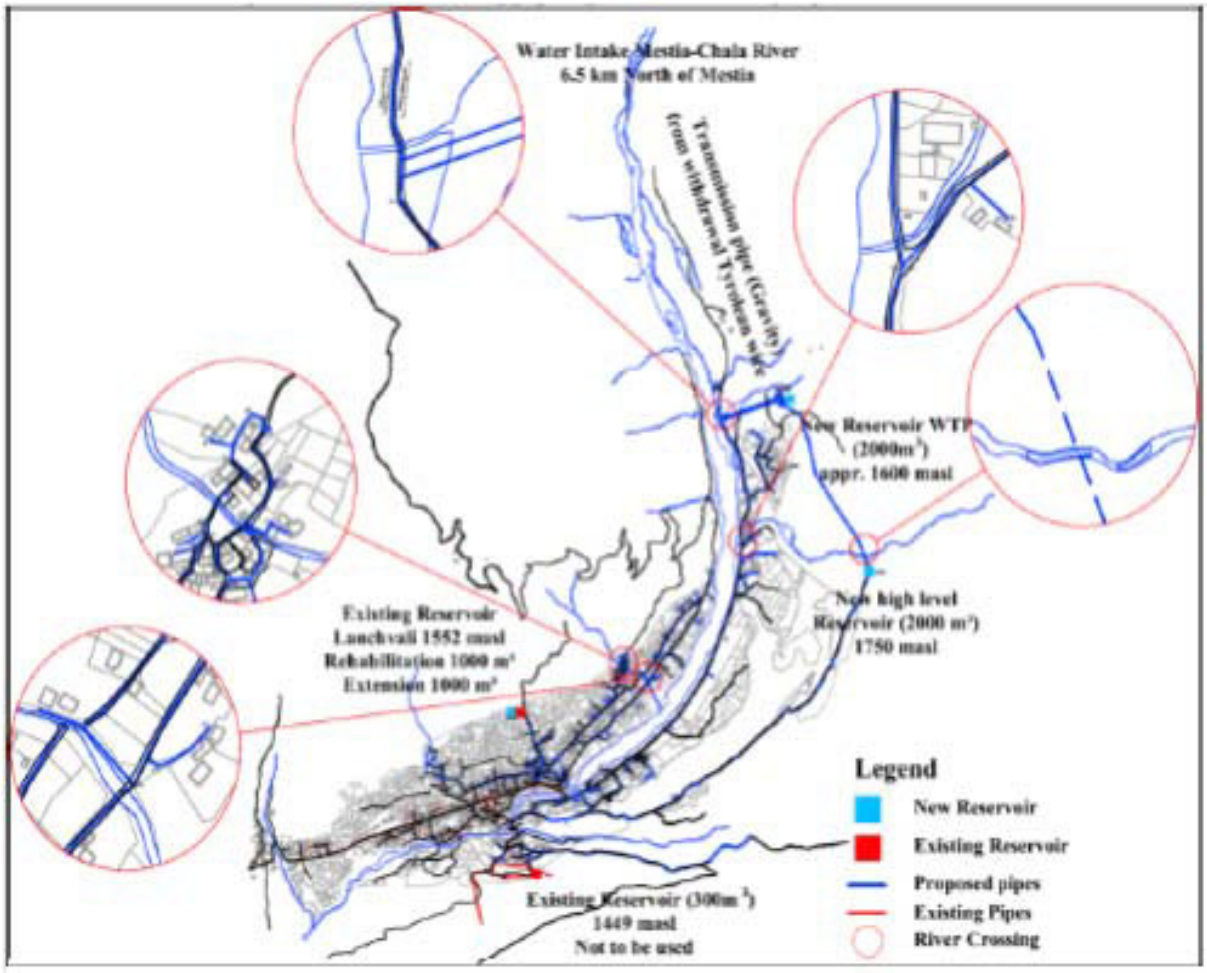
9. The water supply and sewerage distribution service level in Georgia at present are not satisfactory. Services are not available to entire population and the serviced areas suffer with inefficient service levels. Systems are old and inefficient. With the government initiative to develop Mestia as a major tourist destination, the water demand is likely to grow significantly. This subproject will expand the system and improve the service standards, with a daily supply of potable water in adequate quantity (203 lpcd).

10. The Mestia water supply system improvement subproject wasrelatively small in scale and involves straightforward construction and low-maintenanceoperation. Although there are forest areas, none of the components were encroach into theseareas and most of the activities

wereconducted along the existing access roads. Further anydisturbance limited to construction period. Construction work in river bed was also notto have adverse impacts as there are no dependent population and limited aquaticvalue. The identified impacts were mostly short-term, localized and were easilyavoided or mitigated. After construction stage the project have overall beneficial impactson human health and life quality by providing the inhabitants of Mestia with an up to datesanitary system.

11. 99% of works are completed as at 30th June 2013. Most remedial and outstanding works were implemented during May and June 2014 including installation and pressure testing of the last section of DCI pipes in Lanchvali corridor.

Map 2:Mestia Water Supply Improvement Subproject



12. The main works include:

- Tyrolean Weir in Mestiachala River;
- Laying of a transmission line DCI, DN 300 of about 10.6 km;
- Construction of a 2,000 m³ concrete reservoir.

2. Environmental Compliance Audit

2.1 Audit Goals and Objectives

13. This Compliance Audit Report is being prepared to comply with the 2009 ADB's SPS and Georgian legislation, including Safeguards Requirement and aims to identify past and present concerns from the production and business activities of Project Company that related to impacts on environment. Determines were actions in accordance with ADB and Georgian legislation requirements and prepare a Corrective Action Plan ("CAP") containing necessary remedial actions, approximate budget and time frame for resolution of any noncompliance. The specific objectives of the audit can be summarized as follows:

a. Determine and verify whether all environmental requirements, criteria and constraints, prescribed in IEE, EMP and the Concessionaire's Environmental Policy have been adhered to during the construction phase.
b. Determine and verify whether the remedial actions and rehabilitation requirements contained in the EMP have been appropriate and successful to prevent or control environmental pollution and/or damage.
c. Determine and verify whether remedial and rehabilitation actions have been conducted adequately and successfully to prevent and/or minimize environmental pollution or damage.
d. Ensure that an appropriate environmental monitoring and control program exits to follow up on remedial and rehabilitation works completed during the construction phase.
e. Ensure that appropriate environmental monitoring and control program exists for monitoring of all environmental aspects during the operational phase.
f. To identify any shortcomings in the EMP and EMS system implemented during the construction phase and to recommend alterations to the EMS applicable to the operational phase.

2.2 Methodology

14. The compliance environmental audit of Mestia Water Supply Headwork was done in several stages:

I. At stage one so called table audit was conducted and the available materials were studied. The following documents were studied and analyzed at the given stage:

- ✓ Initial Environmental Examination (IEE)for the subproject:
- ✓ Bi-annual environmental monitoring reports drafted by the United Water Supply Company of Georgia (UWSCG)
- ✓ Quarterly Environmental Report developed by the SC (Eptisa);
- ✓ Records of Environmental Monitoring conducted by the SC and UWSCG.

II. At stage two, the meetings with the Project participants with different degrees of responsibility for meeting the environmental requirements and monitoring were held. The meetings were organized with the following environmentalists:

- ✓ Pascal Jansen– Team Leader, Supervision Consultant -Eptisa
- ✓ IrakliLegashvili – EnvironmentalSpecialist, Supervision Consultant - Eptisa
- ✓ KetiChomakhidze – Environmental Consultant,United Water Supply Company of Georgiaunder USSIP

15. Further, a meeting was held with the Mestia residents who live along the project line.

III. At stage three, visit to the site and collection of evidences was accomplished.

2.3Inspection, Monitoring and Reporting

16. No baseline data is provided in IEE of MestiaWS project for air and noise. None of the documents developed under the project envisaged the requirement for the Supervision Consultant to implement qualitative measurements of environmental indicators, therefore monitoring was limited to inspections to verify compliance with mitigation requirements.

17. Contractor's environmental specialist performed daily inspection of construction sites.

18.Representative of a SCand UWSCG performedregular monitoring of construction site except during winter periods during which works were suspended.

19. Environmental specialist of the Unified Water Company performed alsoregular monitoring.

20.The non-compliances that were mainly revealed by the Supervision Consultant and UWSCG specialists were reflected in relevant reports. Corrective actions would be planned for each non-compliance and the quality of performance of corrective actions would be controlled. Identified non-compliances and performed corrective actions would be reflected in a quarterly reports prepared by the Supervision Consultant, as well as in bi-annual reports submitted to the ADB. For example, 15 various types of non-compliances have been identified during the 10 environmental monitoring conducted over the three months in 2013. Corrective actions have been designed for each of those. Furthermore, the SC and UWSCG have conducted environmental monitoring to assess effectiveness of implementation of designed corrective actions (the mentioned document can be found at the ADB webpage).

21. Contractor would submit to the SC monthly progress reports that included environmental issues. SC (Eptisa) develops quarterly progress reports, including environmental monitoring and submits to UWSCG. The UWSCG/environmental specialist prepares bi-annual environmental monitoring reports based on the information submitted by the Contractor and Supervision Consultant and the regular monitoring of the sites.

3. Project Site Audit

22. Site visit took place on September2, 2014. As we have mentioned, the proposed project fell under Category B. The entire project line was passing on the settled territory that is under the high anthropogenic impact. In order to determine the degree of effectiveness of conducted restoration works following the completion of the project the Consultant performed the field audit of the following sites: new water catchment on River Mestiachala; new reservoir and chlorinating unit; water pipes locations and the construction camp.

3.1 Tyrolean Weir in Mestiachala River

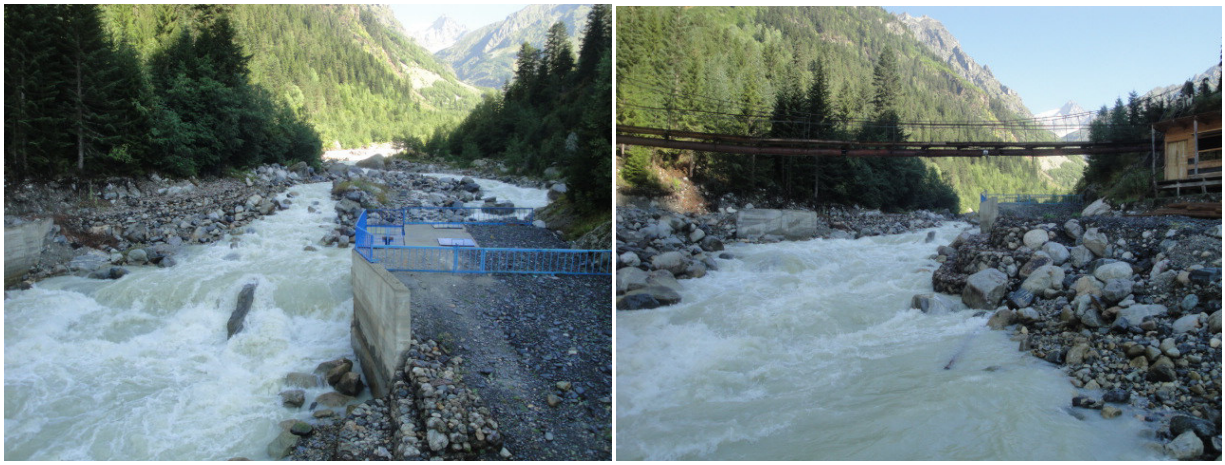
23. Water main is located at a 6 km distance from Mestia, in the River Mestiachala gorge. The territory is located adjacent to a tourist route, respectively, in the course of performing recovery works it was important to retain visual side of the territory in terms of its merging with the existing landscape.

24.Recovery works have been performed to a satisfactory level, the traces of construction waste could not be observed anywhere at the construction site, neither inert waste, nor municipal waste.

Figures 5, 6:Tyrolean Weir in Mestiachala River

25.Restoration works on the territory adjacent to the water intake unit had been performed satisfactorily, following the implementation of embankment works on both sides of the river **(Figures 7 and 8).**

Figures 7 and 8: EmbankmentStructures



3.2 Transmission Line from Tyrolean Weir to New Reservoir

26.On the mentioned section water main flows along the existing road large portion of which is also a “touristic path”. Due to natural conditions, on 6km sections of the mentioned road soil is represented by quite diverse soils. Here there are humus covered sections, as well as the sections covered by slates and sandstones. Restoration works have been performed satisfactorily and all sections of the water main have been restored adequately(**Figures 9,10,11and 12**).

Figures 9,10:Restoration works performed on sandstone territory

Figures 11, 12: **Restoration works on the territory covered partially with humus**

28. No photos of the said territory were taken before the onset of the construction. Therefore, it is impossible to fix the adequacy of the restoration works to the pre-construction state. However, following the situation on the adjacent territories, we may conclude that the Restoration works on the territory adjacent to the wells have been performed to different degrees, predominantly to the satisfactory level(**Figures 13 and 14**).

Figures 13 and 14: Restored landscape on the territories adjacent to the wells

29.On a small portion of a 6-kilometer section, before connection with the reservoir, the pipeline crosses pasturelands. Due to the absence of access roads to the mentioned section, it became necessary to cut about 4-5 meter corridor in order to place the pipes. The process of pipes installation has been completed.

30. Restoration works have not been performed on the mentioned section.As the Consultant have been informed, construction works ended the last on the mentioned section and the result of performed restoration works still cannot be observed visually. By the experts determine the characteristic grass species for this region and the company carried out to grass planting.(**Figures 15 and 16**).

Figures 15 and 16: Grass Planting

31. Due to the climatic conditions of Mestia, the monitoring of the quality of results of performed restoration works will be possible only in late spring, 2015. The period of elimination of deficiencies for the contractor has been set asone year. Respectively, it will be possible to determine the effectiveness of restoration works on the mentioned territory until the expiration of the period for the elimination of deficiencies.

Figures 17 and 18: Unrestored territory adjacent to the reservoir

32.**Recommendation:** Supervision Consultant shallcarry out inspectionin 2015of the territory adjacent to the new reservoir in order to determine effectiveness of conducted restoration works.

3.3 Reservoir

33. A 2,000 m^3 new reservoir has been built under the project.Which is located On a government-owned site, situated in the northern outskirts of the town. This is located above theroad between the town and waterintake.

34. The territory of the reservoir is confined. Reservoir access roads within the territory are made of concrete (**Figures 19 and 20**).

Figures 19 and 20: The territory of the new reservoir and internal concrete roads


35. Restoration works have been performed well on the reservoir territory (**Figures 21and 22).**

Figures 21 and 22:Reservoir territory


3.4 The Pipeline from the New Reservoir to the Lanchvali Reservoir

36. The pipeline that connects the new reservoir with the rehabilitated Lanchvali reservoir is about 4 km long. Pipeline route mainly passes through settled areas. The mentioned pipeline route does not come into contact with private properties.

37. In this case restoration works along the entire pipeline route have been performed satisfactorily. The pipeline is located in the paths between the fences of settled areas, as well as its small part crosses pasturelands. In one place, the pipeline route crosses River Mestiachala.

38. In settled areas the pipeline is mainly placed on unsurfaced internal roads (**Figures 23, 24 and 23**), although on small section pipeline passes along the asphalt-paved road (**Figure 26**). In both cases restoration works have been performed satisfactorily.

Figures 23, 24:Restoration works performed in settled areas


Figures 25, 26:Restoration works performed in settled areas


39. The pipeline crosses River Mestiachala riverbed on the territory of the existing crossing bridge via an open method. The pipeline flows along the existing bridge (**Figure 25 and 26**).

Figures 27, 28:Crossing River Mestiachala

3.5 Construction Camp

40. In the scope of the Project construction works have been peformed by the company “Dagi” Ltd and by “Enguri 2006” Ltd. (From 11 April 2013 the name of “Enguri 2006” LTD has been changed into –“New Construction” LTD). “New Construction”LTDhas open a storage construction camp in the area of Zarghazi where most equipment, containers and pipes were stored.

Non-Compliance #1:

41.**Requirement:** According to the IEE document prepared under the project for better operation of the construction camp the construction contractor was required to do the following prior to launching operation:(IEE, ChapterB. “Topography, Geology & Soils”, paragraph 100): “To ensure that potentially resulting impacts are kept at a minimum the contractor will be required to prepare the following plans or method statements:(i) Layout plan of the work camp including a description of all precautionary measures proposed to avoid potential adverse impacts on the receiving environment (surface and ground water, soils, ambient air, human settlement);(ii) Sewage management plan for provision of sanitary latrines and proper sewage collection and disposal system to prevent pollution of watercourses or groundwater;(iii) Waste management plan covering the provision of garbage bins, regular collection and disposal in a hygienic manner, as well as proposed disposal sites for various types of wastes (e.g., domestic waste, used tires, etc.) consistent with applicable national regulations; and (iv) Description and layout of equipment maintenance areas and lubricant and fuel storage facilities including distance from the beach and from Enguri River. Storage facilities for fuels and chemicals will be located at a distance to the shore and to the riverside. Such facilities will be bounded and provided with impermeable lining to contain spillage and prevent soil and water contamination. These plans will be approved by the Engineer prior to beginning of construction activities”.

42. **Existing Situation:** The Contractor has notdevelopedany of the said plans. Contractor used the “Environmental Management Plan” and “Monitoring Plan” (approved by Asian Development

Bank) included in the IEE document. The said Plans surely include a major part of the required environmental plans mentioned above, but fail to fully meet the requirements developed for such a complex object quite expediently.

43. **Corrective Action:** At present, the Construction works of Mestia Water Supply Headwork are complete. Following the above-mentioned, there is no sense to develop the above-mentioned environmental plans or accomplish any additional studies. Contractor is required to restore the camp territory after the completion of construction.

44. The mentioned construction camp is located in Mestia. No construction camps for the workers to live are used within the scope of the project.60% of the employed workers within the scope of the Project are locals, while others live in the hired flats. The construction camps are only used to store the construction materials (figure 29, 30. 31 and 32).

Figure 29, 30:Storage area

Figures 31 and 32: Storage area

3.6 Inert Waste

45.As the Consultant have been told, no inert waste has been derived during the project implementation process, for the disposal of which it would be necessary to allocate special places in agreement with the local authorities.In the course of project construction works inert waste was produced only on the territory of the construction of a new reservoir and the mentioned waste has been fully used on the territory of a new reservoir, in the process of covering the reservoir with soilaccording to the technical design.

46. Inert waste derived in the process of digging trenches have been used for filling the same trenches, and the small portion remaining was disposed on the same territory considering the factors of the local landscape.

4. Main Findings Revealed during the Documents Review and Site Visits

47. Based on the projects documents review and conducted site visits the Consultant (Audit Team) revealed the following **general findings:**

I. The main beneficiaries of the improved system were the citizens of Mestiawho was provided with a constant supply of better quality water, which serves a greater proportionof the population, including urban poor (and tourists as well). This improve the quality oflife of people as well as raising standards of both individual and public health as theimprovements in hygiene reduced the incidence of disease associated with poorsanitation. This lead to economic gains as people away from work less andwill spend less on healthcare, so their incomes will increase;

II. In terms of environment at the project implementation stage strong negative impact on environment was not expected. According to the ADB instructions the project fell under Category B. According to Georgia legislation Environmental Impact Assessment document preparation and obtaining relevant permit was not necessary for project implementation;

III. All documents developed under the project (Loan Agreement, PAM, Contracts) included the obligation to implement the project according to the ADB SPS 2009 as well as pursuant to the environmental requirements stipulated in Georgia legislation;

IV. No incidents have occurred during the construction stage and no complaints have been initiated by the residents;

V. All project implementing units had hired environmental specialist with relevant qualifications;

VI. At the project implementation stage permanent trainings were held for contractor, as well as those specialists of all organizations involved in the project that dealt with environmental issues;

VII. Under the project UWSCG and SC environmental specialists performed permanent environmental monitoring during spring to autumn seasons. Non-compliances identified by them adequately and corrective actions were planned. The effectiveness of corrective actions were also controlled by the above-mentioned specialists;

VIII. For better management of the construction camp Contractor had to prepare a number of environmental management plans. The contractor had not prepared the above-mentioned plans;

IX. If we do not consider the small section (on the territory adjacent to the new reservoir), restoration works have been performed satisfactorily. According to the explanation of contractor restoration works have been performed on the mentioned section, but it is impossible to visually see the result. Notably, there exists photo material about conducting restoration works on the mentioned territory;

X. Inert waste has not been produced in large quantities during the construction process. Inert waste was derived in the course of project works just on the territory of the construction of a new reservoir and the mentioned waste was fully used on the new reservoir territory, in the process of covering the reservoir with soil according to the technical design;

XI. Contractor has opened a new storage construction camp under the mentioned project and before starting construction for better management of construction camp hazardous and household waste management, safe storage of fuel containers, etc, contractor updated an Environmental Management Plan.

5. Recommendations

46. Along with the above-mentioned findings the Consultant made the following recommendation:

2. In 2015, SChas to carry out inspectionof the mentioned territory in order to determine the effectiveness of conducted restoration works.

47. More detailed recommendations with indication of the entities responsible for their implementation as well as the terms of recommendations implementation are provided in the

Table 1.

Table 1: Recommendations Matrix

#	Recommendation	Responsible for Audit	Implementation Terms	Implementation deadline	Responsible for restoration
1.	Determine the degree of effectiveness of restoration works carried out on the territory adjacent to the new reservoir.	UWSCG and Eptisa:Will carry out Inspection of the territory adjacent to the new reservoir in order to determine effectiveness of	The inspection in late spring, 2015.	Before defect liability period (July2015)	Contractor

		conducted restoration works.			