Environmental Monitoring Report

Semestral Report

July 2012

GEO: Urban Services Improvement Investment Program – Project 2

Prepared by United Water Supply Company of Georgia for the Asian Development Bank.

Bi Annual Environmental Monitoring Report Period: 15 January – 30 June 2012

Project Number: 43405
November 2010

Multitranche Financing Facility Georgia: Urban Services Improvement Investment Program – Project 2

Prepared by "United Water Supply Company of Georgia, LLC", Government of Georgia for the Asian Development Bank.

Tbilisi, Georgia
30 June 2012

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
GoG	Government of Georgia
USIIP	Urban Sector Improvement Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MDF	Municipal Development Fund
MFF	Multi-tranche Financing Facility
MoEPNR	Ministry of Environmental Protection and Natural Resources
MoRDI	Ministry of Regional Development & Infrastructure
UWSCG	United Water Supply Company of Georgia

Table of Contents

I. INTRODUCTION

1. The Urban Services Improvement Investment Program was developed as the Government's response to the lack of adequate and/or safe water supply, sewerage and sanitation in urban areas of Georgia. This is intended to optimize social and economic development in selected urban areas through improved urban water and sanitation services, and will be financed by the ADB through its Multi-tranche Financing Facility. Ministry of Regional Development and Infrastructure is the Executing Agency and United Water Supply Company of Georgia, LLC is the Implementing Agency of the Investment Program. UWSCG is a 100% state-owned company.

2. The Investment Program will improve infrastructure through the development, design and implementation of a series of subprojects, each providing improvements in a particular sector (water supply and/or sewerage) in one town. Subprojects will rehabilitate existing infrastructure and/or create new and expanded infrastructure to meet the present and future demand.

3. The Tranche 2 of the Investment Program includes construction of Anaklia and Mestia Water Supply and Sewerage Distribution Networks and Construction of Anaklia Wastewater Treatment Plant.

4. The following projects are financed under Tranche II:

Contract-1 (UWSC/ICB/CW/2012/ANA-01) Anaklia Water Supply and Sewerage Distribution Networks; The construction/rehabilitation of approximately 54 kilometers of water supply and 58 kilometers of sewerage network includes the extension of the networks to all residents and hotels defined for the year 2040 as well as the connection to Ganmukhuri village, total projected population of about 25,600 people.

Contract-2 (UWSCG/ICB/CW/2011/MES-02) Construction of Mestia Water Supply and Sewerage Distribution Networks; The construction/rehabilitation of approximately 27 kilometers of water supply and 37 kilometers of sewerage network will comprise the whole town of Mestia including the historic center and the future touristic zones covering all residents and hotels defined for the year 2040 thus benefiting total projected population of about 25,300 people.

5. 3. Construction of Anaklia Wastewater Treatment Plant: The new wastewater treatment plant will be located in the north-east of Anaklia. The treated wastewater will be discharged into Enguri River.

Contract-1: The construction works under Contract 1, had started on 20th of February, 2012 and will be completed on 13th of July, 2013 The proposed Bi-Annual Environmental Monitoring Report is prepared considering the time period from February 2012 to April 2012.

Contract-2: Civil Works Contract for Construction of Mestia Water Supply and Sewerage Distribution Networks - was signed with Joint Venture of New Energy LTD – Georgia and Enguri 2006 LTD - Georgia on 31 October 2011but the construction works under Contract 2 have not started yet due to poor weather conditions.

6. There is no civil works contract signed for Anaklia Wastewater Treatment Plant.

7. The Project's Environmental Impact Monitoring and Mitigation is carried out in accordance with the Environmental Management Plans prepared by the UWSCG / Consultant. The construction activities affecting the environment are as follows:

1. Contractor's mobilization and site installation
2. Excavation works
3. Removal of soil
4. Pipe installation
5. Surface water drainage during rains
6. Backfilling and compaction

8. The following items are monitored during the implementation of the project:

1. Air Quality
2. Noise
3. Groundwater Disposal

9. The only parameters monitored during the construction period were dust control to keep air quality at acceptable level and noise. Dust control issue is working positively to avoid complains from local residents.

10. The subproject construction sites under Contract -1 were located in Government owned land. There are no protected areas, wetlands, mangroves, or estuaries. There are no land acquisition and resettlement issues involved. Trees, vegetation (mostly shrubs and grasses), and animals in the subproject sites are those commonly found in built-up areas. The geological structure of the area is stable and no potential land subsidence is foreseen.

A. Construction activities and Project Progress during previous 3 months

11. The activities which were carried out by the Contractors in the past 3 months (January to April 31, 2012) are as follows:

1. Installation of Sewer Pipes DN200 – 611m;
2. Installation of Water Supply Pipes DN110 – 250m;
3. Installation of precast Manholes – 20pc;
4. Installation of inspection shafts – 2pc.

B. Environmental Management Team

12. An environmental management team exists under the UWSCG. The team consists of Ms. Tinatin Zhizhiashvili, Head of Quality Managment, Resettlement and Environment Protection Division as Manager and Ms. Ketevan Chomakhidze as Environment Specialist, hired by UWSCG per requirements of the ADB/ EARF.

13. The Contractor, under Contract 1 employs an environmental specialist Mr. George Gagishvili to help UWSCG on supervision and monitoring of the Environmental Management Plan.

14. The following works were performed by the environmental management team:

- Explaining the Environmental Management Plan (EMP) to the Contractor, the site staff, the supervisors and other relevant personnel;
- On-site supervision of construction activities;
- Monitoring and implementation of the EMP;
- Ensuring that the contractor understands what is to be done to rectify and address any issues identified through monitoring.

C. Project Organization

15. Project organization for the awarded contracts listed above is given in the table below.

Contract #	Employer	Contractor
Contract-1 (UWSC/ICB/CW/2012/ANA-01)	UWSCG	Joint Venture of Peri Ltd and Modern Business Group LLC
Contract -2 (UWSCG/ICB/CW/2011/MES-02)	UWSCG	Joint Venture of New Energy LTD – Georgia and Enguri 2006 LTD

II. ENVIRONMENTAL MONITORING

16. During the last three months no environmental issues or complaints were received from the local residents.

17. The Contractor kept records of industrial safety; environmental considerations of the construction sites; air quality and noise; within the reporting period, no adverse environmental impacts related to the works have been noted or observed.

18. Within the reporting period Peri Ltd monitored and addressed the issue of air quality, industrial waste disposal and noise.

A. Air quality

19. Material (aggregate and sand) is brought to the site when required. Speedy completion of work and proper site clearance after completion are ensured. Wheels and undercarriage of haul trucks are washed prior to leaving construction site.

20. In order to limit soil disturbance, the access to the site is limited to construction workers and the site is fenced.

21. Dust is controlled through watering the roads where driving can easily generate dust. Excavated mounds of soil are damped down by water spray. Tarpaulins are used to cover loose materials that are transported to and from the site by track.

22. Dust generation is controlled while unloading the loose material at the site by sprinkling water inside barricaded area.

23. Regular and clean maintenance of the temporary labor camps is ensured.

B. Noise

24. The Contractor has employed practical means to minimize noise resulting from construction work. The plan of transportation routes are agreed with Municipality and Police. Tarpaulins were used to cover loose material that was transported to and from the site by truck. Wheels and undercarriage of haul trucks were cleaned.

25. Drivers were informed to limit speed 20-25 KMPH to avoid use of horn in the town. Local population was informed about project works. No nighttime activities took place.

C. Groundwater disposal

26. The groundwater pumped from the trench are discharged into the nearby surface water drain with virtually no settlement of solids. This is leading to a buildup of sediment in the bottom of the drain with an associated environmental impact.

27. In order to remove any solid matter it is recommended to install a settlement tank between the groundwater pump and the discharge point. This mitigation measure will minimize any negative environmental impact on the surface water as well.

D. Loss of top soil

28. No topsoil was identified and subsequently stripped at the construction site within the reporting period.

III. ENVIRONMENTAL MANAGEMENT

A. Site Inspections

29. The Contractor's field inspectors performed daily site visits to the project sites. UWSCG Environmental team visited on project sites minimum once a month. PERI's Environmental Consultant performed weakly site inspections.

B. Reporting

30. The Contractor submitted quarterly statements to the UWSCG/environmental management team describing their environmental monitoring activities.

C. Corrective Action Plans

31. No corrective actions were recommended during the reporting period of February 2012 – April 2012.

D. Consultation and Complaints

32. No complaints were received during the reporting period.

IV. ANNEX A: MONITORING DATA

No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
	Construction				
	Impacts caused by excavation and generation of waste soil		• Utilize surplus/waste soil for other construction activities or to raise the ground-level of low level sites	Surplus waste material was transferred to temporary disposal area. Final disposal location will be identified before the end of the project.	Satisfactory
	Loss of top soil		• Top soil of about 1 ft depth (0.3 m) shall be removed and stored separately during excavation work, and after pipeline construction the same soil shall be replaced on the top	Due to the location where works were ongoing no topsoil stripping and storage was required.	Satisfactory
	Erosion due to excavation/refilling		• No trees shall be removed on the slopes; clearing of shrub, bushes and grass shall be limited to actual construction area only; no clearance is allowed for activities such as material/waste storage, concrete mixing, etc.; • Proper compaction of refilled soil the material shall be refilled in layers and compacted properly layer by layer; • In the steep slopes, local grass species shall be planted on the refilled trenches	Mitigation measures have been dally implemented. For the reporting period there was no need for removal of vegetation, trees, or bushes.	Satisfactory
	Impacts due to construction in the river		• Schedule the construction work during low flow season avoiding rainy and summer seasons; work may preferably be conducted after rains and before (May/June) or in November; • Water flow shall not be interrupted completely/diverted; work shall be	The Project works do not include any works that might impact / disturb the river. If any potential risks identified all mitigation measures will be	Satisfactory

No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			conducted on the one-side of the stream, that water to flows on the other side; • Enclose the construction area (e.s with sand bags) so that water do not enter into construction site; • Water collected in the trench shall be disposed safely so that silt water do not get mixed in the river water	considered.	
	Impact on surface water bodies due to construction under rain		• Avoid scheduling excavation work during the rainy season; • Complete pipe laying work in excavated stretches and refill before monsoon; • Complete the excavation and foundation during dry season; • In unavoidable circumstances, protect open trenches from entry of rain water by raising earthen bunds with excavated soil; • Confine construction area including the material storage (sand and aggregate) so that runoff from upland areas doesn't enter the site; • Ensure that drains are not blocked with excavated soil	Trenches are not left for long period of time and especially during night time. To protect trenches from surface water entry special berms are used. As for the materials, they are protected with plastic liner.	Satisfactory
	Impact on air quality due to dust generation		• Cover or damp down by water spray excavated mounds of soil to control dust generation; • Apply water prior to leveling or performing any other earth moving activity to keep the soil moist throughout the process; • Bring the material (aggregate and sand)	Dust is controlled through watering the roads through the populated area where driving can easily generate dust. Access to site is restricted.	Satisfactory

No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			as and when required; • Ensure speedy completion of work and proper site clearance after completion; • Use tarpaulins to cover loose material that is transported to and from the site by truck; • Control dust generation while unloading the loose material (particularly aggregate and sand) at the site by sprinkling water/unloading inside barricaded area; • Clean wheels and undercarriage of haul trucks prior to leaving construction site; • Restricted access to the work area except workers to limit soil disturbance and prevent access by fencing the site		
	Removal of vegetation/trees for construction and impacts due to presence of open trenches		• Avoid tree cutting by small change of layout plan/alignment; • In unavoidable cases, plant two trees of same species for each tree that is cut for construction; • Bushes and grasses shall be cleared only in actual construction area all other preparatory works (material storage) shall be conducted on barren lands where there is no vegetation; • Use excavated soil for refilling the pipeline trench; avoid sand layer on the top of the pipe in inaccessible areas to avoid importing material and related disturbances; • Trench construction shall be taken up in small segments, so that work	No tree, bush or vegetation cover was removed in the reporting period.	Satisfactory

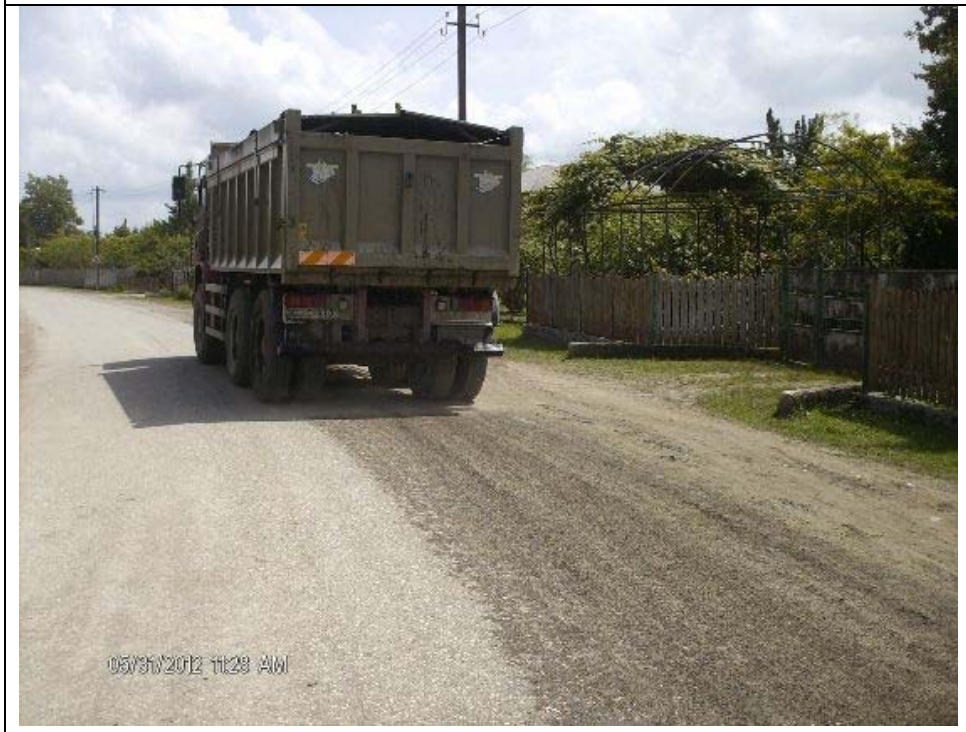
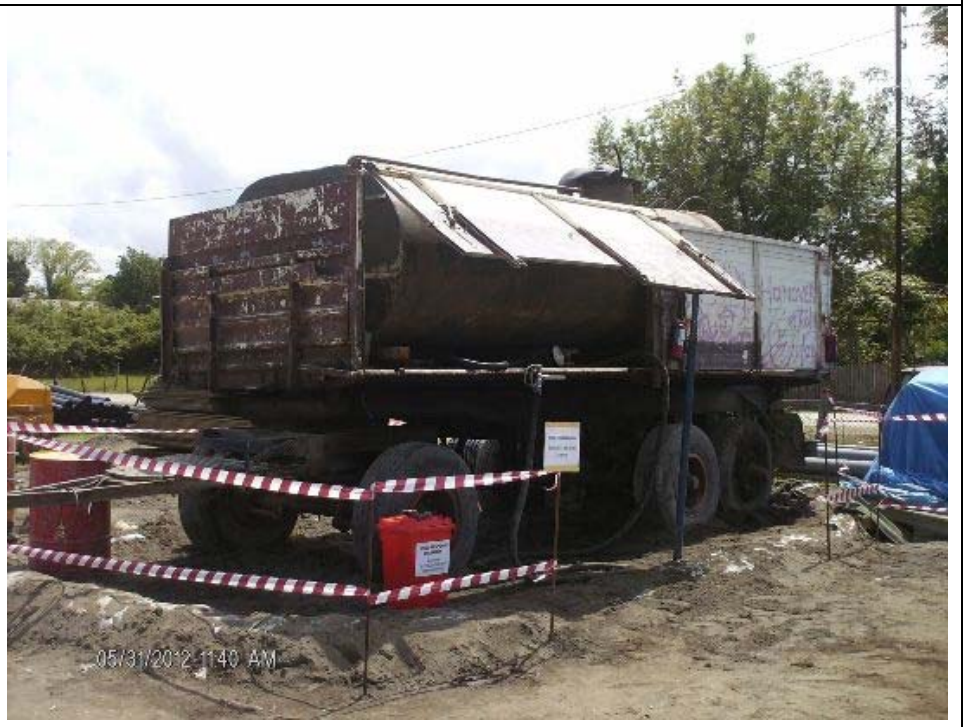
No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			(excavation, pipe laying and refilling) in each segment is completed in a day. No trenches shall be kept open in the night/after work hours. This will prevent any safety risk to wild animals		
	Disturbance to business, people, activities and socio-cultural resources due to construction work		• Inform all residents and businesses about the nature and duration of any work well in advance so that they make necessary preparations; • Limit dust by removing waste soil quickly; by covering and watering stockpiles, and covering soil with tarpaulins when carried on trucks; • Provide wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required; • Increasing workforce to complete the work in minimum time in the town	All mitigation measures were fully addressed.	Satisfactory
	Disturbance/nuisance/noise due to construction activity including haulage of material/waste		• Plan transportation routes in consultation with Municipality and Police; • Schedule transportation activities in a way to avoid peak traffic periods; • Use tarpaulins to cover loose material that is transported to and from the site by truck; • Control dust generation while unloading the loose material at the site by sprinkling water; • Clean wheels and undercarriage of haul trucks prior to leaving construction site; • Educate drivers: limit speed between	Transportation routes were planted in consultation with Municipality and Police. Tarpaulins were used to cover loose material that is transported to and from the site by truck. Dust generation is controlled while unloading the loose material at the site by	Satisfactory

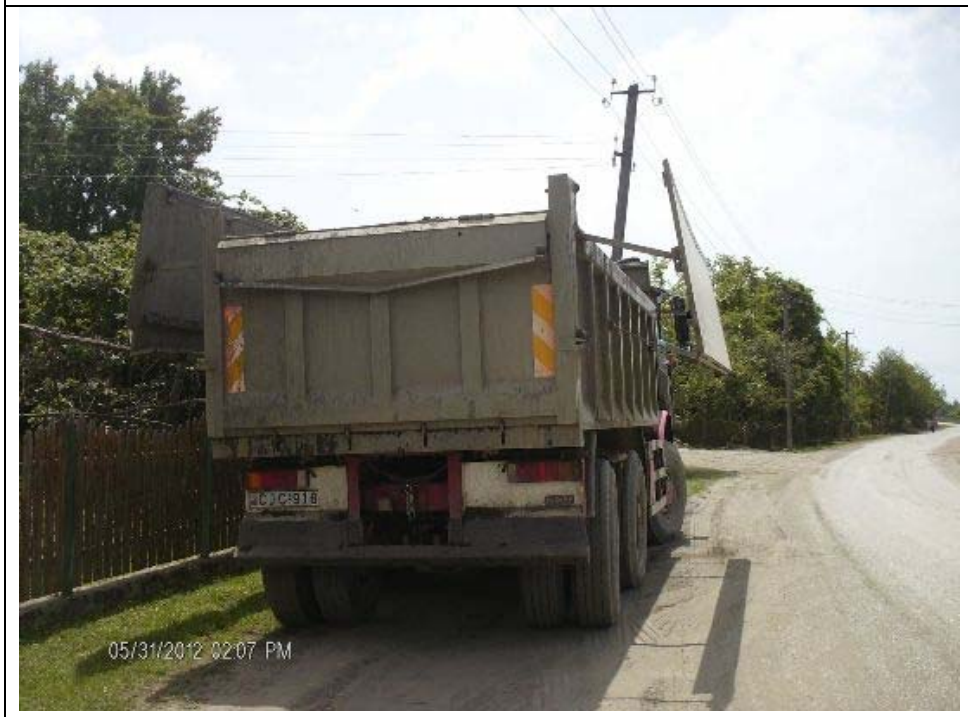
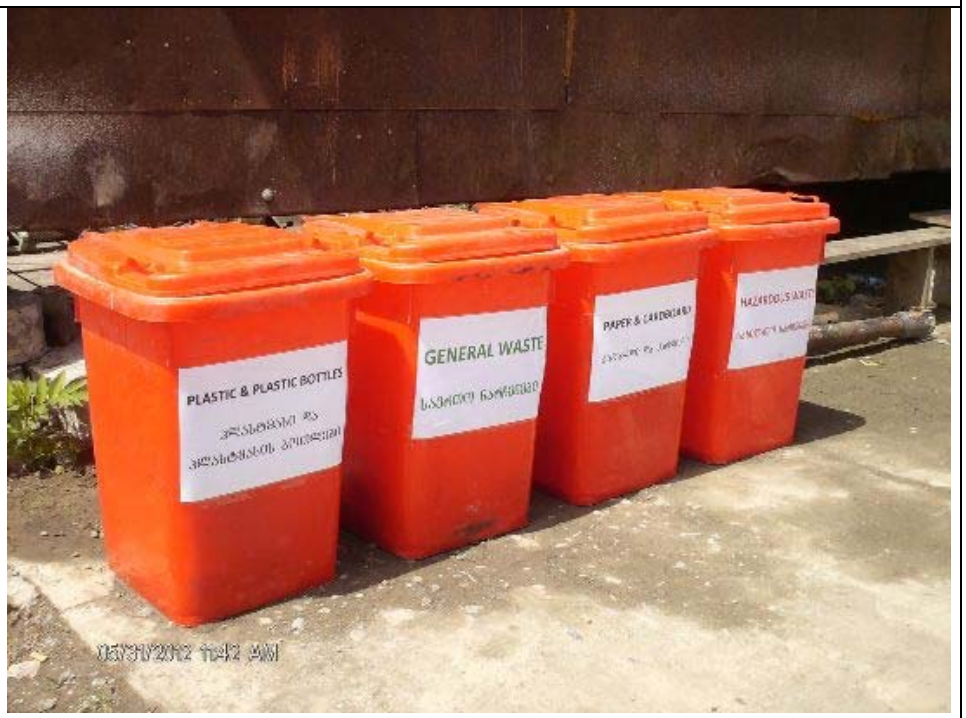
No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			20-25 KMPH and avoid use of horn in the town; • Earmark parking place for construction equipment and vehicles when idling; no parking shall be allowed on the roads, that may disturb the traffic movement; • Provide prior information on works to local people about work to local residents; • No nighttime construction activities including material/waste haulage; • Educate drivers: limit speed between 20-25 KMPH and avoid use of horn in the town; • Earmark parking place for construction equipment and vehicles when idling; no parking shall be allowed on the roads, to avoid disturbing traffic movement	sprinkling water. Wheels and undercarriage of haul trucks were washed prior to leaving construction site. No parking is allowed on the roads, to avoid disturbing traffic movement. Information on works was provided to local residents prior to start of works. No nighttime construction activities were carried out.	
	Socio-economic benefits from employing local people in construction work		• To the extent possible labor force must be drawn from the local community; • Contractor should at least source 50% of unskilled labor force from local communities	The Contractor took best efforts to meet the requirements.	Satisfactory
	Impacts due to import of labor and establishment of temporary labor camps		• In unavoidable case of sourcing labor from other areas, provide adequate housing facilities so that there are no impacts and conflict with the local people; • Establish temporary labor camps in consultation with the local authority; • belabor camps to be located away from	Contractor provided workers with required accommodation and in some cases took additional expenses. No new camps / accommodation were built to avoid impact on	Satisfactory

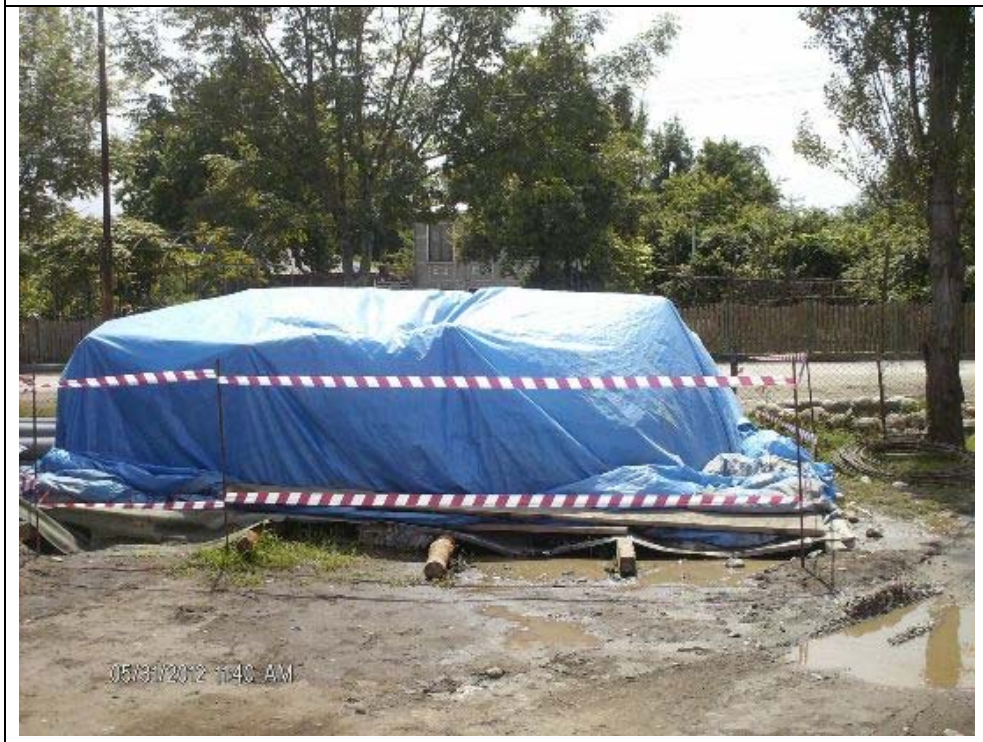
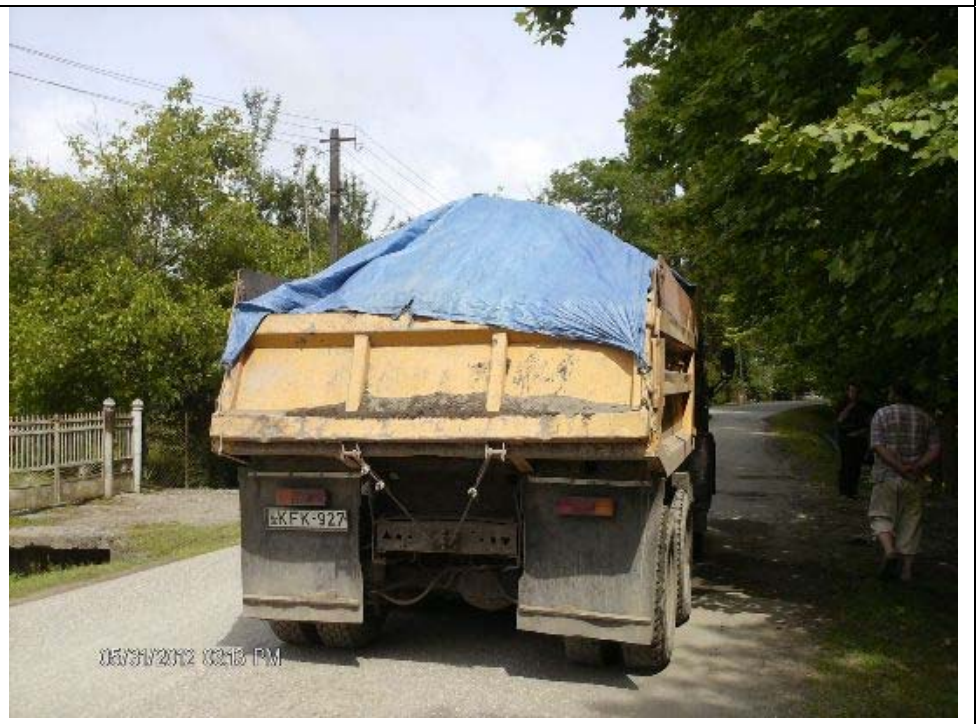
No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			water bodies; • No clearance of trees vegetation shall be allowed for establishment of camps; • Provide all basic amenities (water supply and sanitation, waste collection & disposal, first aid facilities, etc); • Contractor shall provide fire wood and no worker shall be allowed to cut any tree; • Ensure regular and clean maintenance of the camp;	environment.	
	Safety risk for local residents and workers		• Follow standard and safe procedures for all activities – such as provision of shoring in deep trenches (>2 m); • Exclude public from the site – enclose construction area, provide warning and sign boards, security personnel; • Provide adequate lighting to avoid accidents; • Ensure that all workers are provided with and use safety - helmets, hand gloves, boots, masks, safety belts (while working at heights etc); • Maintain accidents records and report regularly	Contractor's safety advisor is controlling sites. All workers are equipped with relevant PPE. No accidents were reported.	Satisfactory
	Historical, archeological chance finds during excavation		• Contractor shall put in place a protocol for conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved. This should involve: o Excavation observed by a specialist with archaeological field training;	During these three months no finding was discovered. In case any finding all mitigation measures will be closely followed.	Satisfactory

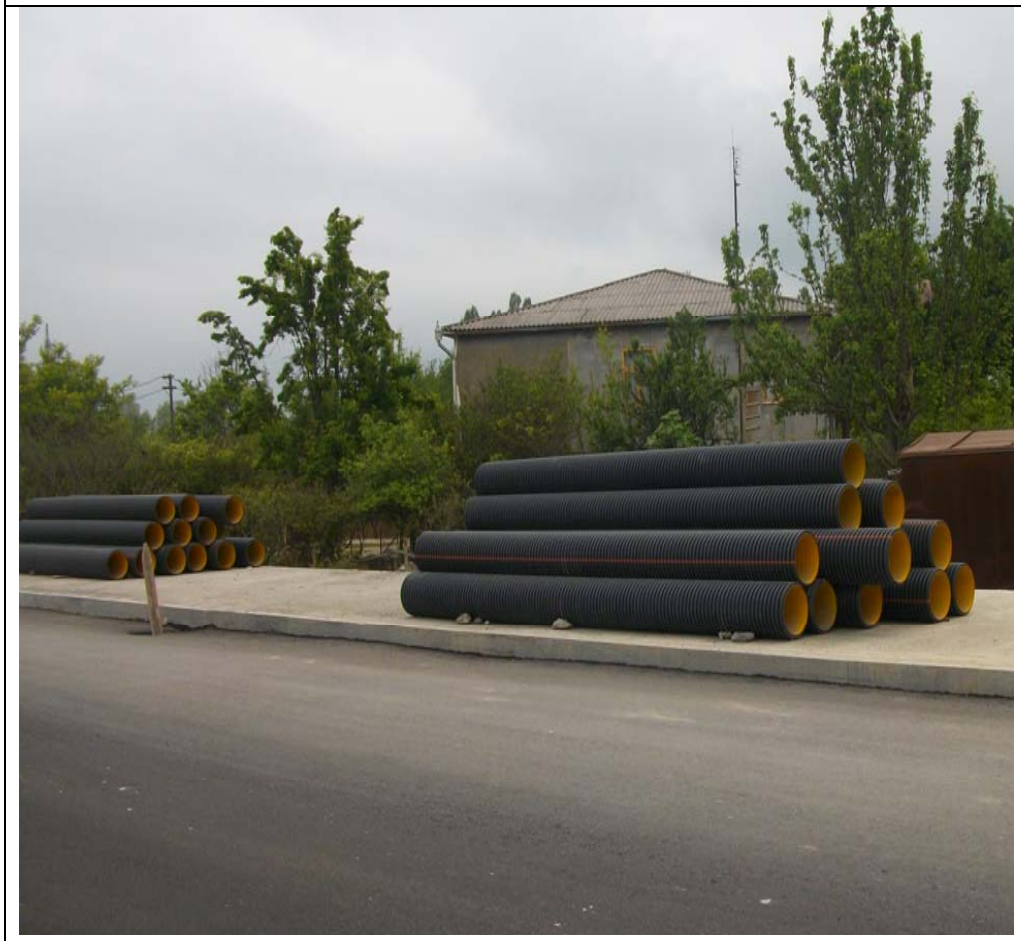
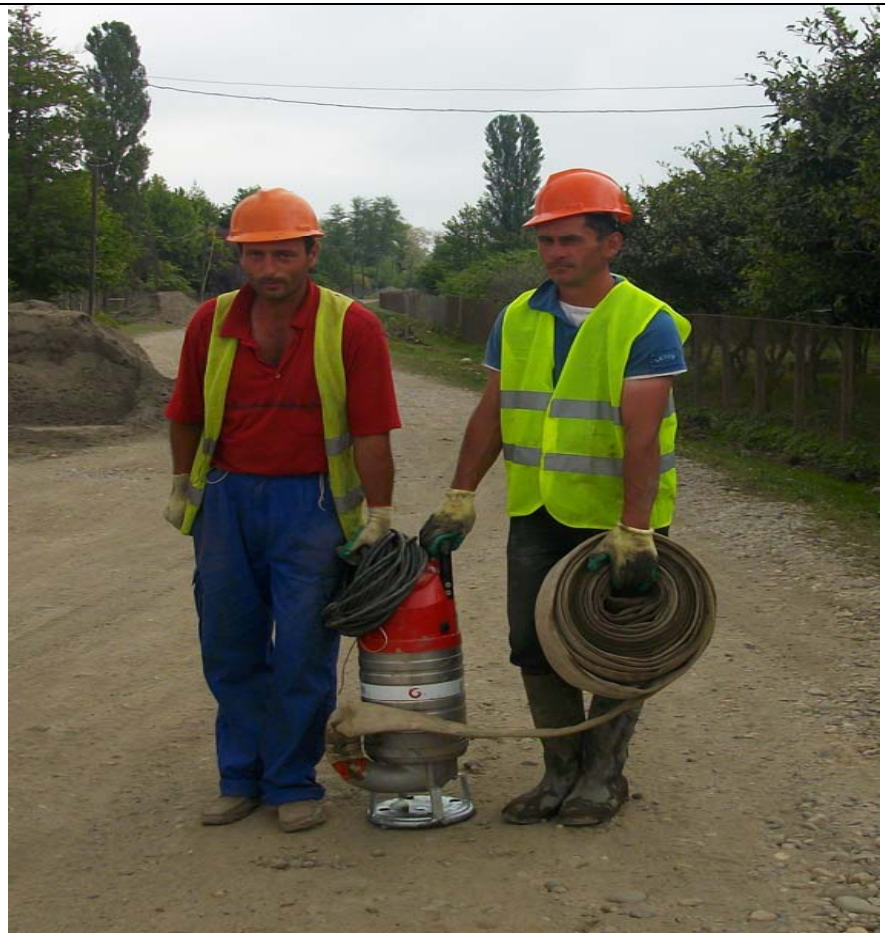
No	Issue	Location	Recommended Measures	Implementation/ Compliances	Comments
			o Stopping work immediately to allow further investigation if any finds are suspected; o In case of suspected archeological find contact archeological authority and take any action they require to ensure its removal or protection.		
	Cumulative impacts – repeated disturbance to roads and people		• Harmonize the schedule of construction works in harmony with other ongoing works; • Schedule the water transmission line work before road work	During last three months no complaints were received.	Satisfactory

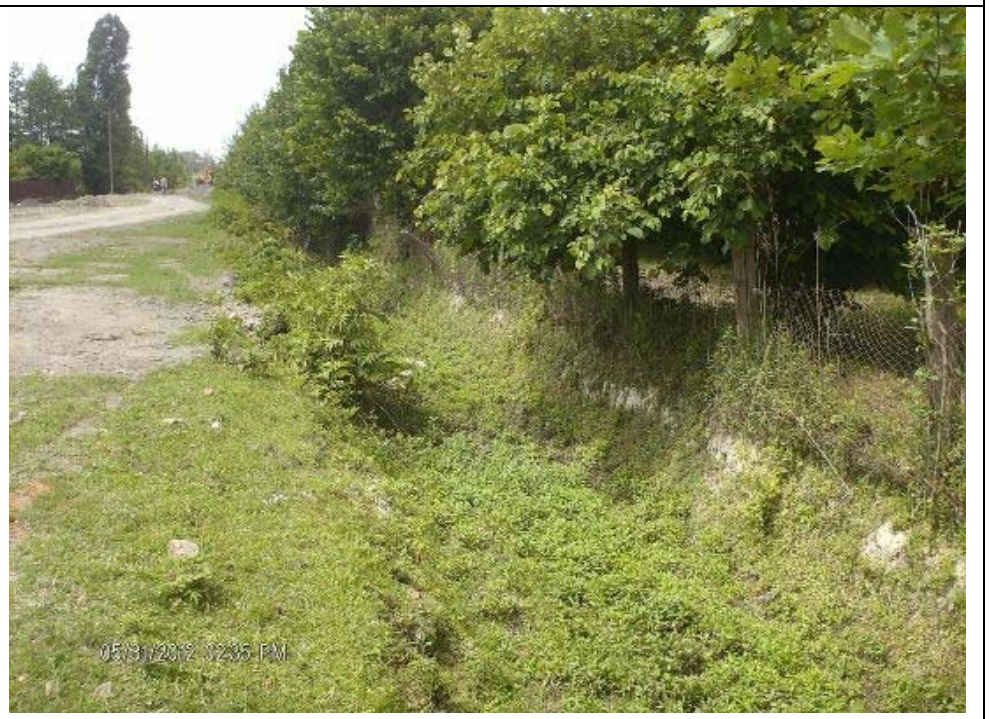
V. ANNEX B: PICTURES

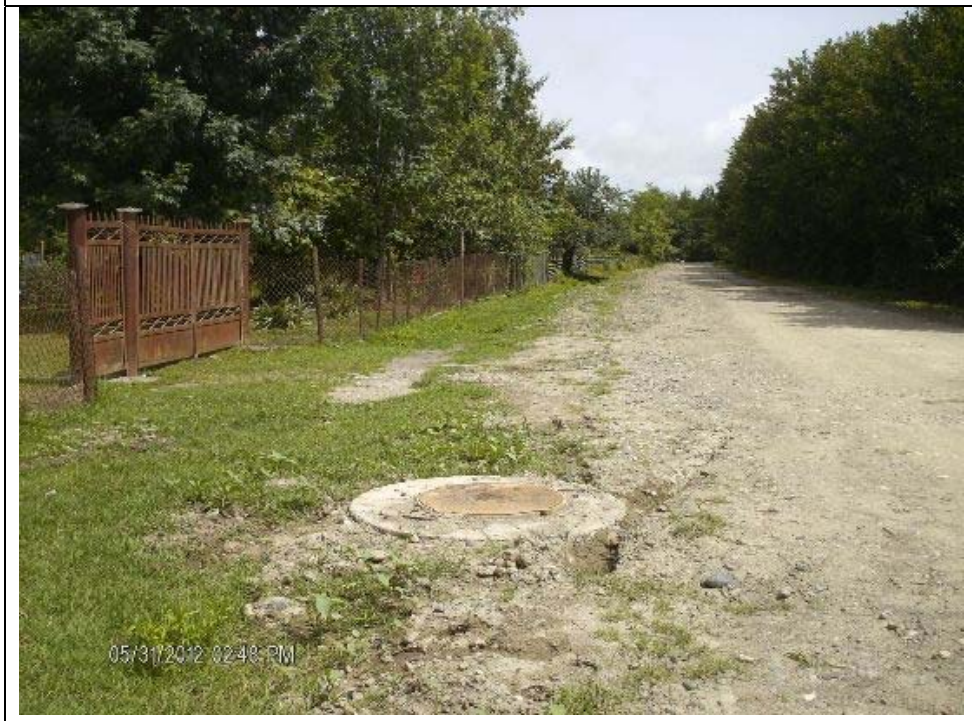
Photograph No. 1	**Photograph No. 2**
	
Dust control - Watering of the road. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Refueling area. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**

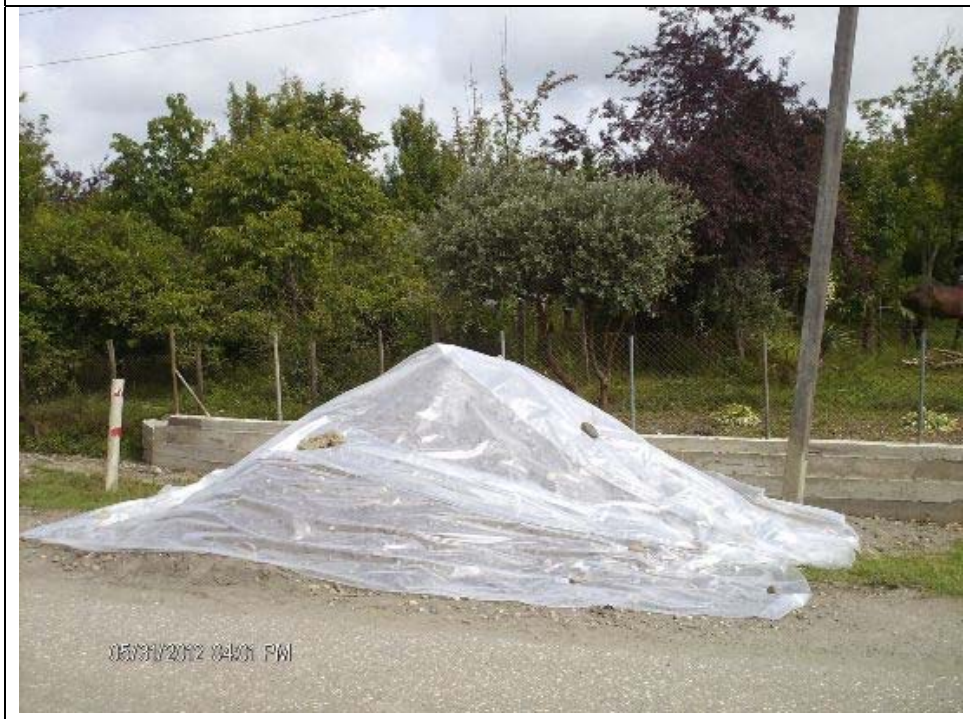
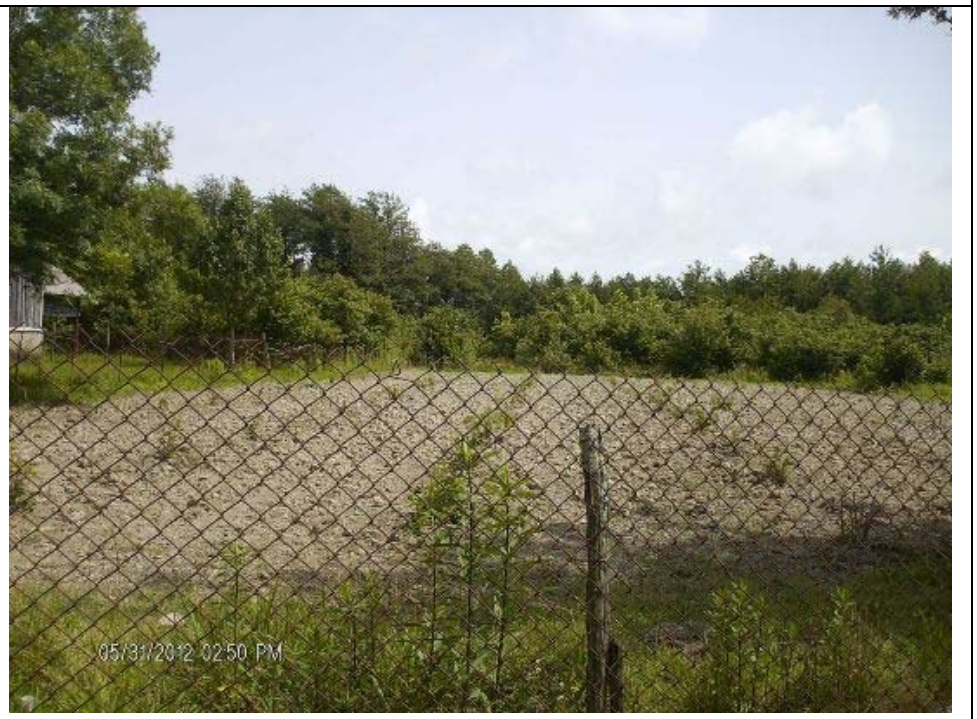
Photograph No. 3	**Photograph No. 4**
	
Trucks equipped with covering mechanism. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Labeled waste bin for proper waste management. **Water Supply and Wastewater Improvement Project in Anaklia – Laydown Area**

Photograph No. 5	**Photograph No. 6**
	
Construction material covered with tarpaulin. **Water Supply and Wastewater Improvement Project in Anaklia – Laydown Area**	Backfilling material protected by tarpaulin. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**

Photograph No. 7	**Photograph No.8**
	
A view of material stocking area. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Workers with helmets and appropriate suits. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**

Photograph No. 9	**Photograph No.10**
	
Site after reinstatement. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Natural channel where sedimentation ponds will be arranged. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**

Photograph No. 11	**Photograph No.12**
	
On completed locations footprints of the project can be hardly identified. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Spoil material donation for rising level of the yards – requested by locals. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**

Photograph No. 13	**Photograph No.14**
	
Backfilling material protected by plastic liner – protection from washout. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**	Donated spoil used for agricultural purposes. **Water Supply and Wastewater Improvement Project in Anaklia – Project Area**