

# Environmental Monitoring Report

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Semestral Report  
October 2013

## GEO: Urban Services Improvement Investment Program – Project 1

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

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## **BI-ANNUAL ENVIRONMENTAL MONITORING REPORT**

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Project Number: 43405  
June 2013

**Georgia: Urban Services Improvement Investment Program (Tranche 1)**

Financed by the ADB

**PREPARED BY "UNITED WATER SUPPLY COMPANY OF GEORGIA", LLC**

Tbilisi, Georgia

**For: The Ministry of Regional Development and Infrastructure of Georgia and  
the Asian Development Bank**

## ABBREVIATIONS

<b>ADB</b>	Asian Development Bank
<b>EA</b>	Executing Agency
<b>EARF</b>	Environmental Assessment and Review Framework
<b>EIA</b>	Environmental Impact Assessment
<b>EIP</b>	Environmental Impact Permit
<b>EMP</b>	Environmental Management Plan
<b>GoG</b>	Government of Georgia
<b>USIIP</b>	Urban Sector Improvement Investment Program
<b>IA</b>	Implementing Agency
<b>IEE</b>	Initial Environmental Examination
<b>MDF</b>	Municipal Development Fund
<b>MFF</b>	Multi-tranche Financing Facility
<b>MoE</b>	Ministry of Environmental Protection
<b>MoRDI</b>	Ministry of Regional Development & Infrastructure
<b>UWSCG</b>	United Water Supply Company of Georgia

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## I. INTRODUCTION

1. The present Bi-annual Environmental Monitoring Report covers the time period from January 2013 till June 2013.
2. 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. The Ministry of Regional Development and Infrastructure is the Executing Agency and the United Water Supply Company of Georgia, LLC is the Implementing Agency of the Investment Program. UWSCG is a 100% state-owned company.
3. 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.
4. Tranche 1 of the Investment Program includes: Construction of Mestia Headworks (MES-01); Construction of Mestia Water Treatment Plant and Reservoirs (REG-02), Improvement of Water Supply Infrastructure in Anaklia, Kutaisi and Poti (REG-01) and UWSCG office building.
5. The following projects are financed under Tranche 1:

**Contract-1:** Construction of Mestia Headworks. The project comprises construction of a Tyrolean Weir as intake structure on Mestia Chala River for the capture of raw water. The discharge is estimated at minimum 1,000 liters/second in dry seasons. The location has been chosen for its altitude and the possibility to supply the water treatment plant, the adjoining reservoir and from there the largest part of the distribution network, by gravity. Apart from the intake, the scope of work comprises 10.6 km transmission lines to the site of Water Treatment Plant and a reservoir and the connection of this location to the distribution network.

**Contract-REG-01:** Improvement of Water Supply Infrastructure. The scope of works includes improvement of water supply infrastructure in Anaklia, Kutaisi and Poti, in particular, reservoirs and pumping stations, transmission lines and distribution lines of water supply systems as well as a water treatment plant in Poti.

The main works will comprise the laying of approx. 103 km water supply pipelines, the construction of concrete water reservoirs at 5 locations with a total storage volume of 38,000 m<sup>3</sup>, the construction of a water treatment plant and the construction of 4 pumping stations with a total capacity of 2.4 MW. The estimated construction period for whole of the works is 1,095 days.

**Anaklia:** Construction of approximately 6,000 m<sup>3</sup> capacity reservoir (two circular shaped reservoirs of 3,000 m<sup>3</sup> each – may be revised through design changes to one reservoir of 3,000 m<sup>3</sup>) at Darcheli; Construction of new pumping station with total capacity of 348 m<sup>3</sup>/h; Construction of a transmission main from two well fields at Kakhati and Inghiri (south of Zugdidi) to the new reservoir at Darcheli for approximately 14 km, and from the reservoir at Darcheli to the networks of Ganmukhuri and Anaklia for approximately 8 km.

**Kutaisi:** Rehabilitation of two pumping stations for approximately 465 m<sup>3</sup>/h at Vazha Pshavela (approximately 348 m<sup>3</sup>/h) and at Kldiashvili (approximately 117 m<sup>3</sup>/h); Construction of 3 new reservoirs for approximately 15,000 m<sup>3</sup> capacity at Vazha Pshavela (2 x 3,500 m<sup>3</sup>) and 1\*3000, Tetramitsa (2 x 2,000 m<sup>3</sup>), and TV Tower (1 x 1,000 m<sup>3</sup>); Construction of transmission main and distribution lines of a total of 52 km; Installation of approximately 40,000 nos. of water meters, pipes, fittings, etc. for the metering of households in apartment blocks.

**Poti:** Construction of new pumping station with 14 pumps of approximately 3,703 m<sup>3</sup>/h capacity in Nabada; Construction of 5 x 3,000 m<sup>3</sup> rectangular shape new reservoirs at the eastern side of the Nabada territory; Supply and installation of new pumps of approximately 3,380 m<sup>3</sup>/h capacity and mains of 22 km for 29 wells; Power supply, control cables and switchboards for 29 wells; Design, construction and commissioning of a new water treatment plant of 20.75 MLD capacity, as well as training of the operator's staff. The estimated construction period for whole of the works is 913 days.

**Contract-REG-02: Section 1: Mestia Water Facilities.** The scope of works includes: a new modular water treatment plant (WTP); the rehabilitation of Tsrniashi spring catchment; the rehabilitation of Lanchvali reservoir (1,000 m<sup>3</sup>); a new reservoir at Lanchvali (1,000 m<sup>3</sup>); a new high level reservoir (2,000 m<sup>3</sup>); a new reservoir at water treatment plant (2,000 m<sup>3</sup>); transmission pipes of approximately 9,200 meters.

The Contractor has to design and build a WTP with a treated water standard that complies with the European standard for the drinking water quality and is defined in the Council Directive 98/83/EC. The new WTP will have a design capacity of 80 l/s to serve the projected population in 2040. Some of the components (hydrocyclone, micro-/ultrafiltration, drinking, process and backwash water pumps) to be constructed under this contract will be for half of the design population in 2040 at this stage. Their design capacity is 40 l/s.

**Contract-1:** Civil Works Contract was signed with Joint Venture of Dagi LTD – Georgia and Enguri 2006 LTD – Georgia (From 11 April 2013 the name of Enguri 2006 LTD has been changed into - New Construction LTD) on 10 October 2011 and scheduled to be completed on 31 October 2013. The proposed Bi-Annual Environmental report is prepared considering the time period from January 1 to June 30, 2013.

**Contract-REG-01:**

UWSCG submitted the final signed Bid Evaluation Report for the construction works contract REG-01 Bid on 29 April 2013. ADB gave clearance for this bid and “Cobra, Instalaciones Y Servicios, S.A” was selected to be awarded the contract.

### **Contract-REG-02:**

As REG-02 is a two-stage bidding process, the evaluation of technical proposals was ongoing as of this reporting period. After completion of the technical evaluation the responsive bidders will be invited for submission of financial bids. Contract award is planned for the fourth quarter.

**Office Building:** Detailed design of the building is in the process of preparation which is financed by the GoG. After completion of the detailed design bidding will be announced.

6. The Project's Environmental Impact Monitoring and Mitigation is carried out in accordance with the Environmental Management Plans prepared by the UWSCG / Consultant. Final EMPs are prepared in consultation with the Contractor. The construction activities affecting the environment are as follows:
  - Contractor's mobilization and site installation
  - Excavation works
  - Removal of soil
  - Backfilling of trenches
7. The following items are monitored during the implementation of the project: (As the contractor for REG-01 has not mobilized as of this reporting period, only MES-01 is reported on in this report).
  - Air Quality
  - Noise
  - Removal of vegetation/trees for construction
8. The only parameters monitored during the construction period were dust control, noise and removal of vegetation/trees for construction. Dust control issue is working positively to avoid complaints from local residents.
9. There are no protected areas, wetlands, mangroves, or estuaries. 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.
10. The land acquisition and resettlement plan (LARP) was prepared by the United Water Supply Company of Georgia under Contract 1. It was based on the detailed design and the requirements of the ADB Safeguards Policies Statement (2009).

### **A. Construction activities and Project Progress during previous 6 months**

11. Overall physical progress of the work for Contract-1 is 62%. The activities which were carried out by the Contractor in the past 6 months (January 2013 to June 2013) are as follows:
  - Installation of transmission mains: 1,794 m of DN 300 installed from 1 Jan. to 30 June 2013; cumulative since start (up to 30 June, 2013): 6,328 m installed out of target 10.6 km (cumulative progress: 60 %);

- Reservoir (Zarghashi): concrete repair and mortar application using special bonding agent completed on internal and external walls; piping work and chlorination station under construction. Overall completion at end of June: 95%
- Intake structure: intake channel completed, sand trap and intake chamber completed, installation of protection gabions completed. Overall completion at end of June: 100%

## B. Environmental Management Team

12. The new Division of Resettlement and Environmental Protection was created at the Design Department of UWSCG. Mr. Beso Nibladze was appointed to the position of Head of Division. The Company has also hired Mr. Giorgi Mshvidobadze to become Head of Resettlement Unit.
13. Ms. Ketevan Chomakhidze is employed by UWSCG to play an advisory role to UWSCG in handling environmental tasks and issues in compliance with the ADB Safeguard Policy requirements and Georgian environmental regulations. She is hired per requirements of EARF.
14. Mr. Giorgi Bichiashvili was designated as temporarily responsible for environmental management along with supervision of construction works under MES-01. He is nominated by “New Construction LTD” on to attend the upcoming training course on “Improving of Environmental Safeguards in Central and West Asia ” financed by ADB and to be carried out by Ltd “Eco-Spectri” (Georgia).

The following works were performed by the environmental management team:

- 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 UWSCG/ICB/CW/2011- MES-01	UWSCG	Joint Venture of Dagi LTD - Georgia and Enguri 2006 LTD – Georgia (From 11 April 2013 the name of Enguri 2006 LTD has been changed into - New Construction LTD)

## II. ENVIRONMENTAL MONITORING

16. During the January-June 2013 period, several environmental issues were flagged for Contract-1 and no complaints received from the local residents.



17. During the reporting period several joint site visits had been carried out by members of the Division of Resettlement and Environment Protection of the United Water Supply Company of Georgia, who worked with the local service center's representative of UWSCG and the temporarily responsible person for environmental management from New Construction LTD.
18. Independent supervision and on-site monitoring of the Environmental Management Plan had been undertaken by Eptisa's environmental specialist Mr. Irakli Legashvili, who visited the site regularly.
19. The supervision and monitoring of EMP had been carried out by the environmental specialist of UWSCG on a regular basis as well.

**A. Air quality**

20. Material (aggregate and sand) was brought to the site when required. Some sections of the pipeline works and reservoir works were not completed as per agreed schedule by Contractors;
21. Site clearance and reinstatement after backfilling trenches remain partially completed; no protection zone (sanitary fence) was established at the intake works (Tyrolean weir).
22. In order to limit soil disturbance, the access to the site was limited to construction workers and the site is fenced; however, site had not been cleaned and maintained properly. No proper signs were installed.
23. Dust was controlled through watering the roads where driving could easily generate dust. Excavated mounds of soil were damped down by water spray, however only occasionally. Tarpaulins were used to cover loose materials that were transported to and from the site by trucks.
24. Dust generation was at times controlled while unloading the loose material at the site by sprinkling water inside the barricaded area.

**B. Noise**

25. The Contractor did not employ at all times practical means to minimize noise resulting from construction work. Wheels and undercarriage of haul trucks were not systematically cleaned.
26. Drivers were informed to limit speed 20-25 KPH to avoid use of horn in the town. No nighttime activities took place. Local population was informed about the subproject works; however, overall awareness on subproject outcomes and benefits is very limited since no awareness activities have been started so far. To address the situation, a comprehensive public awareness campaign is envisaged in August-September, 2013 based on the Public Outreach Strategy prepared by the awareness specialist of Eptisa, and UWSCG's PR department will be involved in the process.

### **C. Water quality**

27. No water sampling and analyses program was carried out during the reporting period for Contract-1; however, it is suggested that such program is implemented at the Tyrolean weir intake (Mestiachala river) before commissioning of the system during the next period; Program to include microbiological and physical-chemical analyses. Results should be compared to the baseline data established by Kocks at the design stage and compared also with the Georgian and European guideline values. Also a separate program of sampling and analysis should be established after the chlorination station (at Zarghashi site) and at Lanchavil reservoir site (final recipient) by measuring residual chlorine level.
28. Decision on the use of the Tsрниashi spring using the existing transmission pipeline (and new section up hill to Zarghashi reservoir under Contract 1) should be made also during the next period based on a new sampling and analysis program; According to Mestia Service Center, the use of each source will be made alternatively (6 months during summer months with Tsрниashi spring and 6 months during winter period with Mestiachala river). This can only be authorized if new analysis shows no risks to public health.

### **D. Removal of vegetation/trees for construction**

29. Tree cutting had been avoided by a small change of layout plan/alignment; however, several bushes or vegetation cover were removed in the reporting period.
30. Bushes and grasses have been cleared only in actual construction area; all other preparatory works (material storage) has been conducted on barren lands where there was no vegetation.

## **III. ENVIRONMENTAL MANAGEMENT**

### **A. Site Inspections**

31. The Contractor's field inspectors performed daily site visits to the project sites. UWSCG Environmental team visited the project sites regularly. Contractor performed weekly site inspections.

### **B. Reporting**

32. The UWSCG/environmental management team prepares bi-annual and annual Environmental monitoring reports based on the information submitted by the Contractor.

### **C. Corrective Action Plans**

33. Several corrective actions were recommended during the reporting period of January 2013 – June 2013 (see Annex V).

### **D. Consultation and Complaints**

34. No complaints by local population were received during the reporting period.
35. There is foreseen to be conducted special Environmental trainings by Eptisa for environmental specialists of Contractors

19 August 2013
10 September 2013
2 October 2013
<i>Further trainings will be scheduled based on needs</i>

### **Mobilization of contractor.**

36. In order to complete construction works before the onset of winter time (and thus speed up disbursement for MES-01) maximum mobilization of human and technical resources was undertaken by contractor. An average of 115 Workers were mobilized on the relatively small and narrow streets of mountain city of Mestia. Despite the fact that environmental recommendations/instructions have been given to the Contractor (see Annex V) regularly, in some cases negative impact on the environment couldn't be avoided.
37. To improve the situation a comprehensive on-site training is planned in early August for the Contractor's staff to be carried out by Supervision Consultant Eptisa. Training manual and materials are already drafted. The Environmental Specialist of UWSCG will be fully involved in the training process, together with the representatives of the DREP team of the Company.
38. In order to strengthen the environmental management capacity of the contractor, the person responsible for environmental management will attend the training on "Improving of Environmental Safeguards in Central and West Asia " organized by ADB.

### **Note on Air and Noise Quality Monitoring (for MES-01)**

39. No baseline data is provided in IEE of Mestia headworks project for air and noise. Project has modest impact on environment that may be easily mitigated, therefore monitoring was limited to inspections to verify compliance with mitigation requirements.
40. The following is an extract from Mestia IEE:

*Air Quality.* Ambient air quality monitoring is conducted at only seven locations in Georgia. As there are no major air polluting sources like industries, none of these are located in Mestia.

#### IV. ANNEX A: MONITORING DATA

No	Impact	Mitigation Measures	Implementation Compliances
1	Impacts caused by excavation and generation of waste soil	<ul style="list-style-type: none"> <li>Utilize surplus/waste soil for other construction activities or to raise the ground-level of low level sites</li> </ul>	<p>Although several verbal/oral instructions have been given by the Engineer (EPTISA) at the place as well as by environmental specialist of UWSCG, Surplus soil material stayed on site. Surplus of excavation (stones) at Tyrolean weir were simply dumped to fill open spaces instead of rip-rap works;</p> <p>Most surplus from trenches of transmission pipeline had been re-used and some used for road surface covering works; usually surplus had been re-used for main backfill, however without sieving on occasions (this has no environmental impact nevertheless);</p> <p>Quarry used for production of granular material for backfill of trenches had been adequately maintained. No dumping of unused material was observed (to river course or stream).</p>

2	Loss of top soil	<ul style="list-style-type: none"> <li>• 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</li> </ul>	<p>In some locations, topsoil stripping and storage was not carried out thoroughly;</p> <p>Although several verbal/oral instructions have been given by the Engineer (EPTISA) and the Environmental Specialist of UWSCG at the place of trenches, reinstatement remain generally poor (no compaction of top soil in most cases) and not made as per instruction of EPTISA.</p>
3	Erosion due to excavation/refilling; Removal of vegetation/trees for construction	<ul style="list-style-type: none"> <li>• Avoid tree cutting by small change of layout plan/alignment;</li> <li>• In unavoidable cases, plant two trees of same species for each tree that is cut for construction;</li> <li>• 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.;</li> <li>• Proper compaction of refilled soil: the material shall be refilled in layers and compacted properly layer by layer;</li> <li>• In steep slopes, local grass species shall be planted on the refilled trenches.</li> </ul>	<p>At the sides of access road there was observed some bushes cut;</p> <p>Some erosion problem noted on start of Section 2 of 3 pipelines running up to Zarghashi reservoir, however unavoidable due to deep sloping of the terrain (requiring large road openings for trench execution and pipe laying);</p> <p>For 1.3 km proper compaction of refilled soil was made in layers and compacted properly layer by layer (however, final layer not compacted properly);</p> <p>No planting of local grass species was observed on the refilled trenches in the steep slopes up to present.</p>
4	Impacts due to construction in the river	<ul style="list-style-type: none"> <li>• Schedule the construction work during low flow season avoiding rainy</li> </ul>	<p>Construction works include several works at the intake (gabions) that impact slightly the river course</p>

		<p>and summer seasons;</p> <ul style="list-style-type: none"> <li>• Water flow shall not be interrupted completely/diverted;</li> <li>• Enclose the construction area (e.g., with sand bags) so that water does not enter construction site;</li> <li>• Water collected in the trench shall be disposed off safely so that silt water does not get mixed with the river water.</li> </ul>	<p>but overall does not disturb the river course nor the water quality;</p> <p>No proper sanitary fencing had been considered around the Tyrolean weir up to now despite instructions by EPTISA. There are clear risks of contamination if there will be no immediate protection zone around the Tyrolean weir (danger of pollution by tourists, defecation by animals, etc.).</p>
5	Impact on surface water bodies due to construction under rain	<ul style="list-style-type: none"> <li>• Avoid scheduling excavation work during the rainy season;</li> <li>• Complete pipe laying work in excavated stretches and refill before monsoon;</li> <li>• Complete the excavation during dry season;</li> <li>• In unavoidable circumstances, protect open trenches from entry of rain water by raising earthen bunds with excavated soil;</li> <li>• Confine construction area including the material storage (sand and aggregate) so that runoff from upland areas doesn't enter the site;</li> <li>• Ensure that drains are not blocked with excavated soil.</li> </ul>	<p>During rainy periods excavation works were interrupted;</p> <p>In several cases trenches were left open for some periods until testing took place.</p>
6	Impact on air quality due	<ul style="list-style-type: none"> <li>• Cover or damp down by water spray</li> </ul>	Dust was controlled through watering the roads

	to dust generation	<p>excavated mounds of soil to control dust generation;</p> <ul style="list-style-type: none"> <li>• Apply water prior to leveling or performing any other earth-moving activity to keep the soil moist throughout the process;</li> <li>• Bring the material (aggregate/sand) as/when required;</li> <li>• Ensure speedy completion of work and proper site clearance after completion;</li> <li>• Use tarpaulins to cover loose material that is transported to and from the site by truck;</li> <li>• Control dust generation while unloading the loose material (particularly aggregate and sand) at the site by sprinkling water/unloading inside barricaded area;</li> <li>• Clean wheels and undercarriage of haul trucks prior to leaving construction site;</li> <li>• Restricted access to the work area except workers to limit soil disturbance and prevent access by fencing the site.</li> </ul>	<p>through the populated area where driving could easily generate dust;</p> <p>In some cases tarpaulins were used to cover loose material that was transported by truck;</p> <p>Cleaning of truck wheels was undertaken at the equipment parking/storage site;</p> <p>No fencing installed at any site.</p>
7	Disturbance to business, people, activities and socio-cultural resources due to construction work	<ul style="list-style-type: none"> <li>• Inform all residents and businesses about the nature and duration of any work well in advance so that they can</li> </ul>	<p>Contractor provided information to the local residents verbally before the works were undertaken;</p>



		<p>make necessary preparations;</p> <ul style="list-style-type: none"> <li>• Limit dust by removing waste soil quickly; by covering and watering stockpiles, and covering soil with tarpaulins when carried on trucks;</li> <li>• Provide wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required;</li> <li>• Increasing workforce to complete the work in minimum time in the town.</li> </ul>	<p>For crossing trenches by vehicle and people, metal or wooden temporary planks were used at the applicable places.</p>
8	Disturbance/nuisance/noise due to construction activity including haulage of material/waste	<ul style="list-style-type: none"> <li>• Plan transportation routes in consultation with Municipality and Police;</li> <li>• Schedule transportation activities so as to avoid peak traffic periods;</li> <li>• Educate drivers: limit speed between 20-25 km/h and avoid use of horn in the town;</li> <li>• No parking shall be allowed on the roads, that may disturb the traffic movement;</li> <li>• No nighttime construction activities including material/waste haulage.</li> </ul>	<p>Transportation routes were not systematically agreed with Municipality/Police although preliminary discussions took place;</p> <p>Parking of vehicles was provided at the storage area to avoid disturbing traffic movement;</p> <p>Drivers respected speed limits;</p> <p>Some parking along Section 3 (narrow road in a residential area) was observed, and at times blockage occurred or access denied – however, lasting no more than 30 minutes;</p> <p>No night time construction activities were carried out.</p>
9	Socio-economic benefits from employing local people	<ul style="list-style-type: none"> <li>• To the extent possible, labor force must be drawn from the local community;</li> <li>• Contractor should source at least</li> </ul>	<p>Only 20-25% of the local population had been employed in the works.</p>

		50% of unskilled labor force from local communities.	
10	Impact of camp sites on the surrounding environment	<ul style="list-style-type: none"> <li>• In unavoidable case of sourcing labor from other areas, provide adequate housing facilities;</li> <li>• Provide all basic amenities (water supply and sanitation, waste collection &amp; disposal, first aid facilities, etc);</li> <li>• Contractor shall provide fire wood and no worker shall be allowed to cut any tree;</li> <li>• Ensure regular and clean maintenance of the camp.</li> </ul>	<p>Contractor provided workers with required accommodation and in some cases incurred additional expenses;</p> <p>A new camp (storage area) was established in May 2013; however, pipes were no properly stored.</p>
11	Safety risk for local residents and workers	<ul style="list-style-type: none"> <li>• Exclude public from the site – enclose construction area, provide warning and sign boards, security personnel;</li> <li>• Provide adequate lighting to avoid accidents;</li> <li>• Ensure that all workers are provided with and use safety paraphernalia – helmets, hand gloves, boots, masks, safety belts (while working at heights, etc);</li> <li>• Maintain accidents records and report regularly.</li> </ul>	<p>Open trenches (transmission pipeline) were not provided with safety signs (special warning lines) to prevent accidents;</p> <p>No sign boards installed by Contractor despite repeated instructions by EPTISA and written instructions of environment specialist of UWSCG;</p> <p>Safety belts were not used at all for workers operating (concrete repair and plastering works) inside and outside the reservoirs;</p> <p>No accidents were reported;</p> <p>Territory for storage of equipment and materials was fenced and had 24 hour security; however, there were no special warning/informational signs at the entrance and on site as well;</p> <p>There were no specially dedicated containers for non-hazardous waste at the storage site;</p>

			At the equipment storage site, there was observed a fuel container placed on the ground.
12	Historical, archeological chance finds during excavation	<ul style="list-style-type: none"> <li>• 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: <ul style="list-style-type: none"> <li>○ Stopping work immediately to allow further investigation if any finds are suspected;</li> <li>○ In case of suspected archeological find, contact archeological authority and take any action they require to ensure its removal or protection.</li> </ul> </li> </ul>	During this reporting period no historical or archeological finds were discovered.

**Annex B: CORRECTIVE ACTIONS INSTRUCTED BY SUPERVISION CONSULTANT**

<b>Nº</b>	<b>DATE</b>	<b>CORRECTIVE ACTION</b>	<b>ORIGIN</b>	<b>Status</b>
	13.04	Removal of earth/stones from reservoir site; Protection of workers inside reservoir (to use proper scaffolding and safety belts).	RE RE	Not corrected as at 30/6/2013. Not corrected as at 30/6/2013.
	15.04	Employ more local residents in the works; Provide safety equipment to all workers.	ARE ARE	Corrected, more staff employed for trench excavation in place where no access by JSB is possible.
	20.04	Establish temporary camps in consultation with the local authority; Ensure access and proper storage and cleaning of new camp at all times	RE	Corrected to some extent; camp cleaned and internal storage improved; however, pipe storage not corrected.
	22.04	Plan transportation routes in consultation with Municipality and Police for Section 3 of main pipeline; Execute works at this section during non-peak hours.	RE	Corrected
	30.04	Provide wooden walkways/planks across trenches for pedestrians and metal sheets in Section 4.	CWI	
	01.06	Staff to wear helmets, gloves, jackets, etc.; Trenches to be fenced.	RE	Corrected in some places, still pending in others.
	06.06	Trench of pipeline to be protected and no access by local residents to sites.	ARE	Corrected partially; Corrected partially.
	15.06	Trench compaction and reinstatement to be made according to approved standards and methods.	ARE	Corrected for Zone 3 only.
	21.06	Fence to be installed at trenches; Intake to be fenced; Workers to wear helmets, gloves, vests.	RE	Corrected for a few sections only, most reinstatement pending.
	26.06	Control dust generation while unloading the loose material	CWI	Corrected partially.  Corrected at times

## V. ANNEX C: PICTURES



MES 01 – no sanitary fence upstream to Tyrolean weir (access unprotected)



Entrance of equipment storage site



MES 01 - stored HDPE pipes



MES 01 - Reservoir area open access without fencing



MES 01 – Wooden scaffolding used for plastering works – without protection



MES 01 – Backfill of reservoir pending leading to safety risks



MES 01 – Excavation surplus from reservoir