Project Number: 43405-025

Reporting Period: January-June 2019

GEORGIA: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 3)

(FINANCED BY THE ASIAN DEVELOPMENT BANK)

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

Endorsed by: Maka Goderdzishvili, Head, Department of Environmental Protection and Permits, "United Water Supply Company of Georgia"

July, 2019

Abbreviations

ABBREVIATIONS

ADB	Asian Development Bank
DC	Design Consultant
DEPRP	Department of Environmental protection, Resettlement and Construction Permit
DIPDR	Department of International Procurement and Donors Relations
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EHS	Environmental Health & Safety
EIA	Environmental Impact Assessment
EIP	Environmental Impact Permit
EMP/ SSEMP	Environmental Management Plan/ Site-Specific Environmental Management Plan
ES/ SES	Environmental Specialist/ Senior Environmental Specialist
GoG	Government of Georgia
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IPMO	Investment Program Management Office
USIIP	Urban Sector Improvement Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MFF	Multi-tranche Financing Facility
MoENRP	Ministry of Environment and Natural Resources Protection
MoRDI	Ministry of Regional Development & Infrastructure
NEA	National Environmental Agency
SC	Supervision Consultant
UWSCG	United Water Supply Company of Georgia
WSS	Water Supply & Sewerage

Contents

1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for "Urban Services Improvement Investment Program" (USIIP), Tranche 3 and describes the period of January-June 2019.

2. This report is the 7th Semi-Annual EMR for the T3 of "Urban Services Improvement Investment Program".

1.2 Headline Information

3. The initial IEE under the Kut-01 / Phase II project was prepared and approved by ADB in October 2013, and then updated in November 2017 due to changes in the design of the project construction of Aqueduct across the Rioni River.

4. In June 2019, IEE for the Kut-01 / Phase II project was further updated and approved by ADB, taking into account additional changes in the design of the project, in particular, in restoration of the chlorine filling station in Parthanakanibi.

1.3 Project Description

5. 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 is 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.

6. 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. Water supply improvements will include source augmentation and head works, pumping systems, treatment facilities, transmission and distribution network; and, sewerage improvement works will include sewer network, pumping stations, main collectors and waste water treatment plants.

7. Tranche 3 of the Investment Program includes:

- Construction of Water Supply and Wastewater Network in Ureki/Phase 3 (URE-01);
- Construction of Wastewater Treatment Plant in Ureki (URE-02);
- Construction and Rehabilitation of Water Supply System in Kutaisi/Phase 2 (KUT-01)
- Construction of New Transmission Pipeline in Abasha (Aba-01)

The following projects are financed under Tranche 3:

8. [1]**Construction of Water Supply and Wastewater Network in Ureki/Phase 3 (URE-01)**. The project comprises of the construction of 1 water supply pumping station and 31 sewage pumping stations (Shekvetili - 18, Ureki - 13; construction of new reservoirs (2,000 m³ x 3,000 m³ and 1 x 1,200 m³); Distribution network - laying of approximately 70 km water supply pipelines (distribution network will be divided into 3 areas), laying of approximately 70 km sewage pipelines; installation of approximately 1,500 water meters; Wells - drilling of 10 drinking water wells.

9. The Contract is signed with JV of Peri Ltd (Georgia) Leading Partner and Slon LLC (Azerbaijan) on October 28, 2014. Commencement date was November 24, 2014. Initial Completion date was scheduled on November 22, 2018 but due to changes in the design of project, which include the construction of an Aqueduct across the Natanebi River, the construction of Gabion wall to protect well fields from flooding and erosion, and the construction of an additional deep well No. 8 along the banks of the Natanebi River, completion date was extended to July 2019. The project is foreseen to serve 35,000 tourists and 5,400 local inhabitants by year 2040.

10. **Construction of Wastewater Treatment Plant in Ureki (URE-02).** The project comprises of the construction of new Wastewater Treatment Plant with the capacity of 6,570 m³/day.

11. The contract URE-02 was signed on April 30, 2015 with JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH and Co.KG ProtechnoSrl (Germany) / Aritim (Turkey), the contract was completed on June 9, 2018.

12. The Post-Construction Environmental Audit was conducted and relevant Audit report was prepared in June 2019 and attached to this report as an Annex F. More details are provided in paragraphs 94, 95 of this report.

13. **Construction and Rehabilitation of Water Supply System in Kutaisi/Phase 2 (KUT-01).** The project envisages construction of Kvitiri 973 m³/h capacity and Mukhrani 660 m³/h capacity pumping stations; Reservoirs - construction of Near East and Mukhrani reservoirs with the capacity of 9,000 m³ (2x4,000+1,000). Distribution network - 332.1 km.

14. United Water Supply Company of Georgia signed a contract with SMK Ulusal Insaat Ve Ticaret A.S. (Turkey) for implementation of KUT-01 project on 22 April 2015. The initial date of completion of the contract - June 8, 2018 was extended until 23 December 2019.

15. **Construction of New Transmission Line in Abasha (Aba-01)**. Within the Aba-01 project the following major works will be carried out: approximately 15 km long 500 mm diameter transmission pipeline will be installed from headworks to the town of Abasha, chlorination building will be constructed and the water meter will be installed at the headwork.

16. The contract for implementation of ABA-01 was signed on October 13, 2017 with AS Inshaat–N, LLC (Azerbaijan). The initial date of completion of the contract - June 8, 2018 was extended until July 2019.

[1] T1-T3 BAEMRs may have some overlap, due to the financing arrangements of Ure-01 project, which is simultaneously financed by T1,T2 and T3.

1.4 Project Contracts and Management

17. The following agencies are involved in implementing the Investment program: Ministry of Regional Development and Infrastructure (MoRDI) is the Executing Agency (EA) responsible for management, coordination and execution of all activities funded under the loan. MoRDI has overall responsibility for compliance with loan covenants.

18. Ministry of Environmental Protection and Agriculture of Georgia (MEPA). MEPA has the overall responsibility for protection of environment in Georgia. The Department of Permits of MEPA is responsible for reviewing EIAs and for issuance of the Environmental Permits. MEPA is the main state body pursuing state policy in the sphere of environment. Their functions for regulating economic or development activities with regard to environmental protection include:

- Issuing permits for project development (Environmental Decision)
- Setting emission limits and issuing surface water intake and discharge consents
- Responding to incidents and complaint

19. United Water Supply Company of Georgia (UWSCG) is the implementing agency (IA), which is responsible for administration, implementation (design, construction and operation) and all day-to-day activities under the loan. Since September 2018, the Investment Program Management Office (IPMO) under UWSCG is Project Management Department, the Head of Department is Mr. Giorgi Archaia. Environmental issues are followed by the Department of Environmental Protection and Permits of UWSCG. The head of the department is Ms. Maka Goderdzishvili. Ms. Ketevan Chomakhidze is the Environmental Specialist of USIIP under the Department of Environmental Protection and Permits.

20. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) – Eptisa under T1. The national and international team of consultants assists UWSCG in the supervision of the construction of subprojects under the USIIP. The SC also provides capacity building training to contractor staff in the management and operation and maintenance of the subprojects. The SC assists UWSCG in ensuring that the subprojects are implemented according to the specified standards. SC assignment also includes the supervising of the implementation of the environmental management plans.

21. All mitigation measures during construction are implemented respectively by the contractor companies: Peri; SMK; As Inshaan-N. Each contractor company have Environmental and safety officers responsible for HSE issues during construction process. Construction companies are monitored by the supervision consultant (Eptisa) environmental specialist – Irakli Legashvili and Environmental Specialist of UWSCG/USIIP Ms. Ketevan Chomakhidze. Environmental Specialists of SC and UWSCG/USIIP conduct routine observations and surveys of project sites, issues non-compliance notes. ES of Eptisa prepares quarterly environmental reports and submits to UWSCG.

22. The Contractor, prior to the onset of the construction, is obliged to conduct a number of studies and develop environmental plans, including “Site Environment Management Plan” (SEMP). Such plans can be further subdivided into Topic Specific or Site Specific EMP’s. The number

of such plans will depend upon the type of project, complexity and sensitivity of the receiving environment.

23. Topic Specific EMPs are developed on a topic by topic basis. For example:

- Waste Management Plans;
- Traffic Management Plans;
- Protected Species Management Plans;
- Water Management Plans.

24. These plans are detailed and set out how the project will address potential issues identified in the impact assessment process and ensure that specific mitigation and monitoring measures are fully implemented. A topic specific environmental management plan will cover all of the project.

25. The environmental specialist of UWSCG/USIIP assists and advise the Department of Environmental Protection and Permits of UWSCG for implementation of USIIP in compliance with the ADB Safeguard Policy Statement 2009 and National Legislation, and oversee the work of DCs and SCs in safeguards compliance. ES supports DEPP in EARF implementation, in particular, reviewing IEE/EIA Reports, overseeing implementation of EMPs, Reviewing and approving SEMPs and carrying out training and capacity-building activities in cooperation with Supervision Company. The ES prepares Semi-annual and annual environmental monitoring reports and submits to ADB.

26. Department of Environmental Protection and Permits of UWSCG is responsible for the implementation of mitigation and monitoring measures during construction and operation of subprojects under USIIP. Currently DEPP is staffed with a Head of Department and 4 specialists, those are responsible for environmental safeguard and construction permission issues.

27. ADB is the donor financing the Investment Program. Environmental management organization is shown in Figure 1 and Figure 2.

Figure 1: Structure Diagram of the Environmental Management Unit of UWSCG

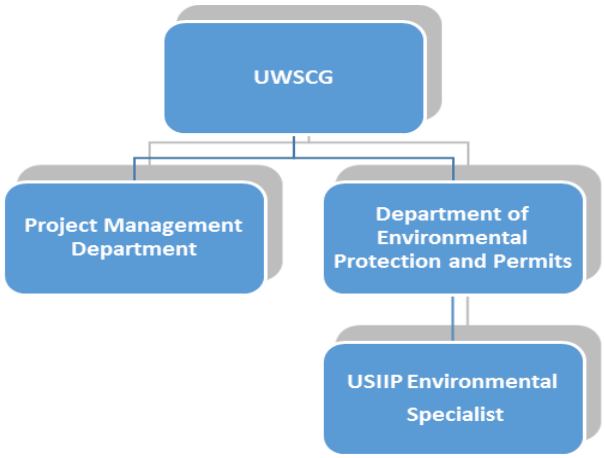
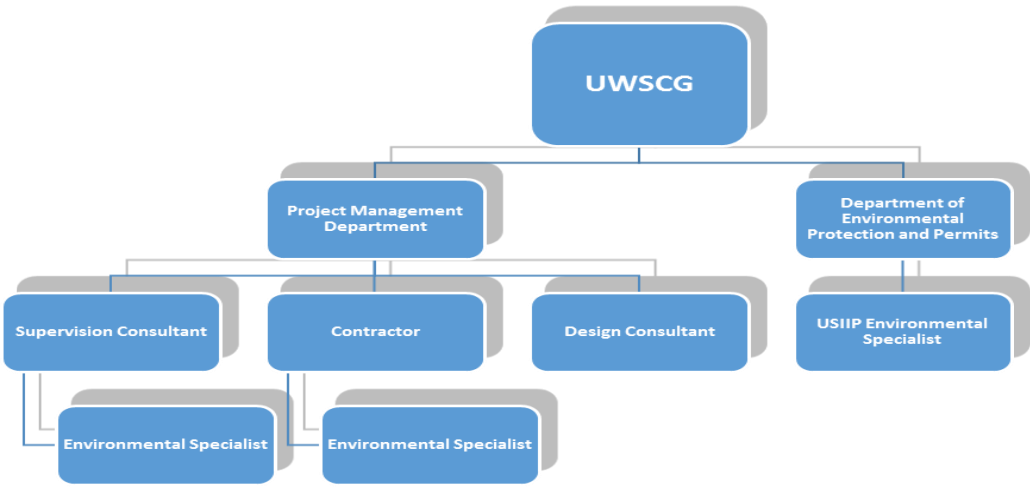


Figure 2: Structure Diagram of the Agencies Involved in Investment Program Implementation



28. A list of main organizations involved in the USIIP/T3 and relating to environmental safeguards is presented in Table 1 below.

Table 1: List of Main Organizations under USIIP/T1

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Lender	Asian Development Bank	Head Office, Environmental Specialist, Portfolio, Results, Safeguards and Gender Unit (PSG), CWRD.	Duncan Lang dlang@adb.org
		Associate Safeguards Officer Georgia Resident Mission Asian Development Bank	Nino Nadashvili +995 595 070442 nnadashvili@adb.org
		ADB RETA International-Regional	Keti Dgebuadze +995 577232937

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
		Environmental Consultant	ketdgeb@yahoo.com
Borrower	UWSCG	UWSCG, Department of Environmental Protection and Permits, Head	Ms. Maka Goderdzishvili Tel: +995 599 229925 E-mail: m.goderdzishvili@water.gov.ge
		UWSCG/IPMO Department of Projects Management, Head	Mr. Giorgi Archaia E-mail: G.Archaia@water.gov.ge Tel: +995 577 380213
Borrower	UWSCG/USIIP/T3	Environmental Specialist	Ms. Ketevan Chomakhidze Tel: +995 577 380309 E-mail: Chomakhidzek@yahoo.com
Supervision Consultant	. A Consortium of Consulting Firm led by Eptisa Servicios de Ingeniria S.L. (Spain) in association with SAFEGE (Belgium) and JSC Georgian Water Project (Georgia)	Environmental Specialist: .	Mr. Irakli Legashvili Tel: +995 577 177016 E-mail: chem_ira@yahoo.com .
Contractor URE-02	. JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH and Co.KG ProtechnoSrl (Germany) / Aritim (Turkey)	Environmental H&S Specialist	Mr.Nikoloz Meparidze Tel: +995 599 346821 E-mail: niko@telenet.ge

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Contractor URE-01	. JV of Peri Ltd (Georgia) Leading Partner and Slon LLC (Azerbaijan)	Environmental H&S Specialist	Mr. Levan Asabashvili Tel: +995 599 962 693 Email: levani.asabashvili@mail.ru
Contractor KUT-01 .	. SMK Ulusal Insaat Ve Ticaret A.S. (Turkey)	Environmental Specialist	Ms. Natia Babukhadia E-mail: natiiibab@gmail.com Tel: +995 595 150444
		H&S Specialist	Mr. Beso Balanchivadze E-mail: besobal84@gmail.com Tel: +995 592 87 0087
ABA-01	. AS Inshaat–N, LLC (Azerbaijan)	Environmental H&S Specialist	Mr. Nodar Usupishvili E-mail n.usupashvili@gmail.com Tel: +995 577 68 16 71

1.5 Project Activities during Current Reporting Period

29. During the reported period construction activities were implemented only under KUT-01, URE-01 and ABA-01 Projects, therefore only KUT-01, URE-01 and ABA-01 sub-projects are reported in this Semi-annual EMR. Contractors have intensified all activities to improve the progress of the works on sites. The Engineers gave processed frequent instructions to the Contractor for the planning and outstanding documents preparation which shall ensure steady improvement of the works progress.

1.5.1 Project Activities during the Reporting Period

URE-01:

30. The following construction works were implemented during the reporting period under URE-01 sub-project:

Reservoir 1

- Finishing flooring works with ceramic tile in chamber east and chamber west on the level +98.50 and + 105.05; 35.3 + 98.2 = 133.5 m^2
- Completed Electrical works, installed lightings - 28 pcs
- Installed Distribution Board #1 and #2
- Switch Box Level. Control float
- Cooper Cable 3X2.5 mm^2

Reservoir 3

- Chlorination building **-** construction works is completed
- Completed Electrical works, installed lightings - 10 pcs
- Installed Distribution Board #1 -1 pc
- Switch Box Level DB.2/S1:00 -1 pc
- Cooper Cable 3X2.5 mm^2

WSPS

- Electrical works - assembled cables
- Installed control panels cabinets.
- Earthling of equipment's,
- Lightning rods - 35 pcs
- Installed Generator

Wellfield

- Drilling new deep bore-well (drilled 240m) water is not appeared
- Stone Gabion on the river bank of Natanebi River
- Constructed - 70m of stone Gabion - Type V Volume - 770 m^3 - 9%
- Backfilled suitable materials behind of gabion on 70m volume - 880m^3

Shekvetili new additional sewer and water supply pipelines

- Excavated trench - 417 m - 720m3
- Laid sewer pipeline DN200 L- 402m
- Sewage manhole - 16 pcs
- Water supply pipeline DN110 -L=315 m; DN50- L=93 m

31. The overall progress of the contractor during January-June 2019 for the project URE-01 is presented in table 2 below:

Table 2: URE-01, project progress during the January - June 2019

Ure-01	Sites
	Construction of Reservoir #1
Works undertaken during January - June 2019	Mechanical Installation Works – 100% Electrical Installation Works – 100%
	Additional Sewer and Water Supply Network
Works undertaken during January - June 2019	Excavated trench - 417 m - 720m3 Laid sewer pipeline DN200 L- 402m
	Well Field
Works undertaken during January - June 2019	Construction Works – 100% Finishing Works – 100% Road Installation Works – 100% Mechanical-Electrical Installation Works – 100% Electrical Installation Works – 100%
	WS Pumping Station
Works undertaken during January - June 2019	Mechanical Installation Works – 100% Electrical Installation Works – 100% Finishing Works – 90%
	Sewer PS Pumping Station
Works undertaken during January - June 2019	Installation Works – 100% Mechanical Installation Works – 100% Electrical Installation Works – 100%
	Construction of Reservoir #3

Ure-01	Sites
Works undertaken during January - June 2019	Excavation Works – 100% Drainage Installation Works – 90% Reinforced Concrete Works – 100% Mechanical Installation Works – 100% Electrical Installation Works – 100% Finishing Works – 90%

KUT-01

2 SCOPE OF WORKS

Piping works

32. Works have continued finishing Tabukashvili Street and have started in Gugunava Street according to a new request from UWSCG.

33. A total length already installed has achieved 284.5 Km on a new total of 288 Km, meaning that only 1% is till remaining.

34. SMK teams have also focused their actions on connections in crossing streets finalizing step by step the whole network.

35. 148 houses connections have been done during month, remaining about 200 on a total of 5253 connections. Remaining sections are till now problematic mainly due to population refusal.

Pressure tests

36. Pressure test have been operated successfully on 960 meters of HDPE pipes in Tabukashvili.

37. And finally after a long preparation, DCI pressure test was carried out in Rustaveli and Javakhishvili Streets for a length 2.5 Km. Test pressure was 8 bars for 3 bars in network.

38. It was requested to Contractor to be better organised in preparation and to use better equipment for pressure increasing. Contractor spent 10 days in order to make this test, which is too long.

39. On another side, a test was foreseen in Part III of partial DCI piping between reservoir and connection to main network. But due to a lack of adapted equipment, flanges, fittings and pressure pump the test failed. The test pressure is 18 bars at this place: Safety should be considered carefully.

Apartment Connections

40. 910 flat connections have been done during the month which represents almost double regarding previous month. VO#14 acceptance has allowed Subcontractor to restart works powerfully. At end of month 6 brigades were on site. Subcontractor foresees to achieve 20 brigades during next month.

41. Remaining flat connections are till about 19.000.

42. As we have already warned, situation is extremely tight in term of timing, due to technical issues concerning lack of pressure, due to opposed residents, and due to VO process. A special attention will be required during next months in order to observed progress and to apply specific actions.

43. Problems of lack of pressure which prevents possibility to connect remaining districts, is recurrent till complete DCI piping with various coupling will be not completed.

44. Subcontractor will hire till 20 brigades but management problem could be more difficult. Preparation of works, good scheduling and excellent organisation would be the key in order to end in time.

DCI

Piping works

45. Piping works in Rustavili and Javakhishvili Streets have been completed beginning of June and pressure test was done. A monthly length of 1090 meters was finally laid in those streets. Less than 3 Km are remaining. Connections to others networks should be finalized.

46. In Parnavas Mepe Street, works which started last month have been stopped due to crossing in Aghmashenebeli Street where palm trees are planted in central reservation. A proposal was sent to UWSCG in order to make easier the crossing. 253 meters are already laid and 460 meters are remaining.

47. In downstream of Rioni Bridge, DCI piping is ongoing. The area is a swamp and pipes were laid on a crushed stones bed. A washout chamber will be built in this area. Works are not facing particular difficulties.

48. Further, connections to existing city network are ongoing in various places.

49. Ostkheli connection crossing under a channel has finally finished. Works were particularly difficult due to a high depth, including presence of sewerage network, grown water and a not adapted casing. A solution was found but 2 weeks duration for this section was too long regarding 4 days planned.

50. In Nikea, 2 chambers including mechanical assembly, one for washout and other for air vent are in progress

51. In Godogani, 3 complete chambers, 2 washout and 1 air vent are in progress along the part between Mukhnari pumping station and reservoir.

52. In Solomon Street, 1 chamber with its air vent is in progress.

53. 84 % of total length has been laid but again remaining parts will be more difficult.

54. DCI piping is crucial for pressure equilibrium and water distribution in Kutaisi. Till those works are not complete, some district cannot be connected to the new network.

Reservoirs and Pumping Station

New East Reservoir

55. The situation has not significantly progressed during the month but thank to partial backfilling in front of construction; that looks to have done a jump ahead.

56. Watertight tests of reservoir N2 has successfully passed opening the possibility to finish backfilling after drainage system completion.

57. Reservoir emptying has to be done because quality of water is not acceptable as drinking one. Currently, and before emptying, environment impact is object of a survey.

58. Remaining works:

- Drainage connection and drainage piping
- Backfilling finishing around reservoirs
- All the finishing works inside control chamber.
- Electrical and mechanical works.
- Landscaped spaces
- Fencing
- Access road.

Mukhnari

59. About Mukhnari pumping station, a significant progress has been pointed out thank to assembly of pumps and pipes inside pumping part of building.

60. Finishing works in masonry are till remaining.

61. Remaining works:

- Electrical works
- Finishing of mechanical
- Finishing works mainly roof, drainage, backfilling
- Access road.

Kvitiri PS

62. During month, Subcontractor has applied flooring mortar in pumping room. No others works have been continued.

63. Windows and doors, which are ordered according to Contractor, are not yet delivered.

64. On another side, all mechanical works have been stopped by engineer due to an evident lack of drawings, calculations and submissions.

65. General drawing of pumping station should be provided including lay-out of pumps, piping which is not yet clarified, connections with existing installation, elevations, materials.

66. Contractor understood this necessity and works on it.

67. Due to a major modification of pumping station elevation and due to an incorrect parameter in pump specifications, an eventual difficulty concerning cavitations phenomena should be secured. This has consequences making late the assembly of pumps on site.

68. Remaining works:

- Concrete works finishing in transformer building
- Drainages
- Windows and doors
- External finishing works in painting
- Electrical and mechanical works

Table 3: KUT-01, project progress during the January-June 2019

Ure-01	**Sites**
	Pipelines
Works undertaken during January - June 2019	Earthworks – 84,92% Pipes – 92,47% Manholes and Chambers – 45,57% Surface Reinstatement – 61,67%
	New East Reservoir
Works undertaken during January - June 2019	Earthworks – 86,05% Fencing – 0% Civil Works – 98% Finishes – 17% Mechanical and Electrical – 3,25%
	Mukhnari Reservoir
Works undertaken during January - June 2019	Earthworks – 97%

Ure-01	Sites
	Civil Works – 93% Finishes – 95% Mechanical and Electrical – 16%
	River, Railway and Road crossing
Works undertaken during January - June 2019	Special Constructions – 53% Rioni Bridge – 94%

ABA-01

SCOPE OF WORKS

69. The project area is located in Abasha town. The contract of construction of the new transmission line targets the improvement of the urban water supply system of Abasha.

70. The following major works were carried out within the ABA-01 project:

- Restoration of Operator's Building
- Earthworks for Pipes
- Wash out Chamber DN 500
- Hydrants
- Insolation of Water Meters
- Pressure Testing
- Surface Reinstatemtn

Construction works:

71. The overall progress of the contractor during January-June 2019 for the project ABA-01 is presented in table 4 below:

Table 4: ABA-01, project progress during the January - June 2019

Site	Pipe Diameter (mm)	Installed
Works undertaken	PE 100-pipes OD 110	72.89%
	PE 100-pipes OD 63	64.03%

Site	Pipe Diameter (mm)	Installed
during January – June 2019		
	PE 100-pipes OD 500	91.74%
	PE 100-pipes OD 90	100%

2.1 Description of Any Changes to Project Design

72. No changes in project design during the reporting period.

2.2 Description of Any Changes to Agreed Construction methods

N/A

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

73. Individual and joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of SC and Environmental Specialist of USIIP on a regular basis, during the reporting period. Also unscheduled monitoring visits were carried out and non-compliance notes has been issued to the contractor as needed. Mitigation measures in order to reduce major environmental impacts have been instructed to CCs during the monitoring visits as well.

74. The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under KUT-01, URE-01 and ABA-01 sub-projects.

75. Environmental Monitoring Specialist hired under the KUT-01 project Ms. Natia Babukhadia conducted the day-to-day monitoring of the construction sites, filled out the weekly checklists, developed monthly monitoring reports and submitted to SC/Eptisa.

76. During the reporting period, Mr. Mamiya Mikiashvili, the environmental E&S specialist of the URE-01 sub-project, was replaced by Mr. Levan Asabashvili. A new environmental specialist of contractor was responsible for the daily monitoring of the project sites, development of monthly monitoring reports for submission to SC/Eptisa.

77. Environmental Monitoring Specialist hired under the ABA-01 project by contractor Mr. Nodar Usupishvili conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to SC/Eptisa.

78. Environmental Monitoring Specialist of Eptisa, Mr.Irakli Legashvili conducted monthly monitoring of project sites under T3 and developed Non-Conformance Notices were required. He also developed quarterly environmental monitoring reports based on the monthly reports submitted by Contractor and environmental site inspections and submit to UWSCG.

79. Environmental Specialist of USIIP Ms. Kate Chomakhidze performed monitoring of contractor's performance in accordance with the requirements of approved IEE/EMPs, SEMPs, and other environmental commitments of the contractor. USIIP/ES developed Semi-Annual Environmental Monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and monitoring results.

80. In accordance with the requirements of IEEs, Contractor is required to undertake parametric measurements and observations on air quality and noise and socio-cultural resources. The monitoring guidelines were set as shown in the Table 5 below for KUT-01, ABA-01 and URE-01 sub-projects.

Table 5: Parametric Measurement Guidelines

Parameters	Frequency & Location	Remarks
KUT-01		
Air Quality	Every 6 months Mukhnari Reservoir, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading Conduct measurements of Dusts Mg/m3; CO Mg/m3; NO2 Mg/m3; SO2 Mg/m3
Noise	Every 6 months Mukhnari Reservoir, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition Limiting working hours to 8 am – 6 pm
Impact on Flora and Fauna	Monthly during the site Inspection and audit	Avoid tree cutting In unavoidable cases, plant four trees of same species for each tree that is cut for construction
Cultural heritage Disturbance to cultural resources	Every time along the alignment Archaeological & Cultural Properties	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. Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.
URE-01		
Air Quality	Every 6 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading

Parameters	Frequency & Location	Remarks
		Conduct measurements of Dusts Mg/m3; CO Mg/m3; NO2 Mg/m3; SO2 Mg/m3
Noise	Every 6 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition Limiting working hours to 8 am – 6 pm
Impact on Flora and Fauna	Monthly during the site monitoring.	Avoid tree cutting In unavoidable cases, plant four trees of same species for each tree that is cut for construction
Cultural heritage Disturbance to cultural resources	Every time along the alignment Archaeological & Cultural Properties	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. Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.
ABA-01		
Air Quality	Every 6 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading Conduct measurements of Dusts Mg/m3; CO Mg/m3; NO2 Mg/m3; SO2 Mg/m3
Noise	Every 6 months Reservoir #1, Pumping Station, Well Fields, Networks, Transmission Main	Ensure that all equipment & vehicles used for construction activity are in good condition

Parameters	Frequency & Location	Remarks
		Limiting working hours to 8 am – 6 pm
Impact on Flora and Fauna	Monthly during the site monitoring.	Avoid tree cutting In unavoidable cases, plant four trees of same species for each tree that is cut for construction
Cultural heritage Disturbance to cultural resources	Every time along the alignment Archaeological & Cultural Properties	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. Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.

3.2 Site Audits

81. Regular inspection and monitoring of construction sites under Kut-01, URE-01 and ABA-01 projects were conducted by ESs of USIIP and Eptisa. The schedule of Joint inspection and summary of audits carried out under KUT-01, Ure-01 ABA-01 projects are provided in the Table 6 below.

Table 6. Summary of site audits

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
Continuously during reporting period (January June 2019)	SMK Kut-01	Environmental Specialists of Contractor Ms. Natia Babukhadia, under KUT-01 project	Day to day monitoring of sites Compliance with Environmental and HES requirements	1. Health and Safety issues on construction sites 2. Regular cleaning of the construction site	Weekly Monitoring Checklists were prepared (Please see Example in Annex D). Corrective Action Plans were developed by contractor (Please see Example in Annex E)
12 February 2019	Kut-01	Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili Environmental specialists of USIIP Ms.Ketevan Chomakhidze	Monthly monitoring of construction sites	High visible safety signs/tapes around of deep excavation should be installed from all sides to avoid accidents Construction waste should be timely removed from the construction site and disposed properly	Verbal instruction was given to contractor to improve the situation and send improved photos of sites to UWSCG
1 April 2019 Godogani Reservoir		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili Environmental specialists of	Monthly monitoring of construction sites	Construction site should be properly fenced from all sides and equipped with lockable gate Proper warning and information signs should be arranged at the	Non-Compliance Notice issued (Please see Annex C)

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
		USIIP Ms.Ketevan Chomakhidze		entrance and perimeter of the site High visible safety signs/tapes and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly Trees at the construction site and nearby deep excavation zone should be protect to avoid its damage Construction waste should be timely removed from the construction site and disposed properly Safety norms during working at height should be provided Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground contamination All construction materials should be properly segregated and stored adequately Proper waste containers should be installed and labeled	

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
				Waste should be placed only at the proper waste container and discharged timely Workers always should use complete PPE Site internally should be arranged properly and cleaned regularly	
31 May 2019	Kut-01 Godogani Reservoir	Head, Department of Environmental Protection and Permits of UWSCG, Ms Maka Goderdzishvili Environmental specialists of USIIP Ms.Ketevan Chomakhidze Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Monthly monitoring of construction sites	Electricity cables should be well protected and handled properly to avoid damage of workers Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground contamination Oil spill elimination kit should be available at the site Proper waste containers should be installed and labeled Construction site should be properly fenced from all sides and equipped with lockable gate Proper warning and information signs should be arranged at the entrance and perimeter of the site High visible safety signs/tapes and trench side barriers around of deep open excavation	Non-Compliance Notice issued (Please see Annex C)

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
				should be installed from all sides to avoid accidents Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly Construction waste should be timely removed from the construction site and disposed properly All construction materials should be properly segregated and stored adequately Complain box should be labeled Workers always should use complete PPE Site internally should be arranged properly and cleaned regularly	
28 June 2019	Kut-01 Godogani Reservoir	Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Monthly monitoring of construction sites	Proper warning and information signs should be arranged at the entrance and perimeter of the site Construction site should be properly fenced from all sides and equipped with lockable gate Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly Trees at the construction site and nearby excavation zone should	Non-Compliance Notice issued (Please see Annex C)

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
				be protect to avoid its damage Construction waste should be timely removed from the construction site and disposed properly Oil spill kit should be available at the site Safety norms during working at height should be provided Containers with fuel/lubricant should be managed properly Parking area should be arranged with relevant sign All construction materials should be properly segregated and stored adequately Waste containers should be labeled Waste should be placed only at the proper waste container and discharged timely Workers always should use complete PPE Complain box should be placed at proper place Site internally should be arranged properly and cleaned regularly	
28 June 2019	Kut-01 Network	Environmental monitoring specialists of SC/EPTISA	Monthly monitoring of construction sites	Walls of the deep trenches (>1.5m) are not strengthened by boards to	Non-Compliance Notice issued

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
		Mr.Irakli Legashvili		avoid landfall of the soil and accidents Construction activities information signs should be installed at each construction segment Special signs and blinking signs should be installed near to main road During materials transportation tarpaulins cover should be used always Construction materials should be brought when needed to avoid its long time disposal in the streets and disturbance of residents and businesses All transmission line construction segments should be cleaned/well organized on regular bases Workers always should use complete PPE Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction	(Please see Annex C)
Continuously during reporting period (January June 2019)	Peri URE-01	Environmental Specialists of Contractor Mr. Levan Asabashvili under URE-01 project	Day-today monitoring of sites	Poor housekeeping H&S issues of workers	Environmental Specialists of CC fill out the checklists and develop monthly monitoring reports

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
12 February, 2019		Environmental specialists of USIIP Ms. Ketevan Chomakhidze Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Monthly monitoring of sites	Construction site has to be properly organized and cleaned on a regular basis	Verbal instruction is given to contractor to improve minor non-conformances on sites
12-13 March 2019		Environmental specialists of USIIP Ms.Ketevan Chomakhidze Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Environmental monitoring and Audit	Fuel/oil spill response items (sand, sawdust, special containers) should be available at the site and used as needed	Verbal instruction is given to contractor To improve minor non-conformances on sites
27-28 March		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Environmental monitoring and Audit	Site internally should be arranged properly and cleaned regularly	Verbal instruction is given to contractor To improve minor non-conformances on sites
11-12 April		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Environmental monitoring and Audit	Construction area and wooden materials should be freed from big nails to avoid personnel damage. Used nails should be collected regularly to avoid workers damage Fuel/oil spill response items (sand, sawdust, special containers) should	Verbal instruction is given to contractor To improve minor non-conformances on sites

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
				be available at the site and used as needed.	
23-24 May 2019		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili Environmental specialists of USIIP Ms.Ketevan Chomakhidze	Monthly monitoring of sites	Site internally should be arranged properly and cleaned regularly	Verbal instruction is given to contractor To improve minor non-conformances on sites
Continuously during reporting period (January June 2019)	AS Inshaat–N, LLC (Azerbaijan) ABA-01	Environmental Specialist of Contractor Mr. Usupashvili	Day-to-day monitoring of sites	H&S issues of workers	Fill out checklists Develop monthly monitoring reports and send to SC
12 February, 2019		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Monthly monitoring of sites	Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage) Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident Surplus waste soil should be removed and disposed in a proper place	Verbal instruction has given to contractor to immediately improve the situation and send improved photos of site

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
12-13 March 2019		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili Environmental specialists of USIIP Ms.Ketevan Chomakhidze	Monthly monitoring of sites	Construction activities information signs should be installed at each construction segment Trench side barriers around of deep open trenches should be installed to avoid accident of population Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage) Workers always should use complete PPE Safety signs/tapes around of all open trenches should be installed (at the non-operational segments) Surplus/accumulated soil for backfilling purposes should be managed/stored properly	Verbal instruction has given to contractor to immediately improve the situation.
1 April, 2019		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili Environmental specialists of USIIP Ms.Ketevan Chomakhidze	Monthly monitoring of sites	Trees of nearby construction zone should be protected to avoid its damage Safety signs/tapes around of all open trenches should be installed Surplus/accumulated soil for backfilling purposes should be managed/stored properly Construction activities information signs should be installed at each construction segment	Verbal instruction given and Non-Compliance Notice issued on (Please see Annex C)

Date of visit	Name of Company Name of Contract	Auditors name,	Purpose of audit	Summary of any significant findings	Cross reference to Audit report
				Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population Workers always should use complete PPE Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction	
23-24 May 2019		Environmental monitoring specialists of SC/EPTISA Mr.Irakli Legashvili	Monthly monitoring of sites	Surplus/accumulated soil for backfilling purposes should be managed/stored properly	Verbal instruction has given to contractor to immediately improve the situation.

3.3 Issues Tracking (Based on Non-Conformance Notices)

82. Several Non-Conformances have been observed during the site visits under KUT-01, ABA-01 and URE-01 sub-projects. The contractors were always informed on the detected non-conformances and were demanded to improve on the deadline set and send photos of improvements made together with the corrective action plans. Environmental team of EPTISA and UWSCG/USIIP monitored the improvements during the next monitoring visits. All Non-conformance Notices issued during the reporting period is presented in ANNEX C of this Semi-Annual EMR.

83. A summary of the identified environmental issues for January-June 2019 is presented below.

Table 7: Summary Table URE-01

Total Number of Issues for Project	16
Issues Opened This Reporting Period	1
Issues Closed This Reporting Period	15
Percentage Closed	98%

Table8: Summary Table Kut-01 (All sites)

Total Number of Issues for Project	44
Issues Opened This Reporting Period	4
Issues Closed This Reporting Period	40
Percentage Closed	90%

Table 9: Summary Table ABA-01

Total Number of Issues for Project	9
Issues Opened This Reporting Period	2
Issues Closed This Reporting Period	7
Percentage Closed	78%

3.4 Trends

84. To identify trends in environmental issues information from previous Semi-Annual EMR (July-December 2018) is used. The summary of the issues is provided in the table 10 below.

Table 10: Summary of identified trends in environmental issues

Semi-Annual EMR No	Total No of Issues	% issues Closed	% issues closed late
1 July-December 2018	177	78%	12%

2 January-June 2019	69	89%	11%

85. All major Non-Conformances under USIIP/T3 during the reporting period are provided in an Annex C of this report.

3.5 Unanticipated Environmental Impacts or Risks

N/A

4 RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

86. During the reporting period Environmental measurements of Noise level and Ambient air Quality were carried out by contractor under Kut-01 and Ure-01 projects.

87. Noise and air pollution standards defined by IFC/WHO 1999, are presented in the Table 11 and 12 below.

Table 11: Noise Level Guidelines

Noise	dB National Regulations		dB WHO	
Receptor	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00	Daytime 07:00- 22:00	Nighttime 22:00- 07:00
Residential; institutional; educational	55	45	55	45
Industrial; commercial	70	70	70	70

88. Air pollution standards by IFC/WHO 1999, are presented in the Table 10 below

Table 12: Air pollution Guidelines

Contaminants	IFC/WHO Guideline Value (Limit) mg/m^3))
1	2
Inorganic dust	(*IFC does not have a standard for "inorganic dust". Instead IFC applies standards for PM2.5 and PM10). PM10 – 0,02/1 Year 0,05/24 Hour PM2,5-0,01/1 Year 0,025/24 Hour
Carbonic monoxide	n/a
Nitrogen dioxide (NO_2)	0,2/ 1 Hour 0,04/1 Year
Aldehyde	n/a

89. Monitoring measurements of noise level and ambient air quality under KUT-01 project was conducted by Ltd “NaSeTo Group” in 1 June 2019 (See Annex A). Location and data are included in the Tables 13 and 14 below. The next monitoring measurements will be conducted in September 2019 and results will be reflected in the next July-December SAEMR 2019.

90. According to data received in June 2019 under KUT-01 project Noise level exceeds the standards required by National Regulations and World Health Organization (IFC/WHO),1999, and therefore additional measures provided in **Table 19** below is required (Please see table Recommendations to Address Environmental Issues under KUT-01, URE-01 and ABA-01 sub-projects). IFC/WHO standards for Noise and Air pollution are presented in Tables 19 and 12 above. It should be noted also that measurements carried out at construction sites (at sorces), were temporary and conducted during the daytime from 11:00am to 13:45pm.

Table 13: Environmental Quality Monitoring Measurements under KUT-01 Project
Results of Noise and Air quality measurements

No	Measurement Point		Measurement results								
1	Location	Coordinates	Noise db (max)	Vibro Speed		Vibro Acceleration		Dust mg/m^3		
				mm/s	db	m/s^2	db	Pm_{25}	Pm_{10}	total
2	Kutaisi Godogani Reservoir	38TO314133 4679770	68.3	<0.1	<66	<0.1	<100	0.039	0.048	0.174
3	Kutaisi Mukhnari	38TO310642 4677937	77.5	<0.1	<66	<0.1	<100	0.034	0.047	0.254
4	Kutaisi Otskheli St.	38TO308649 4679738	63.2	<0.1	<66	<0.1	<100	0.026	0.031	0.275
5	Kutaisi 63 Tabukashvili St.	38TO309032 4679703	60.07	<0.1	<66	<0.1	<100	0.028	0.036	0.217

Table 14: Environmental Quality Monitoring Measurements under KUT-01 Project
Nitrogen Dioxide, Sulfur Dioxide, Carbon monoxide and Total Hydrocarbons

N	Measurement Point		Measurement results mg/m^3				Measurement Results mr/h
	Location	Coordinates	Nitrogen Dioxide	Sulfur Dioxide	Carbon monoxide	Total Hydrocarbons	
1	Kutaisi Godogani Reservoir	38TO314133 4679770	0.001	<0.01	0.94	<0.1	10
2	Kutaisi Mukhnari	38TO310642 4677937	0.008	<0.01	0.68	<0.1	2
3	Kutaisi Otskheli	38TO309032 46797338	0.003	<0.01	1.26	<0.1	4
4	Kutaisi 63 Tabukashvili St.	38TO309032 4679703	0.006	<0.01	1.54	0.1	2

91. Monitoring measurements under Ure-01 project was conducted by the National Environmental Agency under the MEPA in the nearest sensitive receptors to construction sites on 17 June 2019 (See Table 15 and Annex A). Location and data are included in the table below. The next monitoring measurements will be conducted in September 2019 and results will be reflected in the next July-December EMR 2019.

92. According to data received in June 2019 noise level does not exceed the standards required by National Regulations and World Health Organization (IFC/WHO),1999, and therefore no additional measures are required. IFC/WHO standards for Noise and Air pollution are presented in Tables 11 and 12 above. It should be noted also that measurements carried out at construction sites, were temporary and conducted during the daytime from 12:00pm to 15:00pm and no complaints were received from the local population about the noise during the reporting period.

Table 15: Monitoring Measurements under Ure-01 project

N	Place of measurement	Samples #	Results						
			Dust Mg/m^3	CO Mg/m^3	NO2 Mg/m^3	SO2 Mg/m^3	Saturated Hydro carbons	H_2S	Noise dBA (max) Daytime 07:00 - 22:00
	National Environmental Standard (Maximum Permissible Level)		0,5	5,0	0,2	0,5			55 Residential; Institutional; Educational 70 Industrial; commercial ***Note: Please see IFC/WHO in table 4 above***
1	The construction of Gabion at the left bank of Natanebi River X 0740449 Y 4646777	1	0.009	0.67	0,005	<0,1	<0,1	<0,1	50.9
		2	0.011	1.87	0,006	<0,1	1	<0,1	53.7
		3	0.013	1.58	0,004	<0,1	1	<0,1	52.3
		4	0.008	0.49	0,001	<0,1	<0,1	<0,1	51.9
2	Tsvermaghala	1	0.012	1.96	0,006	<0,1	<0,1	<0,1	48.4
		2	0.018	1.87	0,007	<0,1	<0,1	<0,1	49.3

N	Place of measurement	Samples #	Results						
			Dust Mg/m^3	CO Mg/m^3	NO2 Mg/m^3	SO2 Mg/m^3	Saturated Hydro carbons	H_2S	Noise dBA (max) Daytime 07:00 - 22:00
	The yard of Different purpose X 0730528 Y 4649416	3	0.014	1.02	0,007	<0,1	<0,1	<0,1	47.8
		4	0.009	0.67	0,003	<0,1	<0,1	<0,1	42.4
3	Magnititi X 0728774 Y 4652200	1	0.009	0.81	0,004	<0,1	<0,1		41.3
		2	0.010	0.96	0,003	<0,1	<0,1		44.5
		3	0.012	1.31	0,008	<0,1	<0,1		44.7
		4	0.007	0.76	0,002	<0,1	0		40.9
4	Shekvetili X 0729706 Y 4644930	1	0.010	0.34	0,002	<0,1	<0,1		41.5
		2	0.011	0.47	0,002	<0,1	<0,1		42.0
		3	0.012	0.49	0,003	<0,1	<0,1		41.5
		4	0.010	0.42	0,004	<0,1	<0,1		41.8

93. During the reporting period, no environmental quality measurements were carried out under ABA-01 sub-projects, since construction activities were carried out in remote areas, where there is no nearby population. Last semi-annual measurements under ABA-01 sub-project were done in December 2018. The next measurements will be carried out in July 2019 and reflected in the next SAEMRs of July-December 2019.

94. The independent consultant was hired by EPTISA to conduct a Post-construction Audit for the URE-02 sub-project. The full version of the Post-construction Environmental Audit Report is presented in the Annex F, while the main findings of this report are presented below:

- The topsoil placed on the territory of the Waste Water treatment Plant in Ureki is desirable to return to the stripping sites and use for reinstatement of the WWTP territory or handed over to the local self-government (4 months);
- Before the bathroom on the territory is put to operation, a container is to be installed for the wash basin arranged near the aeration tank to collect the used water (1 months);
- The waste containers must be duly labeled as “Domestic waste” and “Hazardous waste” (1 months);

- The volume of the protection tank for hazardous substance container must be increased at least by increasing the walls of the tank (4 months).

95. UWSCG / USIIP / IPMO will conduct an appropriate audit of the WWTP site at Ureki to determine how the non-compliances presented in the post-construction environmental audit report have been corrected and the results of this additional audit will be reflected in the next SAEMR July-December 2019.

4.2 Trends

96. All mitigation measures identified within the KUT-01, ABA-01 and URE-01 projects are effective and no additional measures are required.

4.3 Summary of Monitoring Outcomes

97. Noise level during the construction period under KUT-01 sub-project exceed the existing standards of IFC/WHO and therefore additional mitigations are required by contractor. These mitigations are provided in table 18 below. SC and UWSCG/USIIP will monitor the improvements under Kut-01sub-rpoject and reflect findings in the next Semi-annual EMR in July-December 2019.

4.4 Material Resources Utilisation

4.4.1 Current Period

98. Constructor provided material resources utilization during the current reporting period. The table 16 below provides information about the utilization of water and electricity under URE-01 sub-project.

Table 16: Material Resources Utilization under URE-01 sub-project

Water and Electricity meters indication use on the UWSCG's Head Office Construction Site Tbilisi University Street No 006/003	
Water M^3 Indication	864 M^3
Electricity KV Indication	130434 kWh

99. Material resources utilization under KUT-01 sub-project during the current reporting period is provided in the table 17 below.

Table 17: Material Resources Utilization under KUT-01 project

Construction of Water Supply Sub-project in Kutaisi/Phase II **January – June 2019**

Water M^3 Indication	349 m^3
Electricity M^3 Indication	22957 KV

100. The contractor did not provide any information on the material resources utilization under the ABA-01 subproject, despite the fact that the contractor was strictly requested to provide this information. The contractor promised to collect this data for the next reporting period, which will be reflected in the semi-annual EMR of July-December 2019.

4.4.2 Cumulative Resource Utilisation

N/A

4.5 Waste Management (URE-01, Kut-01)

URE-01

101. At the construction sites there are mainly produced household, construction (inert, surplus soil) waste.

102. Mainly household waste is collected in municipal containers. Amount of generated household waste is 42000kg during the reporting period. However there are observed some construction sites with littering problem.

103. The household waste that is allocated at the construction site is removed for its final disposal that is managed by formal agreement with local municipality or Ltd "Solid Waste Management Company".

KUT-01

104. At the construction sites there are mainly produced household and solid waste. The amount of waste generated during the current reporting period is provided in the table 18 below.

Table 18: Waste Generated under the KUT-01 Sub-project

Construction of Water Supply Sub-project in Kutaisi/Phase II January – June 2019	
Solid Waste M^3 Indication	9015 m^3
Household Waste KG Indication	1100 kg

4.6 Health and Safety

4.6.1 Community Health and Safety

105. No community incidents have been reported by contractor and SC during the reporting period under KUT-01, URE-01 and ABA-01 projects.

4.6.2 Worker Safety and Health

KUT-01

106. Environmental H&S Manager of KUT-01 project Mr. Beso Balanchivadze was performing every day monitoring, induction and supervision of ongoing works according to HSE standards and by requirements of ADB/UWSCG/EPTISA and kept H&S incidents/accidents/Near Misses log book.

107. Health & safety and environment issues which were covered during the reporting period are as follows:

- PPE;
- Reinforcement;
- Protected all trees nearby construction to avoid its damage;
- Ground works;
- Manual works;
- Bending rebar, Cutting;
- Installation and dismantle formwork
- Toolbox Talk
- Dust and Noise Measurements

108. The following Near Missis were reported under KUT-01 project, which may be resulted in Workers' Health and Safety problems. There were nails on wooden materials which could damage workers during construction activities. In accordance with the instructions given to workers by H&S Specialist wooden materials were cleaned from nails.

109. Another case was the dangerous falling from height during the construction of Godogani reservoir due to the not correctly installing staircase for safety works of personal. Instruction was given to contractor to improve the situation.

110. Near Missis Example No3 under KUT-01 sub-project included not properly used electrical cables. Electrical plug was missing, no insulation on place.

Photo: Near Missis Under KUT-01 project, Godogani Reservoir

111. No workers incidents have been reported during reporting period under ABA-01 and URE-01 projects.

112. No Near Missis were developed under URE-01 sub-project during the reporting period.

113. Environmental H&S Manager of ABA-01 project Mr. Nodar Usupishvili was performing every day monitoring, induction and supervision of ongoing works according to HSE standards and by requirements of ADB/UWSCG/EPTISA and kept H&S incidents/accidents/Near Misses log book.

114. The following Near Missis were reported under ABA-01 projects during the reporting period, January-June 2019. Walls of the deep trenches (>1.5m) were not strengthened by boards to avoid landfall of the soil and accidents/workers damage (Please see the photo below). Strong instruction were given to contractor by SC and UWSCG/USIIP to improve the situation and keep the improved standard.

Photo: Near Missis Under ABA-01 project, Abasha Network

4.10 Training

115. Routine personnel trainings and toolbox talks happen by the construction companies almost on daily basis under KUT-01, URE-01 and ABA-01 projects. The recording of such toolbox

talks are available at the sites. SC also provides routine instructions and verbal trainings for Construction Company environmental and H&S officers. Statistics of routine toolbox talks will be communicated by the construction companies during next reporting period.

5 FUNCTIONING OF THE SEMP

5.1 SEMP Review

116. All SSEMPs under KUT-01, URE-01, URE-02 and ABA-01 projects were prepared by Contractor, endorsed by SC and approved by UWSCG and reviewed/commented by the RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Keti Dgebuadze. No Location Specific SEMP was prepared under ABA -01 project as the project includes only rehabilitation of existing water supply network.

117. The following SSEMPs were prepared by contractor, within the framework of URE-01, URE-02 and KUT-01 projects during the previous reporting periods:

URE-01:

- SSEMPs for Ureki Well Fields (May 2016)
- Reservoir#1 (November 2016)
- Water Supply Pumping Station (November 2016)
- Reservoir #2 (Laituri Reservoir) (August 2018);

URE-02:

- SSEMP for Ureki Waste Water Treatment Plant (November 2015)

KUT-01

- Godogani Reservoir (August 2016)
- Mukhnari Reservoirs (March 2016)
- Aqueduct River Crossing (December 2019)

118. All of the SSEMPs listed above are effective, mitigation measures are still relevant, no changes are required.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

119. N/A

6.2 Opportunities for Improvement

120. N/A

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

121. During the reported period construction activities were implemented only under KUT-01, URE-01 and ABA-01 sub-projects. Contractors have intensified all activities to improve the progress of the works on sites. Individual and Joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of EPTISA and UWSCG/USIIP on a regular basis.

122. Day-to-day monitoring of the construction sites were carried out by the environmental Specialists of Contractor, weekly checklists were filled out (Annex D) and monthly monitoring reports were developed and sent to Supervision Consultant. Corrective Action Plans were developed by contractor were required as well (Please see Annex E).

123. Environmental Monitoring Specialist of Eptisa, Mr.Irakli Legashvili conducted monthly monitoring of project sites under T3 and developed Non-Conformance Notice were required (Please see Annex C). He also developed quarterly environmental monitoring reports based on the monthly reports submitted by Contractor and environmental site inspections and submit to UWSCG.

124. The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under KUT-01, URE-01 and ABA-01 sub-projects.

125. Environmental Specialist of USIIP Ms. Kate Chomakhidze performed monitoring of contractor's performance in accordance with the requirements of approved IEE/EMPs, SEMPs, and other environmental commitments of the contractor. USIIP/ES developed Semi-annual monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and monitoring results.

126. Also unscheduled monitoring visits were carried out and Non-Conformance Notice has been issued to the contractor by the environmental specialist of UWSCG/USIIP if needed. Mitigation measures in order to reduce major environmental impacts have been instructed to CCs during the monitoring visits as well.

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

128. Necessary instructions have been given to the Contractor by UWSCG and SC to follow the EMP's and SSEMP's requirements for KUT-01, URE-01 and ABA-01 sub-projects.

7.2 Recommendations

129. During the reporting period, from January to June 2019, the T3 of Investment Program was implemented in accordance with the requirements of ADB - SPS 2009 and the National Legislation.

130. More detailed recommendations for the implementation of T3 during the next reporting period January-June 2019 are provided in the table 13 below:

Table 19: Recommendations to Address Environmental Issues under KUT-01, URE-01 and ABA-01 sub-projects

Recommendations KUT-01, URE-01 and ABA-01 projects	
Recommendations KUT-01	**Implementation status and date**
Godogani Reservoir	
Daily presence of HSE officer at the construction territory is necessary	Contractor is given strong instruction to improve the situation, develop CAP (if requested) and send improved photos of Site to SC and UWSCG by the end of July 2019.
Safety rules during electric cable use should be respected	
Construction area and wooden materials should be freed from big nails to avoid personnel damage. Used nails should be collected regularly to avoid workers damage	
Fuel/oil spill response items (sand, sawdust, special containers) should be available at the site and used as needed	
Site internally should be arranged properly and cleaned regularly	
Noise from the construction activities should not cause disruption and nuisance to nearby community and other sensitive receptors (i.e. school, hospitals).	Instruction are given to contractor to improve the situation and to conduct following mitigation measures: Plan activities in consultation with SC and IPMO/UWSCG so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance; Noisy construction activities will be avoided during night time; All construction equipment and vehicles shall be well maintained, regularly

Recommendations KUT-01, URE-01 and ABA-01 projects	
	inspected for noise emissions; Impose speed limits on construction vehicles to minimize emissions along areas where sensitive receptors are located (i.e. temples, hospitals, schools, houses) Install noise barriers (e.g., panels, curtains, or partitions) to reduce the emission of engine noise. Conduct meetings with population and provide information related to schedule of construction activities and noise caused by the project ctivities.
Network	
Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)	Contractor is given strong instruction to improve the situation, develop CAP (if requested) and send improved photos of Site to SC and UWSCG by the mid of July 2019.
Construction activities information signs should be installed at each construction segment	
Construction materials should be brought when needed to avoid its long time disposal in the streets and disturbance of residents and businesses	
All transmission line construction segments should be cleaned/well organized on regular bases	
Workers always should use complete PPE	
Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction	
Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)	

Recommendations KUT-01, URE-01 and ABA-01 projects	
Noise from the construction activities should not cause disruption and nuisance to nearby community and other sensitive receptors (i.e. school, hospitals).	Instruction are given to contractor to improve the situation and to conduct following mitigation measures: Plan activities in consultation with SC and IPMO/UWSCG so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance; Noisy construction activities will be avoided during night time; All construction equipment and vehicles shall be well maintained, regularly inspected for noise emissions; Impose speed limits on construction vehicles to minimize emissions along areas where sensitive receptors are located (i.e. temples, hospitals, schools, houses) Install noise barriers (e.g., panels, curtains, or partitions) to reduce the emission of engine noise. Conduct meetings with population and provide information related to schedule of construction activities and noise caused by the project activities.
ABA-01	
Construction activities information signs should be installed at each construction segment	Contractor is given strong instruction to improve the situation, develop CAP (if

Recommendations KUT-01, URE-01 and ABA-01 projects	
Trench side barriers around of deep open trenches should be installed to avoid accident of population Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage) Workers always should use complete PPE Safety signs/tapes around of all open trenches should be installed (at the non-operational segments) Surplus/accumulated soil for backfilling purposes should be managed/stored properly	requested) and send improved photos of Site to SC and UWSCG by the mid of July 2019.
URE-01	
Site internally should be arranged properly and cleaned regularly	Contractor was given strong instruction to improve the situation and keep improved Standards on sites regularly.

131. Conduct monitoring of Ambient Noise and Air quality under Ure-01 project at the nearest sensitive receptors in September 2019.

Table 20: The Specific Plan for Environmental Measurement under Ure-01 Project

Parameters	Quarterly measurement
Dust	September 2019
Vibration	September 2019
Carbon monoxide	September 2019
Nitrogen dioxide	September 2019
Sulfur dioxide	September 2019
Noise	September 2019

132. Conduct monitoring of Noise and Ambient Air quality under KUT-01 project near the sensitive receptors of Construction sites in September 2019.

Table 21: The Specific Plan for Environmental Measurement under KUT-01 Project

Parameters	Quarterly measurement
Dust	September 2019
Vibration	September 2019
Carbon monoxide	September 2019
Nitrogen dioxide	September 2019
Sulfur dioxide	September 2019
Noise	September 2019

133. Conduct monitoring of Noise and Ambient Air quality under ABA-01 project at the nearest sensitive receptors of Construction sites in November 2019.

Table 16: The Specific Plan for Environmental Measurement under ABA-01 Project

Parameters	Quarterly measurement
Dust	November 2019
Vibration	November 2019

Carbon monoxide	November 2019
Nitrogen dioxide	November 2019
Sulfur dioxide	November 2019
Noise	November 2019

ANNEX A: ENVIRONMENTAL MONITORING DATA OF NOISE AND AMBIENT AIR QUALITY

KUT-01 Sub-project

საქართველო
შპს „ნასეტო გრუპ"

GEORGIA
LTD "NaSeTo Group"

საქართველო, ქუთაისი, ხუნდაძის 65, email: nato-gaburia@mail.ru, ტელ. 595-270-451, TBC ა/ა № GE29TB7064236020100019
Georgia, Kutaisi, Khundadze str. 65, , email: nato-gaburia@mail.ru, tel. 595-270-451, TBC bank № GE29TB7064236020100019

Kutaisi Water Supply Project

Monitoring measurements under project: 43405-023

June **2019**

1. Introduction

It is proposed to improve the water supply system in Kutaisi under the Asian Development Bank (ADB) funded Urban Services Improvement Investment Program. This Investment Program, implemented in seven towns, will develop the water and sanitation services, which will improve quality of life and optimize the social and economic development.

A first phase of the Kutaisi sub-project, financed under Tranche I, focuses in water supply measures and implemented in 2013 – 2015. Phase II, financed under Tranche 3, and with a start of implementation in 2014 will complete the rehabilitation and extension of the water supply system.

2. Regulatory Requirements

The environmental quality standards on the territory of Georgia are regulated by Decree No 287N of August 16, 2001 of the Minister of Labor, Health and Social Affairs of Georgia "On the approval of the environmental quality standards" (State Registration Code 470.230.000.11.119.004.920).

The following amendments were made to the above-mentioned decree:

1. Decree No 38/N of February 24, 2003 of the Minister of Labor, Health and Social Affairs of Georgia, SSM III, №16, 06.03.2002, Article 150

2. Decree No.251/N of the Minister of Labor, Health and Social Affairs of Georgia of September15, 2006– SSMIII, №129, 20.09.2006, Article 1716

3. Decree No.351/N of the Minister of Labor, Health and Social Affairs of Georgia of December 17, 2007– SSMIII, №179, 18.12.2007, Article 1974

4. Decree No.304/N of the Minister of Labor, Health and Social Affairs of Georgia of September 18, 2009– SSMIII, №115, 22.09.2009, Article 1312

5. Decree No.98/N of the Minister of Labor, Health and Social Affairs of Georgia of April 14, 2010– SSMIII, №39, 14.04.2010, Article 622

6. Decree No.350/N of the Minister of Labor, Health and Social Affairs of Georgia of October 25, 2010 - SSMIII, №138, 26.10.2010, Article 2000

7. Decree No.01-24/N of the Minister of Labor, Health and Social Affairs of Georgia of May 17, 2012 – web-site, 17.05.2012

3. Description of the works to be accomplished

Under the agreement concluded between the Construction Contractor SMK ULUSAL INSAAT Ve TICARET branch of Georgia and "Naseto Group" Ltd., the environmental quality analysis was accomplished at different points, in particular on the territory of Kutaisi (Godogani , at rezervior, Muxnari, Otskheli st., 63, Tabukashvili st.), where the project construction works are in progress, the environmental quality analysis of the adjacent area was done.

4. Accomplished measurements and results

4.1 Introduction

In Georgia, Kutaisi is one of the four cities where the National Environmental Agency regularly monitors the environmental quality. Consequently, the results of measurements of the National Environmental Agency can be considered as basic for the construction works taking place on the territory of eth city of Kutaisi.

The air pollution monitoring in Kutaisi in april - june 2019 accomplished at the observation point located in Chavchavadze Avenue. The concentrations of the following atmospheric air pollutants were fixed: dust, carbon monoxide, sulphur dioxide, nitrogen dioxide, nitrogen oxide and lead.

The identified maximum single and average monthly concentrations of each polluting ingredient are given in Table 1.

Table 1.Maximum single and average monthly concentrations fixed in the city of Kutaisi[1]

Point of observation	Dust		Nitrogen dioxide		Sulphur dioxide		Carbon monoxide		Nitrogen oxide	
	maximum single concentration, mg/m^3	Average monthly concentration, mg/m^3	maximum single concentration, mg/m^3	Average monthly concentration, mg/m^3	maximum single concentration, mg/m^3	Average monthly concentration, mg/m^3	maximum single concentration, mg/m^3	Average monthly concentration, mg/m^3	maximum single concentration, mg/m^3	Average monthly concentration, mg/m^3
Chavchavadze Avenue	0.052	0.023	0.057	0.031	0.006	0.003	3.2	2.1	0.027	0.058

[1]Source: http://nea.gov.ge/ge/service/garemos-dabindzureba/7/biuleteni/

4.2 Background radiation

The background radiation on the territory of the city of Kutaisi is permanently measured by the National environmental Agency. As the results of the current year suggest, the background radiation on the territory of the city of Kutaisi varies between 10-15 mR/h constituting thus being within the admissible limit of 30 mR/h.

The measurements accomplished in the project area yielded virtually the same result: the level in various sites was varied from 2 mR/h to 10 mR/h (see annex 1).

4.3 Noise and Vibration

The Construction Contractor carried out the construction works in Tsereteli, Agmashenebeli, Gansaxurdia and Miqeladze-Mevele streets and at reservoir. The trenches had been excavating at sites and the trenches were filled in some of them..

In all cases, the noise level in the immediate vicinity of the techniques varies within 60-80 dB. However, the noise level sharply reduced after 20-25 m and was within 55-70 dB in the vicinity of the nearest buildings and premises.

As a rule, noise caused by moving equipment's is reduced at some distance. Such reduction has logarithmic properties. In case of noise caused by construction activities, noise spread pattern from the noise point is used, that can be determined as: Noise level1-Noise level 2=20 log r2/r1, meaning that by doubling of distance noise is reduced by 6 dBA.

Table 26: Noise levels

Distance from noise source, m	Calculation level of the noise Average value - dBa	Calculation level of the noise Maximum value - dBa
10	80	90
20	74	84
40	68	78
80	62	72
160	56	66
320	50	60

4.4 Air quality values

The quality indicators of the following components measured in the project area: dust, CO, NO_2 and SO_2.

The results of the accomplished quality measurements given in Annex 1.

ჰაერის აზოტის და გოგირდის დიოქსიდით, ნახშირბადის მონოოქსიდით და ჯამური ნახშირწყალბადებით დაბინძურების და γ გამოსხივების გაზომვების შედეგები
01.06.2019 წ. $11^{00} - 13^{45}$

Nitrogen and sulfur dioxide, carbon monoxide and total hydrocarbon air pollution, and radiations measurement results 01.06.2019 წ. $11^{00} - 13^{45}$

№	გაზომვის წერტილის Measurement point		გაზომვის შედეგები მგ/მ³ Measurement results mg/m³				გაზომვის შედეგები მკრ/სათ Measurement results mr/h
	ადგილ მდებარეობა Locastion	კოორდი-ნატები Coordinates	აზოტის დიოქსიდი nitrogen dioxide	გოგირდის დიოქსიდი sulfur dioxide	ნახშირბადის მონოოქსიდი carbon monoxide	ჯამური ნახშირწყალბადები total hydrocarbons	
1	ქუთაისი,გოდოგანის რეზერვუარი. Kutaisi, Godogani , at rezervior	38T0314133 4679770	0.001	<0.01	0.94	<0.1	10
2	ქუთაისი,მუხნარი. Kutaisi, Muxnari	38T0310642 4677937	0.008	<0.01	0.68	<0.1	2
3	ქუთაისი, ოცხელის ქ. Kutaisi, Otskheli st.	38T0309032 4679738	0.003	<0.01	1.26	<0.1	4
4	ქუთაისი, თაბუკაშვილის 63. Kutaisi, 63, Tabukashvili st.	38T0308649 4679703	0.006	<0.01	1.54	0.1	2

01.06.2019 წ. 11⁰⁰ – 13⁴⁵ Dust

air pollution, noise and vibration measurements on 01.06.2019 წ. 11⁰⁰ – 13⁴⁵

№	გაზომვის წერტილის Measurement point		გაზომვის შედეგები Measurement results							
	ადგილ მდებარეობა Locastion	კოორდი-ნატები Coordinates	ხმაური A_{max} დბ Noise Amax db	ვიბრო სიჩქარე Vibro Speed		ვიბრო აჩქარება Vibro acceleration		მტვერი მგ/მ³ Dust mg / m3		
				მმ/წმ mm/s	დბ db	მ/წმ² m/s²	დბ db	$Pm_{2.5}$	Pm_{10}	Total
1	ქუთაისი,გოდოგანის რეზერუარი. Kutaisi, Godogani , at rezervior	38T0314133 4679770	68.3	<0.1	<66	<0.1	<100	0.039	0.048	0.174
2	ქუთაისი,მუხნარი. Kutaisi, Muxnari	38T0310642 4677937	77.5	<0.1	<66	<0.1	<100	0.034	0.047	0.254
3	ქუთაისი, ოცხელის ქ.. Kutaisi, Otskheli st.	38T0309032 4679738	63.2	<0.1	<66	<0.1	<100	0.026	0.031	0.275
4	ქუთაისი, თაბუკაშვილის 63. Kutaisi, 63, Tabukashvili st.	38T0308649 4679703	60.7	<0.1	<66	<0.1	<100	0.028	0.036	0.217

გაზომვის დროს გამოყენებულია ხელსაქმეები:/During measurement tools used:
ხმაური/Noise - Mini Sound Level Meter N05CC;
ვიბრაცია/Vibration- Smart Sensor ® AR63B Vibration Meter:
დამტვერიანობა/ Dust- Portable Dust Deteqtor model LB-HD08
და Gasella Mikro Dust Pro (თვითკალიბრაცია ნულოვანი და ოფტიკური ფილტრით./Self-calibration zero and optical filter.). აზოტის დიოქსიდის და ნახშირბადის მონოოქსიდის - nitrogen dioxide and carbon monoxide - Элан CO/NO₂.
ჯამური ნახშირწყალბადების - total hydrocarbon MiniRae 7600;
გოგირდის დიოქსიდის - sulfur dioxide – WASP-XM-E-SO2.

2001 წლის 16 აგვისტოს, საქართველოს შრომის, ჯანმრთელობისა და სოციალური დაცვის მინისტრის ბრძანება №297/ნ, გარემოს ხარისხობრივი მდგომარეობის ნორმების დამტკიცების შესახებ: / August 16, 2001, the Ministry of Labor, Health and Social Affairs of Georgia №297 / N, approval environmental quality of the norms:
დამტვერიანობის ნორმა შეადგენს 0.5 მგ/მ³; / Dust norm is 0.5 mg / m3;
აზოტის დიოქსიდის ნორმა შეადგენს 0.2 მგ/მ³; / nitrogen dioxide norm is 0.2 mg / m3;
გოგირდის დიოქსიდის ნორმა შეადგენს 0.5 მგ/მ³; / sulfur dioxide norm is 0.5 mg / m3;
ნახშირბადის მონოოქსიდის ნორმა შეადგენს .5 მგ/მ³; / carbon monoxide norm is 5 mg / m3;
ჯამური ნახშირწყალბადების ნორმა შეადგენს 1 მგ/მ³;/total hydrocarbons norm is 1 mg /m3;
ვიბროსიჩქარის ნორმა შეადგენს 112 დბ; / Vibro-speed norm is 112 db;
ვიბროაჩქარების ნორმა სპეციალური დამცავი საშუალებების გამოყენების გარეშე - 126 დბ./Vibro acceleration norm special protective outlets without using - 126 db.

დირექტორი: ნ.გაბუნია

ტექნიკური შემსრულებელი: ს. ხაცავა

URE-01 – ENVIRONMENTAL QUALITY MEASUREMENT

Concentration of harmful substances in atmospheric

Ltd "Feri" 17 June 2019

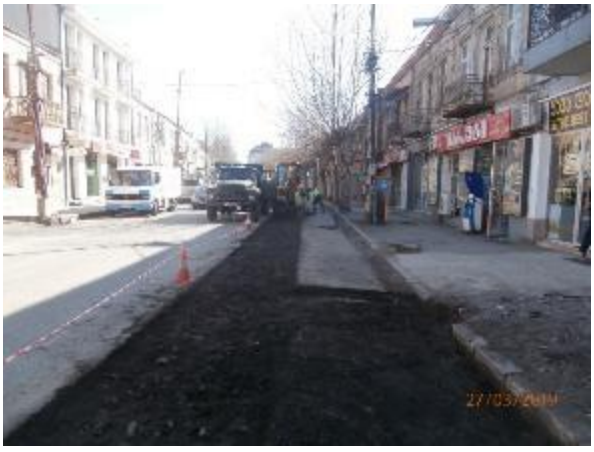
Samplin place coordinates	Sample N.	Noise DB	Concentration mg/m³					
			Saturated hydrocarbons	Carbon oxide CO	Nitrogen dioxide NO_2	Dust	Sulfur dioxide SO_2	Hydrogen sulfide H_2S
The construction of gabions at the left bank of the river Natanebi X 0740449 Y 4646777	1	50.9	<1	0.67	0.005	0,009	<0,1	<0,1
	2	53.7	1	1.87	0,006	0,011	<0,1	<0,1
	3	52.3	1	1.58	0,004	0,013	<0,1	<0,1
	4	51.9	<1	0.49	0,001	0,008	<0,1	<0,1
Tsveramghala, the yard of different porpose X0730528 Y4649416	1	48,4	<1	1.96	0,006	0,012	<0,1	<0,1
	2	49.3	<1	1.87	0,007	0,018	<0,1	<0,1
	3	47.8	<1	1.02	0.007	0.014	<0,1	<0,1
	4	42.4	<1	0.67	0.003	0.009	<0,1	<0,1
Magnetiti, Installation of water meter X0728774 Y4652200	1	41.3	<1	0.81	0,004	0,009	<0,1	<0,1
	2	44.5	<1	0.96	0,003	0,010	<0,1	<0,1
	3	44,7	<1	1.31	0,008	0,012	<0,1	<0,1
	4	40.9	0	0.76	0,002	0,007	<0,1	<0,1
Shekvetili, Installation of water meter X 0729706 Y 4644930	1	41.5	<1	0.34	0,002	0,010	<0,1	<0,1
	2	42.0	<1	0,47	0,002	0,011	<0,1	<0,1
	3	41.5	<1	0,49	0,003	0,012	<0,1	<0,1
	4	41.8	<1	0,42	0,004	0,010	<0,1	<0,1

Executors:
Head of Division — G. Kargareteli
Main Specialist — O. Yenia

Agreed:
Acting Head of Environmental Pollution Monitoring Department — T. Maghlakelidze

ANNEX B: PROJECT PHOTOS

Kut-01 - Godogani reservoir (New East Reservoir)



Restoration of Grishashvili Street

Aqueduct River Crossing

Photo: Aba-01 Construction of Network

Reinstatement of the road after the installation of pipes

Photo: Construction of the Water Supply Network in Ureki (Ure-01)

Well Fields - Water Well N4

River Natanebi Gabion Protection Wall

Reservoir N1

ANNEX C: NON-CONFORMANCE NOTICE

KUT-01 SUB-PROJECT

Non-Compliance Notice

Project: USIIP	**Non-compliance Notice KUTAISI**
Contract No: KUT-01	
Contractor: SMK	
Reference: Kutaisi – Godogani Reservoir, Network	

This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented **urgently.**

NON-COMPLIANCE IN KUTAISI

Godogani Reservoir

- Construction site should be properly fenced from all sides and equipped with **lockable gate**
- Proper warning and information signs should be arranged at the entrance and perimeter of the site
- High visible safety signs/tapes and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents
- Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly
- Trees at the construction site and nearby deep excavation zone should be protect to avoid its damage
- Construction waste should be timely removed from the construction site and disposed properly
- Safety norms during working at height should be provided
- Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground contamination
- All construction materials should be properly segregated and stored adequately
- Proper waste containers should be installed and labeled
- Waste should be placed only at the proper waste container and discharged timely
- Workers always should use complete PPE
- Site internally should be arranged properly and cleaned regularly

Photos of Godogani Reservoir

KUTAISI NETWORK

- Safety signs/tapes around of all open trenches should be installed to avoid accident of population
- Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)
- Construction activities information signs should be installed at each construction segment
- Construction materials should be brought when needed to avoid its long time disposal in the streets and disturbance of residents and businesses
- All transmission line construction segments should be cleaned/well organized on regular bases
- Workers always should use complete PPE

- Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction

Photos of Kutaisi Network

All these conditions have to be remedied within four days (by the 5 April 2019) by the prime Contractor (SMK).

Date of site visits 27.03-28.03.2019	
Irakli Legashvili EPTISA - Environment	

Non-Compliance Notice

Project: USIIP	**Non-compliance Notice KUTAISI**
Contract No: KUT-01	
Contractor: SMK	
Reference: Kutaisi – Godogani Reservoir, Network	

This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented **urgently.**

NON-COMPLIANCE IN KUTAISI

Godogani Reservoir

- Electricity cables should be well protected and handled properly to avoid damage of workers
- Containers with fuel/lubricant should be managed properly (stored at the proper organised place with concrete floor and roofing) to avoid leakage and ground contamination
- Oil spill elimination kit should be available at the site
- Proper waste containers should be installed and labeled
- Construction site should be properly fenced from all sides and equipped with lockable gate
- Proper warning and information signs should be arranged at the entrance and perimeter of the site
- High visible safety signs/tapes and trench side barriers around of deep open excavation should be installed from all sides to avoid accidents
- Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly
- Construction waste should be timely removed from the construction site and disposed properly
- All construction materials should be properly segregated and stored adequately
- Complain box should be labeled
- Workers always should use complete PPE
- Site internally should be arranged properly and cleaned regularly

Photos of Godogani Reservoir





All these conditions have to be remedied within four days (by the 5 June 2019) by the prime Contractor (SMK).

Date of site visits 23.05-24.05.2019	
Irakli Legashvili - EPTISA Environment Ketevan Chomakhidze – USIIP UWSCG Maka Goderdzishvili – UWSCG Head of Dept.	

Non-Compliance Notice

Project: USIIP	**Non-compliance Notice KUTAISI**
Contract No: KUT-01	
Contractor: SMK	
Reference: Kutaisi – Godogani Reservoir, Network	

This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented **urgently.**

NON-COMPLIANCE IN KUTAISI

Godogani Reservoir

- Proper warning and information signs should be arranged at the entrance and perimeter of the site
- Construction site should be properly fenced from all sides and equipped with lockable gate
- Soil (surplus/accumulated soil) for backfilling purposes should be managed/stored properly
- Trees at the construction site and nearby excavation zone should be protect to avoid its damage
- Construction waste should be timely removed from the construction site and disposed properly
- Oil spill kit should be available at the site
- Safety norms during working at height should be provided
- Containers with fuel/lubricant should be managed properly
- Parking area should be arranged with relevant sign
- All construction materials should be properly segregated and stored adequately
- Waste containers should be labeled
- Waste should be placed only at the proper waste container and discharged timely
- Workers always should use complete PPE
- Complain box should be placed at proper place
- Site internally should be arranged properly and cleaned regularly

Photos of Godogani Reservoir






KUTAISI NETWORK

- Walls of the deep trenches (>1.5m) are not strengthened by boards to avoid landfall of the soil and accidents
- Construction activities information signs should be installed at each construction segment
- Special signs and blinking signs should be installed near to main road
- During materials transportation tarpaulins cover should be used always
- Construction materials should be brought when needed to avoid its long time disposal in the streets and disturbance of residents and businesses
- All transmission line construction segments should be cleaned/well organized on regular bases
- Workers always should use complete PPE
- Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction

Photos of Kutaisi Network





All these conditions have to be remedied within three days (by the 6 July 2019) by the prime Contractor (SMK).

Date of site visits 28.06.2019	
Irakli Legashvili EPTISA - Environment	

ABA-01 SUB-PROJECT

eptisa *Urban Services Improvement Investment Project - Georgia*

Date: 01/04/2019

Non-Compliance Notice

Project: USIIP	**Non-compliance Notice ABASHA**
Contract No: ABA-01	
Contractor: As Inshaan-N	
Reference: ABASHA – Network	

This notice is to advice you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented **urgently.**

NON-COMPLIANCE IN ABASHA

NETWORK

- Trees of nearby construction zone should be protected to avoid its damage
- Safety signs/tapes around of all open trenches should be installed
- Surplus/accumulated soil for backfilling purposes should be managed/stored properly
- Construction activities information signs should be installed at each construction segment
- Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident of population
- Workers always should use complete PPE
- Refilling/compaction and reinstatement process should bring site at the same or better condition as it was before construction

Photos of Abasha Network

All these conditions have to be remedied within three days (by the 4 April 2019) by the prime Contractor (**As Inshaan-N**).

Date of site visits: 27.03-28.03.2019	
Irakli Legashvili EPTISA - Environment	

ANNEX D: SAMPLE WEEKLY MONITORING REPORTS

ყოველკვირეული გარემოსდაცვითი მონიტორინგი
Weekly Environmental Monitoring

Name of the Contractor and project number/lot მშენებელი კონტრაქტორის სახელი და პროექტის/ლოტის ნომერი	SMK Ulusal Insaat Ve Ticaret A.S. (Turkey), Construction and Rehabilitation of Water Supply System in Kutaisi / Phase 2 (KUT-01)
კონტრაქტის #: Contract #:	Contract No: P43405-ICB-KUT-01
Description and Location of the Site სამშენებლო ობიექტის აღწერილობა-მდებარეობის აღწერა	Codogani Reservoir
Implementing Agency განმახორციელებელი საგენტო	შპს „საქართველოს გაერთიანებული წყალმომარაგების კომპანია" "United Water Supply Company of Georgia", LLC
Date of Visit (Year/Month/Day) ვიზიტის დრო და თარიღი	03.12.2018 - 07.12.2018
Supervisor's Identity (name, last name, contact information and signature) საზედამხედველო კომპანიის წარმომადგენლის სახელი, გვარი, საკონტაქტო ინფორმაცია და ხელმოწერა	კონრაქტორი/Contractor: Signature and stamp/ხელმოწერა და ბეჭედი ირაკლი ლეკვეიშვილი
Current Stage of Civil Works სამშენებლო სამუშაოების მიმდინარე სტატუსი	მიმდინარე. On-going
Weather Conditions ამინდის პირობები	

ობიექტის უსაფრთხოებასა და გარემოს დაცვაზე პასუხისმგებელი პირი (კონტრაქტორი) Staff responsible for environment/safety at the site (contractor)	სახელი: მამუკა დარახველიძე Name: Mamuka Darakhvelidze	ხელმოწერა/ Signature:
მშენებლობის ინსპექტორი (ზედამხედველი) Construction site inspector (supervisor)	სახელი: Name: ნოდარ ძველიშვილი	ხელმოწერა/ Signature:

გარემოს დაცვის სპეციალისტი (კონტრაქტორი) Environmental Specialist (contractor)	სახელი: ნათია ბაბუხადია Name: Natia Babukhadia	ხელმოწერა/ Signature:

N	Documents and Facts to be Examined შესამოწმებელი დოკუმენტები და ფაქტები	კი/ yes	არა/ no	ნაწ-ობ Partially	არ ეხება N.A	შენიშვნა/ Comment
1	EMPs/SSEMPs, Protocols and Reports					
1.1	Contractor's Site-specific Environmental Management Plan (SSEMP) is prepared, reviewed and approved by PIU prior to contractor commencing the works. შემუშავებული და დამტკიცებულია სატ- სპეციფიკური გარემოსდაცვითი მართვის გეგმა.					Construction of Water Supply System un Kutaisi - phase II
1.2	Construction contractor has National Environmental Specialist in staff. მშენებელ კონტრაქტორს დაქვემდებარებაში ჰყავს ხელშეკრულება ადგილობრივ გარემოსდაცვით საკითხების მართვის სპეციალისტთან.	✓				
1.3	Construction contractor has International Environmental Specialist in staff. მშენებელ კონტრაქტორს დაქვემდებარებაში ჰყავს ხელშეკრულება საერთაშორისო გარემოსდაცვითი საკითხების მართვის სპეციალისტთან.	✓				
1.4	Monthly environmental monitoring reports are prepared by the Contractor and submitted to the Supervision Consultant მომზადებულია გარემოსდაცვითი მართვის გეგმის განხორციელების ყოველთვიური ანგარიშები კონტრაქტორის მიერ და წარდგენილია კონსულტანტისათვის	✓				
1.5	Emergency Response Plan is prepared and approved. შემუშავებული და მოწონებულია გადაუდებელ სიტუაციებზე რეაგირების გეგმა .	✓				
1.6	Health and Safety Management Plan is prepared and approved. შემუშავებული და მოწონებულია ჯანდაცვის და უსაფრთხოების მართვის გეგმა და ჯანდაცვის და უსაფრთხოების მართვის სისტემა მშენებლობის დაწყებამდე.	✓				
1.7	Complaints log exists on construction site. საჩივრების დოკუმენტირების არსებობა სამშენებლო ობიექტზე.	✓				
1.8	Site inspection non-compliance notices issued and corrective action requests implemented.	✓				

	შეუსაბამობების შესწორების მოთხოვნა და წარდგენა კონტრაქტორისთვის და შეკონტრაქტორებული ქმედებების განხორციელება.					
1.9	Training/Capacity building activities undertaken as per EMP requirements and records kept of trainings. გადამზადებული და ხელმძღვანელი მუშახელის ტრენინგი ს ოქმი ჯანდაცვისა და უსაფრთხოების საკითხებზე. ტრენინგის ანგარიში შენახული და ინახება საიტის კემპზე.	✓				
2	**Permits, Licenses and Contracts**					
2.1	The Contractor has a permit or relevant contract from the Municipality for final disposal of construction waste/კონტრაქტორს მიღებული აქვს სამშენებლო ნარჩენების საბოლოო განთავსების ნებართვა ან შესაბამისი კონტრაქტი ადგილობრივ ორგანოებთან.	✓				
2.2	The Contractor has a permit for final disposal of municipal waste. კონტრაქტორს მიღებული აქვს საყოფაცხოვრებო ნარჩენების საბოლოო განთავსების ნებართვა.	✓				
2.3	The Contractor has executed the contract with the licensed organization on the hand-over and disposal of hazardous waste. კონტრაქტორს გაფორმებული აქვს სახიფათო ნარჩენების გადაცემისა და გატანის ხელშეკრულება ლიცენზირებულ ორგანიზაციასთან.	✓				
2.4	The Contractor has a license for tree felling/კონტრაქტორს გააჩნია ლიცენზია ხის ჭრისთვის.	✓				
3	**Performance of civil works**					
3.1	სამშენებლო ტერიტორიის სრულად შემოღობვა Adequate fencing of construction area from all sides	✓				
3.2	საკეტიანი შესასვლელი კარის მოწყობა, სტანდარტული გამაფრთხილებელი და საინფორმაციო ნიშნებით აღჭურვა Arrangement of lockable gate with standard warning and information signs	✓				
3.3	სამშენებლო ტერიტორიაზე და პერიმეტრზე სტანდარტული გამაფრთხილებელი და საინფორმაციო ნიშნების განთავსება Placement of standard warning and information signs at the perimeter and inside of construction area	✓				
3.4	ღიად დატოვებულ თხრილებზე და ჭებზე უსაფრთხოების ლენტების, ბარიერების და გამაფრთხილებელი ნიშნების განთავსება Installation of safety signs/tapes and trench side barriers around of open trenches	✓				
3.5	1,5 მეტრზე მეტი სიღრმის ტრანშეებში კედლების გამაგრება Strengthening of walls of the deep trenches (>1.5m) by boards				✓	
3.6	დასახლებულ ადგილებში ღიად დატოვებულ თხრილებზე დროებითი გადასასვლელების მოწყობა Installation of proper temporary wooden/metal walkways/planks across open trenches in settlement areas				✓	
3.7	სამშენებლო ტერიტორიაზე, სამუშაოების ზონაში არსებული ხეების შემოღობვა (დაზიანების თავიდან აცილების მიზნით) Protect all trees nearby construction zone to avoid its damage	✓				
3.8	ექსკავაციის დროს, ნიადაგის ნაყოფიერი (დაახლოებით 20-30 სმ სისქის) ფენის მოხსნა და განცალკევებულად გროვებად შენახვა Removal of top soil (about 20 cm depth) and separately storing in appropriate place	✓				
3.9	სამშენებლო ნარჩენების და ჭარბი ნარჩენი გრუნტის დროული გატანა/განთავსება Timely removal/disposal of construction waste and surplus waste soil	✓				
3.10	სამშენებლო ტერიტორიის ღამის საათებში განათება Provide adequate lighting of construction territory	✓				
3.11	სამშენებლო ტერიტორიის შესაბამისად მოწყობა მასალების და მოწყობილობების და დანადგარების ორგანიზებულად განთავსება (საჭიროებიდან გამომდინარე) Proper arrangement of construction site and segregation/storing of construction materials/equipment (bring the material when required)	✓				
3.12	სამშენებლო ტერიტორიაზე საწვავის და საპოხი მასალების დაღვრის შედეგების სალიკვიდაციო ნაკრების (ქვიშა, ნახერხი, მცირე ზომის ავზი და სხვა) ხელმისაწვდომობა Availability of proper fuel/oil spill response items (sand, sawdust, special containers) at the construction site	✓				
3.13	საწვავის და საპოხი მასალების კონტეინერების განთავსება მხოლოდ სპეციალურ გადახურულ ადგილებში Allocation of fuel and lubricants containers at the special dedicated place (with roofing and concrete flooring)	✓				
3.14	სამშენებლო ტერიტორიაზე საყოფაცხოვრებო ნარჩენებისთვის თავსახურიანი კონტეინერის განთავსება და შესაბამისი წარწერებით აღჭურვა (მაგ. "HOUSEHOLD WASTE") Placement of proper Household Waste container at the special dedicated place with relevant indication signs (for example "Household Waste")	✓				
3.15	სამშენებლო ტერიტორიაზე სახიფათო ნარჩენებისთვის თავსახურიანი კონტეინერის განთავსება და შესაბამისი წარწერებით აღჭურვა (მაგ. "HAZARDOUS WASTE") Placement of proper Hazardous Waste container at the	✓				

	special dedicated places with relevant indication signs (for example "Hazardous Waste")					
3.16	სამშენებლო ტერიტორიაზე ან მის გარეთ ტრანსპორტისთვის პარკირების ადგილის მოწყობა და ნიშნით აღჭურვა (მაგ. P) Arrangement of proper Parking area at the adequate place inside/outside of construction territory with relevant sign (for example P)	✓				
3.17	სამშენებლო მასალების და ნარჩენების ტრანსპორტირების დროს ავტოტრანსპორტის სპეციალური საფარით (ბრეზენტით, ტენტითდასხვა) აღჭურვა Use tarpaulins cover during materials transportation		✓			
3.18	მტვრიანობიდან გამომდინარე მტვრის წარმოქმნის პრევენცია Dust generation prevention activities (when needed)	✓				
3.19	მუშების და ინჟინერ-ტექნიკური პერსონალის მიერ ინდივიდუალური დაცვის საშუალებების (ჩაფხუტი, ფილტრი, ხელთათმანი, ჩექმები, დამცავი სათვალე, და სხვა) სრულად გამოყენება Ensure that all workers are provided with and use appropriate Personal Protective Equipment - helmets, hand gloves, boots, masks, safety belts	✓				
3.20	სიმაღლეზე მუშაობის დროს სპეციალური დამცავი აღჭურვილობის გამოყენება Use of special safety equipment during working at heights	✓				
3.21	სამშენებლო ტერიტორიის მუდმივად დალაგება და დასუფთავება Regularly cleaning of construction territory	✓				
4	**Monitoring Measurements**					
4.1	Monitoring measurement data (air, water, soil, erosion, noise, dust, vibration, etc). წყლის, ჰაერის, ეროზიის, ტრიბოის, ხმაურის, მტვრის და ვიბრაციის მონაცემების გაზომვების მონიტორინგი.	✓				
5	**Top Soil Protection**					
5.1	Topsoil is stripped and stored according to standard procedures and used further for landscaping and reinstatement. ნიადაგის ზოგუნარიანი ფენის დაცვა	✓				
6	**Safety Measures**					
6.1	The workers use all personal safety equipments required for individual technological processes (hard hats, gloves, respirators, glasses, etc.). მუშახელი იყენებს ცალკეული ტექნოლოგიური პროცესებისათვის აუცილებელ პირად დამცავ საშუალებებს (ჩაფხუტები, ხელთათმანები, რესპირატორები, სათვალეები და ა.შ).	✓				
6.2	The sites are provided with the fire fighting and emergency medical aid kits, site is fenced, site lightning, signs are installed, etc .					

	სამშენებლო ობიექტზე განთავსებულია ხანძარსაწინააღმდეგო და სასწრაფო სამედიცინო დახმარების სამაზისო ნაკრები. სატი შემოღობილია, განაჩენი დამონტაჟებულია, საინფორმაციო დაფები/ბანერი გაკრულია და სხვ...	✓				
7	**Works Completion**					
7.1	After completion of main works, the site undergoes final cleanup, harmonization with outward landscape and landscaping. ძირითად სამუშაოთა დასრულებისას ნარჩენებს ობიექტის საბოლოო დასუფთავება, გარე ლანდშაფტთან ჰარმონიზება და გამწვანება.					დასრულების შემდეგ
7.2	After completion of the operations in the quarry or its certain section, the idle material is backfilled, compacted, terraced and harmonized with the landscape. კარიერის ან მისი ცალკეული უბნის ექსპლუატაციის დასრულებისას წარმოების ფუჭი მასალის უკუყრა, კომპაქტირება, ტერასირება, და ლანდშაფტთან ჰარმონიზება.				✓	
7.3	Final Post Construction Environmental Audit/monitoring is conducted and Final Environmental Audit Report is prepared. /საბოლოო გარემოს დაცვის მონიტორინგი/აუდიტი ჩატარებულია და საბოლოო გარემოსდაცვის აუდიტის ანგარიში მომზადებული.					დასრულების შემდეგ

შენიშვნა/Comment:

ANNEX E: CORRECTIVE ACTION PLAN, KUT-01 SUB-PROJECT

ULUSAL INSAAT ve TICARET A.S.

Date: 21/03/2019

Corrective Action Plan

Project Name: *Construction of Water Supply in Kutaisi*	**Corrective Action Plan**
Project No: *P 43405-ICB-KUT-01*	
Project Location: *Kutaisi*	
Site: *Godogani reservoir*	
Location: *Kutaisi*	
Consultant: *EPTISA*	
Issue: *Health, Safety and Environmental Issues*	
Date of Site visit: 06/03/2019	**Notification Date: 12.03.2019**

Corrective Action Plan

Godogani

SMK has already taken action to correct the subject items

- Due to construction activities specification the location of gate was changed and it will be arranged as soon as possible in appropriate place.
- Proper warning and information signs are installed at the entrance and perimeter of the site.
- SMK took action and trees nearby deep axcavation zone are protected(covered with soil to avoid its damage).
- High visible safety signs/tapes and trench side around of deep open excavation is installed from all sides to avoid accidents.
- Containers with fuel/lubricant is managed properly to avoid leakage and ground contamination.
- SMK took action and waste containers will be renewed with the relevant indication signs as soon as possible
- SMK took action and all construction materials are properly segregated and stored adequately.
- All workwrs are using complete PPE.
- Site is cleaned regulary.

Photos of Godogani Reservoir

Natia Babukhadia(SMK Environmental)

Corrective Action Plan

Project Name: *Construction of Water Supply in Kutaisi*	**Corrective Action Plan**
Project No: *P 43405-ICB-KUT-01*	
Project Location: *Kutaisi*	
Site: *Godogani reservoir*	
Location: *Kutaisi*	
Consultant: *EPTISA*	
Issue: *Health, Safety and Environmental Issues*	
Date of Site visit: 01/04/2019	**Notification Date: 02.04.2019**

Corrective Action Plan

Godogani

SMK has already taken action to correct the subject items

- The lockable gate could not be installed Due to a big trench in construction site, it will be possible to arrange after completion of DCI pipe installation works on site.
- Proper warning and information signs are installed at the entrance and perimeter of the site.
- High visible safety signs/tapes and trench side around of deep open excavation is installed from all sides to avoid accidents.
- Soil surplus for backfilling purpuses are managed properly.
- trees nearby deep axcavation zone are protected,(it was covered with soil to avoid its damage).
- SMK took action and construction waste is timely removed and desposed properly on site.
- SMK took action and special equipment is used during working at height.
- Containers with fuel/lubricant is managed properly to avoid leakage and ground contamination.
- SMK took action and all construction materials are properly segregated and stored adequately.
- Proper waste containers will be renewed and labled as soon as possible.
- All workwrs are using complete PPE.
- Site is cleaned regulary.

Photos of Godogani Reservoir

Natia Babukhadia(SMK Environmental)

Network

- SMK took action and safety signs are installed to all open trenches to avoid accidents.
- Deep trenches are strengthened by boards to avoid workers damage.
- SMK took action and Information signs are installed at each construction segment.
- SMK took action and construction materials are brought when needed to avoid its long time disposal in the streets and disturbance of resident and business.
- All transmission line construction segments are cleaned and well organized.
- Workers are using complete (PPE)

Photos of Network





Natia Babukhadia(SMK Environmental)

ANNEX F: POST-CONSTRUCTION AUDIT REPORT, URE-02

Post Construction Environmental Audit Report

GEORGIA: L2807: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 3)

Construction of Waste Water Treatment Plant in Ureki (URE - 02)

June, 2019

I. INTRODUCTION

1. This report represents the Post Construction Environmental Audit Report for URE-02: Construction of Waste Water Treatment Plant in Ureki Subproject under L 2807: Urban Services Improvement Investment Program" (USIIP), Tranche 3.

2. This Post Construction 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. The specific objectives of the audit can be summarized as follows:

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

II. PROJECT DESCRIPTION

2.1 Brief subproject description

3. 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 is 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.

4. 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. Water supply improvements will include source augmentation and head works, pumping systems, treatment facilities, transmission and distribution network; and, sewerage improvement works will include sewer network, pumping stations, main collectors and waste water treatment plants. The Investment Program will improve the health of residents in secondary towns in Georgia. The outcome of the Investment Program is improved WSS services in these urban centers.

5. Tranche 3 of the Investment Program includes the following sub-projects:

- Construction of Water Supply and Wastewater Network in Ureki/Phase 3 (URE-01);
- Construction of Wastewater Treatment Plant in Ureki (URE-02);
- Construction and Rehabilitation of Water Supply System in Kutaisi/Phase 2 (KUT-01)
- Construction of New Transmission Pipeline in Abasha (Aba-01)

6. The presented final audit report covers only Construction of UrekiWaste Water Treatment Plant (URE-02) subproject.

7. The wastewater treatment plant (WWTP) will be constructed on a newly acquired, former agricultural land between Ureki and Shekvetili, next to the railroad and at a distance of more than 500 m from the next settlements. The location is shown in the figure below. The site is accessible by a road. The treated wastewater will be discharged via a pressure line into the river Sepa, which will feed into the Black Sea after about 500 m. The WWTP will have a final capacity cover about 40,000 population equivalents by 2040. In Tranche 3, the first phase of the WWTP with a capacity of 20,000 PE will be constructed.

Map 1: Location of the WWTP with access road

2.2 Agencies Involved in REG-02 subproject implementation under USIIP, Tranche

9. The following agencies are involved in implementing the Investment program: Ministry of Regional Development and Infrastructure (MoRDI) is the Executing Agency (EA) responsible for management, coordination and execution of all activities funded under the loan. MoRDI has overall responsibility for compliance with loan covenants.

10. United Water Supply Company of Georgia (UWSCG) is the implementing agency (IA), which is responsible for administration, implementation (design, construction and operation) and all day-to-day activities under the loan. In December 2016 the name of Investment Program Management Office (IPMO) - Strategic Planning and Donors Relation Department (DSPDR) changed and became an International Procurement and Donors Relations Department. A new Department of Environmental Protection, Resettlement and Construction Permit (DEPRP) was established under UWSCG as well. DEPRP replaced the existing Unit of Resettlement and Environmental Protection (UREP). DEPRP will include Unit of Construction Permission and will consist of five staff members. The new structural changes enter into force from January 2017.

11. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) - Eptisa. The national and international team of consultants assists UWSCG in the supervision of the construction of subprojects under the USIIP. The SC also provides capacity building training to contractor staff in the management and operation and maintenance of the subprojects. The SC assists UWSCG in ensuring that the subprojects are implemented according to the specified standards. SC assignment also includes the supervising of the implementation of the environmental management plans.

12. All mitigation measures during construction have to be implemented by the contractor and these are monitored by the supervision consultant (SC). To ensure the smooth implementation of EMPs and SEMPs of subprojects, an Environmental Management Specialist (EMS) is employed by the SC/Eptisa. SC/EMS conducts routine observations and surveys, prepares quarterly environmental reports and submits these to UWSCG.

13. The construction Contractor JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH and Co.KG ProtechnoSrl (Germany)/Aritim (Turkey), has the following obligations:

- to prepare SSEMPs;
- to employ Environmental Consultant responsible for developing and implementing the construction phase SSEMPs and for providing the corresponding information to UWSCG and SC;
- to develop Solid Waste Disposal Plan and agreed the MoENRP and Local Government

14. DC is responsible for developing and incorporation of mitigation measures in design and construction.

15. The environmental specialist (ES) is hired by UWSCG under the USIIP to assist and advise the DEPRP in USIIP program implementation in compliance with the ADB Safeguard Policy Statement 2009 and National Legislation, and oversee the work of DCs and SCs in safeguards compliance. ES supports DEPRP in EARF implementation, in particular, reviewing IEE/EIA Reports and overseeing implementation of EMP/SSEMPs and in training and capacity-building

activities. The ES prepares bi-annual and annual environmental monitoring reports and submits to ADB.

16. DEPRP is responsible for the implementation of mitigation and monitoring measures during construction and operation of subprojects under USIIP. Currently DEPRP is staffed with a Head of Department. Head of Construction Permission Unit and 3 specialists, those are responsible for resettlement, environmental protection and construction permission issues.

17. A list of main organizations and persons involved in the implementation of REG-02 subproject under USIIP/T2 and relating to environmental safeguards is presented in **Table 1** below.

Table 1:Agencies involved in REG-02 subproject implementation

Contract #	Sub-project Title	Employer	Contractor	Contract Signature date	Contract Final Date	Contact Details of Environmental Staff
Contract No: UWSCG/USSIP/ICB/CW/REG-02	Contract: REG-02	UWSCG	JV of Ludwig Pfeiffer Hoch- und Tiefbau GmbH and Co.KG Protechno Srl (Germany) / Aritim (Turkey)	30-Apr-15	9-Jun-17	**Completed** **Environmental Specialist of CC:** ***Mr. Nikoloz Meparidze*** ***Tel:*** ***+995 599 346821*** ***E-mail:*** ***niko@ telenet.ge*** **Environmental Specialist of SC:** ***Mr. Irakli Legashvili*** ***Tel:*** ***+995 577 177016*** ***E-mail:*** ***chem_ira@ yahoo.com*** **Environmental Specialist of USIIP/UWSCG** ***Ms. Ketevan Chomakhidze*** ***Tel:*** ***+995 577 380309*** ***E-mail:***

Contract #	Sub-project Title	Employer	Contractor	Contract Signature date	Contract Final Date	Contact Details of Environmental Staff
						Chomakhidzek@yahoo.com

III. SUMMARY OF PREVIOUS AUDITS AND ISSUES STILL OPEN FROM EMR

18. Individual and joint on-site monitoring activities were conducted by Environmental Monitoring Specialist of SC and Environmental Specialist of DEPRP under USIIP on a regular basis.

Environmental Management Plans, Conducted Environmental Audits

19. All environmental management plans requested under the IEE have been prepared by the Contractor JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH and Co.KG ProtechnoSrl (Germany) / Aritim (Turkey) and approved by the PIU-UWSCG. SSEMP was prepared by the contractor before commencement of construction activities which was endorsed by Supervision Company – Eptisaand approved by UWSCG/PIU.

20. Waste management plan for construction phase have been prepared by the Contractor JV of Ludwig Pfeiffer Hoch-und Tiefbau GmbH and Co.KG ProtechnoSrl (Germany) / Aritim (Turkey) and submitted to UWSCG/PIU at the end of December 2016.

21. The USIIP's Environmental Impact Monitoring and Mitigation is carried out in accordance with the updated EMPs and SSEMPs prepared by the Contractors. The construction activities affecting the environment are as follows:

- Excavation works
- Removal of soil
- Removal of vegetation
- Backfilling of trenches
- Reinstatement activities

22. Regular site monitoring visits were carried out during the construction period by the Supervision Consultant Eptisa, and Environmental Specialist of UWSCG/USIIP for URE-02 project. Some monitoring visits were conducted jointly by the SC/EMS and ES of USIIP. During the field visits a number of EHS issues were noted and brought to the attention of the Environmental Consultant and the H&S manager of URE-02 project. Mitigation measures were then discussed with the contractor on-site and detailed instructions were given. Good Practice in compliance with Georgian and international H&S standards were therefore enforced in accordance with the Contractor's contract for URE-02 project.

23. Site inspection monitoring and audit during the 1018 period have been carried out on: 26-28 January 2018; 17-18 April 2018; 23, 28 April 2018; 15 May 2018; 22 May 2018 and 29-30 June 2018. The schedule of conducted monitoring and audit during the reporting period is presented in the Table 2 below.

Table 2: The Schedule of Conducted Audits and Monitoring during the Reporting Period

#	Ure-01, Reg-02 and Tbilisi Office Building Site visits	Organization	Date
1	Day-to-Day Site Inspection	Environmental Specialists of Contractor under Reg-02 Project	1 January – 30 June 2018
	Site Monitoring and Audit	Environmental specialist of USIIP, environmental specialists of Eptisa, International-Regional Environmental Safeguards Consultant Ms. Keti Dgebuadze and Mr. Duncan Lang, Environmental Specialist, ADB	26-28 January 2018
2	Site Monitoring and Inspection	Environmental specialist of USIIP, environmental specialists of Eptisa	17-18 April 2018
	Site Monitoring	Environmental specialist of USIIP, environmental specialists of Eptisa, International-Regional Environmental Safeguards Consultant Ms. Keti Dgebuadze and Mr. Duncan Lang, Environmental Specialist, ADB as well as about 40 participants of "Training Workshop and Regional Exchange on Monitoring of Environmental Safeguards Implementation" (Batumi, Georgia, 19-21 April, 2018)	21 April 2018
3	Site Monitoring	Environmental specialist of Eptisa	28 April 2018
4	Site Monitoring	Environmental specialist of USIIP and Environmental specialist of Eptisa	22 May 2018
	Site Monitoring and Inspection	Environmental specialist of USIIP and Environmental specialist of Eptisa	15 May 2018
5	Site Monitoring	Environmental specialist of USIIP	29-30 June 2018

24. During the above-mentioned inspections and audits 4 non-compliances have been revealed,all 4 non-compliances were corrected. The list of main non-compliances and status of implementation of corrective actions are given in the **Table 3** below.

Table 3: List of non-compliances revealed during 2018

Project	Specific Issues	Implementation Status
URE-02	ADB to formally request that the PIU and the supervision consultants for the USIIP program employ dedicated Health and Safety personnel. These personnel must be additional to existing staff (particularly at PIU level) to ensure that sufficient capacity is present to cover H&S on this large portfolio of projects. The staff personnel must have the relevant qualifications and experience.	All construction activities are completed now and there is no need to hire H&S Specialist under Ure-01 sub project.
URE-02	During the ADB Mission waste burning footprints have been revealed at one of the segregated waste disposal area, which is the non-compliance and not allowed at the construction site.	Completed and improved after the strong instruction of the contractor.
URE-02	Contractor requested SC to conduct customized training for CC environmental specialist related to waste management issues and ADB SPS requirements.	Completed, but since all construction activities are completed now on the site there is no need to conduct additional trainings on this matter.
URE-02	Supervision consultant and contractor to action all minor non-compliances or areas for improvement identified during the site visits including completion of TBT for staff to reinforce the message no burning of waste is allowed; improving waste segregation, improving housekeeping; reinstalling safety signage and other tasks as outlined above.	Completed. Segregation of waste with relevant signs installed is improved;

IV. SUMMARY OF OBSERVATIONS OF SITE VISITS

25. On June 17, 2019, under the agreement concluded with the project design consultant, the employees of Eco-Spectri Ltd. conducted Post Construction Environmental Audit of URE-02 sub-poroject and filled post-construction environmental checklist (see enclosed checklist in **Annex 1**).

26. The following entities from the project implementing organization participated in the final environmental audit: employees of design consultant organization Eptisa and representative of the United Water Supply Company of Georgia.

27. The construction of WWTP was fully accomplished satisfactorily, all kinds of waste, including construction waste were removed from the site, and territory of the WWTP construction site was fully fenced and cleared (Figures 1 and 2).

Figure 1: The territory of WWTP is completely fenced and protected	**Figure 2: Gate to the site**
	

28. The drainage system well installed on all the territory of WWTP (Figures 3 and 4).

Figure 3 and 4: Drainage system in the project area

29. The generator is also installed according to the standards. The given generator is placed on the secondary protective container, at the location protected against the precipitations (Figure 5 and 6).

Figure 5: The generator is placed in a covered area

Figure 6: The generator is placed on the secondary protective tank

30. The sub-soil stripped at the project implementation stage is placed on the private land plot adjacent to the project zone. The construction company has concluded an agreement with the land plot owner. Under this agreement, the final disposal of sub-soil is done in the private land plot area (Figure 7).

Figure 7: Sub-soil (surplus soil) placed on the private land plot

31. During the final audit, few non-compliances were revealed at the construction site which are necessary to correct prior to the commencement of the operation phase.

32. #1 Non-Compliance re the top soil disposal and incompletely reinstated areas in the project zone

Observation:

33. The topsoil stripped during the construction phase is placed on the territory of WWTP, in its southern part (Figure 8). At the stage of the audit, the topsoil was not fully used for the reinstatement of WWTP territory. It should be noted that the WWTP territory, following the soil quality, is self-restored to a certain degree (Figures 9 and 10).

34. The height of the topsoil placed on the territory is approximately 1.5 m. if the topsoil is not used for reinstatement activities, after some time, the lower layers of the topsoil may lose the original properties and as a result, the valuable resource may be destroyed.

Figure 8: The topsoil placed in the WWTP area

Figure 9 and 10: Self-restored section on the WWTP territory

Finding:

35. The topsoil stripped during the construction phase is placed on the territory of WWTP and was not used for reinstatement activities of the WWTP territory. After some time, the lower layers of the topsoil may lose the original properties and as a result, the valuable resource may be destroyed.

Corrective action:

36. The topsoil placed on the territory is desirable to return to the stripping sites and use for reinstatement of the WWTP territory or handed over to the local self-government. Additional inspection is necessary to identify the fact of correcting the revealed non-compliance.

37. #2 Non-compliance re the sanitary norms of the employees

Observation:

38. As the bath placed on the WWTP territory is not in operation, the employees have arranged a primitive hand-made wash basin near the aeration tanks, from where the water pours directly into the soil (Figure 11).

Figure 11: A primitive wash basin arranged on the territory

Finding:

39. The sanitary norms of employees of WWTP were not in accordance of ADB requirements, and the water pours directly into the soil from the primitive hand-made wash basin arranged by the employees near the aeration tanks.

Corrective action:

40. Before the bathroom on the territory is put to operation, a container is to be installed for the wash basin arranged near the aeration tank to collect the used water.

41. #3 Non-compliance re the labeling of the waste containers

Observation:

42. Some containers in the project zone do not have relevant marking (Figures 12 and 14), while the Georgian and English inscriptions on some of them are incompliant (Figure 13 and 14).

Figure 12: Containers without relevant marking

Figure 13: The Georgian and English marking on the containers are incompliant

Figure 14: The containers miss some marking or have incompliant inscriptions

Finding:

43. The containers found in the project zone are not duly labeled.

Corrective action:

44. It is necessary to make relevant marking on the waste containers, such as "Domestic waste" and "Hazardous waste". Besides, the bilingual inscription on the container is to be made compliant.

45. #4 Non-compliance re the re incorrect hazardous waste management

Observation:

46. There is a tank placed in the project area where the hazardous waste is planned to be stored during the operation phase. As per the requirements, the given container is placed on the secondary containment (**Figures 15 and 16**). However, as the figures show, the volume of the secondary containment is 110% less the volume of the container placed on it.

Finding:

47. The hazardous substance container is placed on the secondary containment. The volume of the secondary containment is 110% less the volume of the container containing hazardous substances.

Figures 15 and 16: Fuel tank on the secondary container

Corrective action:

48. The volume of the protection tank must be increased at least by increasing the walls of the tank.

V. CONCLUSIONS AND RECOMMENDATIONS

49. The construction of the WWTP is complete, but the object is not put to exploitation yet. The territory is fenced, it has a gate and guardroom. The whole territory is cleaned and there is a drainage system provided around the territory as well as within the territory of WWTP.

50. The topsoil removed in the construction phase is still placed in the southern part of the WWTP territory. The given topsoil is to fully used for reinstatement activities or handed over to the local self-government.

51. No environmental non-compliances, whose remediation/mitigation is associated with high financial costs, were identified during the audit. **All partially/not satisfactorily implemented mitigation measures should be corrected until the end of Defects Notification Period by the Contractor within 1-month time** (see Table 4 below).

Table 4: Schedule of mitigation measures to be implemented by the contractor

Construction Site	Noncompliance	Corrective Action	Time
WWTP	The topsoil stripped during the construction phase is placed on the territory of WWTP and was not used for reinstatement activities of the WWTP territory. After some time, the lower layers of the topsoil may lose the original properties and as a result, the valuable resource may be destroyed.	The topsoil placed on the territory is desirable to return to the stripping sites and use for reinstatement of the WWTP territory or handed over to the local self-government. Additional inspection is necessary to identify the fact of correcting the revealed non-compliance.	4 Months
WWTP	The sanitary norms of employees of WWTP were not in accordance of ADB requirements, and the water pours directly into the soil from the primitive hand-made wash basin arranged by the employees near the aeration tanks.	Before the bathroom on the territory is put to operation, a container is to be installed for the wash basin arranged near the aeration tank to collect the used water.	1 Month
WWTP	The containers placed in the project zone are not duly labeled.	The waste containers must be duly labeled as "Domestic waste" and "Hazardous waste".	1 month
WWTP	The hazardous substance container is placed on the secondary containment. The volume of the secondary containment is not 100% of the hazardous waste container.	The volume of the protection tank must be increased at least by increasing the walls of the tank.	4 months

ANNEXES

Annex 1: Anaklia WWTP Post-Construction Environmental Audit Checklist

Required mitigation measures of enviromental impact	Measures implemented				Comment
	yes	partially	no	N/A	
Site territory fenced fully	x				The site is completely fenced and protected.
Topsoil placed at original location	x				The topsoil removed in the project zone is not returned to its original location, where it was removed earlier
Vegetation cover reinstated			x		The reinstatement works were not accomplished in the area. However, following the soil quality, partial self-restoration was achieved.
Trees replanted as needed				x	No trees were cut down on the reservoir site under the project.
Construction waste and surplus/waste soil removed completely and disposed properly	x				The construction waste is totally removed from the reservoir site.
Hazardous waste removed and disposed properly	x				The hazardous waste is totally removed from the reservoir site.
Fuels and lubricants spills eliminated				x	The hazardous waste container is placed on the secondary containment, with its volume less than 110%.
Contractor equipment and machinery removed	X				The construction equipment and machinery is totally removed by the Contractor.
All temporary facilities removed and cleaned up	x				All temporary facilities are disassembled and removed from the site.
Streets with installed network reinstated to pre-construction or better		X			The access road is reinstated to the pre-

conditions					construction condition.
Post-Construction territory reinstated to pre-construction or better conditions		X			Following the soil quality, the territory was self-restored.