

SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT

Project Number: 43405-027

Reporting Period: July-December 2019

GEORGIA: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 5)

(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

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ABBREVIATIONS

ADB	Asian Development Bank
DC	Design Consultant
DEPP	Department of Environmental protection and Permit
PMD	Projects Management Department
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/ EMS	Environmental Specialist/ Environmental Monitoring Specialist
GoG	Government of Georgia
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IPMO	Investment Program Management Office
USIIP	Urban Services Improvement Investment Program
IA	Implementing Agency
IEE	Initial Environmental Examination
MFF	Multi-tranche Financing Facility
MoEPA	Ministry of Environment Protection and Agriculture
MoRDI	Ministry of Regional Development & Infrastructure
NEA	National Environmental Agency
SC	Supervision Consultant
UWSCG	United Water Supply Company of Georgia
WSS	Water Supply & Sanitation

I. INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for the Urban Services Improvement Investment Program, Tranche 5.
2. This report is the 5th Environmental Monitoring Review (EMR) of Tranche 5 under USIIP.

1.2 Headline Information

3. During the reporting period no changes took place to the project design and accordingly nothing has been updated or prepared.

II. PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

4. 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.
5. 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.
6. Tranche 5 of the Investment Program includes:
 - Construction of Sewage System in Zugdidi (ZUG-02);
 - Construction of Wastewater Treatment Plants in Zugdidi (A) – REG-03a
 - Construction of Waste Water treatment Plant in Mestia (B) - REG-03b

The following projects are financed under Tranche 5:

7. **Construction of Sewage System in Zugdidi (ZUG-02).** The Zugdidi wastewater project envisages the rehabilitation and extension of the sewer network with gravity sewers and pressure lines and the construction of wastewater pumping stations. The project measures for the sewer network comprise the laying of 160 km new gravity pipes (DN 100 to DN 800) and 9.7 km new pressure pipes (OD 110 and OD 630). There will be 24 new wastewater pumping stations. The new network will convey the wastewater to a new wastewater treatment plant, which will be constructed under Reg-03 – Zugdidi (A) WWTP project.
8. The contract No P43405-ICB-Zug-02 was signed on February 1, 2017 with Ludwig Pfeiffer Hoch-und Tiefbau GmbH & Co.KG, The date of completion of the contract is 1 February 2020.

9. **Construction of Wastewater Treatment Plant in Zugdidi (REG-03a).** The project comprises of the construction of new Wastewater Treatment Plant with the capacity of 22,000 m³/day.
10. The contract No UWSCG-USIIP-ICB-REG-03a was signed on February 1, 2017 with “JV “Pfeiffer - EMIT” comprised by “Ludwig Pfeifer Hoch – and Tiefbau GmbH Co. KG (Germany)” and “EMIT Group – Ercole Marelli Impianti Tecnologici S.r.l. (Italy)”, Original completion date: 15 Jan. 2020, no Contract extension applied for the moment.
11. **Construction of Wastewater Treatment Plant in Mestia (REG-03b).** The project comprises of the construction of new Wastewater Treatment Plant with the capacity of 3,200 m³/day.
12. The contract No UWSCG-ICB-MES-03-2019 was signed on 5 November 2019 with “JV of Toshiba Water Solutions Pvt.Ltd and IN-SI” LLC (India/Georgia). Contract completion date is April 2021.

2.2 Project Contracts and Management

13. 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.
14. 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
15. 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. The Investment Program Management Office (IPMO) under UWSCG is Project Management Department, the Head of Department is Mr. Giorgi Archiaia. 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.
16. UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) – Posch&Partners Consulting Engineers under T5. 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.
17. All mitigation measures during construction are implemented respectively by the contractor companies: Ludwig Pfeiffer (ZUG-02) and Pfeiffer - EMIT (REG-03/a). No construction activities implemented under MES-03 sub-project during the reporting period. Each contractor company have Environmental and safety officers responsible for HSE issues during construction process. Mr. Nikoloz Neparidze is simultaneously responsible for EH&S issues under ZUG-02 sub-project and only for Environmental

Issues under ZUG-03/a sub-project. Mr. Irakli Abuladze is responsible for H&S issues under Reg-03/a sub-project.

18. Ms. Tiko Zhizhiashvili is Environmental specialist of Supervision Consultant Posch. Construction companies are monitored by Ms. Tiko Zhizhiashvili and Environmental Specialist of UWSCG/USIIP Ms. Ketevan Chomakhidze. Environmental Specialists of SC and UWSCG/USIIP conducted routine observations and surveys of project sites, issues non-compliance notes. ES of Posch prepares quarterly environmental reports and submits to UWSCG.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.
24. 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

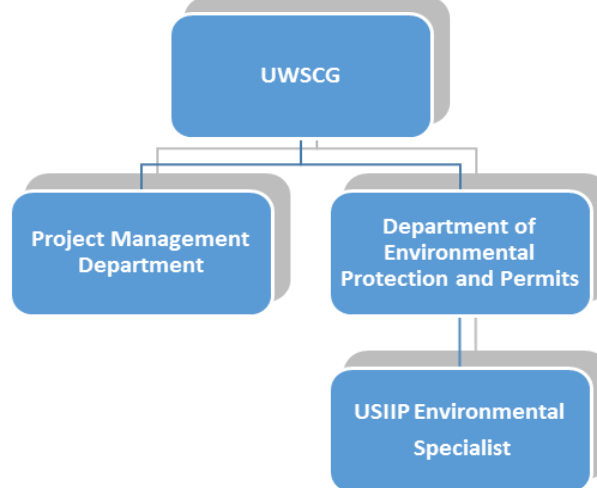
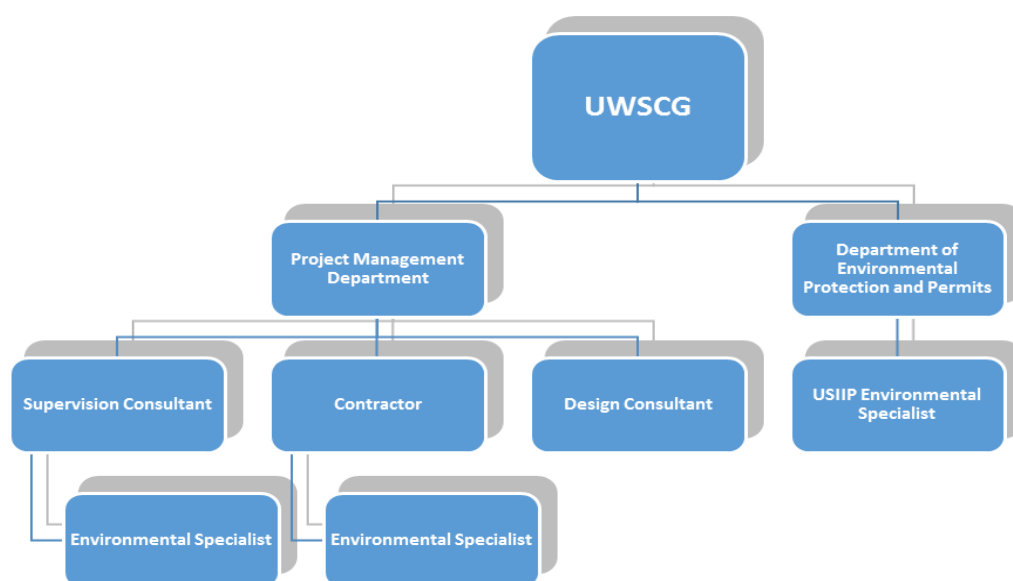


Figure 2: Structure Diagram of the Agencies Involved in Investment Program Implementation



25. Main organizations involved in the project and related to environmental safeguard are presented in the table 1 below:

Table 1: List of Main Organizations under USIIP/T5

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.	Nurlan Djenchuraev E-mail: ndjenchuraev@adb.org
		Associate Safeguards Officer Georgia Resident Mission Asian Development Bank	Nino Nadashvili Tel: +995 595 070442 nnadashvili@adb.org

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
		ADB RETA International-Regional Environmental Consultant	Keti Dgebuadze Tel: +995 577232937 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 Tel: +995 577 380213 E-mail: G.Archaia@water.gov.ge
Borrower	UWSCG/USIIP/T5	Environmental Specialist	Ms. Ketevan Chomakhidze Tel: +995 577 380309 E-mail: Chomakhidzek@yahoo.com
Supervision Consultant	Posch&Partners Consulting Engineers	Environmental Specialist:	Mr. Tinatin ZhiZhiashvili Tel: +995 577 380113 E-mail: tikozhizhiashvili@yahoo.com
Contractor ZUG-02	Ludwig Pfeiffer Hoch-und Tiefbau GmbH & Co.KG	Environmental H&S Specialist	Mr. Nikoloz Neparidze Tel: +995 599 346821 E-mail: nikoloz.neparidze@ludwigpfeiffer.com
Contractor REG-03a	JV "Pfeiffer - EMIT" comprised by "Ludwig Pfeiffer Hoch – and Tiefbau GmbH Co. KG (Germany)" and "EMIT Group – Ercole Marelli Impianti Tecnologici S.r.l. (Italy)	Environmental H&S Specialist	Mr. Nikoloz Neparidze Tel: +995 599 346821 E-mail: nikoloz.neparidze@ludwigpfeiffer.com
		H&S Specialist	Mr. Irakli Abuladze Tel: +995 568 012858 E-mail: irakli.abuladze.1974@gmail.com

2.3 Project Activities During Current Reporting Period

26. During the reporting period, no construction work was carried out as part of the REG-03b sub-project. The contractor should develop the final design project for WWTP Mestia

during the next reporting period (January-June 2020) and submit to SC and UWSCG for their approval.

27. Progress of construction activities under ZUG-02a project during the reporting period is presented in the Table 2 below.

Table 2: progress of construction activities ZUG-02

Site	Construction of New Sewers
ZUG 02	Earthworks
Works Undertaken during July – December 2019	85.31%
Site	Pipeline and Manholes Installation
Works Undertaken during July – December 2019	89.21%
	Reinstatement
Works Undertaken during July – December 2019	96.63%

28. Progress of construction activities under REG-03/a project during the reporting period is presented in the Table 3 below.

Table 3: Construction progress REG-03a project

Site	Works	%
REG-03/a - STP Zugdidi		
Works undertaken during July - December 2019.		
Works performed including July 2019.		
Plant and Mandatory Spare Parts Supplied from Abroad	43.42	%
Design Services	100	%
Installation and Other Services	69.59	%
Works performed including August 2019.		
Plant and Mandatory Spare Parts Supplied from Abroad	57.28	%
Design Services	100	%
Installation and Other Services	73.17	%
Works performed including September 2019.		
Plant and Mandatory Spare Parts Supplied from Abroad	59.54	%
Design Services	100	%
Installation and Other Services	73.97	%
Works performed including October 2019.		

Site	Works	%
REG-03/a - STP Zugdidi		
Plant and Mandatory Spare Parts Supplied from Abroad	59.55	%
Design Services	100	%
Installation and Other Services	75.12	%
Works performed including November 2019.		
Plant and Mandatory Spare Parts Supplied from Abroad	68.09	%
Design Services	100	%
Installation and Other Services	78.53	%
Works performed including December 2019.		
Plant and Mandatory Spare Parts Supplied from Abroad	73.45	%
Design Services	100	%
Installation and Other Services	81.67	%

2.4 Description of Any Changes to Project Design

N/A

2.5 Description of Any Changes to Agreed Construction methods

N/A

III. ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

29. 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 period July-December 2019. Also unscheduled monitoring visits were carried out, on-site verbal instructions have been given to the contractor and its environmental team and non-conformance notes has been issued to the contractor as needed. Mitigation measures to reduce major environmental impacts have been instructed to contractors during the monitoring visits.
30. The monitoring activities included:
 - The monitoring of compliance of construction activities under Zug-02 project sites to the IEE/EMP requirements;
 - The monitoring of mobilization activities under Reg-03/a project sites to the overall project EMP/SSEMP requirements.
31. Environmental Monitoring Specialist hired under the ZUG-02 and Reg-03/a projects Mr.Nikoloz Meparidze conducted the day-to-day monitoring of the construction sites, filled the weekly checklist forms developed the monthly monitoring reports and submitted to SC/Posch.
32. Environmental Monitoring Specialist, Ms.Tinatin Zhizhiashvili developed quarterly monitoring reports for UWSCG/USIIP based on the monthly reports submitted by Contractor, and on regular site inspections.
33. ES of USIIP performed monitoring of contractor's performance with the approved EMPs and SSEMPs, environmental standards and other environmental commitments of the contractor. ES developed Semi-annual and annual environmental monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and monitoring results.
34. The construction activities affecting the environment during the reporting period are as follows:
 - Excavation works
 - Removal of Surplus Soil
 - Backfilling of Trenches
 - Reinstatement Activities
35. 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. Accordingly, the monitoring guidelines were set as shown in the Table 4 below.

Table 4: Parametric Measurement Guidelines

Parameters	Frequency & Location	Remarks
Zug-02		
Air Quality	Air Quality Every 6 months Networks,	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	Noise, Every 6 months Sewerage Networks,	Ensure that all equipment & vehicles used for construction activity are in

Parameters	Frequency & Location	Remarks
		good condition Limiting working hours to 8 am – 6 pm
Incorrect surplus/waste soil management	Monthly during the site Inspection and audit	Utilize surplus/waste soil for beneficial purposes such as in construction or to raise the ground-level of low lying sites. Dispose extra waste soil at special disposal place identified by Municipality
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.
REG-03/a		
Air Quality	Air Quality Every 6 months Zugdidi WWTP construction site	Watering site during excavation works to avoid dust spreading Conduct measurements of Dusts Mg/m ³ ; CO Mg/m ³ ; NO ₂ Mg/m ³ ; SO ₂ Mg/m ³
Noise	Noise, Every 6 months Zugdidi WWTP construction site	Ensure that all equipment & vehicles used for construction activity are in good condition Limiting working hours to 8 am – 6 pm
Incorrect surplus/waste soil management	Monthly during the site Inspection and audit	Utilize surplus/waste soil for beneficial purposes such as in construction or to raise the ground-level of low lying sites. Dispose extra waste soil at special disposal place identified by Municipality
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

Parameters	Frequency & Location	Remarks
		<p>measures are taken to ensure they are protected and conserved.</p> <p>Calling in the state archaeological authority if a find is suspected, and taking any action they require to ensure its removal or protection.</p>

3.2 Site Audit

36. Regular inspection and monitoring of construction sites under ZUG-02 and REG-03/a sub-projects were conducted by ESs of USIIP and Posch. The schedule of Joint inspection and summary of audits carried out under the sub-projects are provided in the Table 5 below.

Table 5. Summary of site audits

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	
Continuously during reporting period (January-June 2019)	Ludwig Pfeiffer Hoch- und Tiefbau GmbH & Co.KG ZUG-02	Environmental, H&S Specialist of Contractor Mr. Nikoloz Nepridze	Day to day monitoring of sites Compliance with Environmental and HES requirements	1. Poor housekeeping 2. Safety issues on construction sites	Develop Weekly Checklists (Annex D) Prepare Monthly Monitoring Reports and send to Supervision Consultant
		Environmental, H&S Specialist of Supervision Consultant Ms. Tinatin Zhizhiashvili	Monthly monitoring of sites		Quarterly Monitoring Reports prepared and Non-Conformance Notice Issued (example is provided in Annex c)
18-19 July 2019		ADB, CEF - Mr. Duncan Lang RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Ketii Dgebuadze.	GEO country Annual Environmental Safeguard Mission was conducted in 18-25 July 2019	During the previous ADB Mission in October 2018, hiring of flagman by CC for excavator operating under the transmission line during the tranche excavation, as well as implementing other safety procedures related to open tranches and updating	Mission's Note Developed by Ms. Ketii Dgebuadze

Date of Visit	Name of Company	Auditors Name	Purpose of audit	Summary of any Significant Findings	
	Name of Contract				
		<p>Environmental Specialist of USIIP Ms. Ketevan Chomakhidze</p> <p>Environmental Specialist of SC Ms. Tiko Zhizhiashvili</p>		<p>H&S procedures to ensure accidents do not occur were recommended by ADB. Completed</p> <p>Poor asphalt reinstatement was also revealed during the ADB Mission in October 2019 after completion of Water Supply network construction activities.</p> <p>Will be completed under Variation Order (VO) #5</p>	<p>ADB Mission requested CC to speed up the process of reinstatement asphalt layers at remaining streets of Zugdidi city as this is a community annoyance and driving hazard.</p> <p>The reinstatement work will be carried out in accordance with the VO No. 5 of the contract No.: P43405-ICB-Zug-02 and include the restoration of the asphalt surface of damaged roads during construction.</p>
23,24 August 2019		Environmental Specialist of SC Ms. Tiko Zhizhiashvili		<p>Safety signs/tapes around of all open trenches should be installed to avoid accident of population</p> <p>Construction activities information signs should be installed at each construction segment</p>	Verbal Instruction were given to contractor to improve the situation and send improved photos of sites
11, 12		Head of	Monthly Monitoring of	Safety/warning signs/tapes and	Non-

Date of Visit	Name of Company	Auditors Name	Purpose of audit	Summary of any Significant Findings	
	Name of Contract				
September 2019		<p>UWSCG's Department of Environmental protection and Permits</p> <p>Ms. Maka Goderdzhishvili</p> <p>Environmental Specialist of USIIP</p> <p>Ms. Ketevan Chomakhidze</p> <p>Environmental, H&S Specialist of Contractor</p> <p>Mr. Nikoloz Neparidze</p> <p>Environmental Specialist of SC</p> <p>Ms. Tiko Zhizhiashvili</p>	<p>sites for Compliance with EH&S requirements</p>	<p>trench side barriers around of deep open trenches should be installed to avoid accident.</p> <p>Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workersdamage).</p> <p>Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required.</p> <p>Surplus waste soil should be removed and disposed in a proper place.</p> <p>All transmission line construction segments should be cleaned/well organized on regular bases.</p> <p>Construction activities information signs should be installed at each construction segment.</p> <p>Provide adequate lighting to avoid accidents.</p> <p>Trench construction shall be taken up in small segments, so that work (excavation, pipe</p>	<p>Conformance Notice Issued by UWSCG to Contractor (Please see Annex C) and was requested to immediately improve the situation and send improved photos of site.</p> <p>An explanatory note was sent by DEPP to the head of the UWSCG Project Management Department and the Construction Supervision Department to share shared information on the situation in the field of Environment, H&S on construction sites and requested support for an immediate improvement.</p> <p>As a result of above actions a Corrective Action Plan was developed by Contractor (Please see Annex E) and improved photos of sites were provided to UWSCG/USIIP.</p>

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	
				<p>laying and refilling) in each segment is completed in a day. No trenches shall be kept open in the night/after work hours.</p> <p>Informing all residents and businesses about the nature and duration of any work well in advance so that they can make necessary preparations if needed.</p> <p>Increasing workforce to complete the work in minimum time.</p> <p>Schedule construction activities on the narrow streets of Zugdidi with local Municipality and locate entry and exit points in construction areas.</p>	
28,29 October 2019		<p>Environmental Specialist of SC Ms. Tiko Zhizhiashvili</p> <p>Environmental, H&S Specialist of Contractor Mr. Nikoloz Neparidze</p>	Monthly monitoring of sites	<p>Safety signs/tapes around of all open trenches should be installed to avoid accident of workers and population.</p> <p>Workers always should use complete PPE.</p>	Verbal instruction was given to contractor to immediately improve the situation.
26,27 November 2019		Environmental Specialist of SC Ms. Tiko Zhizhiashvili	Monthly monitoring of sites	Walls of the deep trenches (>1.5m) are not strengthened by boards to avoid landfall of the soil and accidents.	Verbal Instructions given to contractor. Quarterly Environmental

Date of Visit	Name of Company	Auditors Name	Purpose of audit	Summary of any Significant Findings	
					Monitoring Report Prepared.
23-24 December 2019		Environmental Specialist of CC Mr. Nikoloz Neparidze Environmental Specialist of SC Ms. Tiko Zhizhiashvili	Monthly monitoring of sites	Surplus waste soil should be removed and disposed in a proper place	Verbal Instructions given to contractor
Continuously during reporting period (January-June 2019)	JV "Pfeiffer - EMIT" REG-03/a	Environmental, H&S Specialist of Contractor Mr. Nikoloz Neparidze	Day to day monitoring of sites Compliance with Environmental and HES requirements	Workers always should use complete PPE	Monthly Monitoring Reports
18-19 July 2019		ADB, CEF - Mr. Duncan Lang RETA International Environmental Consultant of ADB under RETA 8663 - Ms. Ketevan Chomakhidze. Environmental Specialist of USIIP Ms. Ketevan Chomakhidze Environmental Specialist of SC Ms. Tiko Zhizhiashvili	Annual Environmental Safeguard Mission	Wash out pit is existing from which water directly discharged into the river. ADB Mission requested CC to make water tests to avoid pollution of the river. Not completed, since contractor stopped the direct discharge of water from the wash out pit into the river and therefore no further pollution of the river occurred The generator unit on the territory of camp site running on diesel is not placed on a secondary tank. Completed. Cattle were observed within the construction territory due to damaging the fencing at few places around the construction site.	Verbal instructions are given to the contractor to carry out water measurements before discharge into the river. Verbal instruction is given to contractor to immediately improve the situation and send improved photos of site by the end of July 2019. ADB recommended CC to rehabilitate fencing around the territory to avoid admission of cattle and incidents.

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	
				<p>Completed</p> <p>CC to improve track record system and add Accident Record Log (with recorded near misses) and grievance log book</p> <p>Completed</p>	
23,24 August 2019		Environmental Specialist of SC Ms. Tiko Zhizhiashvili	Monthly Monitoring of construction site	Waste should be timely removed from the construction site and disposed properly	Verbal instruction has given to contractor to improve the situation
11, 12 September 2019		<p>Head of UWSCG's Department of Environmental protection and Permits</p> <p>Ms. Maka Goderdzhishvili</p> <p>Environmental Specialist of USIIP</p> <p>Ms. Ketevan Chomakhidze</p> <p>Environmental, H&S Specialist of Contractor</p> <p>Mr. Nikoloz Neparidze</p> <p>Environmental Specialist of SC Ms. Tiko Zhizhiashvili</p>	Monthly Monitoring of sites for Compliance with EH&S requirements	<p>Surplus waste soil should be removed and disposed in a proper place</p> <p>Proper waste containers should be installed and labeled</p> <p>Waste should be timely removed from the construction site and disposed properly</p> <p>Site internally should be arranged properly and cleaned regularly</p>	Non-Conformance Notice Issued by UWSCG to Contractor (Please see Annex C).
28,29 October 2019		Environmental, H&S Specialist	Monthly monitoring of	Safety signs/tapes around of all open	Verbal instruction was

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	
		of Contractor Mr. Nikoloz Neparidze	sites	trenches should be installed to avoid accident of workers and population	given to contractor to immediately improve the situation.
26,27 November 2019		Environmental Specialist of SC Ms. Tiko Zhizhiashvili	Monthly monitoring of sites	Surplus waste soil should be removed and disposed in a proper place	Verbal Instructions given to contractor Quarterly Environmental Monitoring Report Prepared
23-24 December 2019		Environmental Specialist of CC Mr. Nikoloz Neparidze Environmental Specialist of USIIP Ms. Ketevan Chomakhidze	Monthly monitoring of sites	Proper waste containers should be installed and labeled Waste should be timely removed from the construction site and disposed properly Site internally should be arranged properly and cleaned regularly	Verbal Instructions given to contractor

3.3 Issues Tracking (Based on Non-Conformance Notices)

- 37.** Non-Conformances have been observed during the site visits under ZUG-02 and REG-03/a 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. Environmental team of Posch 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.
- 38.** A summary of the identified environmental issues for July-December 2019 is presented in table 6 below.

Table 6: Summary of Issues Tracking Activity for Current Period Zug-02

Total Number of Issues for Project	21
Issues Opened This Reporting Period	5

Issues Closed This Reporting Period	16
Percentage Closed	76%

Table 7: Summary of Issues Tracking Activity for Current Period REG-03/a

Total Number of Issues for Project	5
Issues Opened This Reporting Period	1
Issues Closed This Reporting Period	4
Percentage Closed	80%

3.4 Trends

39. 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 8 below.

Table 8: Summary of identified trends in environmental issues

Semi-Annual EMR No	Total No of Issues	% issues Closed	% issues closed late
January-June 2019	41	88%	12%
July-December 2019	26	78%	22%

40. All major Non-Conformances under USIIP/T5 during the reporting period are provided in an Annex C of this report.

3.4 Unanticipated Environmental Impacts or Risks

N/A

IV. RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

41. During the reporting period Environmental measurements of Noise level and ambient air Quality were carried out by contractor under Zug-02 and REG-03/a sub-projects.
42. Noise and air pollution standards defined by IFC/WHO 1999, are presented in the Table 9 and 10 below.

Table 9: Noise Level Guidelines

Noise	dBA		dBA	
	National Regulations		WHO	
Receptor	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00	Daytime 07:00- 22:00	Nighttime 22:00- 07:00
Residential; institutional;	55	45	55	45

Noise	dBA		dBA	
	National Regulations		WHO	
educational				
Industrial; commercial	70	70	70	70

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

Table 10: 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

43. Monitoring measurements of noise level and Dust under Zug-02 and REG-03/a sub-projects were conducted by the National Environmental Agency of the Ministry of Environment Protection and Agriculture of Georgia in the nearest sensitive receptors of ¹Zug-02 and REG-03/a sub-project in 7 November 2019 (See Table 11 below and Annex A). The next monitoring measurements will be conducted in May 2020 and results will be reflected in the next January-June 2020 EMR.
44. According to data received in November 2019 noise level exceeds the standards of the National Regulations and World Health Organization (IFC/WHO), 1999 in Zugdidi and therefore additional mitigation measures are not required. IFC/WHO standards for Noise and Air pollution are presented in Tables 9 and 10 above. It should be noted also that measurements carried out at construction sites, were temporary and conducted during the daytime from 14:00 pm to 15:00 pm and no complaints were received from the local population about the noise during the reporting period.

Table 11: Environmental Quality Monitoring Measurement of Noise and Air Quality, REG-03/a, ZUG-02

N	Place of measurement	Coordinates	Results				
			Dusts Mg/m ³	CO Mg/m ³	NO ₂ Mg/m ³	SO ₂ Mg/m ³	Noise dBA (MAX) (1-hour)
	National Environmental Standard (Maximum		0,5	5,0	0,2	0,5	55 Residential; Institutional;

¹ Since there is one environmental specialist working in both ZUG-02 and REG-03/a subprojects, Mr. Nikoiloz Meparidze and the sensitive receptors of the construction site of both subprojects may coincide in some places (for example, the hospital area near the WWTP site), during the reporting period, only one environmental quality measurement was carried out for both subprojects.

The contractors were instructed to conduct separate measurements during the next reporting period for both sub-projects, which will be reflected in the next Semi-annual EMR of January-June 2020.

N	Place of measurement	Coordinates	Results				
			Dusts Mg/m3	CO Mg/m3	NO2 Mg/m3	SO2 Mg/m3	Noise dBA (MAX) (1-hour)
	Permissible Level)						Educational 70 Industrial; commercial
1	Zugdidi 0734030 4708169		0.092	0.98	0.005	<0.247	² 51.4

4.2 Trends

45. All mitigation measures identified within the ZUG-02 and REG-03/a projects are effective and no additional measures are required.

4.3 Summary of Monitoring outcomes

46. Noise level and Dust during the construction period under ZUG-02 and REG-03/a sub-projects doesn't exceeds the existing standards of IFC/WHO and therefore no additional mitigations are required. The parameters of the ambient air quality is within the existing norms as well. As it was already mentioned above contractor is strictly requested to carried out separate Environmental Quality measurements for both sub-project – REG-03/a and ZUG-02.

4.4 Material resources Utilization

4.4.1 Current Period

47. The following information was provided by contractor under REG-03/a sub-project about the material resources utilization during the reporting period – July-December 2019, within the framework of the REG-03/a sub-project.
48. The consumption of technical water is averages 3-4 tons per day.
49. Electricity consumption for 3 months is 5631.7 kV. The numbers are estimated and depend on the weather, the intensity of works, in case there is no electricity supply and the light is off, the generator is very common.
50. Drinking water is provided by the private company “Sno” an amount of 400-500 liters per week, depending on the weather condition and intensity of work.
51. The contractor did not provide any information on the use of material resources in the framework of the ZUG-02 sub-project, since the main construction work is carried out on the sewage network part of the project throughout the City of Zugdidi.

4.4.2 Cumulative Resources Utilization

N/A

4.5 Waste Management

² This data for noise propagation is the Maximum and Average will be obtained for the next reporting period and reflected in the next SAEMR - January-June 2020.

4.5.1 Current Period

52. At the both construction sites there are mainly produced household, construction (inert, surplus soil) and hazardous waste. Despite the request from UWSCG to contractors and SC to provide quantity of produced waste during the construction in accordance with the requirements of the new Semi-annual EMR format, the contractor did not provide any information on this issue.
53. Mainly household waste is collected in municipal containers which are served by the local cleaning service. There is need of routine organization and cleaning of sites. Contractors always have separate containers for household and hazardous waste with proper labelling at the construction site.
54. In most cases waste/surplus soil is removed from the construction site for further use in agreement with municipality or it stays at the construction site for its future use.
55. The construction 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".
56. Hazardous waste (lubricant residues and etc) were stored according to all the safety norms after the strong instruction given by SC and UWSCG. In the case of formation such kind of waste, contractor has to write to the management of the municipality or the company who is licensed to recycle/decontaminate such kind of waste. Also contractors have special container with proper labelling at the construction site.

4.5.2 Cumulative Waste Generation

N/A

4.6 Health and Safety

4.6.1 Community Health and Safety

57. No community incidents have been reported to SC during reporting period under ZUG-02 and Reg-03a sub-projects.

4.6.2 Worker Safety and Health

ZUG-02

58. Environmental H&S Manager of ZUG-02 project Mr. Nikoloz Neparidze was performing every day monitoring, induction and supervision of ongoing works according to EH&S standards and by requirements of ADB/UWSCG/POSCH and providing relevant reports on a regular basis taking into account any recommendations given by SC/UWSCG engineers.
59. Health & safety and environment issues which were covered during the reporting period are as follows:
 - PPE;
 - Manual works;
 - Upgrade Safety Hard and Warning Barricade
60. Contractor under ZUG-02 project was working on compilation of statistics information (incidents, near misses, trainings) during reporting period. No workers incidents have been reported during reporting period under ZUG-02 project.
61. The following Near-Misses were reported by SC under ZUG-02 project, which may be resulted in Workers' Health and Safety problems:

- Electric cables should be protected during the excavation works by hiring a flagman
- The Contractor should erect secure robust safety barriers around all open excavations.

62. During the reporting period, within the framework of the ZUG-02 sub-project, no near-misses forms have been filed. SC and UWSCG / USIIP requested from contractor to adequately fill the near-misses forms and reflect in their monthly monitoring reports.

REG-03/a

63. Environmental H&S Managers of ZUG-03/a sub-project Mr. Nikoloz Neparidze and Irakli Abuladze were performing every day monitoring, induction and supervision of ongoing works according to HSE standards and by requirements of ADB/UWSCG/Posch and providing relevant reports on a regular basis taking into account any recommendations given by SC/UWSCG engineers.

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

- PPE;
- Housekeeping;
- Reinforcement;
- Ground works;
- Manual works;
- Removal waste;
- Bending rebar, Cutting;
- Installation and dismantle formwork
- Induction all visitors
- Dust and Noise Measurements
- Upgrade Safety Hard and Warning Barricade

65. Contractor under ZUG-03/a project was working on compilation of statistics information (incidents, near misses, trainings) during reporting period. No workers incidents have been reported during reporting period under ZUG-03/a project.

66. The following Near-Misses were reported by SC under ZUG-02 project, which may be resulted in Workers' Health and Safety problems:

- Any construction materials, machinery, and other equipment should be removed from the area where the electrical cables pass at the construction site (Please see photo 1 below)

Photo 1: Electric Cables at the Construction Site



- In accordance with the instructions given to workers by EH&S Specialist of

- contractor, wooden materials were cleaned from nails;
- Working on height including proper use of PPE

67. During the reporting period, within the framework of the REG-03/a subproject, no incidents with workers were registered.

4.7 Training

68. Routine personnel trainings and toolbox talks happen by the construction companies almost on daily basis under Zug-02 and REG-03/a sub-projects. The recording of such toolbox talks are available at the sites. This trainings were conduct on the following issues: working on height including proper use of PPE (special work shoes, high visibility vest, helmet and gloves).
69. 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.

V. FUNCTIONING OF THE SEMP

5.1 SEMP Review

70. SEMP for Zugdidi WWTP under Reg-03/a project was prepared by Contractor, endorsed by SC and approved by UWSCG in 13 March 2018. SEMP was reviewed/commented by the RETA Regional Environmental Consultant of ADB under RETA 8663 - Ms. Ketii Dgebuaдзе.
71. No SEMPs have been prepared under Zug-02 project, since all construction activities are going on already inhabited area and no damage will be caused to the environment.

VI. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

N/A

6.2 Opportunities for Improvement

N/A

VII. SUMMARY AND RECOMMENDATIONS

7.1 Summary

72. During the reported period construction activities were implemented under ZUG-02 and REG-03/a 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 Posch and UWSCG/USIIP on a regular basis.
73. Day-to-day monitoring of the construction sites were carried out by the environmental Specialists of Contractor, monthly monitoring reports were developed and sent to Supervision Consultant.
74. Environmental Monitoring Specialist of Posch, Ms. Tiko Zhizhiashvili conducted monthly monitoring of project sites under T5 and developed Non-Conformance Notice were required. She also developed quarterly environmental monitoring reports based on the monthly reports submitted by Contractor and environmental site inspections and submit to UWSCG.

- 75. The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under ZUG-02 and REG-03/a sub-projects.
- 76. Environmental Specialist of USIIP Ms. Kate Chomakhidze performed monitoring of contractor's performance in accordance with the requirements of approved IEE/EMPs, SEMP, 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 results of monitoring of construction sites.
- 77. 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.
- 78. 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.

7.2 Recommendations

- 79. The following activities are recommended for the next reporting period:
- 80. During the reporting period, from July to December 2019, the T5 of Investment Program was implemented in accordance with the requirements of ADB - SPS 2009 and the National Legislation.
- 81. More detailed recommendations for the implementation of T5 during the next reporting period January-June 2019 are provided in the table 12 below:

Table 12: Recommendations to Address Environmental Issues under ZUG-02 and REG-03/a sub-projects

Recommendations ZUG-02 and REG-03/a sub-projects	
Recommendations ZUG-02	Implementation status and date
ZUG-02 Network	
<p>Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident</p> <p>Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)</p> <p>Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required</p> <p>Surplus waste soil should be removed and disposed in a proper place</p> <p>All transmission line construction segments should be cleaned/well organized on regular bases</p>	<p>The contractor is given a strong instruction to improve the situation by the mid. January 2020 and constantly maintain an improved standard.</p>
ZUG-03/a	

Recommendations ZUG-02 and REG-03/a sub-projects

Waste should be timely removed from the construction site and disposed properly, Site internally should be arranged properly and cleaned

The contractor is given a strong instruction to improve the situation by the mid. January 2020 and constantly maintain an improved standard.

- 82.** Conduct monitoring of Ambient Noise and Air quality under ZUG-02 project at the nearest sensitive receptors in May 2020.

Table 13: Conduct Monitoring of Environmental Quality under Zug-02 project

Parameters	Quarterly measurement
Dust	May 2020
Vibration	May 2020
Carbon monoxide	May 2020
Nitrogen dioxide	May 2020
Noise	May 2020

- 83.** Conduct monitoring of Ambient Noise and Air quality under REG-03/a project at the nearest sensitive receptors in May 2020.

Table 14: Conduct Monitoring of Environmental Quality under REG-03/a project

Parameters	Quarterly measurement
Dust	May 2020
Vibration	May 2020
Carbon monoxide	May 2020
Nitrogen dioxide	May 2020
Noise	May 2020

ANNEX A: ENVIRONMENTAL QUALITY MEASUREMENT DATA

REG-03/a, ZUG-02

საქართველოს გარემოს დაცვისა და სოფლის მეურნეობის სამინისტრო
 MINISTRY OF ENVIRONMENT PROTECTION AND AGRICULTURE OF GEORGIA



სსიპ გარემოს ეროვნული სააგენტო
 LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/198

07/11/2019

Ltd „Ludwig Pfeiffer Hoch and Tifbau and Co. Representative in Georgia“.

Results of atmospheric air pollution and noise levels.

attachment

N	Measurement area	Measurement coordinates	Concentration of pollutant ingredients mg / m ³				Noise sound level db
			Dust	Carbon monoxide	Nitrogen dioxide	Sulfur dioxide	
1	City Poti	0719295 4675729	0.074	0.14	0.002	<0.247	54.3
2	City Zugdidi	0734030 4708169	0.092	0.98	0.005	<0.247	51.4
Maximum allowable concentration			0.5	5.0	0.2	0.5	

Head of Division:

G. Kargareteli

Chief Specialist:

S. Khatsava

Agreed:

Head of the Department



M. Arabidze

Photos of REG-03a project – CONSTRUCTION OF THE WWTP IN ZUGDIDI

REG-03/a Biodigester



REG-03/a: Roof of Operation building



REG-03/a: Mechanical installation of Biological tank



ZUG-02: Pipe Laying in Section 2



ANNEX C: NON-CONFORMANCE NOTICES ZUG-02

Non-Compliance Notice

Project: USIIP	Non-Compliance Notice Zugdidi
Contract No: ZUG-02	
Contractor: Ludwig Pfeiffer	
Reference: Zugdidi – Network	
This notice is to advise you, the prime Contractor, on the referenced Contract, of the following notice on environmental measures to be implemented urgently .	
<u>NON-COMPLIANCE</u>	
NETWORK ZUGDIDI (ZUG-02)	
<ul style="list-style-type: none">- Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident- Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)- Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required- Surplus waste soil should be removed and disposed in a proper place- All transmission line construction segments should be cleaned/well organized on regular bases- Construction activities information signs should be installed at each construction segment- Provide adequate lighting to avoid accidents- Trench construction shall be taken up in small segments, so that work (excavation, pipe laying and refilling) in each segment is completed in a day. No trenches shall be kept open in the night/after work hours- Informing all residents and businesses about the nature and duration of any work well in advance so that they can make necessary preparations if needed- Increasing workforce to complete the work in minimum time- Schedule construction activities on the narrow streets of Zugdidi with local Municipality and locate entry and exit points in construction areas	
Photos of Zugdidi Network (Erevani Street)	





<p>Il these conditions have to be remedied within one week by the prime Contractor (Ludwig Pfeiffer).</p>	
<p>Date of site visits: 12.09.2019</p>	
<p>Maka Goderdzishvili, Head, Department of Environmental Protection and Permits, UWSCG Kate Chomakhidze, Environmental Consultant UWSCG/USIIP</p>	



Non-Compliance Notice

Project: USIIP	Non-compliance Notice Zugdidi
Contract No: Reg-03/a	
Contractor: Pfeiffer-EMIT	
Reference: Zugdidi – Construction of Waste Water Treatment Plant	

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

NON-COMPLIANCE IN ZUGDIDI

Zugdidi WWTP

- Surplus waste soil should be removed and disposed in a proper place
- Proper waste containers should be installed and labeled
- Waste should be timely removed from the construction site and disposed properly
- Site internally should be arranged properly and cleaned regularly

Photos of Zugdid WWTP



All these conditions have to be remedied within four days by the contractor.

Date of site visits 11 September 2019

Ketevan Chomakhidze
UWSCG/USIIP – Environmental Specialist

Correction Action Plan

Zugdidi – Construction of the sewerage system

Project: USIIP
Contract No: ZUG-02
Contractor: Ludwig Pfeiffer

Contractor's information on Non-Compliance Notice (dated 12 September 2019)

Non-Compliance	Compliance
Safety/warning signs/tapes and trench side barriers around of deep open trenches should be installed to avoid accident	All necessary warning signs and tapes are installed at each construction segments
Walls of the deep trenches (>1.5m) should be strengthened by boards to avoid landfall of the soil and accidents (workers damage)	Walls of the deep trenches are strengthened at each construction segments
Surplus waste soil should be removed and disposed in a proper place	Waste are disposed in a special waste container
Construction activities information signs should be installed at each construction segment	Information signs are installed at each construction segments
Provide adequate lighting to avoid accidents	Ongoing
Informing all residents and businesses about the nature and duration of any work well in advance so that they can make necessary preparations if needed	Lasha Lataria provides informing the residents
Schedule construction activities on the narrow streets of Zugdidi with local Municipality and locate entry and exit points in construction areas	Schedule of the construction activities on the narrow streets is agreed with local Municipality

Correction Action Plan

Photos



Correction Action Plan



Correction Action Plan

