

# Semi-annual Environmental Monitoring Report

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*Project Number: 43405-026*

*Reporting Period: July-December 2019*

**GEORGIA: URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM  
(TRANCHE 4)**

**(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**

**ABBREVIATIONS**

<b>ADB</b>	Asian Development Bank
<b>DC</b>	Design Consultant
<b>DEPP</b>	Department of Environmental protection and Permit
<b>PMD</b>	Projects Management Department
<b>EA</b>	Executing Agency
<b>EARF</b>	Environmental Assessment and Review Framework
<b>EHS</b>	Environmental Health & Safety
<b>EIA</b>	Environmental Impact Assessment
<b>EIP</b>	Environmental Impact Permit
<b>EMP/ SSEMP</b>	Environmental Management Plan/ Site-Specific Environmental Management Plan
<b>ES/ EMS</b>	Environmental Specialist/ Environmental Monitoring Specialist
<b>GoG</b>	Government of Georgia
<b>GRC</b>	Grievance Redress Committee
<b>GRM</b>	Grievance Redress Mechanism
<b>IPMO</b>	Investment Program Management Office
<b>USIIP</b>	Urban Services Improvement Investment Program
<b>IA</b>	Implementing Agency
<b>IEE</b>	Initial Environmental Examination
<b>MFF</b>	Multi-tranche Financing Facility
<b>MoEPA</b>	Ministry of Environment Protection and Agriculture
<b>MoRDI</b>	Ministry of Regional Development & Infrastructure
<b>NEA</b>	National Environmental Agency
<b>SC</b>	Supervision Consultant
<b>UWSCG</b>	United Water Supply Company of Georgia
<b>WSS</b>	Water Supply & Sanitation

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# **1 INTRODUCTION**

## **1.1 Preamble**

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for “Urban Services Improvement Investment Program” (USIIP), Tranche 4 and describes the period of January-June 2019.
2. This report is the 8<sup>th</sup> Semi-Annual EMR for the T4 of “Urban Services Improvement Investment Program”.

## **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.

## 2 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 4 of the Investment Program includes:
  - Construction of Water Supply System in Zugdidi (Zug 01 - Contract No: P43405-ICB-Zug-01)
  - Construction of Sewerage System in Poti (Pot 01 - Contract No: P43405-ICB-Pot-01)
  - Construction of Wastewater Treatment Plant in Poti (Pot 02 -Contract No: P43405-ICB-Pot-02)
  - Construction of Water Supply System in Jvari (Jvari 02- Contract No: P43405-DC-Jvari-01)
  - Construction of Sewage Collection and Water Supply System in Gudauri (UWSCG-ICB-GUD-02-2028-GUD-02)
7. **Construction of Water Supply System in Zugdidi (ZUG 01).** The project comprises of the construction of 1 water supply pumping station – 1,170 m<sup>3</sup>, construction of new reservoirs (3,300 m<sup>3</sup>x3); distribution network - laying of approximately 220 km water supply pipelines; approximately 15 km transmission main; wells - drilling of 10 drinking water wells.
8. The contract ZUG-01 was signed on October 26, 2015 with AS Inshaat–N, LLC (Azerbaijan), the construction works were completed in September 2018. Finish of Defects Notification period is till 10 January 2019.
9. **Construction of Sewerage System in Poti (POT-01).** Pot-01 project includes the construction of 112.4 km of new sewerage pipes, and construction of 28 sewage pumping stations. United Water Supply Company of Georgia signed a contract with TAHAL Group BV on 20 December 2017. The final date of completion of the contract is July 31, 2020.

10. **Construction of Wastewater Treatment Plant in Poti (POT-02).** The project comprises of the construction of new Wastewater Treatment Plant with the capacity of 11,663 m<sup>3</sup>/day for Poti. The contract for construction of WWTP in Poti was signed on December 21, 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). The final date of completion of the contract is February 1, 2020.
11. **Construction of Water Supply System in Jvari (JVA-01).** The major works to be implemented for rehabilitation and improvement of Jvari water supply system are following: construction of wells on the well field near the village Lia; installation of about 4 km long transmission pipeline; replacement of distribution pipes in the town; rehabilitation of existing reservoir or construction of new one depending on results of detailed investigation; construction of new pump station.
12. The contract for implementation of JVA-01 was signed on January 17, 2017 with AS Inshaat-N, LLC (Azerbaijan). The date of completion of the contract is April 2020.
13. **Construction of Sewage Collection and Water Supply System in Gudauri (GUD-02).** The major works to be implemented for rehabilitation and improvement of Gudauri sewage collection and water supply system, including construction of well field, Raw Water Reservoir of 500m<sup>3</sup>, water pipes and sewage collection system.
14. The contract for implementation of GUD-02 sub-project was signed on 4 January 2019 with “China Nuclear Industry 23 Construction Co.” LTD (CNI23). The date of completion of the contract is April 2021.
15. **Supervision Consultant for T4 of USIIP.** Supervision Consultant for Tranche 4 of USIIP is “SAFEGE France with Engineering Solution LLC Georgia”.

## 2.2 Project Contracts and Management

16. 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.
17. 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

- 18.** 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.
- 19.** UWSCG as responsible IA for the project recruited a Supervision Consultant (SC) – Safege under T4. 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.
- 20.** All mitigation measures during construction are implemented respectively by the contractor companies: TAHAL, Pfeiffer, AsInshaan-N. Each contractor company have Environmental and safety officers responsible for HSE issues during construction process. Construction companies are monitored by the supervision consultant (Safege) environmental specialist – Mr. Shalva Bosikashvili 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 Safege prepares quarterly environmental reports and submits to UWSCG.
- 21.** 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.
- 22.** Topic Specific EMPs are developed on a topic by topic basis. For example:

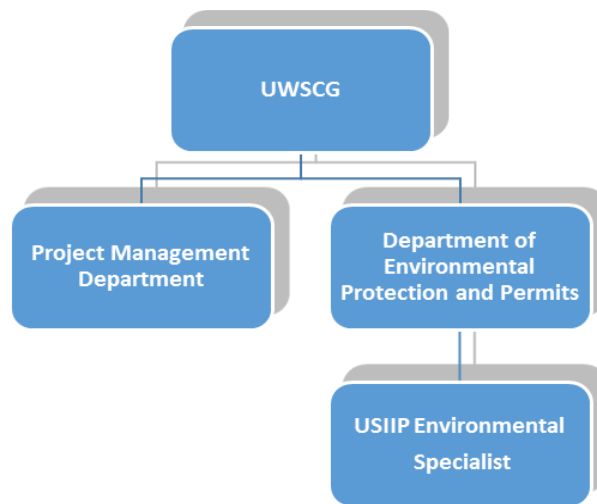
  - Waste Management Plans;
  - Traffic Management Plans;
  - Protected Species Management Plans;
  - Water Management Plans.
- 23.** These plans are detailed and set out how the project will address potential issues identified in the impact assessment process and ensure that specific mitigation and monitoring measures are fully implemented. A topic specific environmental management plan will cover all of the project.
- 24.** 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



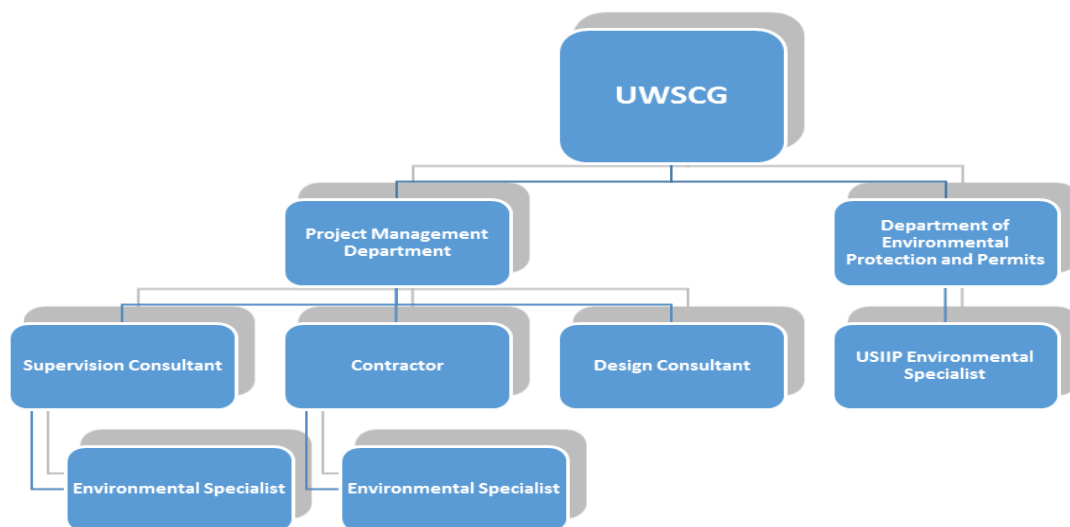
EMPs, reviewing and approving SEMP and carrying out training and capacity-building activities in cooperation with Supervision Company. The ES prepares Semi-annual and annual environmental monitoring reports and submits to ADB.

- 25. 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.
- 26. 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



27. A list of main organizations involved in the USIIP/T4 and relating to environmental safeguards is presented in Table 1 below.

**Table 1:** List of Main Organizations under USIIP/T4

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: <a href="mailto:ndjenchuraev@adb.org">ndjenchuraev@adb.org</a>
		Associate Safeguards Officer Georgia Resident Mission Asian Development Bank	Nino Nadashvili Tel: +995 595 070442 <a href="mailto:nnadashvili@adb.org">nnadashvili@adb.org</a>
		ADB RETA International-Environmental Consultant	Keti Dgebuadze Tel: +995 577232937 <a href="mailto:ketdgeb@yahoo.com">ketdgeb@yahoo.com</a>

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Borrower	UWSCG	UWSCG, Department of Environmental Protection and Permits, Head	Ms. Maka Goderdzishvili Tel: +995 599 229925 E-mail: <a href="mailto:m.goderdzishvili@water.gov.ge">m.goderdzishvili@water.gov.ge</a>
		UWSCG/IPMO Department of Projects Management, Head	Mr. Giorgi Archaia Tel: +995 577 380213 E-mail: <a href="mailto:G.Archaia@water.gov.ge">G.Archaia@water.gov.ge</a>
Borrower	UWSCG/USIIP/T4	Environmental Specialist	Ms. Ketevan Chomakhidze Tel:+995 577 380309 E-mail: <a href="mailto:Chomakhidzek@yahoo.com">Chomakhidzek@yahoo.com</a>
Supervision Consultant	SAFEGE (France) with Engineering Solution LLC (Georgia)	Environmental Specialist:	Mr. Shalva Bosikashvili Tel:+995 595116041 E-mail: <a href="mailto:sbosikashvili@yahoo.com">sbosikashvili@yahoo.com</a>
Contractor ZUG-01	AS Inshaat-N LLC (Azerbaijan)	Environmental H&S Specialist	Mr. Nodar Usupishvili Tel:+995 577 68 16 71 E-mail: <a href="mailto:n.usupashvili@gmail.com">n.usupashvili@gmail.com</a>
Contractor POT-01	TAHAL Group BV	Environmental H&S Specialist	Mr.Revaz Kalandadze Tel: +995 599 346 821 E-mail: <a href="mailto:r.kalandadze@yahoo.com">r.kalandadze@yahoo.com</a>

Type of project participant	Name of Agency/Company	Environmental Staff	Name and contact details
Contractor POT-02	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)	Environmental Specialist H&S Specialist	Mr. Nikoloz Neparishvili Tel: +995 599 346 821 E-mail: <a href="mailto:niko@telenet.ge">niko@telenet.ge</a> <a href="mailto:nikoloz.neparidze@ludwigpfeiffer.com">nikoloz.neparidze@ludwigpfeiffer.com</a>
JVA-01	AS Inshaat-N LLC (Azerbaijan)	Environmental H&S Specialist	Mr. Nodar Usupishvili Tel: +995 577 68 16 71 E-mail: <a href="mailto:n.usupashvili@gmail.com">n.usupashvili@gmail.com</a>
GUD-02	"China Nuclear Industry 23 Construction Co." LTD (CNI23)	Environmental H&S Specialist	Mr. Aleksandre (Sasha) Mchedlishvili E-mail <a href="mailto:alexandermchedlishvili1@gmail.com">alexandermchedlishvili1@gmail.com</a> Tel: +995 574 02 77 33

### 2.3 Project Activities during Current Reporting Period

28. During the reported period construction activities were implemented only under POT-01, POT-02 and JVA-01 Project, therefore only these 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.

## POT-02

29. The main activities under POT-02 during the reporting period of July-December 2019 is presented in the table 2 below:

**Table 2:** Project Progress during the July-December 2019 POT-02

POT - 02	
Works undertaken during July 2019-December 2019	For POT-02 Project was executed Soil Improvement with stone Columns, from 1884 Columns was executed 100%.
Works undertaken during July 2019-December 2019	Civil works for structures are completed 60%

30. Pumping stations under POT-02 – no construction activities started. Complete detailed Design is still missing.

## POT-01

31. The main activities under POT-01 project, carried out by contractor during the reporting period is provided in the table 3 below:

**Table 3:** POT-01, project progress during July-December 2019

HDPE PRESSURE PIPES PERFORMED ACTIVITIES	Completed Total (m)	Completed [%]
Ø 110 (mm) : 3603	3111.6	86.3
Ø 140 (mm) : 790,00	642,8	81.36%
Ø 315 (mm) : 935,00	736,7	78.8%
Ø 355 (mm) : 4 272,00	2638,7	61.68%
Ø 400 (mm) : 6,580,00	3875.7	58.9%
Ø 630 (mm) : 694,00	694	100%
TOTAL = 16,874,00	11819.4	70%
HDPE GRAVITY CORRUGATED PIPE IN LINEAR METER		
Ø 150 (mm) : 37 500,00	502.7	1.3%
Ø 200 (mm) : 57 000,00	5281	9.2%
Ø 300 (mm) : 38 000,00	4616.6	12.2%

<b>HDPE PRESSURE PIPES PERFORMED ACTIVITIES</b>	<b>Completed Total (m)</b>	<b>Completed [%]</b>
Ø 400 (mm) : 1,643,00	111.7	6.7%
Ø 500 (mm) : 1,739,6	456.8	26.26%
TOTAL = 135,882,06	10 968.8	8.1%

### JVA-01

32. The main activities under JVA-01 sub-project, carried out by contractor during the reporting period is provided in the table 4 below:

33. In the reporting period the Contractor has continued construction of Chambers, concrete manholes, compaction tests, installation of formworks for ceiling in the rehabilitation of the existing reservoir job-site, asphalt reinstatement and re-development test of well No:4A and well No:08.

**Table 4.** Project Progress during the July-December 2019 for JVA-01

<b>Jvari</b>	<b>Jvari Water Supply System Construction</b>		
Sites	Jvari Water Pipeline Network		
<b>Jvari</b>	<b>Jvari Transmission Pipelines</b>		
Works undertaken during July 2019-December 2019	Executed July 2019 – December 2019. Total Completed %:		
	OD 63 PE SDR 11 - 1175m	100 %	
	OD 90 PE SDR 11 – 2131m	100 %	
	OD 110 PE SDR 11 – 8592m	100 %	
	OD 140 PE SDR 11- 4808m	100%	
	OD 160 PE SDR 11 - 186 m	100 %	
	OD 200 PE SDR 11- 168m	100 %	
	OD 40 PE SDR 17 - 34m	100%	
	OD 50 PE SDR 17 - 9m	100%	
	OD 63 PE SDR 17 - 2395m	100%	
	OD 75 PE SDR 17 - 578m	100 %	
	OD 90 PE SDR 17 - 2022m	100%	
	OD 110 PE SDR 17 - 18514m	100%	
	OD 140 PE SDR 17 - 211m	100%	
	OD 160 PE SDR 17 - 5904m	100%	
	OD 200 PE SDR 17 - 2194m	100%	
	Total Contract Quantity – 48 918m - 100 %		
	<b>OD DCI 300 SDR7.4 - 4200m</b>	<b>0%</b>	
	<b>House Connections:</b>		
	Private houses: 850 unit	98 %	
	Apartment blocks: 1300 unit	98 %	

Jvari	Jvari Water Supply System Construction
	<b>Reservoir:</b> Civil works completed 70%  <b>Lia Well Field:</b> Mobilization – 100% All 9 wells 100% Finished Drilling (9 wells are equipped with Screens and Filters).

### GUD-02

34. The main activities under GUD-02 sub-project, carried out by contractor during the reporting period is provided in the table 5 below:

**Table 5:** Project Progress during the July-December 2019 for GUD-02

Construction Progress under GUD-02 sub-project			
Work	Contract	Completed	Completed %
<b>Sewers, Zones 1 to 5</b>	37kms	<b>Zone 2, 3 &amp; 4 Zones 1B 5 on hold 1,850 m pipes laid 107m 0</b>	<b>5%</b>
Manholes precast	1,670m		<b>6%</b>
House Connections	1,375		<b>0%</b>
<b>Water Pipes, Zone 5</b>	3,837m	<b>Zone 5, Seturebi village: UWSCG fourth meeting as agreement reversed on sewage works</b>	<b>0%</b>
<b>Raw Water Reservoir, 500m<sup>3</sup>, chlorination building &amp; gate house</b>			<b>15%</b>
<b>Well Field</b>			
Hydrogeological investigation	1No		
Borehole No 1, drill depth	200m		

Construction Progress under GUD-02 sub-project			
Borehole No 2, drill depth	200m	<b>borehole site</b>	<b>5%</b>
Borehole No 3, drill depth	200m		
Pipeline	1.5kms		

**2.4 Description of Any Changes to Project Design**

N/A

**2.4 Description of Any Changes to Agreed Construction methods**

N/A



### 3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

#### 3.1 General Description of Environmental Safeguard Activities

35. 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.
36. The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under POT-01, POT-02 and JVA-01 sub-projects.
37. Environmental Monitoring Specialist hired under the JVA-01 sub-projects Mr. Nodar Usupishvili conducted the day-to-day monitoring of the construction sites, developed monthly monitoring reports and submitted to SC/Safege.
38. Environmental Monitoring Specialist hired under the POT-01 sub-project by contractor Mr. Rezo Kalandadze conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to SC/Safege.
39. Environmental Monitoring Specialist hired under the POT-02 sub-project project by contractor Mr. Nikoloz meparidze conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to SC/Safege.
40. Environmental Monitoring Specialist hired under the GUD-02 sub-project project by contractor Mr. Aleksandre Mchedlishvili conducted the day-to-day monitoring of the construction sites, developed the monthly monitoring reports and submitted to SC/Safege.
41. Environmental Monitoring Specialist of Safege, Mr. Shalva Bosikashvili conducted monthly monitoring of project sites under T4 and developed Non-Conformance Notices where required. He also developed quarterly environmental monitoring reports based on the monthly reports submitted by Contractor and environmental site inspections and submit to UWSCG.
42. 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. Prepare Non-conformance Notice were required developed Semi-Annual Environmental Monitoring reports and submitted to ADB based on the quarterly reports prepared by SC and monitoring results.
43. 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 6 below for JVA-01, POT-01 and POT-02 sub-projects.

**Table 6:** Parametric Measurement Guidelines

Parameters	Frequency & Location	Remarks
JVA-01		

Parameters	Frequency & Location	Remarks
Air Quality	Every 6 months Mukhnari Reservoir, Networks, Transmission Main	Watering site during excavation works to avoid dust spreading  Conduct measurements of Dusts Mg/m <sup>3</sup> ; CO Mg/m <sup>3</sup> ; NO <sub>2</sub> Mg/m <sup>3</sup> ; SO <sub>2</sub> Mg/m <sup>3</sup>
Noise	Every 6 months Lia 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 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.
<b>POT-01</b>		
Air Quality	Every 6 months across the sewerage network	Watering site during excavation works to avoid dust spreading  Conduct measurements of Dusts Mg/m <sup>3</sup> ; CO Mg/m <sup>3</sup> ; NO <sub>2</sub> Mg/m <sup>3</sup> ; SO <sub>2</sub> Mg/m <sup>3</sup>

Parameters	Frequency & Location	Remarks
Noise	Every 6 months Reservoir #1, Sewerage Network	Ensure that all equipment & vehicles used for construction activity are in good condition.  Limiting working hours to 8 am – 6 pm.
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.
<b>POT-02</b>		
Air Quality	Every 6 months Waste Water Treatment Plant construction site	Watering site during excavation works to avoid dust spreading.  Conduct measurements of Dusts Mg/m <sup>3</sup> ; CO Mg/m <sup>3</sup> ; NO <sub>2</sub> Mg/m <sup>3</sup> ; SO <sub>2</sub> Mg/m <sup>3</sup>
Noise	Every 6 months Waste Water Treatment Plant construction site	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

Parameters	Frequency & Location	Remarks
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

44. Regular inspection and monitoring of construction sites were conducted only under POT-01, POT-02 and JVA-01 sub-projects by ESs of UWSCG/USIIP and Safege. The schedule of Joint inspection and summary of audits carried out under POT-01, POT-02 and JVA-01 sub-projects are provided in the Table 7 below.

**Table 7.** 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 (July-December 2019)	AS Inshaat-N LLC (Azerbaijan)  <b>JVA-01</b>	Environmental, H&S Specialist of Contractor  Mr. Nodar Usupishvili	Day to day monitoring of sites  Compliance with Environmental and HES requirements	Poor housekeeping  Safety issues on construction sites	Monthly Monitoring Reports
25.07.2019		Environmental Specialist of	Monthly Monitoring of Sites	Unsafe ladder	Verbal Instruction was given to

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
		SC Mr. Shalva Bosikashvili,		Damaged waste containers Scattered Concrete waste	contractor to improve the situation
05.11.2019		Environmental Specialist of SC Mr. Shalva Bosikashvili,  Environmental Specialist of CC Mr.Nodar Usupishvili  Environmental Specialist of USIIP  Ms. Ketevan Chomakhidze	Compliance with EH&S requirements	Poor housekeeping  Concrete washed out on the ground  Lubricant drums outdoor storage  Rebar without capping	Verbal Instruction was given to contractor to improve the situation
09.12.2019		Environmental Specialist of SC Mr. Shalva Bosikashvili,  Environmental Specialist of CC Mr.Nodar Usupishvili  Environmental Specialist of USIIP  Ms. Ketevan Chomakhidze		Poor housekeeping.  Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required.  Containers with fuel/lubricant should be managed properly (stored at the proper organized place with concrete floor and roofing) to avoid leakage and ground/water contaminatio	Verbal Instruction was given to contractor to improve the situation

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 (July-December 2019)	JV "Pfeiffer – EMIT"  <b>POT-02</b>	Environmental, H&S Specialist of Contractor  Mr. Nikoloz Neparidze	Day to day monitoring of sites.  Compliance with Environmental and HES requirements	Minimize tree cutting on construction site, due to construction purposes.  Ensure proper protection of Red Book trees on site.	Monthly Monitoring Reports
12.07.2019		Environmental specialists of USIIP Ms. Ketevan Chomakhidze  Environmental monitoring specialists of SC/Safege  Mr. Shalva Bosikashvili	Monthly monitoring of construction sites	Oil drums outdoor. Poor housekeeping. Generator without drip tray, secondary containment, spill kit, fire extinguisher, roof.	Contractor is given verbal instructions to improve the situation
26.07.2019		Environmental monitoring specialists of SC/Safege  Mr. Shalva Bosikashvili	Monthly monitoring of construction sites	Vehicles and heavy equipment parking outside the defined parking should be prohibited. Hazardous and non-hazardous waste wheelie bins are provided and placed where necessary.  All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage	Non-Compliance Notice prepared by SC and send to CC (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
				<p>finding, prohibit usage of the damaged Vehicles/Heavy equipment. General housekeeping is acceptable. Fuel, lubricants and chemicals should be stored in the building with proper ventilation or under temporary shelters.</p> <p>During refueling drip trays and absorbent pads should be used to prevent environment contamination by hydrocarbons.</p>	
2 August 2019		<p>Environmental monitoring specialists of SC/Safege</p> <p>Mr. Shalva Bosikashvili H&amp;S Specialist of Contractor</p> <p>Ms. Eni Mokia</p> <p>Environmental Specialist of Contractor Mr. Nikoloz Meparidze</p>	Monthly monitoring of construction sites	<p>The access road to the site is contaminated with concrete waste.</p> <p>Sub-Contractor (TMB Construction LLC; Prime Concrete) of CC to immediately improve the Environmental, Health and Safety Situation</p>	Non-Compliance notice issued by CC to sub-contractor (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
18 October 2019		Environmental monitoring specialists of SC/Safege  Mr. Shalva Bosikashvili  H&S Specialist of Contractor  Ms. Eni Mokia  Environmental Specialist of Contractor Mr. Nikoloz Meparidze	Monthly monitoring of construction sites	The Workers have no special belts for working on height  Sub-Contractor (TMB Construction LLC; Prime Concrete) of CC to immediately improve the Environmental, Health and Safety Situation	Non-Compliance Notice issued by contractor JV "Pfeiffer – EMIT"  to sub-contractor  (Please see Annex C)
26 November 2019		specialists of SC/Safege  Mr. Shalva Bosikashvili  H&S Specialist of Contractor  Ms. Eni Mokia  Environmental Specialist of Contractor Mr. Nikoloz Meparidze	Monthly monitoring of sites	Concrete poring activities: Concrete wash out pit should be specially installed at the batching plant for concrete mixture truck washing	Non-Compliance Notice issued by contractor JV "Pfeiffer – EMIT" to sub-contractor.  (Please see Annex C)
28 November 2019		RETA International Environmental Consultant of	ADB's Environmental	CC to improve track record system and add Accident Record Log book (with	Mission's Note prepared and



Date of Visit	Name of Company  Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
		<p>ADB under RETA 8663 - Ms. Ketid Dgebuadze.</p> <p>Environmental Specialist of USIIP Ms. Ketevan Chomakhidze</p>	Safeguard Mission	<p>recorded near misses) and measurement data – Q4 2019.</p> <p>Completed</p> <p>CC to add one more sign to the topsoil stockpiled area and in case of dust generation (especially in hot weather condition) to perform watering of topsoil – Q4 2019.</p> <p>Not yet Completed</p> <p>CC to improve hazardous waste management and place all waste containers on concrete base and provide roofing. In addition, for hazardous waste containers secondary drip trays have to be used.</p> <p>Agreement have to be signed with licensed company for disposal of hazardous waste in Q4 2019 – Q1 2020.</p> <p>Completed, agreement is signed with licensed company for</p>	<p>submitted to CC and SC</p> <p>Strong instruction is given to contractor to improve the situation by the January 2020.</p>

Date of Visit	Name of Company  Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
				<p>disposal of waste (more details are provided in chapter 4.4. Material Resources Utilization).</p> <p>CC to arrange fencing or safety barriers around the entire perimeter of the wash out pit and arrange permanent door from one side – Q4 2019.</p> <p>Not yet Implemented.</p>	<p>Instruction is given to contractor to improve the situation by the mid. January 2020</p>
08.12.2019		<p>Environmental specialists of USIIP Ms. Ketevan Chomakhidze</p> <p>Environmental monitoring specialists of SC/Safege</p> <p>Mr. Shalva Bosikashvili</p>	<p>Monthly monitoring of construction sites</p>	<p>Containers with fuel/lubricant should be managed properly (stored at the proper organized place with concrete floor and roofing) to avoid leakage and ground/water contamination.</p>	<p>Contractor is given verbal instructions to improve the situation</p>
Continuously during reporting period (July-December 2019)	<p>TAHAL Group BV</p> <p><b>POT-01</b></p>	<p>Environmental, H&amp;S Specialist of Contractor</p> <p>Mr. Rezo Kalahdadze</p>	<p>Day to day monitoring of sites</p> <p>Compliance with Environmental and HES requirements</p>	<p>Improve hazardous waste management and place all waste containers on concrete base and provide roofing.</p> <p>Hazardous waste containers secondary drip trays have to be used.</p>	<p>Monthly Monitoring Reports</p> <p>Environmental Monitoring Checklist filled</p>

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
					by contractor (Annex D)
26.07.2019		<p>Environmental Specialist of SC Mr. Shalva Bosikashvili,</p> <p>Environmental Specialist of CC Mr. Nodar Usupishvili</p> <p>Environmental Specialist of USIIP</p> <p>Ms. Ketevan Chomakhidze</p>	Monthly Monitoring report	<p>Drip trays should be provided and used at the vehicle and heavy equipment maintenance area/ Re-fuelling points No Spill Response Equipment on site;</p> <p>Spill kits should be placed at the vehicle and heavy equipment maintenance area, fuel and lubricant storage and refueling points.</p> <p>Waste storage and disposal should be improved. All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment. General housekeeping is acceptable</p> <p>Power generator should be placed in the sufficient drip</p>	Non-Compliance Notice was issued by SC (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
				tray or concrete fuel/oil containment band should be arranged around.	
23.10.2019		<p>Environmental Specialist of SC Mr. Shalva Bosikashvili,</p> <p>Environmental Specialist of CC Mr. Nodar Usupishvili</p> <p>Environmental Specialist of USIIP</p> <p>Ms. Ketevan Chomakhidze</p>	Monthly Monitoring report	<p>Visual assessment of site.</p> <p>Open trench contaminated with solid waste</p> <p>Housekeeping and waste management problems at the camp and construction site.</p> <p>Information board and restriction signs are placed at the entrance.</p> <p>Entrance is controlled by security police; entering for visitors are allowed after registration.</p> <p>Stray animals at the site should be forbidden.</p> <p>Only non-hazardous waste wheelie bins are provided and placed where necessary.</p> <p>Drip trays should be provided and used at the vehicle and heavy equipment</p>	<p>Non-Compliance Notice Issued by Supervision Consultant</p> <p>(Please see Annex C)</p> <p>Near Misses developed</p> <p>(Please see Annex E)</p>

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
				<p>maintenance area/ Re-fueling points</p> <p>No Spill Response Equipment on site; Spill kits should be placed at the vehicle and heavy equipment maintenance area, fuel and lubricant storage and refueling points. Waste storage and disposal should be improved.</p> <p>All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment.</p>	
06.11.2019		<p>Environmental Specialist of SC Mr. Shalva Bosikashvili,</p> <p>Environmental Specialist of CC Mr. Nodar Usupishvili</p> <p>Environmental Specialist of USIIP</p> <p>Ms. Ketevan</p>	Monthly Monitoring report	<p>Visual assessment of site.</p> <p>No trenches shall be kept open in the night/after workhours.</p>	Verbal instruction is given to contractor

Date of Visit	Name of Company Name of Contract	Auditors Name	Purpose of audit	Summary of any Significant Findings	Cross Reference to Audit Report
28 November 2019		<p>International Environmental Consultant of ADB under RETA 8663 - Ms. Ketil Dgebuadze.</p> <p>Environmental Specialist of USIIP Ms. Ketevan Chomakhidze</p>	ADB's Environmental Safeguard Mission	<p>CC to improve track record system and keep IEE, Accident Record Log book (with recorded near misses and incidents) and measurement data at camp site - Q4/2019.</p> <p>Completed.</p> <p>CC to dispose place for hazardous waste containers with concrete base and provide roofing – Q4/2019.</p> <p>Completed</p> <p>CC to add ladders in deep trenches for safety of workers – Q4/2019.</p> <p>Completed</p> <p>CC and IPMO to agree the location of dump site for final disposal of old pipes – Q4/2019 - Q1/2020.</p> <p>Not-yet completed</p>	Mission's Note prepared and submitted to CC and SC
Continuously during reporting period (July-December 2019)	<b>China Nuclear Industry 23 Construction Co., Ltd</b>	<p>Environmental, H&amp;S Specialist of Contractor</p> <p>Mr. Aleksandre</p>	<p>Day to day monitoring of sites</p> <p>Compliance with Environmental</p>	Minimize tree cutting on construction site, due to construction purposes	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
		(Sasha) Mchedlishvili	and HES requirements	Ensure proper protection of Red Book trees on site.	
2 October 2019		Environmental specialists of USIIP Ms.Ketevan Chomakhidze  Environmental monitoring specialists of SC/Safege  Mr.Shalva Bosikashvili		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 workhours.	Monthly Monitoring Reports of CC  Quarterly monitoring reports of SC
30.09.2019		Environmental specialists of USIIP Ms. Ketevan Chomakhidze  Environmental monitoring specialists of SC/Safege  Mr. Shalva Bosikashvili	Monthly monitoring of construction sites	Visual assessment of site.  Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required.	Contractor is given verbal instructions to improve the situation.

### 3.3 Issues Tracking (Based on Non-Conformance Notices)

45. Non-Conformances have been observed during the site visits under POT-02, JVA-01 and POT-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. Environmental team of SAFEGE 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.
46. A summary of the identified environmental issues under POT-02, POT-01 and JVA-01 sub-projects for January-June 2019 is presented in table 8, 9, 10 and 11 below.

**Table 8:** Summary of Issues Tracking Activity for Current Period – POT-02

<b>Total Number of Issues for Project</b>	<b>12</b>
<b>Issues Opened This Reporting Period</b>	2
<b>Issues Closed This Reporting Period</b>	10
<b>Percentage Closed</b>	83%

**Table 9:** Summary of Issues Tracking Activity for Current Period – JVA-01

<b>Total Number of Issues for Project</b>	<b>13</b>
<b>Issues Opened This Reporting Period</b>	3
<b>Issues Closed This Reporting Period</b>	10
<b>Percentage Closed</b>	77%

**Table 10:** Summary of Issues Tracking Activity for Current Period – POT-01

**Summary Table POT-01**

<b>Total Number of Issues for Project</b>	<b>15</b>
<b>Issues Opened This Reporting Period</b>	3
<b>Issues Closed This Reporting Period</b>	12
<b>Percentage Closed</b>	80%

**Table 11:** Summary of Issues Tracking Activity for Current Period – GUD-02

**Summary Table GUD-02**

<b>Total Number of Issues for Project</b>	<b>7</b>
<b>Issues Opened This Reporting Period</b>	3
<b>Issues Closed This Reporting Period</b>	4
<b>Percentage Closed</b>	57%



### 3.4 Trends

47. To identify trends in environmental issues, information from previous Semi-Annual EMR (January-June 2019) is used. The summary of the issues is provided in the table 12 below.

**Table 12:** Summary of identified trends in environmental issues

Semi-Annual EMR No	Total No of Issues	% issues Closed	% issues closed late
January-June 2019	50	76%	14%
July-December 2019	47	74%	16%

48. All major Non-Conformances under USIIP/T4 were reported verbally to the contractor during the reporting period and a written note of non-compliance was not prepared and submitted to the contractor.

### 3.5 Unanticipated Environmental Impacts or Risks

N/A

## 4 RESULTS OF ENVIRONMENTAL MONITORING

### 4.1 Overview of Monitoring Conducted during Current Period

49. During the reporting period Environmental measurements of Noise level and Ambient air Quality were carried out by contractor only under Pot-02 sub-project.
50. Noise and air pollution standards defined by IFC/WHO 1999, are presented in the Table 13 and 14 below.

**Table 13** 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; educational	55	45	55	45
Industrial; commercial	70	70	70	70

51. Air pollution standards by IFC/WHO 1999, are presented in the Table 14 below.

**Table 14:** Air pollution Guidelines

Contaminants	IFC/WHO Guideline Value (Limit mg/m <sup>3</sup> )
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 <sub>2</sub> )	0,2/ 1 Hour 0,04/1 Year
Aldehyde	n/a

52. Environmental Quality Measurements of noise level and ambient air quality were conducted only under POT-02 sub-project during the reporting period, despite the numerous verbal and written instructions given to contractor and Supervision Company. Quality measurement in Jvari was not carried out due to the fact that all construction work was carried out in remote areas from the settlement. CC and SC are strongly recommended to carry out environmental quality measurements, as per of their environmental obligations, especially as part of the POT-01 and GUD-02 sub-projects in January 2020, results of which will be reflected in the next SAEMR in January-June 2020.
53. Monitoring measurements of noise level and ambient air quality under POT-02 project was conducted by the National Environmental Agency under the MEPA in the WWTP construction area in 7 November 2019 (See Table 15 and Annex A). Location and data are included in the table below. The next monitoring measurements will be conducted in May 2020 and results will be reflected in the next July-December EMR 2019.
54. According to data received in November 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 Table 13 and 15 above. It should be noted also that measurements carried out at construction sites, were temporary and conducted during the daytime from 12:00pm to 13:00pm and no complaints were received from the local population about the noise during the reporting period.

**Table 15:** Monitoring Measurement of Noise and Air Quality, POT-02

N	Place of measurement	Coordinates	Results				
			Dusts Mg/m3	CO Mg/m3	NO2 Mg/m3	SO2 Mg/m3	Noise dBA (1-hour)
	National Environmental Standard (Maximum Permissible Level)		0,5	5,0	0,2	0,5	55 Residential; Institutional; Educational  70 Industrial; commercial
1	Poti WWTP 0719295 4675729		0.074	0.14	0.002	<0.247	<sup>1</sup> 54.3

<sup>1</sup> 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.

## 4.2 Trends

55. All mitigation measures identified within the POT-01, POT-02 and JVA-01 projects are effective and no additional measures are required.

## 4.3 Summary of Monitoring Outcomes

56. Noise level during the construction period under POT-02 sub-project doesn't exceed the existing standards of IFC/WHO and therefore no additional mitigations are required by contractor. Contractors under JVA-01 and POT-01 sub-project as well as Supervision Company SAFEGE was strongly requested to provide environmental quality measurements under JVARI-01 and POT-01 sub-projects as well for the next Semi-annual EMR of January-June 2020.

## 4.4 Material Resources Utilisation

### 4.4.1 Current Period

57. The material resources utilized by contractor - TAHAL Group BV, under POT-01 sub-project during the reporting period – July-December 2019 is provided in the table 16 below.

**Table 16:** Material Resources Utilization under POT-01 Sub-project, July-December 2019

Material Resources Utilization	
Water M <sup>3</sup> Indication	1655 M <sup>3</sup>
Electricity KV Indication	68430.4 KW
Gas	<b>1644 M<sup>3</sup></b>

59. The following table provides information on the consumption of water and electricity in the framework of the POT-02 sub-project by the contractor - JV "Pfeiffer – EMIT".

**Table 17:** Material Resources Utilization under POT-02 Sub-project, July-December 2019

Material Resources Utilization	
Drinking Water	600 liter (daily)
Technical Water	650 liter (daily)
Electricity KV Indication	6000. KW

61. There is no information on material resources used during the reporting period under the Jvari-01 subproject from the contractor - AS Inshaat-N LLC (Azerbaijan) and SC / SAFEGE, despite numerous written and oral instructions and requests issued by Environmental

Consultant of UWSCG / USIIP. The UWSCG will receive this information for the next reporting period, January-June 2020, and will reflect it in the corresponding SAEMR.

#### 4.4.2 Cumulative Resource Utilisation

N/A

#### 4.5 Waste Management

##### 4.5.1 Current Period

62. At the construction sites there are mainly produced household, construction (inert, surplus soil) and hazardous waste. 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. The amount of generated household under POT-01 sub-project is provided in the table 18 below:

**Table 18:** Generated Waste under POT-01 Sub-project, July-December 2019

Material Resources Utilization	
Household Waste	3600 kg (average 20kg daily)
Hazardous Waste	80 kg

64. 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.
65. The amount of generated household under POT-02 sub-project is provided in the table 19 below:

**Table 19:** Generated Waste under POT-02 Sub-project, July-December 2019

Material Resources Utilization	
Household Waste	3600 kg (average 20kg daily)
Hazardous Waste	200 kg (during the week)

67. The local municipality is responsible for the disposal of household waste under the POT-02 subproject, and the contractor has signed a contract with Medal Technologies Ltd. for the disposal of hazardous waste.

## 4.5.2 Cumulative Waste Generation

### 4.6 Health and Safety

#### 4.6.1 Community Health and Safety

68. No community incidents have been reported to SC during reporting period under POT-01, POT-02 and JVA-01 sub-projects.

#### 4.6.2 Worker Safety and Health

##### JVA-01

69. Environmental H&S Manager of JVA-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/SAFEGE and providing relevant reports on a regular basis taking into account any recommendations given by SC/UWSCG engineers.
70. Health & safety and environment issues which were covered during the reporting period are as follows:
- PPE;
  - Groundworks;
  - Manual works;
  - Upgrade Safety Hard and Warning Barricade
71. Contractor under JVA-01 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 JVA-01 project.
72. The following Near Misses were reported by SC under POT-01 sub-project, which may be resulted in Workers' Health and Safety problems (Please see Annex E):
- Some workers don't wear PPE, while PPE were in place.
  - No protection in open trenches. No shoring. Worker without PPE in the trench
  - Transportation with improper equipment.
73. During the reporting period, within the framework of the Pot-01 subproject, no incidents with workers were registered. Notwithstanding the above, SC and UWSCG / USIIP reported that their H&S manager would continue to carry out the necessary H&S training.
74. No near-misses were reported under ZUG-01 and POT-02 as well, as there were no construction works carried out during the reporting period.

#### **4.7 Training**

- 75.** Routine personnel trainings and toolbox talks happen by the construction companies almost on daily basis under JVA-01 sub-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.

## V. FUNCTIONING OF THE SEMP

### 5.1 SEMP Review

- 76.** All SSEMPs under ZUG-01, POT-01, POT-02 and JVA-01 projects were prepared by Contractor, endorsed by SC and approved by UWSCG and reviewed/commented by the RETA Regional Environmental Consultant of ADB under RETA 8663 - Ms. Keti Dgebuadze.
- 77.** Location Specific Environmental Management Plan under JVA-01 project was prepared for Lia well fields within the reporting period (July 2018).
- 78.** SSEMPs prepared by contractors, within the framework of ZUG-01, POT-01, POT-02 and JVA-01 sub-projects during the current and previous reporting periods are presented in table 19 below.
- 79.** SEMP for construction of Water Reservoir and well fields under GUD-02 is prepared by contractor and submitted to SC for their endorsement.

**Table 20:** SSEMPs Prepared under ZUG-01, POT-01, POT-02 and JVA-01 Sub-projects are given in the table below:

No	Project/Site	Date of Approval
1	ZUG-01 – Ingiri Well fields and Pumping Station	March 2016
2	ZUG-01 – Bashi Reservoir	January 2016
3	Pot-02/Poti WWTP	31 May 2018
4	Jvari-01/Lia Well Fields	July 2018

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



## **VI. GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT**

### **6.1 Good Practice**

**81.** N/A

### **6.2 Opportunities for Improvement**

**82.** N/A

## **VII. SUMMARY AND RECOMMENDATIONS**

### **7.1 Summary**

- 83.** During the reported period construction activities were implemented under POT-01, POT-02, JVA-01 and GUD-02 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 Safège and UWSCG/USIIP on a regular basis.
- 84.** 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.
- 85.** Environmental Monitoring Specialist of Safège, Mr. Shalva Bosikashvili conducted monthly monitoring of project sites under T4 and developed Non-Conformance Notice 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.
- 86.** The monitoring activities included monitoring of compliance of construction activities to the IEE/EMP and SEMP requirements under POT-01, POT-02, JVA-01 and GUD-02 sub-projects.
- 87.** 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.
- 88.** 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.
- 89.** 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.
- 90.** Necessary instructions have been given to the Contractor by UWSCG and SC to follow the EMP's and SEMP's requirements for GUD-02, POT-01, POT-02 and JVA-01 sub-projects.

### **7.2 Recommendations**

- 91.** During the reporting period, from July to December 2019, the T4 of Investment Program was implemented in accordance with the requirements of ADB - SPS 2009 and the National Legislation.
- 92.** More detailed recommendations for the implementation of T4 during the next reporting period January-June 2020 are provided in the table 21 below:

**Table 21:** Recommendations to Address Environmental Issues under POT-01, POT-02, JVA-01 and GUD-02 sub-projects.

Recommendations POT-01, JVA-01, POT-02 and GUD-02sub-projects	
Recommendations POT-01	Implementation status and date
<b>Poti Network</b>	
CC and IPMO to agree the location of dump site for final disposal of old pipes – Q4/2019 -Q1/2020.	Instruction are given to contractor to improve the situation and to conduct following mitigation measures by the January 2020:
Drip trays should be provided and used at the vehicle and heavy equipment maintenance area/ Re-fueling points. No Spill Response Equipment on site.	
Spill kits should be placed at the vehicle and heavy equipment maintenance area, fuel and lubricant storage and refueling points.	
Waste storage and disposal should be improved. All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment. General housekeeping is acceptable	
Power generator should be placed in the sufficient drip tray or concrete fuel/oil containment band should be arranged around.	
<b>JVA-01</b>	
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	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 January 2020.
Trench construction shall be taken up in small segments, so that work (excavation, pipe laying and	

<b>Recommendations POT-01, JVA-01, POT-02 and GUD-02sub-projects</b>	
refilling) in each segment is completed in a day, No trenches shall be kept open in the night/after work hours	
Containers with fuel/lubricant should be managed properly (stored at the proper organized place with concrete floor and roofing) to avoid leakage and ground/water contamination	
<b>POT-02</b>	
C to add one more sign to the topsoil stockpiled area and in case of dust generation (especially in hot weather condition) to perform watering of topsoil – Q4 2019.	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 January 2020.
CC to arrange fencing or safety barriers around the entire perimeter of the wash out pit and arrange permanent door from one side – Q4 2019.	
Vehicles and heavy equipment parking outside the defined parking should be prohibited. Hazardous and non hazardous waste wheelie bins are provided and placed where necessary.	
All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment.	
General housekeeping is acceptable Fuel, lubricants and chemicals should be stored in the building with proper ventilation or under temporary shelters. During refueling drip trays and absorbent pads should be used to prevent environment contamination by hydrocarbons.	
<b>GUD-02</b>	
Minimize tree cutting on construction site, due to construction purposes 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.	Contractor is given strong instruction to improve the situation, develop CAP (if requested) and send improved photos of

Recommendations POT-01, JVA-01, POT-02 and GUD-02sub-projects	
Providing wooden walkways/planks across trenches for pedestrians and metal sheets where vehicle access is required	Site to SC and UWSCG by the end of January 2020.
Ensure proper protection of Red Book trees on site	
No trenches shall be kept open in the night/after workhours	

93. Conduct Post-Construction Environmental Audit by the May 2020 for ZUG-01 project and reflect findings of the audit in the next Semi-Annual EMR of July-December 2019.

94. Conduct monitoring of Ambient Noise and Air quality under POT-01 project at the nearest sensitive receptors in May 2020.

**Table 22:** The Specific Plan for Environmental Measurement under POT-01 Project

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

95. Conduct monitoring of Noise and Ambient Air quality under POT-02 project near the sensitive receptors of Construction sites in May 2020.

**Table 23:** The Specific Plan for Environmental Measurement under POT-01 Project

Parameters	Quarterly measurement
Dust	May 2020
Vibration	May 2020
Carbon monoxide	May 2020

Nitrogen dioxide	May 2020
Sulfur dioxide	May 2020
Noise	May 2020

96. Conduct monitoring of Noise and Ambient Air quality under JVA-01 project at the nearest sensitive receptors of Construction sites in May 2020.

**Table 24:** The Specific Plan for Environmental Measurement under JVA-01 Project

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

**ANNEX A: Environmental Monitoring Data of Noise and Ambient Air Quality Pot-02**

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



სსიპ გარემოს ეროვნული სააგენტო  
 LEPL NATIONAL ENVIRONMENTAL AGENCY

N 12/198

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 / m3				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. Kargareli

Chief Specialist:

S. Khatsava

Agreed:

Head of the Department



M. Arabidze

07/11/2

**ANNEX B: Project Photos**

**Photos- POT-01, Network**



**JVA-01, Network**





**JVA-01 Reservoir**



**Photos POT-02, Construction of WWTP**





## ANNEX C: NON-COMPLIANCE NOTICE (POT-01)

### Non-Compliance Notice

Date & Time: 23.10.2019 Location: Poti 01

Subject of Inspection: Environmental Monitoring

Supervisor: Stephen Bayley, Shalva Bosikashvili Contact Details: \_\_\_\_\_

People Interviewed:

No	Name	Position	Comment
1	Moshe Turiski	Project Manager	
2	Shalva Bosikashvili	Environemntal Specialist	



1. Open trench contaminated with solid waste
2. Generator without drip tray and power wire on the ground

#### General Housekeeping

- Housekeeping and waste management problems at the camp and construction site

**Environment**

- Information board and restriction signs are placed at the entrance.
- Entrance is controlled by security police; enter for visitors are allowed after registration..
- Stray animals at the site should be forbidden.

**Sanitation**

- Toilet is clean.

**Vehicles & Equipment Safety**

- Some leakages were detected

**Environment**

- Only non hazardous waste wheelie bins are provided and placed where necessary.
- Drip trays should be provided and used at the vehicle and heavy equipment maintenance area/ Re-fuelling points
- No Spill Response Equipment on site; Spill kits should be placed at the vehicle and heavy equipment maintenance area, fuel and lubricant storage and refueling points.
- Waste storage and disposal should be improved.
- All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment.
- General housekeeping is acceptable
- Power generator should be placed in the sufficient drip tray or concrete fuel/oil containment band should be arranged around.

**Other (specify):**

Inspector (s):

ShalvaBosikashvili  
Name

Environmental Specialist  
Position

**Non-Compliance Notice**

Date & Time: 30.09.2019 Location: Poti 01

Subject of Inspection: HSE practice/Performance and culture on site

Supervisor: Shalva Bosikashvili, Stephen Bayley Contact Details: \_\_\_\_\_

People Interviewed:

No	Name	Position	Comment
1	Moshe Turiski	Project Manager	
2	Environmental Specialist	Field HSE Manager	

General Housekeeping
<ul style="list-style-type: none"><li>Housekeeping and waste management problems at the camp and construction site</li></ul>

Environment
<ul style="list-style-type: none"><li>Only non hazardous waste wheelie bins are provided and placed where necessary.</li><li>Drip trays should be provided and used at the vehicle and heavy equipment maintenance area/ Re-fuelling points</li><li>No Spill Response Equipment on site; Spill kits should be placed at the vehicle and heavy equipment maintenance area, fuel and lubricant storage and refueling points.</li><li>Waste storage and disposal should be improved.</li><li>All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment.</li><li>General housekeeping is acceptable</li><li>Power generator should be placed in the sufficient drip tray or concrete fuel/oil containment band should be arranged around.</li></ul>

Cultural heritage:
<ul style="list-style-type: none"><li>N/A</li></ul>

Other (specify):

Inspector (s):

<u>ShalvaBosikashvili</u>	<u>Environmental Specialist</u>
Name	Position

<u>Rezo Kalandadze</u>	<u>HSE Manager</u>
Name	Position

**NON-COMPLIANCE NOTICE POT-02**



**Non-Compliance Notice - შეუსაბამობის რეპორტი**

Project / პროექტი: STP Construction in POT1	DATE OF ISSUANCE/ თარიღი: 02.08.2019  NON-COMPLIANCE NOTICE № 1
Contract No / კონტრაქტი: P43405-IC-POTI-02	
SUBCONTRACTOR / ქვეკონტრაქტორი: PRIME CONCRATE	
SITE/ ობიექტი: WWTP POTI -02	
SECTION/ სექცია:	
The subcontractor shall remediate, on the referenced Contract, of the following notice on Cleaning of contaminated soil from concrete waste to be implemented <b>urgently</b> .	
<b>DESCRIPTION OF INCIDENT FOR NON-COMPLIANCE OF HEALTH AND SAFETY NORMS / შეუსაბამობის აღწერა:</b>	
<ul style="list-style-type: none"> <li>The access road to the site is contaminated with concrete west</li> <li>ობიექტთან მისასვლელი გზა დაბინძურებულია ბეტონის წარჩენებით</li> </ul>	
<b>PHOTO DOCUMENTATION / ფოტო დასაბუთება:</b>	
All these conditions have to be remedied within / აღნიშნული ხარვეზი უნდა იქნას აღმოფხვრილი: <b>24 h – 24 ს</b>	
<b>SIGNATURE PLACE / ხელმოწერა</b>	
SUBCONTRACTOR / ქვეკონტრაქტორი	
CONTRACTOR REPRESENTATIVE / კონტრაქტორის მონიტორი	

**Non-Compliance Notice - შეუსაბამობის რეპორტი**

<b>Project / პროექტი:</b> STP Construction in POTI	<b>DATE OF ISSUANCE/ თარიღი:</b> 18.09.2019  <b>NON-COMPLIANCE NOTICE N#</b> 2
<b>Contract No / კონტრაქტი:</b> P43405-IC-POTI-02	
<b>SUBCONTRACTOR / ქვეკონტრაქტორი:</b> TMP CONSTRUCTION	
<b>SITE/ ობიექტი:</b> WWTP POTI -02	
<b>SECTION/ სექცია:</b>	

The subcontractor shall remediate, on the referenced Contract, of the following notice on health, safety and environment measures to be implemented **urgently**.

**DESCRIPTION OF INCIDENT FOR NON-COMPLIANCE OF HEALTH AND SAFETY NORMS / შეუსაბამობის აღწერა:**

The workers have not special belts for the working on height.

მუშათა პერსონალი არ იყენებს სიმაღლეზე მუშაობისთვის აუცილებელ დამცავ ღვედს.

**PHOTO DOCUMENTATION / ფოტო დოკუმენტაცია:**





All these conditions have to be remedied within immediatley / აღნიშნული ხარვეზი უნდა იქნას აღმოფხვრილი დაუყოვნებლივ.

<b>SIGNATURE PLACE / ხელმოწერა</b>	
<b>SUBCONTRACTOR REPRESENTATIVE / ქვეკონტრაქტორის წარმომადგენელი</b>	ი.მაჩაბელი / I.Machabeli
<b>CONTRACTOR REPRESENTATIVE / კონტრაქტორის წარმომადგენელი</b>	ი.მიქაძე / I.Mikadze



**Non-Compliance Notice - შეუსაბამობის რეპორტი**

Project / პროექტი: STP Construction in POTI 02		DATE OF ISSUANCE/ თარიღი: 26.11.2019  NON-COMPLIANCE NOTICE N4
Contract No / კონტრაქტი: P43405-IC-POTI-02		
SUBCONTRACTORS / ქვეკონტრაქტორები: TMP Construction LLC ; Prime Concrete		
SITE/ ობიექტი: WWTP POTI -02		
SECTION/ სექცია:		
<p>The subcontractor shall remediate on the referenced Contract following notice on Health, Safety and Environmental measures/ ხელშეკრულების თანახმად ქვეკონტრაქტორმა უნდა გამოასწოროს აღნიშნული შეტყობინება და მიიღოს შესაბამისი ზომები უსაფრთხოების, უსაფრთხოების და გარემოსდაცვითის საკითხებში.</p> <p><b>DESCRIPTION OF INCIDENT FOR NON-COMPLIANCE OF HEALTH AND SAFETY NORMS / შეუსაბამობის აღწერა:</b> Concrete pouring Activities/ბეტონის ჩასხმა Concrete washout pit (plastic lined) should be specially installed at the batching plant for concrete mixer trucks washing/ ბეტონის მიქსერების გასარეცხად ობიექტზე უნდა იქნას მოწყობილი სპეციალური ბეტონის სარეცხი ორმო (წყალგამტარი მეშრანით).</p> <p><b>PHOTO DOCUMENTATION / ფოტო დასაბუთება:</b></p>		
		
<p>The action should be remedied within 72 Hrs. აღნიშნული ხარვეზი უნდა იქნას აღმოფხვრილი 72 სთ-ში:</p>		
<b>SIGNATURE PLACE / ხელმოწერა</b>		
SUBCONTRACTOR / ქვეკონტრაქტორი		
CONTRACTOR REPRESENTATIVE / კონტრაქტორი		

**Non-Compliance Notice - შეუსაბამობის რეპორტი**

Project / პროექტი: STP Construction in POTI 02	DATE OF ISSUANCE/ თარიღი: 29.10.2  NON-COMPLIANCE NOTICE N# 3
Contract No / კონტრაქტი: P43405-IC-POTI-02	
SUBCONTRACTOR / ქვეკონტრაქტორი: TMP Construction LLC	
SITE/ ობიექტი: WWTP POTI -02	
SECTION/ სექცია:	
The subcontractor shall remediate, on the referenced Contract, of the following notice on health, safety and environme measures to be implemented in 24 Hours	

**DESCRIPTION OF INCIDENT FOR NON-COMPLIANCE OF HEATH AND SAFETY NORMS / შეუსაბამობის აღწერა:**

- In case of working on 2 meters and more all workers should be equipped with protective equipment e.g. shoes, high visibility vests, anti-dumping equipment, gloves and etc.)
- All waste (including Hazardous) should be placed only at the proper separated containers.
- Tanks of fuel/lubricants should be managed properly
- All construction materials should be properly segregated and stored adequately.
- Construction waste should be placed properly ( fenced with adequate signs)
- Site internally should be arranged properly and cleaned regularly

**PHOTO DOCUMENTATION / ფოტო დასაბუთება:**





Spilled soil should be removed



Household waste placed in containers

All these conditions have to be remedied within / აღნიშნული ხარვეზი უნდა იქნას აღმოფხვრალი:

**The action should be taken immediately.**

SIGNATURE PLACE / ხელმოწერა

SUBCONTRACTOR / ქვეკონტრაქტორი



CONTRACTOR REPRESENTATIVE / კონტრაქტორი



## SAFEGE/ESL HSE INSPECTION REPORT

### Non-Compliance Notice

Date & Time: 26.07.2019 Location: Poti 02

Subject of Inspection: HSE practice/Performance and culture on site

Supervisor: Shalva Bosikashvili Contact Details: \_\_\_\_\_

People Interviewed:

No	Name	Position	Comment
1	Christian Zschorn	Project Manager	
2	Eni Mokia	Field HSE Manager	
3.	Shalva Bosikashvili	Environmental Specialist SAFEGE	



Running power generators outdoor without drip trays



Unacceptable housekeeping



Oil drums stored outdoor.

<b>General Housekeeping</b>
<ul style="list-style-type: none"> <li>Housekeeping is not satisfactory.</li> </ul>

<b>Environment</b>
<ul style="list-style-type: none"> <li>Vehicles and heavy equipment parking outside the defined parking should be prohibited. Hazardous and non hazardous waste wheelie bins are provided and placed where necessary.</li> <li>All vehicles and heavy equipment should be inspected on daily basis (use relevant checklists), in case of leakage finding, prohibit usage of the damaged Vehicles/Heavy equipment.</li> <li>General housekeeping is acceptable</li> <li><b>Fuel, lubricants and chemicals should be stored in the building with proper ventilation or under temporary shelters.</b></li> <li><b>During refueling drip trays and absorbent pads should be used to prevent environment contamination by hydrocarbons.</b></li> </ul>

<b>Social:</b>
<ul style="list-style-type: none"> <li>No social issues were raised; all the activities are being preliminary agreed with local government representatives. Hard copies kept in office.</li> </ul>

<b>Cultural heritage:</b>
<ul style="list-style-type: none"> <li>N/A</li> </ul>

<b>Other (specify):</b>

Inspector (s):

<u>Shalva Bosikashvili</u>	<u>Environmental Specialist</u>
Name	Position

<u>Eni Mokia</u>	<u>HSE Manager</u>
Name	Position

## ANNEX D: ENVIRONMENTAL MONITORING CHECKLIST

Monitoring has been conducted by Rezo Kalandadze, the Tahal Group Environmental Manager, for the project of construction of the Poti city sewage system. The monitoring results and comments are presented below.

Environmental weekly Monitoring Report #28	
Name of the Contractor and project number/lot	TAHAL GROUP B. V. Poti sewage system construction Contract No: P43405-ICB-POT-01
Name of the Consultant company	SAFEGE Engineering Solution
Description and Location of the Site	<p>Pot-01 Site</p> <p>This project is located in City of Poti. The City of Poti is the most developed part of the Samegrelo - Zemo Svaneti region of Georgia. It is located on the Black Sea and lies some 360 km to the west from the capital City of Tbilisi. To the west it borders the Black Sea; to the north the right tributary of the rivers Rioni and Khobi and to the southeast the river Kapartchina and Paliastomi Lake. Regional location of Poti is shown in below.</p> <p>The project measures for the sewer network comprise the laying of 150 km new gravity pipes (DN 100 to DN 1200) and 25 km new pressure pipes (OD 110 to OD 630). The sewer network is divided into two zones. Poti South and Poti North. The southern part will serve an existing wastewater treatment plant in the South of Poti, the northern part - about 85% of the total network - will serve the new wastewater treatment plant to be constructed under the present project.</p> <p>As the terrain is flat a number of pumping stations of different size will be constructed. All existing pumping stations will be replaced.</p>
Employer	"United Water Supply Company of Georgia", LLC

Monitoring date (Year/Month/Day)	2019/06/10 – 2019/06/14				
Environmental specialist's Identity (name, last name, contact information)	Contractor: <b>TAHAL GROUP B. V.</b> <b>Moshe Turiski</b> <b>595 750227</b>				
Rezo Kalandadze					
Phone Number: 599 388026					
Current Stage of Civil Works	On-going				
Weather Conditions	Sunny.				
Topics	Status				Comments
	Yes	Partially	No	N/A	
Contractor company have approved EMP and H&S plans	Yes				EMP and H&S plans prepared and approved by the Engineer.

The construction contractor has the national HSE Specialist in the staff.	Yes				
The Construction subcontractors have the national HSE officers in the staff.			NO		The contractor's EHS specialist have selected the persons from each site staff who has been providing the workers with daily safety tool box talks. Each subcontractor must have full time, skilled safety officer on the working site. The issue is under discussion.
HSE rules and regulations are observed on the working sites and at the camp according to the Georgian and international regulations.	Yes				The observance of the HSE rules and regulations has been monitored on the daily bases. If violation takes place it is responded and corrected immediately.
Lifting operations are conducted with observing of the lifting safety rules.		Partially			Lifting operations are under the control by the contractors HSE staff. In case of non-compliance of the HSE rules corrective actions are taken immediately Improper lifting ropes ( Photo below) and lack of operators certifications are the issue currently.

The Construction Contractor engages 1 archeologist for daily supervision (during soil excavation activities).			NO		The site engineers have been instructed that, in case of archeological findings, immediately stop working activities and contact the contractor's environmental manager.
Monthly EHS monitoring reports are prepared by the subcontractor and submitted to the contractor			NO		The subcontractor's site safety officer is responsible to be on site all the time of working activities, provide the working team with daily tool box talk and inform the contractor's safety specialist by phone if there is any safety problem that he could not handle to mitigate/eliminate. Weekly report has been prepared by the contractor EHS manager.
Monitoring reports disclosed to local communities and relevant government agencies.				N/A	
Complaints log exists on construction site.	Yes				
Site inspection non-compliance notices issued and corrective action requests implemented.	Yes				
The Contractor has an environmental permit for production of construction materials (cement, asphalt, brick, etc.)			No		The contractor doesn't produce construction material.



	The Contractor has a permit or relevant contract from the Municipality for final disposal of construction waste.	Yes			The construction wastes have been disposed at the territories which are approved by the local municipality to be used for the relevant purpose.
	The Contractor has a permit for final disposal of municipal waste.			NO	As construction has been conducted in the urban areas, the municipal waste is being disposed by the municipal cleaning service
	The Contractor has executed the contract with the licensed organization on the hand-over and disposal of hazardous waste.			NO	The Contractor will contact to the hazardous waste disposal company when the waste is in a considerable quantity.
	The Contractor has a license for tree felling			NO	The CONTRACTOR will contact with the local municipality and ask for wood specialist/botanist to attend the group for identification of a tree species which are enlisted in the red list of Georgia or under special code of tree cutting (Forest code of Georgia). After the mentioned above procedure the permit will be issued by the local municipality.
	The site is fenced and warning signs are arranged.		Partially		Working activities are conducted in the urban area streets and there is no possibility to fence the site. The safety portable fences and warning signs have been used at the working areas.

	The construction works do not impede pedestrian and motor traffic, or the temporary detour routs are organized.		Partially		Sometimes the working activities require the roads to be closed for a short while. In such case there always are the alternative detour roads organized and the traffic is always under control. Temporary bridges with hand rails must be installed at the exits from the private properties and enterprises.
	The working hours are observed in the human settlements and their vicinity.		Partially		Occasionally the contractor will be forced to work nights due to daytime heavy traffic in the central parts of the city. Proper lighting and additional safety measures will be applied.
	During the required temporary disruptions of water, power or gas supply, the customers are notified in advance.	Yes			
	All generators and other portable equipment, working on the sites and at the camp, running petroleum product, are placed in the secondary containment(drip tray).			No	Presently in case of soil contamination, the soil is cut and brought to the hazardous waste area.
	The construction machinery and equipment is in good order (there is no leakage of fuels and lubricants, nor excess noise and emissions) and the operators are skilled and certified.		Partially		Time after time leakages of fuel, lubricants and oil have been fixed. Contaminated materials have been immediately removed to the Hazardous Materials. Currently the operators certificates are the issue.
	Each working site are provided with an oil spill response kit (absorbent pads and booms)			No	Currently in case of soil contamination, the soil is cut and brought to the hazardous waste area.

	The construction materials and waste are temporarily stored in the specific place on-site, designated for this purpose.	Yes					The Contractor still awaiting the written permit from the Employer for the sewage sludge disposal place. Currently the sludge is being disposed into the concrete reservoir at the camp.
	The construction waste is transported from the site on regular basis to the officially designated site.	Yes					
	During transportation, the construction materials and waste are covered with tarpaulin due to not generating dust or debris falling down.	Yes					
	The sites are watered during the periods of intensive dust generation and dry weather conditions.	Yes					
	The containers for collection of domestic waste are placed in the construction site.					N/A	The domestic waste has been segregated (plastics separated) collected in plastic bags and placed into the municipal waste bins.
	The construction sites is supplied with water and toilets in good sanitary condition.			NO			The nearby municipal toilets are in use.

	During excavation works, in case of any archeological chance finds, the works are suspended and the employer is notified in written form.	Yes					A similar case has not yet been occurred.
	Measurement of the noise, dust and vibration is applied as per project EMP.	Yes					
Top soil protection	Topsoil is stripped and stored according to standard procedures and used further for landscaping and reinstatement.	Yes					The Contractor have not stripped topsoil at any working site(there was no topsoil on contractor's working sites so far)
Pollution Prevention	Pollution prevention and response measures are implemented.	Yes					
Prevention of trees	Trees are protected from cutting or unintentional damage. Cutting is performed only in cases of proved necessity and in agreement with municipality.	Yes					

Safety Measures	The workers use all personal protective equipment required for individual technological processes (hard hats, gloves, respirators, glasses, etc.).	Yes				At this time the issue is solved. Monitoring of the issue is conducted on the daily bases.
	The sites are provided with the firefighting and emergency medical aid kits, site is fenced, provided with lighting, signs are installed, etc .	Yes				Firefighting and emergency medical aid kit are at office. The site engineer instructed to have the first aid kit on the sites. The issue is solved.
	Deep excavations have been inspected on the presence of H2S gas at the bottom of the pits.			NO		Gas detector should be obtained by the contractor for measuring of H2S (hydrogen sulfide) gas in the excavations.
	Daily toolbox talks and safety instructions have been conducted for the workers on the sites as required by Georgian and international safety regulations.	Yes				
	The contractor/subcontractor heavy equipment (excavators, crane, etc.) operators are certified properly. All mobile heavy equipment have been provided with the revers beepers and top flashers.		partially			Issue about certificates for the operators and the to flashers for all mobile equipment on sites still are open.
	The project working sites are under the supervision of at least one fool time and experienced/trained safety representative (can be selected from the site staff.)	Yes				

	Shoring are used when workers entering the excavated trenches/pits deeper than 1.5m.	Yes				Shoring have been used at particular sites where The excavated trenches levels are >1.5 and walls are extremely unstable. The trench walls must to be terraced or sloped up where shoring could not be installed otherwise the works will be stopped until issue is fixed. At present the issue is solved.
	The project sites have been cleaned up and tidied on daily bases.	Yes				
	The contractor and consulting company camp have been provided with the emergency exits, fire extinguishers and assembly point in case of fire or other emergencies.		partially			Offices and nearby buildings are equipped with the fire extinguishers. There is no emergency exit at TAHAL's office on the second floor. The issue is still under discussion.
Works' Completion	After completion of main works, the site undergoes final cleanup, harmonization with outward landscape and landscaping.			No		Zone 25 (subcontractor MZF group ) the site works are completed but final cleanup is not done. The Photos below.
	After completion of the operations in the quarry or its certain section, the idle material is backfilled, compacted, terraced and harmonized with the landscape.				N/A	
	Final Post Construction Environmental Audit/monitoring is conducted and Final Environmental Audit Report is prepared			No		Will be commenced after completion of works.



## ANNEX E: NEAR MISSES (POT-01)

### Near Misses (POT-01)

Date & Time: 23.10.2019 Location: POT-01

Subject of Inspection: HSE practice/Performance and culture on site

Supervisor: Stephen Bayley, Shalva Bosikashvili Contact Details: \_\_\_\_\_

People Interviewed:

No	Name	Position	Comment
1	Moshe Turiski	Project Manager	
2	Alexander Chanturia	Field HSE Manager	



1. No shoring. Worker without PPE in the trench
2. Transportation with improper equipment.

#### H&S

- Information board and restriction signs are placed at the entrance.
- Stray animals at the site should be forbidden.

#### Personal Protective Equipment (PPE)

- PPE in place. Some workers don't wear PPE.
- Refreshment training should be provided about specific PPE and PPE requirements in general

#### Accident Reporting

- No accident was reported.

#### Medical Cover

- No medical cover on site.

#### Fire Safety

- Fire action board is placed on site.
- Fire extinguishers are placed on the action board

#### Emergency Response

- Emergency Response plan is not elaborated and Master Point is not defined and announced

Social:

Other (specify):

Inspector (s):

<u>ShalvaBosikashvili</u>	<u>Environmental Specialist</u>
Name	Position

<u>Rezo Kalandadze</u>	<u>HSE Manager</u>
Name	Position