Environmental Monitoring Report

Project Number: 50347-002
July 2025

TAJ: Dushanbe Urban Water Supply and Sanitation Project. Semestrial Environmental Monitoring Report for 01 January, 2025 –30 June, 2025

Prepared by Project Implementation group for the State Unitary Enterprise Dushanbevodokanal and the Asian Development Bank.

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CURRENCY EQUIVALENTS

(as of 30 June, 2025)

Currency unit	–	Tajik somoni (TJS)
TJS1.00	=	$ 0.1010
$1.00	=	TJS 9.9002

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
CEP	Committee for Environmental protection
EA	Executing Agency
EIA	Environmental impact assessment
EIR	Environmental impact report
EMS	Environmental monitoring station
GDP	Gross domestic product
GHG	Greenhouse gas
GRM	Grievance redress mechanism
IA	Implementing agency
IEE	Initial environmental examination
O&M	Operation and maintenance
OPF	Operators of project facilities
PMDSC	Project Management Design and Supervision Company
PIU	Project implementation unit
RP	Resettlement plan
SPS	Safeguard Policy Statement (of ADB)
SRT	Sludge retention time
SS	Suspended solids
SWM	Solid Waste Management facility
TN	Total Nitrogen
TP	Total Phosphorus
TSP	Total suspended particulates
WHO	World Health Organization
WRB	Water resources bureau
WTP	Water treatment plant
WWTP	Wastewater treatment plant

GLOSSARY

Gosudarstvennyy standart Referred as GOST	–	the state standards
Hukumat	–	State administrative office at the regional and district levels
Jamoat	–	State administrative union at the village level.
Stroitelnye Normy Referred as SNiP	–	construction codes and regulations

NOTES

(i) The fiscal year (FY) of the Government of Government of Tajikistan and its agencies ends on 31 December.

(ii) In this report, "$" refers to US dollars.

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SUMMARY PROJECT INFORMATION

GENERAL INFORMATION	
Project title:	**Dushanbe Urban Water Supply and Sanitation Project**
Date of project effectiveness:	27 February 2019
Executing agency:	State Executive Authority of Dushanbe City
Implementing agency:	State Unitary Enterprise Dushanbevodokanal
PIG (name of agency):	Project Implementation Group
PIG Environment Officer (name, email):	Kamoliddin Kholov
Loan implementation consultant / firm:	None
LIEC:	None
Project Management Design and Construction supervision company:	SMEC International PTY Limited (AUS) and LLC PANASIA (TAJ)
Contractors:	7
ADB web link to EMP:	https://www.adb.org/projects/documents/taj-50347-002-iee
Domestic web link to EMP:	<insert working web address / link>

ENVIRONMENTAL SAFEGUARD MONITORING	
ADB environment safeguard category:	B
Environmental report prepared as per ADB requirements for this category:	Initial Environmental Examination
Semi-annual period covered by this report:	01 January 2025 to 30 June 2025
# EMRs to date including this report:	11
Agency/person responsible for internal* environmental monitoring:	PIG Environmental Specialist
Agency/person responsible for external* environment monitoring:	PMDSC Environmental Consultant
Agency/person responsible for compliance* environment monitoring:	PMDSC Environmental Consultant
Agency/person responsible for independent compliance* monitoring:	PMDSC Environmental Consultant
Overall status of environmental safeguards:	On track

ADB = Asian Development Bank, EMP = environmental management plan, EMR = environment monitoring report, LIEC = loan implementation environment consultant, PMO = project management office.

*See Section III.3 for definitions of internal, external, compliance, and independent compliance monitoring.

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EXECUTIVE SUMMARY

This Semi-Annual Environmental Monitoring Report (EMR) presents the status of environmental safeguards implementation for the Dushanbe Urban Water Supply and Sanitation Project (DWSSP) during the reporting period of 01 January to 30 June 2025. The project is financed by the Asian Development Bank (ADB) through Grant No. 0612-TAJ and executed by the State Executive Authority of Dushanbe City, with implementation by the State Unitary Enterprise Dushanbevodokanal (DVK) through its Project Implementation Group (PIG).

The DWSSP aims to rehabilitate and expand climate-resilient water supply and sanitation infrastructure while enhancing the institutional capacity of DVK. Project activities are concentrated in the Shohmansur district and southeastern parts of Dushanbe, targeting improvements in water supply, reduction of non-revenue water (NRW), expansion of reservoir storage, and rehabilitation of the South Sewage Collector.

As of the reporting date, substantial progress has been made in civil works under multiple contract packages (CW-01 to CW-04), with several packages reaching completion and undergoing commissioning or operation. Remaining works primarily involve final pipeline installations and network replacement in DMAs.

Environmental safeguard implementation is guided by the Environmental Management Plan (EMP) developed during the initial environmental examination (IEE). The EMP outlines mitigation measures, monitoring protocols, institutional responsibilities, and training needs. Throughout the reporting period, the majority of mitigation measures were fully implemented and remained in compliance. These include:

- **Sanitary Protection Zones (SPZs):** Activities within SPZs adhered strictly to established restrictions to safeguard groundwater quality.
- **Air Quality and Noise Management:** Dust suppression, emission control, and noise mitigation measures were in place, especially near sensitive areas such as schools and medical facilities.
- **Waste and Hazardous Material Management:** Contractors followed approved Waste Management Plans, maintained licensed disposal arrangements, and handled hazardous substances, including fuel and oil, using mobile bunds and spill kits.
- **Tree Cutting and Replanting:** Tree removals were authorized by the Committee for Environmental Protection (CEP), with a 3:1 replanting ratio observed and monitored.
- **Occupational Health and Safety (OHS):** Compliance with PPE usage and safety signage was reinforced through frequent inspections and training sessions.

No significant non-compliance was reported, and all identified issues, such as improper PPE usage and signage placement, were promptly addressed. Furthermore, no asbestos-containing materials (ACMs) or riverbank protection works were identified during the period, rendering associated mitigation measures non-applicable for this cycle.

Environmental monitoring included 43 site inspections, of which six were joint inspections by PIG and PMDSC. Findings confirmed consistent implementation of the Site-Specific Environmental Management Plans (SSEMPs). No community complaints or grievances related to environmental performance were received during the reporting period, indicating positive stakeholder engagement and adherence to environmental standards.

Training and capacity building were prioritized, with monthly sessions conducted to enhance contractor awareness of environmental, health, and safety (EHS) standards. A total of 46 individuals were trained on topics including environmental safeguards, social issues, and grievance redress mechanisms (GRM). Feedback mechanisms and follow-up assessments are planned to ensure continuous improvement.

Public consultation activities were limited to individual meetings with 46 local stakeholders, due to the absence of a scheduled large-scale consultation event. These sessions served to inform affected communities of ongoing activities and environmental safeguards in place. The GRM remains operational and responsive, with no unresolved grievances carried into the current period.

The project remains in full compliance with ADB's environmental safeguard covenants as stipulated in the loan and project agreements. All relevant provisions from the EMP have been incorporated into works contracts and are being implemented by contractors under supervision of the PMDSC and PIG.

Next Steps:

- Final audits for completed sub-projects will be conducted and documented.
- Monitoring of SPZs, air quality, and waste management will continue with strengthened oversight.
- Additional training on advanced risk management and digital tools will be developed.
- Enhanced community engagement and feedback mechanisms will be introduced.
- The next EMR for July–December 2025 will be prepared and submitted to ADB by January 2026.

I. INTRODUCTION

1. Purpose of report

1. The purpose of this environmental monitoring report (EMR) is to describe and assess progress for implementation of the environmental management plan (EMP) for the Dushanbe Urban Water Supply and Sanitation Project, for the reporting period 01 January 2025 to 30 June 2025. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS)[1] of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

2. This is the 11th EMR for the project. It covers part of the construction phase of the project. The report describes: (i) implementation of mitigation measures; (ii) monitoring activities; (iii) public consultations (including grievance redress); (iv) training and capacity building; (v) expenditures for EMP implementation (including mitigation, monitoring, and training); (vi) reporting; and (vii) an overall assessment of key achievements, challenges, issues, corrective actions, and lessons learned, during the reporting period.

2. Project outcome, outputs and subcomponents

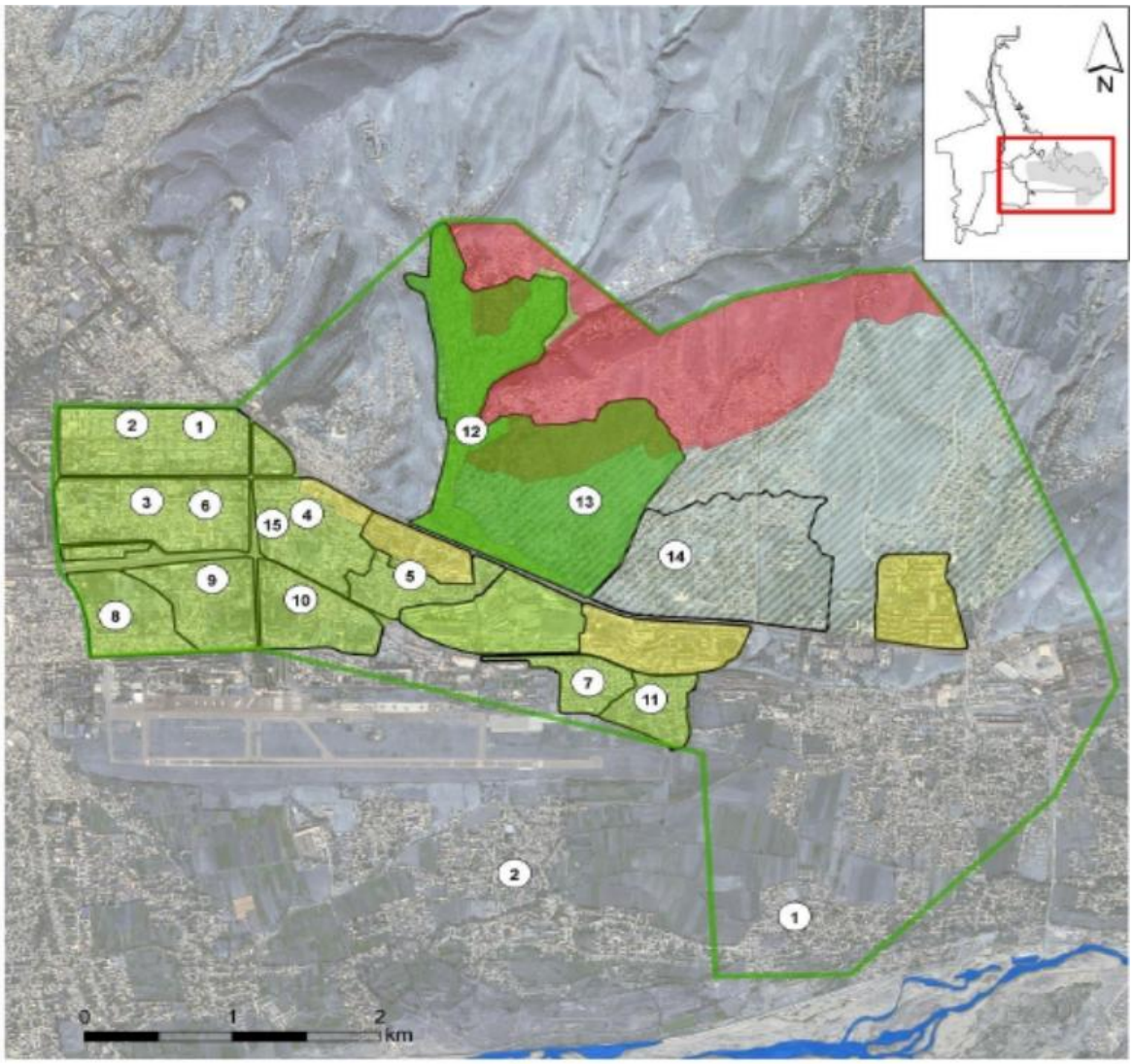
3. The water supply and sanitation systems in Dushanbe have deteriorated over the years due to a combination of age, lack of continued capital investments and lack of proper operation and maintenance. The water supply system is characterized by intermittent operation, high non-revenue water (NRW), low water pressures and low energy efficiency. The expanding urban areas, particularly in the eastern part of the city, are not connected to the water and sewerage system. The lack of public understanding to conserve water as a natural resource combined with low tariffs has led to uncontrolled consumption and wastage of water.

Figure 1. Location of the project

[1] ADB. 2009. Safeguard Policy Statement. Manila.

4. The sanitation infrastructure provides only limited coverage within the city and the peri-urban areas. The existing network is in a generally poor condition resulting in potential groundwater pollution and overflows to water bodies and to land. In particular, the south collector sewer is dysfunctional being partly blocked due to poor design and construction leading to critical adverse sanitary and environmental conditions in large areas of the south-eastern part of Dushanbe.

5. The Asian Development Bank (ADB) allocated Grant No. 0612-TAJ in the amount of $41.22 million in accordance with the Financing Agreement for the Dushanbe Water Supply and Sanitation Project (DWSSP). This project is the first ADB-funded project for the SUE "Dushanbevodokanal" (DVK). The scope of work of the allocated grant includes the rehabilitation of water supply, sewerage facilities and the strengthening of the institutional capacity of the SUE "Dushanbevodokanal" to improve its services in the Shohmansur district and the districts located in the southeastern part of the city. Figures below show the detailed location of project sites and area of interventions.



Areas of intervention

- Priority area boundary
- Areas with measures for WS and sewerage networks
- Category A: Old network high NRW areas
- Category B: Areas under scheduling partially rehabilitated
- Category C: Rehabilitation by WB
- Category D: Extension areas, low population density

Shohmansur district of Dushanbe city (mahallas)

1	Chehov	10	Bedil
2	N Muhammad	11	Chanoro-2
3	Shohmansur-1	12	Karotegin
4	Shohmansur-2	13	Zebunniso
5	Shohmansur-3	14	Hovaron
6	Vosifi	15	Shodi
7	Chanoro-1	**Rudaki district**	
8	Afzali	1	Jamoat Guliston
9	Dilshodi Barno	2	Jamoat Kushteppa (Rossiya)

Figure 2. Project area

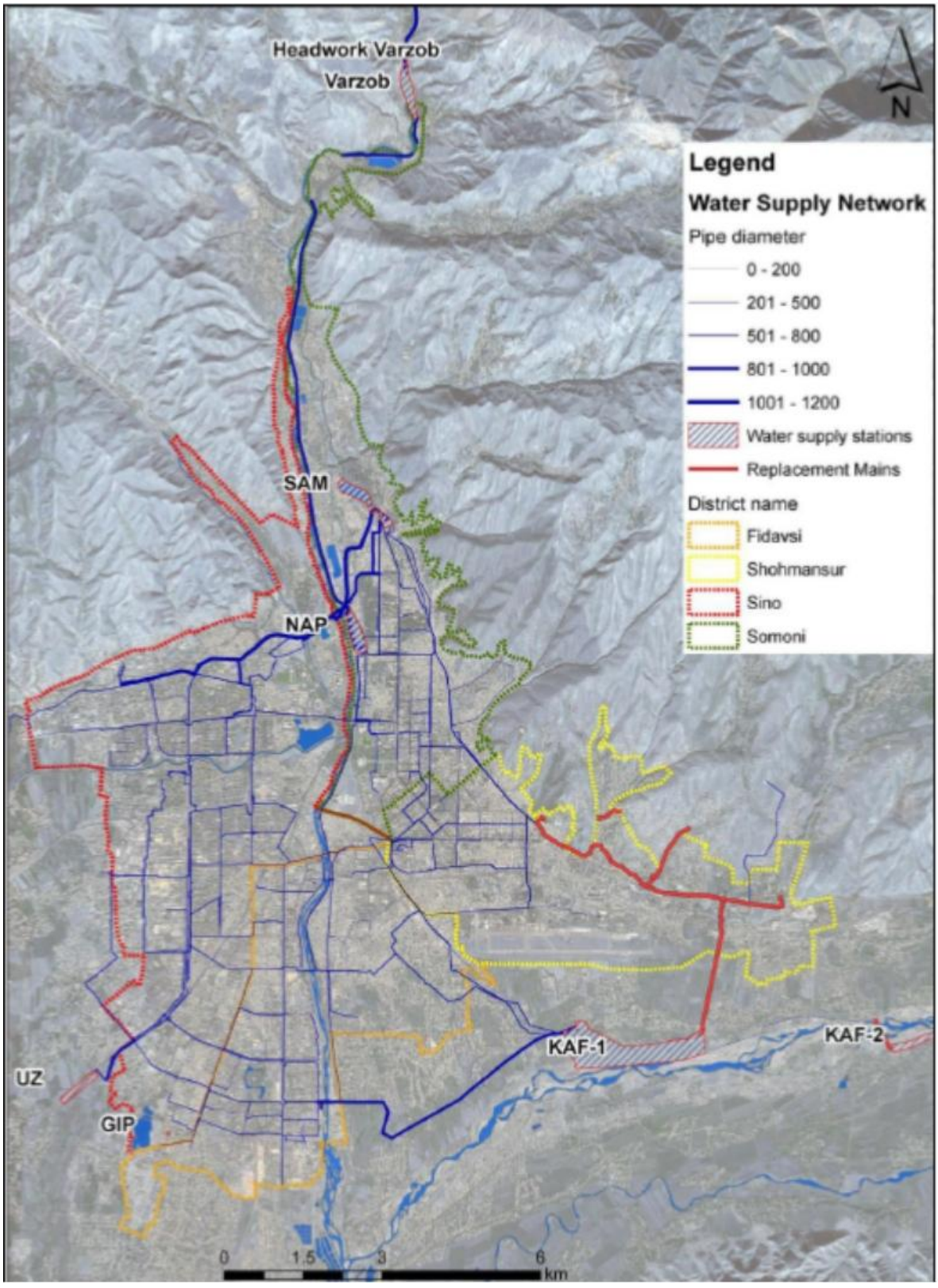


Figure 3. Water supply network in Dushanbe and project district Shohmansur

6. There are following outputs of the project:

Output 1: Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded. This output will be delivered through

(i) rehabilitating 17 wells, 22 pumps and second stage pump stations, water metering, chlorination, and other facilities at Kafernigan I, including the installation of a SCADA system;

(ii) reducing NRW through the rehabilitation of 12 km of the line which is used for conveying water to the distribution system (transmission main), the establishment of 18 district metering areas (DMAs): with the installation of 42 bulk meters and 5,220 smart meters, and the improvement of 57.5 km of distributional pipeline in six DMAs;

(iii) increasing the reservoir storage for Khovaron and Zebuniso mahallas to a total capacity to 4,000 m3 , which will supply approximately an additional 2,000 households with drinking water; and

(iv) rehabilitating the South sewage collector of 9.412 km.

Output 2: Sustainable business model and institutional capacity developed. This output will be delivered through prioritized institutional strengthening actions:

(i) a business model for DVK developed that covers technical, operational, and institutional organizational restructuring; and human resources management;

(ii) an accountability and incentive mechanism established, with a performance benchmarking matrix;

(iii) a smart management system enhanced for operational efficiency; asset management; and seamless integration of the customer database, billing, collection, accounting, and reporting;

(iv) an NRW management system operationalized, with the installation of SCADA for new network management practices for the 18 DMAs equipped with flow meters, smart meters for household service connections, active leak detection, and calibration of meters;

(v) institutional, technical, and financial capacity improved; and

(vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.

7. The project, includes 4 Civil Works (CW) packages:

CW-01: Rehabilitation of the Water Supply System in Shomansur district, Phase 1.

Lot 1 (CW-01/1): Reconstruction of the KAF-1 water intake structure (awarded to JSC “Tojikgidroelectromontaj” in Nov 2021, started April 2022, completion by May 2023).

Lot 2 (CW-01/2): Construction and rehabilitation of main water pipelines (awarded to a JV between JSC “Tojikgidroelectromontaj” and Azkompozit LLC in Nov 2021, started March 2022, completion by Q4 2024).

CW-02: Reconstruction of PS Khovaron, construction of Zebunisso reservoir, and replacement of water distribution networks in DMAs A14 and AB15 (awarded to OJSC “TajikSGEM” in Nov 2020, started Feb 2022, completed Nov 2023).

CW-03: Rehabilitation of the South Sewage Collector, split into three parts after the termination of Ludwig Pfeiffer Hoch- und Tiefbau GmbH& Co.KG's contract:

CW-03/2: Completion of unfinished works and rehabilitation from K39-K50, K81-K94, and 24m from K94.

CW-03/3: Rehabilitation from K1-K39.

CW-03/4: Rehabilitation from K56-K81 and K98 to the connection point (awarded to a JV of JSC Tojikgidroelectromontaj and Azkompozit LLC in Nov 2022, started March 2023, completion by Q3 2024).

CW-04: Replacement of water distribution networks and installation of measuring devices in DMAs:

Lot 1 (CW-04/1): Replacement in DMAs A1, A2, A3, and A4 (awarded to "Story-Centr" LLC in June 2022, started Oct 2022, completion by Q3 2024).

Lot 2 (CW-04/2): Installation of measuring devices in DMAs A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17, B-16, and SCADA system for DMA and KAF-1 (awarded to a JV between "Blue Star Group" LLC and LLC "Joint Venture Ittihod Inshoot and Zumrut" in June 2022, started Oct 2022, completion by Q3 2024).

3. Project implementation progress

8. The project became effective on 27 February 2019 As of 31 December 2024 physical progress by the project was estimated by the project management office (PMO) to be 96%, against the elapsed implementation of 94% (70 months out of 73 months since the date of project effectiveness). The project is currently rated by ADB as <*select:* on track, a potential problem, an actual problem>. Implementation progress for subcomponents is summarized in Table 1.

Table 1: Project implementation progress as of 31 December 2024

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
I. Rehabilitation of Water Supply System in Shomansur district Phase 1.						
CW-01/1:	Rehabilitation of Reconstruction of the water intake structure KAF-1.	*Commissioning*	*April 2022*	*JSC Tojikgidroelectromontaj (TGEM)*	SMEC International PTY Limited	All construction work has been completed, and commissioning and demobilization activities are now underway.
CW-01/2:	Construction and rehabilitation of portions of main water pipeline.	*Commissioning*	March 2022	Joint venture between JSC TGEM and Azkompozit LLC	SMEC International PTY Limited	All construction work has been completed, and commissioning and demobilization activities are now underway.
II. Reconstruction of PS Khovaron, construction of Zebunisso reservoir, and replacement of water distribution network in DMAs A14 and AB15.						
CW-02	Reconstruction of PS Khovaron, construction of Zebunisso reservoir,	Operating	February 2022	JSC TajikSGEM	SMEC International PTY Limited	All construction work has been completed, Final Environmental

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
	and replacement of water distribution network in DMAs A14 and AB15.					Audit conducted, Under operation by SUE DVK.
III. Rehabilitation of the south sewage collector.						
CW-03	Rehabilitation of the south sewage collector	Contract terminated	February 2021	Ludwig Pfeiffer Hoch- und Tiefbau GmbH& Co.KG	SMEC International PTY Limited	Contract terminated
CW-03/2	3/2 Rehabilitation of the south sewage collector. Lot 2: Finalization unfinished works of Lot 1 and Rehabilitation of the South Sewage Collector Sections from K39 to K50, K81 to·K94, 24meter around K 94. Including Amendment : Additional works 1000 meters between K26 to K39, plus from K56 to connection point of K15	Construction completed	May 2022	Kangurt 2 LLC	SMEC International PTY Limited	All construction work has been completed,
CW-03/3	Rehabilitation of the South Sewage Collector Sections from K1 to K26	In bidding				
CW-03/4	Rehabilitation of the South Sewage Collector Sections from K56 to K81, from K98 to Connection point (end of the line)	Construction completed	March 2023	Joint venture between JSC TGEM and Azkompozit LLC	SMEC International PTY Limited	All construction work has been completed,
IV. Replacement of water distribution network & installation of measuring devices in DMAs.						
CW-04/1	Replacement of water distribution networks in DMAs A1, A2, A3, and A4.	*construction*	August 2022	LLC “Stroy-Center”	SMEC International PTY Limited	The contractor successfully executed earthworks and the installation of GRP pipes across various sections. In DMA A-3, the scope of work included the installation of 200 meters of D-40-15 pipes, 13 meters of GRP pipes with a diameter of 450 mm,

Contract No.	Contract Name	Status	Civil work starting date	Name of contractor	Name of PMDSC	Implementation Description
						and 20 meters of GRP pipes with a diameter of 600 mm. Additionally, 40 water meter boxes were installed as part of the project.
CW-04/2	Installation of measuring devices for DMAs A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17 and B-16; and SCADA system for DMA and KAF-1.	*commissioning*	September 2022	Joint venture between between "Blue Star Group" LLC and LLC "Joint Venture Ittihod Inshoot and Zumrut"	SMEC International PTY Limited	All construction work has been completed, and commissioning and demobilization activities are now underway.

PMDSC =Project management Design and construction supervision company.

9. The **CW-01** project, which focuses on the rehabilitation of the water supply system in the Shomansur district (Phase 1), consists of two lots. **Lot 1 (CW-01/1)** involves the reconstruction of the KAF-1 water intake structure, with all construction works completed in December 2024, and de-mobilization currently in progress. Similarly, **Lot 2 (CW-01/2)**, covering the construction and rehabilitation of main water pipelines, was also completed in December 2024, with de-mobilization underway.

10. The **CW-02** project, which included the reconstruction of the PS Khovaron, construction of the Zebunisso reservoir, and replacement of water distribution networks in DMAs A14 and AB15, was fully completed in November 2023. The final audit report has been prepared and approved.

11. The **CW-03** project, focusing on the rehabilitation of the South Sewage Collector, faced challenges as the contract was terminated due to the contractor's financial problems. To address this, **CW-03/2** was initiated to complete the unfinished works and rehabilitate sections K39-K50, K81-K94, and 24m from K94. These works were successfully completed in March 2023. Meanwhile, **CW-03/3**, which covers rehabilitation from K1-K39, has not yet started, as this section is part of an active pipeline. The bidding process was completed in April 2025, and the submitted tender proposals are currently under evaluation. Additionally, **CW-03/4**, covering the rehabilitation from K56-K81 and K98 to the connection point, was completed in December 2024.

12. Under the **CW-04** project, which focuses on the replacement of water distribution networks and the installation of measuring devices in DMAs, **Lot 1 (CW-04/1)** is responsible for replacing networks in DMAs A1, A2, A3, and A4. The work is currently 99% complete, with an expected completion date in August 2025, though delays have been reported. **Lot 2 (CW-04/2)** involves the installation of measuring devices in multiple DMAs (A5, 6, 7, 8, 10, 10-1, 12, 13, C-9, 11, 17, B-16) and the SCADA system for DMA and KAF-1. All construction works for this lot were completed in December 2024, with de-mobilization now in progress.

II. SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

13. The project environmental management plan (EMP) is the primary reference document for the government and ADB for all environment-related mitigation, monitoring, reporting, and training activities for the project. Timely and effective implementation of the EMP is a key condition of the loan agreement between the government and ADB. The EMP was prepared as part of the initial environmental examination in 2018. The EMP is being implemented over 7 years, comprising 3 years of construction and 1 year of operation. The content of the EMP includes: institutional roles and responsibilities for EMP implementation; mitigation measures for environmental safeguard risks; environmental monitoring and reporting; grievance redress mechanism (GRM); cost estimates; and terms of reference for key positions.

14. **Project institutional arrangements (Section H of the IEE).** This section of the EMP describes the roles and responsibilities of relevant agencies for EMP implementation. For this project, the principal person responsible for EMP coordination is the PIG Environment Officer (Mr. Kamoliddin Kholov, environmental engineer), acting on behalf of the PIG. On-site implementation of the EMP is by the implementing agencies, contractors, and construction supervision companies (CSCs).

15. **Potential impacts and mitigation (Section H of the IEE)**. This section of the EMP summarizes the potential environmental impacts and mitigation measures for the different phases of the project: detailed design and pre-construction phase; construction phase; and operations phase. Table 24 in the EMP summarizes the environmental risks and mitigation measures, and agencies responsible for implementation and supervision of these measures. For this project, the key potential impacts and/or issues of concern are:

(i) Air Quality: Dust from vehicle movements, emissions from construction equipment.

(ii) Agriculture: Temporary disruption while laying pipes.

(iii) Rivers (Varzob and Kafarnigan): Degradation of water quality and aquatic habitat.

(iv) Flora: Tree cutting.

(v) Access and Traffic: Blocked access to properties and traffic delays during pipe laying.

(vi) Waste Management: Generation of waste, including hazardous waste (e.g., asbestos).

(vii) Noise: Elevated noise levels during construction.

(viii) Physical Cultural Resources: Minor impacts to cemeteries during pipe laying.

(ix) Health and Safety: Occupational and community health and safety risks..

16. **Training**. The Environmental Management Plan (EMP) does not provide a detailed or specific training schedule for implementation. Despite this, the IEE mentions several training activities:

1. Training for the Contractor's staff:

- Initial Safety Induction Course - All new staff shall be required to attend a safety induction course before they can access the site.

- Periodic Safety Training Courses - Safety training shall be conducted not less than once every six months. All employees will be required to participate in relevant training courses.

2. Training for DVK staff:

- The IEE recommends that DVK strengthen its health, safety and environment (HSE) capacity by assigning at least two of the Contractor's Environmental Health and Safety Officers (EHSOs) to work full-time in the DVK HSE unit after completion of the construction works. This would allow a direct transfer of relevant HSE skills into DVK.

- The PMSDSC is tasked with providing initial training to the PIG Safeguard Specialist prior to the start of the project.

17. **Consultation and participation plan**. The Environmental Management Plan (EMP) does not provide a detailed or specific consultation and participation plan schedule for implementation.

18. **Environmental monitoring program (Section H of the IEE)**. During the pre-construction and construction phases, instrumental monitoring includes soil monitoring for RCRA metals, BTEX, and PAH at two locations per petrol station along pipeline alignments before construction begins. Air quality monitoring will be conducted based on identified issues, such as TSP for dust, at complaint locations or as required. Noise levels (Laeq 1 h dBA) will be measured at complaint locations as needed. Surface water quality monitoring will assess parameters like pH, suspended solids, BOD5, COD, coliforms, nitrate, phosphate, oil, and grease at 50m upstream and downstream of work sites on the Varzob and Kafarnigan Rivers, conducted monthly during bridge construction and riverbank protection works. The IEE does not mandate instrumental monitoring for the operational phase but requires the development and implementation of management plans by Dushanbe Vodokanal (DVK), including an Emergency Response Plan, Occupational Health and Safety Plan, and Chlorine Management Plan. These plans will incorporate relevant monitoring and inspection measures to ensure the safe operation and maintenance of the water supply and sanitation infrastructure

19. **Costs (Section H of the IEE)**. The EMP outlines the estimated mitigation costs for the three project packages. For the pre-construction phase, key costs include the development of site-specific EMPs (SSEMP), design of the source protection zone (SPZ), and compensation payments as per the Land Acquisition and Resettlement Plan (LARP). During construction, standard site management measures are budgeted, such as mobile toilets, spill kits, waste management, and safety equipment. Tree cutting and replanting is also accounted for. Capacity building through health, safety, and environmental training for the contractor, project staff, and PMU is included in the project budget. The contractor will have a full-time Environmental, Health, and Safety Officer (EHSO) on site. For the operational phase, costs are included for developing an Occupational Health and Safety (OHS) Plan, Emergency Response Plan (ERP), and Chlorine Management Plan. Instrumental monitoring of soils, air quality, noise, and water quality is also budgeted throughout the construction period. The total estimated mitigation costs range from $31,400 for Package 1 to $33,400 for Packages 2 and 3, demonstrating the importance placed on environmental and social safeguards for this project.

20. **Reporting**. The Environmental Management Plan (EMP) does not provide a detailed or specific requirements for the reporting. Despite this, the IEE report outlines the reporting requirements for the environmental management and monitoring of the Dushanbe Water Supply and Sanitation Project as follows:

1. Contractor's Reporting: The Contractor will be required to prepare weekly environmental checklists and an environmental section of the Contractor's monthly progress reports. These will be submitted to the Engineer (PMSDSC) for review. The monthly reports will contain sections relating to:

- General progress of the project
- Environmental incidents (e.g. spills, accidents)
- Progress of environmental initiatives (e.g. energy savings, recycling)
- Records of any environmental monitoring

2. PMSDSC Reporting: The PMSDSC Safeguard specialist will make routine visits to the construction sites throughout the project lifecycle to ensure the Contractor's compliance with the environmental obligations. The PMSDSC will prepare Semestrial Environmental Reports to be submitted to the PIG and ADB.

3. PIG Reporting: The PIG Safeguards Specialist will supervise the Contractors' EMP implementation and ensure overall compliance with ADB's Safeguard Policy Statement (SPS 2009) requirements. The PIG Safeguards Specialist will prepare and submit semi-annual environmental, social and health and safety monitoring reports to DVK and ADB for disclosure on the ADB website. The PIG Safeguards Specialist will also report in a timely manner to ADB of any non-compliance or breach of ADB safeguard requirements.

4. DVK Operational Reporting: During the operational phase, DVK will be responsible for implementing the various management plans outlined in the EMP, such as the Emergency Response Plan, Occupational Health and Safety Plan, and Chlorine Management Plan.

III. ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

21. This section summarizes the progress made to implement the project EMP during the current reporting period.

1. Implementation of the project mitigation measures

22. Implementation of the mitigation measures in the EMP is summarized in Table 3. This table is the same as Table 24 of the IEE but has 3 additional columns, to summarize the implementation status and compliance for each listed mitigation measure within the reporting period.

Table 3: Project impacts, mitigation measures, and implementation status

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
Design / Pre-construction Phase				
SPZ	Un-defined SPZ leading to groundwater pollution	Follow the procedures defined in **IEE (Section B.3.7 - Sanitary Protection Zones)** to define and establish the SPZ.	First Belt (SPZ-1): No tall tree are planted. No constructed residential/public buildings, pipelines, wastewater discharge, swimming, animal grazing, and the didn't used of fertilizers/pesticides. All tracks having a hard coating. No any construction that not related to water supply facilities. Water facilities are equipped with measures to prevent drinking water contamination. Equipment is installed to monitor actual production rates against designed capacity. Second Belt (SPZ-2): Cemeteries, cattle cemeteries, wastewater fields, manure storages, and livestock/poultry enterprises are prohibited. The application of fertilizers and pesticides is prohibited. Third Belt (SPZ-2/SPZ-3): Wastewater injection and underground solid waste storage are prohibited. The storage of fuel/lubricants, toxic chemicals, and industrial waste is prohibited, except in the	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
			third belt where groundwater protection measures are in place	
Electrical Equipment	Accidents	All new transformers and substations shall be designed with suitable safety measures, including fencing around the areas to ensure no unauthorized access to these areas.	All new transformers and substations designed with appropriate safety features, including fencing around the premises to prevent unauthorized access.	Yes
	Oil Leaks	Dry transformers should be considered for the Project.	As possible designed to use dry transformers	Yes
Chlorine	Management of Liquid Chlorine	The design of the liquid chlorination facility will be in-line with international best practice, for example: Safe Handling of Chlorine From Drums and Cylinders (second edition), Health and Safety Executive, 2009.	The design of the liquid chlorination facility adhere to international best practices,	Yes
Natural Hazards	Earthquakes	Materials for new pipes and joints linking pipe segments must at least adhere to the current earthquake building standards (SniP).	New pipes and joints have been implemented to meet current earthquake building standards	Yes
General Environmental Management	SEMP	Preparation of an SEMP to include: • Waste Management Plan. • OHS Plan • Spill Prevention Plan. • Hazardous Materials Management Plan. In addition, the Contractor will be responsible for the preparation of the following site specific plan:	All contractors prepared SSEMP	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		• Riverbank Works Plan.		
Contamination	Petrol Stations	Ensure designs include double walled pipes at alignments around petrol stations	Designs incorporate double-walled pipes at alignments surrounding petrol stations.	Yes
Land Acquisition and Compensation	Compensation payments	Ensure that LARP is completed and implemented before Contractor starts work.	LARP completed and implemented	Yes
Construction Phase				
General	Construction Principles	Follow the Water Supply Construction Principles outlined in **IEE Section C.1.2.**	Construction uses burst lining, manhole connections, and HDPE (≤200 mm) or DCI/steel (≥350 mm) pipes. Pipes are laid ≥1 m deep, above sewers, with house connections via PPP. Water meters are 15 mm (domestic) or electromagnetic (bulk). Rehabilitation focuses on ≤200 mm pipes.	Yes
Air Quality	Planning	Implementation of the Air Quality Management Plan	A comprehensive air quality management plan has been developed and is being consistently implemented.	Yes
	Exhaust Emissions	No equipment using any fuel that may produce air pollutants, including mobile generators, will be installed without consent of the Engineer. Construction equipment will be maintained to a good standard and fitted with pollution control devices which will be regularly monitored by the Engineer.	No fuel-based equipment emitting air pollutants, including mobile generators, was installed without the Engineer's approval. All construction equipment was maintained to a high standard, fitted with pollution control devices, and regularly monitored by the Engineer.	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
	Burning Waste	No burning of debris or other materials will occur on the site.	No burning of debris or other materials	Yes
	Dust	The Contractor will ensure that material stockpiles will be located in sheltered areas and be covered with tarpaulins or other such suitable covering to prevent material becoming airborne. All trucks used for transporting materials to and from the sites will be covered with canvas tarpaulins, or other acceptable type cover (which will be properly secured) to prevent debris and/or materials from falling from or being blown off the vehicle(s). Effective use of water sprays will be implemented (e.g., Carry out watering for dust control at least 3 times a day: in the morning, at noon, and in the afternoon during dry weather with temperatures of over 25°C, or in windy weather. Avoid overwatering as this may make the surrounding muddy). All water used for controlling dust will be free of odor and pollution.	Contractor	
Noise	Construction Noise	Works will be scheduled to coincide with periods when people would least likely be affected; work hours and work days will be limited to less noise-sensitive times. Hours-of-work will be approved by the Engineer having due	• **Material Stockpiles**: Material stockpiles were located in sheltered areas and covered with tarpaulins to prevent materials from becoming airborne. • **Trucks**: Trucks were covered with secured canvas tarpaulins to prevent	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?

		regard for possible noise disturbance to the local residents or other activities. Construction activities will be strictly prohibited between 10 PM and 7 AM in the residential areas. When operating close to sensitive areas (within 250 meters) such as medical facilities and schools, the Contractor's hours of working shall be limited to 8 AM to 6 PM;
		
		Use temporary noise barriers while working in sensitive locations in case accidence of allowable limits is expected. Placing the barrier close to the source proves to be effective.
		
		Give notice as early as possible to sensitive receptors for periods of noisier works such as excavation. Describe the activities and how long they are expected to take. Keep affected neighbours informed of progress.
		
		Within normal working hours, where it is reasonable to do so:
		
		schedule noisy activities for less sensitive times.
		
		provide periods of respite from noisier works (for example, periodic breaks from jackhammer noise).
		
		The weekend/evening periods are important for community rest and
			debris/materials from falling or blowing off.
			• **Dust Control**: Water sprays were used effectively (e.g., 3 times daily during dry/windy weather). Overwatering was avoided to prevent mud, and water used was odor-free and pollution-free.
			• **Work Scheduling**: Work was aligned with less noise-sensitive times, as approved by the Engineer. Work was prohibited between 10 PM–7 AM in residential areas. Near sensitive areas (e.g., schools, medical facilities), work was limited to 8 AM–6 PM.
			• **Noise Barriers**: Temporary noise barriers were installed near sensitive locations where noise limits were expected to be exceeded.
			• **Noisy Works**: Sensitive receptors were notified in advance for noisier activities (e.g., excavation), and neighbors were kept informed.
			• **Noise Management**:
			  ○ Noisy activities were scheduled during less sensitive times.
			  ○ Periodic breaks were provided from noisier works.
			  ○ Weekend/evening work was avoided to allow community rest.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?

		recreation and provide respite when noisy work has been conducted throughout the week. Accordingly, work will not be scheduled during these times.
		
		All mechanical plant is to be silenced by the best practical means using current technology. Mechanical plant, including noise-suppression devices, will be maintained to the manufacturer's specifications. Internal combustion engines are to be fitted with a suitable muffler in good repair.
		
		Fit all pneumatic tools with an effective silencer on their air exhaust port.
		
		Install less noisy movement/reversing warning systems for equipment and vehicles that will operate for extended periods, during sensitive times or in close proximity to sensitive sites. Occupational health and safety requirements for use of warning systems must be followed.
		
		Turn off plant when not being used.
		
		All vehicular movements to and from the site to only occur during the scheduled normal working hours, unless approval has been granted by the Engineer.
		
		Where possible, no truck associated with the work will be left standing with
			• **Equipment**:
			  ○ Mechanical plant was silenced using the best available technology and maintained to manufacturer's specifications.
			  ○ Internal combustion engines were fitted with well-maintained mufflers.
			  ○ Pneumatic tools were equipped with effective silencers.
			  ○ Less noisy warning systems were used for equipment/vehicles operating near sensitive sites.
			  ○ Plant was turned off when not in use.
			• **Vehicular Movements**: Vehicular movements were limited to scheduled working hours unless approved by the Engineer. Idling trucks near residential areas was avoided.
			• **Noise Protection**: Earplugs/earmuffs were provided to workers in areas with noise levels exceeding 85 dB(A).	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		its engine operating in a street adjacent to a residential area. Provision of noise protection kits such as ear plug, earmuff, for workers who are working in the area with noise level is higher than 85 dB(A).		
Pipelines	Excavation	Deep excavations in unstable soils will be shored by the Contractor, and below grade construction brought to grade quickly, then excavations closed. Surface soils will be temporarily graded-to-drain and protected as necessary to reduce erosion and sediment runoff.	• Deep excavations in unstable soils were shored. • Below-grade construction was promptly brought to grade. • Excavations were closed. • Surface soils were temporarily graded to drain. • Surface soils were protected to minimize erosion and sediment runoff.	Yes
	Pipeline laying	Minimize the period of time that a segment of excavation is kept open by not allowing trenching to outpace pipe laying by more than a day or so. Trenches will be back- filled and ground leveled after installation of piping. Place only bedding and pipe materials at the location that will be used within the next few days work, well out of the line of traffic. Clean up and remove from the site any excess spoil, wood used for shoring and construction	• Open excavation time was minimized by ensuring trenching did not outpace pipe laying by more than a day. Trenches were backfilled and leveled after piping installation. • Only immediate-use bedding and pipe materials were stored, kept away from traffic. Excess spoil, shoring wood, and construction materials were removed after segment completion. Soil was compacted, and pavement cleaned to reduce dust.	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In compliance?
		materials upon completion of the segment. Compact soil in trench and clean surrounding pavement areas to reduce blowing dust. Provide temporary bridging across the trench at entries to residences and businesses. Otherwise, provide tape barriers to reduce the possibility of an accident. Once work is complete on a segment, pavement surfaces and masonry works (curbs, abutments, stairs, drains, drives, etc.) will be repaired and returned to original condition. All roadway surfaces will be repaired as construction progresses; bid packages will contain a unit bid price for roadway repair, and for repair of any other facility, structure or surface that is likely to be damaged in quantity during construction. The construction approach will minimize the time that any one segment is under construction or roadway/walkway left unrepaired to reduce the construction impact, done by limiting the length of open trench to 100 m or less. The public will be barred from construction areas, and excavations will be fenced and sign posted. Workers will not be allowed to enter	• Temporary trench bridging was provided for residential/business access, or tape barriers were used to prevent accidents. • Pavement, masonry (curbs, stairs, drains, etc.), and roadway surfaces were repaired post-construction. Unit bid prices for repairs were included in bid packages. • Open trench length was limited to 100 m or less to minimize construction impact and ensure timely repairs. • Public access to construction zones was restricted; excavations were fenced and signed. Workers were prohibited from entering trenches deeper than waist height without proper shoring. • Pipeline installation was scheduled post-harvest to reduce impacts on crops and livelihoods.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		trenches deeper than waist height unless they are properly shored. Pipelines are laid after the harvest in order to minimize impacts to crops and livelihoods.		
	Traffic Management	The Contractor will strictly follow his Traffic Management Plan (TMP). Where practical roads shall remain open at all times. If any diversions are required, they shall be outlined in the TMP.	Contractors are following their Traffic Management Plans (TMPs), and no road closures have been implemented.	
	Tree cutting	Where tree cutting occurs on public land the Contractor will follow the CEP approved procedures for tree cutting.	All Contractors required to cut trees have obtained permission from the CEP and has followed the CEP-approved procedures for tree cutting.	
	Tree Re-planting	Where practical the Contractor shall remove existing trees and replant them within the vicinity of the pipeline so as to cause minimal impact. Where this is not possible the Contractor shall discuss with CEP alternative locations for the re-planting of the trees. Where trees will be cut they shall be replaced on a 3:1 basis. The replaced trees shall be the same as the trees cut. The Contractor will be responsible for maintaining the trees for a six month period. If any of the trees die within this	he Contractor replanted existing trees near the pipeline wherever feasible. In cases where replanting was not possible, alternative locations were discussed and agreed upon in consultation with CEP	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		period, the Contractor will replace the tree on a 1:1 basis.		
	Pipeline pollutants	Pipelines can be disinfected through chlorination. Initial chlorine concentrations shall be made high enough (about 50 mg/l) to overcome the chlorine demand of contaminants. Chlorination is repeated until residual chlorine is one mg/l, after which the structure is flushed out before being placed into use. Installation contracts shall include a bid item for disinfection of installed piping.	Pipeline disinfection has been done under supervision of State Supervision Service for Sanitary and Epidemiological Surveillance and CEP	Yes
	Contaminated spoil	Spoil material from pipeline trenches around petrol stations will be tested for soil contamination before final disposal. The final disposal locations will be determined based on the results of the soil sampling. Any spoil material classified as hazardous will be disposed of at appropriately licensed facilities.	The water supply pipes near gas stations were not installed.	Yes
Electrical Equipment	Oil Leaks	If oil containing transformers are chosen they will require containment measures to built around them to collect any leak of transformer oils (110% of the volume of the oil in the transformer). The containment area, or 'bund' shall comprise an impermeable base	Transformers are installed indoors, ensuring that any potential leakage of transformer oil is contained and preventing contamination of the soil.	

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		backfilled with a layer of clean, washed stone free of dirt and fines, averaging 2-4cm in size to help limit the impact of any fires.		
Waste Management	WMP	Implementation of the Waste Management Plan	Contractors developed the Waste Management Plan (WMP) and strictly adhere to it.	
	Recycling	Where possible, surplus materials will be reused or recycled.	Contractor to implement mitigation and keep records of the types and volumes of materials recycled.	
	Hazardous Wastes	Oil and fuel will be stored in mobile bunds to contain spillage (the bund will be able to contain at least 110% of the volume of the largest storage tank within the bund). Spill kits will be provided at all construction sites where fuel and oil is stored and used.	Whenever possible, surplus materials are reused or recycled.	
	Waste Disposal	Waste, both hazardous and non-hazardous, shall be collected and disposed of by a licensed waste management contractor. The Contractor will keep copies of the waste management company's licenses on file at his site office. The Contractor shall also keep a record of the waste volumes and types removed from the site and the waste transfer notes provided by the waste management contractor.	Contractors have obtained permission from CEP to dispose of inert materials at a designated location in Chorbog. Contractors concluded contracts with licensed company SUE Solid waste landfill in Dushanbe for disposing domestic waste	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		Suitable number and sized waste containers will be provided at each site for organic waste, hazardous waste and non- hazardous wastes.		
	Asbestos	The Contractor will be responsible for the preparation and implementation of a method statement for the safe removal, storage and disposal of asbestos containing materials from the site. A sample method statement is provided by Appendix B. The statement will follow international best practice, for example; HSE A14 - Asbestos Essentials. Asbestos materials shall only be disposed of at a hazardous waste landfill site.	No ACMs were identified during the operational activities.	Yes
OHS	Accidents and Incidents	Implementation of the OHS Plan.	Contractors developed OHS plans and adhere it	Yes
Hydrology		Ensure no waste materials are dumped in the river, including re-enforced concrete debris. Place mobile generators more than 20 meters from the river. Ensure that no wet concrete waste is dumped in the river. Ensure that no hazardous liquids are placed within 10 meters of the river.	No Riverbank Protection works has been conducted	Yes

Work phase	Potential impacts/issues	Mitigation measure prescribed in EMP	Implementation status, issues identified and corrective actions	In comp-liance?
		Ensure that workers are provided with correct PPE including hi- vis life vests. During piling works ensure that pumped water is filtered through a silt trap before being discharged to the river. Provide areas where concrete mixers can wash out leftover concrete without polluting the environment. This may be in the form of a lined settling pond. Undertake works outside of fish spawning periods.		
SPZ	Management of the SPZ	Control of activities within the SPZ.	State sanitary and Epidemiological Control Bodies CEP	

EMP = environmental management plan, EMU = environmental management unit, PMO = project management office.

23. The Environmental Management Plan (EMP) outlines a comprehensive set of mitigation measures to address potential environmental impacts during various phases of the project. The overall progress in implementing these mitigation measures can be summarized as follows:

24. Compliance Status: Most measures are in compliance: The majority of the mitigation measures prescribed in the EMP are being implemented as planned. For example:

25. Sanitary Protection Zones (SPZ): The SPZ measures, including restrictions on activities in SPZ-1, SPZ-2, and SPZ-3, are being followed. No tall trees are planted, and no unauthorized construction or activities are taking place within these zones.

26. Electrical Equipment: New transformers and substations are designed with safety features.

27. Chlorine Management: The liquid chlorination facility adheres to international best practices, and chlorine handling is being managed safely.

28. Natural Hazards: New pipes and joints meet earthquake building standards (SniP).

29. General Environmental Management: Contractors have prepared Site-Specific Environmental Management Plans (SSEMP), including Waste Management Plans, OHS Plans, and Spill Prevention Plans.

30. Air Quality: A comprehensive air quality management plan is in place, and no fuel-based equipment emitting pollutants is being used without approval.

31. Noise Management: Scheduling of noisy activities during less sensitive times, and use of silenced equipment are being implemented.

32. Pipeline Installation: Deep excavations are shored, and pipelines are laid post-harvest to minimize impacts on crops and livelihoods.

33. Waste Management: Contractors are adhering to the Waste Management Plan (WMP), and hazardous waste is being stored and disposed of properly.

34. OHS: Occupational Health and Safety (OHS) plans are in place, and contractors are following them.

35. Some measures are not yet applicable: Certain mitigation measures are not yet applicable because the related works have not started. For example:

36. Riverbank Protection Works: No riverbank protection works have been conducted yet, so the associated mitigation measures (e.g., preventing waste dumping in the river) are not yet applicable.

37. Asbestos Removal: No asbestos-containing materials (ACMs) have been identified during operational activities, so the measures for asbestos removal and disposal are not yet applicable.

38. Non-Compliance: No significant non-compliance identified.

39. Progress in Specific Areas: Land Acquisition and Compensation: The Land Acquisition and Resettlement Plan (LARP) has been completed and implemented before the contractor started work, ensuring that compensation payments were made as required.

40. Pipeline Disinfection: Pipeline disinfection has been completed under the supervision of the State Supervision Service for Sanitary and Epidemiological Surveillance, with chlorine concentrations and residual levels meeting the required standards.

41. Traffic Management: Contractors are strictly following Traffic Management Plans (TMPs), and no road closures have been implemented, ensuring minimal disruption to traffic.

42. Tree Cutting and Replanting: Contractors have obtained permission for tree cutting and are replanting trees in the vicinity of the pipeline. In cases where replanting is not possible, alternative locations are being discussed with the CEP.

43. Ongoing Monitoring and Supervision: PMDSC and PIG is actively monitoring the implementation of the EMP, particularly in sensitive areas like SPZs and during pipeline disinfection.

44. Contractor Compliance: Contractors are required to keep records of waste volumes, types, and disposal methods, ensuring transparency and accountability in waste management.

45. **Conclusions and next steps.** Most mitigation measures are being implemented, and the project complies with the Environmental Management Plan (EMP). Key measures related to Sanitary Protection Zones, electrical equipment, chlorine management, air quality, noise control, waste management, and occupational health and safety are effectively in place. Contractors are following the EMP, with PMDSC and PIG specialists monitoring compliance.

46. Some measures are not yet applicable due to pending works like riverbank protection and asbestos removal. These will become relevant as the project advances.

47. No significant non-compliance issues have been reported.

48. Follow-up action

- *Preparing final audit reports for the completed sub-projects*

- *Regularly monitor all EMP measures, focusing on sensitive areas such as SPZs and water bodies. Ensure contractors keep accurate records of waste management, including volumes, types, and disposal methods. Provide periodic updates on the progress of mitigation measures, particularly for ongoing activities like spoil disposal and riverbank works.*

2. Implementation of the project monitoring program

49. The following environment safeguard monitoring was conducted in the reporting period: Weekly Inspections: Conducted by the PIG and PMSDSC specialists to monitor compliance. Throughout the designated reporting period, we did not encounter any complaints or concerns from individuals or stakeholders pertaining to air quality, dust levels, or noise pollution. This lack of feedback suggests that there were no significant issues or disturbances related to air quality or noise in the area under observation.

It is also noteworthy that our environmental monitoring plan, which outlines the framework for our monitoring efforts, does not mandate specific air quality measurements in instances where no complaints or concerns have been expressed by community members or stakeholders. This approach underscores our commitment to addressing environmental issues proactively, while also recognizing that a lack of reported concerns can indicate a stable and healthy environment.

50. **Internal monitoring.** The Project Management, Design, and Supervision Consultant (PMDSC) oversees daily project execution, ensuring compliance with environmental safeguards. Environmental specialists from both PMDSC and the Project Implementation Group (PIG) conducted regular site inspections, monitoring contractor performance regarding the Environmental Management Plan (EMP) and Site-Specific Environmental Management Plan (SSEMP). During reporting period total of 43 site visits, including six joint inspections, assessed adherence to environmental regulations, with findings indicating satisfactory implementation.

51. Key activities included reviewing documents, auditing corrective actions, and ensuring contractor compliance with safety and environmental standards. Issues such as improper use of personal protective equipment (PPE) were addressed through training and corrective actions. The Asian Development Bank (ADB) conducted several review missions, highlighting minor concerns and recommending further training on environmental safety. All identified issues, were resolved by the end of the reporting period.

52. The project emphasizes continuous improvement through inspections, audits, and training, ensuring adherence to environmental and safety standards while fostering sustainable development.

53. **Conclusions and next steps.** The Project Management, Design, and Supervision Consultant (PMDSC) and the Project Implementation Group (PIG) have effectively overseen environmental safeguards implementation through regular site inspections, audits, and corrective measures. The project has demonstrated compliance with the Environmental Management Plan (EMP) and Site-Specific Environmental Management Plan (SSEMP), with most identified issues resolved within the reporting period. ADB's review missions further reinforced the commitment to environmental and safety standards, ensuring that all concerns were addressed in a timely manner. The collaborative approach between stakeholders has contributed to a well-managed and environmentally responsible project execution.

54. Next Steps

Enhanced Training and Capacity Building – Conduct additional training sessions for contractors and subcontractors on environmental safety measures, focusing on PPE compliance and best practices.

Continuous Monitoring and Inspections – Maintain regular site inspections and audits to ensure ongoing compliance with environmental safeguards and identify areas for improvement.

Implementation of Outstanding Actions – Finalize any remaining corrective actions, including ongoing environmental safety enhancements and adherence to ADB's recommendations.

3. Public consultations and grievance redress mechanism

55. This section describes the public consultations undertaken during the reporting period and implementation of the project grievance redress mechanism (GRM). Documentation for the consultations and/or GRM (e.g. lists of participants in stakeholder workshops) is in Appendix 4.

Public consultations. Since the Environmental Management Plan (EMP) does not include a detailed consultation and participation plan for implementation and between January 1, 2025, and June 30, 2025, no public consultation meetings were held. However, more than 20 individual consultations were conducted, engaging a total of 67 people. These meetings aimed to raise awareness about the project, including its environmental, health, and safety requirements. They also provided residents and other stakeholders near the project sites with an opportunity to learn about the project, including the schedule of upcoming works and activities.

56. **Grievance redress mechanism.** No grievances related to the health and safety and environment were documented during the reporting period. From the beginning of the project, one complaint was received regarding its environmental concern and was fully resolved.

Table 7: Summary of All Grievances Documented during Project Design and Implementation

Grievance	Date submitted to a project agency	Submitted by (# persons affected)	Grievance first received by	Corrective action	Resolved?	Next steps
Project implementation phase, including current reporting period						
1 July 2023 – 31 December 2023						
The concern raised by the residents is that the sidewalk, where the pipe was installed, has not been restored to its original or improved condition as promised before the work commenced.	10 December 2023	Residents of Nisor Muhammad street	PIG	• Meeting with residents of N.Muhammad street; • New works schedule agreed with contractor	Yes	• PMDSC to closely monitor sites

CSC = construction supervision company, PMO = project management office.

4. Training and capacity building

57. Between 01 January 2025 and 30 June 2025, a training events were conducted (Table 8). Documentation for the training events is in Appendix 5. The training covered 4 topics: Environmental issues, Social Issues, Occupational Health and Safety and GRM. A total of 23 people from 15 agencies participated in the trainings.

Table 8: Training for environmental safeguards conducted during the reporting period

Topic	Trainees	Content	# Trainees		Date	Outcomes
			M	F		
Environmental issues, Social Issues, Occupational Health and Safety and GRM.	PIG, Contractors	Environmental and Social reporting requirements, GRM, Workers Health and safety, SSEMP Implementation	22	1	20 Feb 2025	Trainees demonstrated good understanding of regulatory frameworks
		Total trainees	22	1		**Grand total: 22**

ADB = Asian Development Bank, EMP = environmental management plan, SSEMP = Site specific environmental management plan, F = female, GRM = grievance redress mechanism, M = male, PIG = project implementation group.

58. The main topics addressed included:

- **Environmental Safety** – Emphasizing compliance with environmental protection measures, proper waste disposal, and minimizing pollution during construction activities.
- **Social Issues** – Discussing respectful workplace behavior, community relations, and inclusiveness, particularly in interactions with local residents.
- **Occupational Health and Safety (OHS)** – Reinforcing standard safety procedures, use of personal protective equipment (PPE), emergency preparedness, and accident prevention measures.
- **Grievance Redress Mechanism (GRM)** – Ensuring that workers and community members are aware of the channels available for reporting concerns and grievances, and the importance of timely and transparent resolution.
- **Heat Safety Measures** – Highlighting the risks associated with high-temperature working conditions and promoting measures such as proper hydration, rest breaks, and monitoring for signs of heat stress.

59. These discussions played a vital role in maintaining on-site safety and compliance with environmental and social standards, despite the absence of structured training programs during the reporting period.

60. **Conclusions and next steps.** Between January 1 and June 30, 2025, the project engaged 22 individuals raising awareness of environmental, health, and safety aspects. No grievances were recorded during this or previous periods. While no formal training was held, toolbox talks and informal discussions effectively reinforced key topics such as environmental safety, OHS, social responsibility, GRM awareness, and heat safety.

61. Next Steps:

a) **Develop a formal consultation plan** to ensure broader stakeholder engagement.

b) **Continue regular communication** with communities through updates and awareness campaigns.

c) **Strengthen the GRM system** to ensure accessibility and prompt response.

d) **Introduce formal training** on environmental, social, and safety practices.

e) **Maintain informal capacity building** through toolbox talks and on-site discussions.

5. Compliance with project assurances

62. The loan agreement and project agreement between the government and ADB includes 7 covenants for environmental safeguards and/or related to environmental issues (Appendix 1). These relate to the timely and effective implementation of the EMP, as well as project-specific assurances tailored to the current project. Compliance with these assurances is a condition of the loan and project agreements. For the current reporting period: (i) all of the assurances are being complied with.

6. Issues for Follow-Up Documented in the Previous Environment Monitoring Report and any Missions undertaken During the Current Reporting Period

63. On 18 March 2025, a review mission from the TJRM Asian Development Bank visited project sites to review the project progress, including the status of EMP implementation. Environmental issues described in the mission memorandum of understanding (MOU), and the previous EMR, and corrective actions taken, are summarized in Tables 9.

Table 9: Corrective Actions to Address Environment Safeguard Issues Identified in the TJRM ADB Mission 18 March 2025

When	Whom	What	Corrective Action
18 Mar 2025	Contractor CW01/1	To install remaining safety signs and instruction for safe operation of equipment at chlorination plant.	**Fully resolved** Safety signs installed
18 Mar 2025		To put the instructions for safe operation of equipment at the pumping station lower, on the level visible for the workers.	**Fully resolved** Instructions for safe operation at the pumping station are hanged lower
18 Mar 2025		At KAF-I nearby the SCADA operation building the sewerage chamber is located very close to the drinking water supply chamber. The Contractor shall provide evidence/reference to standard that the distance between these 2 chambers meets the relevant requirements or one of the chambers shall be relocated to ensure required distance between these chambers as per applicable norms and standards	**Fully resolved** The distance between the sewerage chamber and the drinking water supply chamber exceeds 1.50 meters (Photo 27-28), complying with national standards (SNiP RT 40.01.2019 – Water Supply, External Networks, and SNiP RT 40.02.2021 – Sanitation Facilities)

7. Reporting

64. The project reporting requirements for environmental safeguards are summarized in Table 11 and comprise: (i) progress reports from contractors to the PMDSC; (ii) progress reports on monitoring from PMDSC to the PIG; (iii) environmental monitoring reports (EMRs) from the PIG to ADB;

Table 11: Project reporting requirements for environmental safeguards

Reports	From	To	Frequency	Progress this reporting period	Comments
Construction phase					
Progress reports from contractors to the PMDSC	Contractors	PMDSC	Monthly	Jan–Jun 2025	Provided
Progress reports on monitoring from PMDSC to the PIG	PMDSC	PIG	Monthly	Jan–Jun 2025	Provided
Semiannual EMR	PIG	ADB	Semi-annual	Jan–Jun 2025	In progress

ADB = Asian Development Bank, PMDSC = Project Management Design and supervision company, EMP = environmental management plan, EMR = environment monitoring report, EPB = environment protection bureau, LIEC = loan implementation environment consultant, PIU = project implementation unit, PMO = project management office.

65. **Conclusions and next steps.** Progress reporting from the PIG to ADB complies with the EMP reporting schedule. In general, the quality of the EMRs is improving. The next EMR will be for the period July 2025 to December 2025 and will be submitted to ADB by end of January 2026.

IV. LESSONS LEARNED

66. Effective coordination played a crucial role in ensuring compliance with environmental safeguards. The collaboration between the Project Implementation Group (PIG), contractors, and the Project Management Design and Supervision Consultant (PMDSC) facilitated smooth project execution. Regular meetings and site visits enhanced problem-solving capabilities, allowing for the timely resolution of environmental concerns. Proactive environmental monitoring further contributed to compliance, as weekly inspections and real-time monitoring helped identify and mitigate potential risks before they escalated. The involvement of environmental specialists ensured strict adherence to the Environmental Management Plan (EMP).

67. Training also proved essential in improving environmental and safety performance. Monthly sessions for contractors and subcontractors enhanced awareness of occupational health and safety (OHS) measures, proper use of Personal Protective Equipment (PPE), and best environmental practices. Hands-on training was particularly effective in achieving compliance and reducing safety-related incidents. Additionally, a well-structured Grievance Redress Mechanism (GRM) helped address community concerns through individual consultations, allowing minor issues to be resolved before they escalated. This system ensured timely responses to grievances, minimizing delays and fostering community trust.

68. EMP compliance required continuous adaptation, as unforeseen challenges—such as dust control, noise management, and waste disposal—necessitated site-specific adjustments. A more flexible approach is recommended for future projects. Moreover, construction scheduling was strategically planned to minimize disruptions. Noisy activities were aligned with less sensitive times, such as avoiding evenings and weekends, while temporary access solutions, like trench bridging, ensured minimal inconvenience for businesses and residents. Strong waste management practices were also implemented, preventing environmental contamination through proper hazardous waste disposal and collaboration with licensed waste management contractors.

69. Stakeholder engagement increased project acceptance, even though no major public consultations were held. Small-scale discussions with residents helped improve transparency and trust, highlighting the need for more structured public engagement strategies in future

projects. Timely corrective actions further enhanced project efficiency. Issues identified during ADB review missions, such as improper PPE usage, were promptly addressed through training and enforcement, preventing regulatory non-compliance and delays.

70. For future improvements, more structured feedback mechanisms are needed to assess training effectiveness, alongside enhanced reporting systems to track compliance trends. Expanding environmental safeguard training to include advanced risk management and digital monitoring tools will further strengthen project outcomes. These lessons will be critical in enhancing environmental monitoring, safety compliance, and stakeholder engagement in upcoming water supply and sanitation projects.

V. NEXT STEPS

71. The next steps should focus on ensuring compliance, addressing remaining actions, and enhancing monitoring and training efforts. To begin, finalizing the current project phase is essential. This includes conducting and documenting final environmental audits for completed sub-projects, verifying that all mitigation measures outlined in the Environmental Management Plan (EMP) are fully implemented, and resolving any outstanding corrective actions before closing contracts.

72. Continued environmental monitoring is also crucial. Regular weekly inspections by the Project Implementation Group (PIG) and PMDSC specialists should be maintained, with a heightened focus on monitoring sensitive areas such as Sanitary Protection Zones (SPZs), air quality, noise control, and water bodies. Contractors must ensure accurate documentation of waste management records, water quality monitoring, and safety compliance, while also preparing for the next reporting period (January–June 2025) for submission to ADB by July 2025.

73. Strengthening contractor compliance and training remains a priority. Additional training should be conducted, expanding coverage on environmental safety measures, personal protective equipment (PPE) compliance, and best practices. Incorporating risk management, digital technologies, and leadership skills for project managers will further enhance efficiency. A feedback mechanism should be implemented to gather insights from contractors and subcontractors, refining future training sessions. Moreover, a follow-up assessment process must be developed to ensure that training translates into effective on-ground compliance.

74. Community engagement and grievance redress should also be enhanced. Structured community meetings should be held to address public concerns, while the Grievance Redress Mechanism (GRM) must be actively monitored to ensure all complaints are logged, addressed, and resolved in a timely manner.

75. Finally, reporting and coordination with ADB should be streamlined to ensure timely submissions. Monthly reports should be prepared by contractors for the PMDSC, which in turn will report to PIG, followed by semi-annual reports from PIG to ADB. The quality of Environmental Monitoring Reports (EMRs) should be improved by enhancing clarity and completeness in reporting environmental compliance.

APPENDIX 1. COMPLIANCE WITH ENVIRONMENTAL ASSURANCES

This appendix lists the environmental safeguard assurances for the project and the status of compliance with these assurances during the reporting period

Schedule	Paragraph	Covenant	Compliance Status
3	3	Environment The Recipient shall, or shall cause DVK, through SEADC, to, not award any Works contract which involves environmental impacts until: a) each of ADB and the State Committee on Environment of the Recipient has granted the final approval of the IEE; and b) the Recipient has incorporated, or has caused DVK, through SEADC, to incorporate, the relevant provisions from the EMP into the Works contract.	Complied Provisions of EMPs are included to the works contract. The "environmental appraisal/ approval" was obtained from SEE on 30.04.2019 (Registration No. 443/15)
3	9	Environment The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Recipient relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the IEE, the EMP, and any corrective or preventative actions set forth in the Safeguards Monitoring Report or corrective action plan.	Complied. Ongoing. DVK ensures that preparation and design will comply with Environmental Safeguards requirements and applicable laws and regulations of Tajikistan. DVK/ PIG has appointed the Environmental Safeguards Specialist to ensure compliance.
3	13	Human and Financial Resources to Implement Safeguards Requirements The Recipient shall make available or cause SEADC to make available necessary budgetary and human resources to fully implement the EMP and the RP.	Complied. There are ES hired by PIG, IES and NES hired by PMDSC. Project IEE reflects indicative cost for EMP implementation and human resources
3	14	Safeguards–Related Provisions in Bidding Documents and Works Contracts The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to: a) comply with the measures relevant to the contractor set forth in the IEE,	Complied. Ongoing.

Schedule	Paragraph	Covenant	Compliance Status
		the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in the Safeguards Monitoring Report or corrective action plan; b) make available a budget for all such environmental and social measures; c) provide Recipient, through DVK, with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP; d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and e) reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.	IEE, EMP and RP included to the bidding documents All parties allocated budget for social and environmental measures implementation No unanticipated risk discovered during reporting period Pre- construction photolog prepared Rehabilitation activities will be carried out as the work is completed
3	15	Safeguards Monitoring and Reporting The Recipient shall, or cause DVK, through SEADC to do the following: a) submit semiannual Safeguards Monitoring Reports to ADB within 1 month after the reporting period at the end of each half of the calendar year, and disclose relevant information from such reports to affected persons promptly upon submission; b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the IEE, the EMP and the RP (including, without limitation, as a result of any change of design, baseline or other current conditions), promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan;	Complied. a) Last semi-annual environmental monitoring report (covering January to June 2022) was submitted and disclosed on ADB website and at the DVK website in Russian in November 2021 b) COVID-19 HSMP and ERP were prepared by Contractor of all packages as part of its SSEMP; no COVID-19 cases were identified among the workers during the monitoring period. Suspension of CW-03 civil works by the Contractor in December 2021 was considered as an unanticipated impact, whereupon in the beginning of January 2022 a detailed description of the event was presented to the ADB, along with mitigation and management measures to avoid any environmental impacts, incorporated in a separate photoreport in January 2022 c) No breach.

Schedule	Paragraph	Covenant	Compliance Status
		c) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP or the RP promptly after becoming aware of the breach.	
3	17	Labor Standards, Health and Safety The Recipient shall ensure, or shall cause DVK, through SEADC, to ensure, that the core labor standards and the Recipient's applicable laws and regulations are complied with during Project implementation. The Recipient shall, or shall cause DVK, through SEADC, to include specific provisions in the bidding documents and contracts financed by ADB under the Project requiring that the contractors, among other things: a) comply with the Recipient's applicable labor law and regulations and incorporate applicable workplace occupational safety norms; b) do not use child labor; c) do not discriminate workers in respect of employment and occupation; d) do not use forced labor; e) allow freedom of association and effectively recognize the right to collective bargaining; and f) disseminate, or engage appropriate service providers to disseminate, information on the risks of sexually transmitted diseases, including HIV/AIDS, to the employees of contractors engaged under the Project and to members of the local communities surrounding the Project area, particularly women.	Complied. Ongoing. PDMSC combined with PIG monitoring to comply with standards PDMSC combined with PIG monitoring. Workers code of conduct prepared PDMSC combined with PIG monitoring. PDMSC combined with PIG monitoring. PDMSC combined with PIG monitoring.
3	18	Labour Standards, Health and Safety The Recipient shall, or shall cause DVK, through SEADC, to strictly monitor compliance with the requirements set forth in the foregoing paragraph and provide ADB with regular reports.	Complied. Ongoing.

APPENDIX 2. MONITORING DATA

No instrumental monitoring conducted during current period

APPENDIX 3. PHOTOGRAPHS

Photo 1: Connecting the pipe to an existing line, June 2025

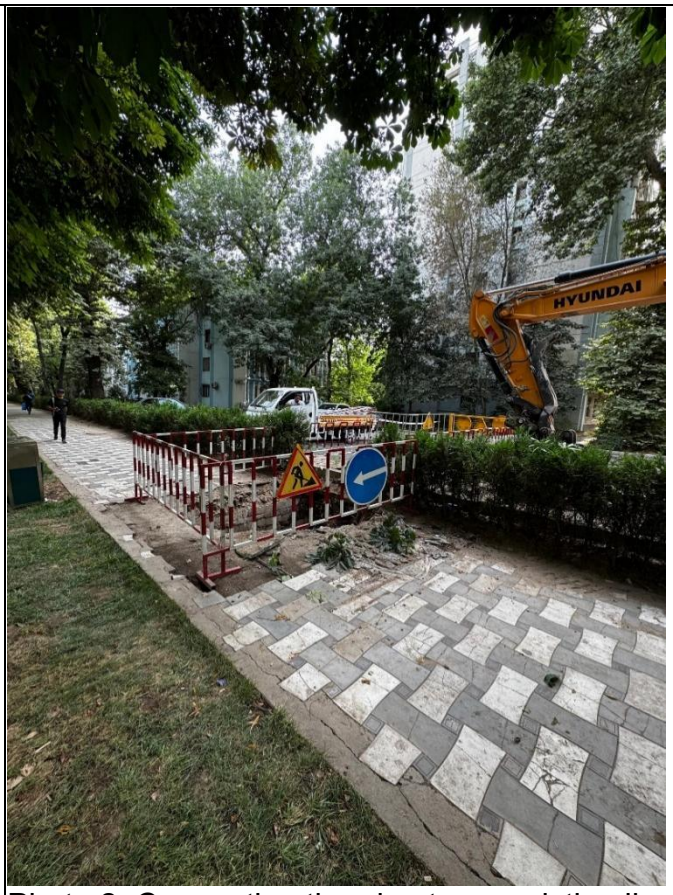


Photo 2: Connecting the pipe to an existing line, June 2025

Photo 3: Photo 2: Connecting the pipe to an existing line, May 2025

Photo 4: Restoration of sidewalks, May 2025

Photo 5: Restoration of Asphalt Road Surface, May 2025

Photo 6: Restoration of sidewalks, May 2025

Photo 7: Site visit of TJRM Safeguard team

Photo 8: Site visit of TJRM Safeguard team

APPENDIX 4. PUBLIC CONSULTATIONS AND GRIEVANCE REDRESS

No public consultations conducted during reporting period

APPENDIX 5. TRAINING ACTIVITIES