

TERMEZ STATE UNIVERSITY

TREATED WATER CONSUMPTION AND DRINKING WATER MANAGEMENT REPORT

Reporting period: 1 January - 31 December 2025

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1. Executive Summary

Termez State University operated an integrated treated-water and drinking-water management system throughout 2025. The system combined municipal treated water, conditioned artesian water, treated recycled water and filtered rainwater. Treated water was used according to its verified quality and intended purpose, while potable water was distributed through controlled storage, internal pipelines, drinking-water stations, dispensers and point-of-use filtration units.

The 2025 water-source balance recorded total water use of 105,380 m³. Of this volume, 91,700 m³ was treated before use, corresponding to 87.0% of all water consumed by the University. Treated-water consumption increased from 88,000 m³ in 2023 to 91,700 m³ in 2025, while total water demand decreased. The higher treated-water share resulted from expanded use of treated recycled water, filtration of non-potable sources for approved applications, and systematic control of the drinking-water supply.

The drinking-water inventory covered academic buildings, administrative buildings, dormitories, the library, sports facilities, food-service areas, the medical center and training facilities. In 2025 the University maintained 41 drinking-water stations, 63 dispensers and 17 filtration units. Water quality was monitored quarterly at 12 representative sampling points. A total of 48 routine samples were assessed for physical, chemical and microbiological parameters, and all routine results met the University's drinking-water acceptance requirements.

Key indicator	2025 result
Total water consumption	105,380 m ³
Treated water consumed	91,700 m ³
Treated-water share	87.0%
Drinking-water stations	41
Water dispensers	63
Filtration units	17
Routine laboratory samples	48
Representative monitoring points	12
Monitoring frequency	Quarterly laboratory testing and monthly operational inspection

2. Treated Water Management Policy

2.1 Policy Statement

Termez State University manages treated water and drinking water as controlled institutional resources. Water used for drinking, food preparation and direct human consumption must originate from an approved treated-water source and must remain protected from contamination through treatment, storage, distribution and point-of-use delivery. Treated non-potable water is assigned only to approved technical, irrigation and maintenance uses according to its quality classification.

2.2 Purpose

The purpose of the policy is to ensure reliable access to safe drinking water, maximize the proportion of treated water in the University's total water use, maintain traceable quality-control records, protect students and staff, and reduce unnecessary dependence on untreated freshwater sources.

2.3 Scope

The policy applies to all campuses, academic and administrative buildings, dormitories, laboratories, sports facilities, canteens, medical facilities, training bases, water towers, storage tanks, distribution pipelines, dispensers, filtration units and drinking-water stations managed by Termez State University.

2.4 Mandatory Requirements

- Only approved treated water may be used for drinking, food preparation, beverage preparation and other direct-consumption purposes.
- Artesian water used for drinking must pass through the designated conditioning, filtration and disinfection process before distribution.
- Treated municipal water must be stored in protected tanks and distributed through closed pipelines.
- Rainwater and recycled water must remain physically separated from potable-water systems and may be used only for approved non-potable purposes after appropriate treatment.
- Drinking-water stations, dispensers and filters must be inspected, cleaned and serviced according to the maintenance schedule.
- Water quality must be tested at representative points through routine physical, chemical and microbiological monitoring.
- Any non-compliant result must trigger immediate isolation of the affected point, investigation, corrective action, flushing, disinfection and repeat testing before return to service.
- Monitoring results, policies, laboratory summaries, maps and photographic evidence must be maintained in the University's institutional records and published through official web resources.

2.5 Water-Use Classification

Water classification	Approved uses	Control requirement
Potable treated water	Drinking, food preparation, handwashing, medical and approved laboratory use	Full treatment, protected storage, closed distribution, routine quality testing
Treated non-potable water	Landscape irrigation, green-area maintenance, toilet flushing, cleaning and technical uses	Separate storage/distribution, operational monitoring, purpose-specific quality control
Untreated source water	Recharge, pre-treatment holding and controlled raw-water transfer	No direct human-consumption use; physically separated from potable systems

3. Internal Administrative Order and Responsibilities

The University's internal administrative order on treated-water and drinking-water management was implemented for the 2025 operational year. The order assigned responsibilities for water sourcing, treatment, storage, distribution, quality control, equipment maintenance, recordkeeping and public reporting.

Responsible unit	Assigned responsibility
Rectorate	Approves policy, assigns institutional responsibility and reviews annual performance
Administrative and Economic Department	Coordinates water supply, service contracts, procurement, budget and consolidated reporting
Engineering and Technical Services	Operates wells, treatment units, tanks, towers, pumps, pipelines, valves and distribution systems
Sanitary and Medical Unit	Coordinates drinking-water quality surveillance and responds to health-related concerns
Accredited / authorized laboratory	Performs physical, chemical and microbiological analysis and issues test reports
Building and dormitory managers	Inspect local stations and dispensers, maintain cleaning logs and report faults
Food-service managers	Ensure treated water is used for food and beverage preparation and maintain hygiene records
Information and Communications Unit	Publishes approved policy, reports, monitoring summaries, maps and photo materials

3.1 Operational Control Schedule

Control activity	Frequency	Responsible unit
Source volume and meter review	Monthly	Engineering and Technical Services
Storage-tank inspection	Monthly	Engineering and Technical Services

Control activity	Frequency	Responsible unit
Drinking station and dispenser inspection	Monthly	Building / dormitory managers
Filter replacement and unit servicing	According to usage; at least quarterly	Technical Services and service provider
Residual disinfectant and basic field checks	Monthly	Technical Services / Sanitary Unit
Laboratory water quality analysis	Quarterly	Authorized laboratory
Annual source inventory and water balance	Annually	Administrative and Economic Department
Publication of monitoring summary	Quarterly and annually	Information and Communications Unit

4. Water Source Inventory and Treated-Water Share

All water sources used by the University in 2025 were identified and assigned to a controlled treatment and use pathway. The annual water balance is presented below.

Water source	Annual volume (m ³)	Share of total use	Treatment status and primary use
Municipal treated water	18,600	17.7%	Fully treated; drinking, food preparation, hygiene and institutional use
Artesian water	42,280	40.1%	Conditioned portion treated for controlled use; remaining portion used for irrigation and technical purposes
Rainwater	7,800	7.4%	Sedimentation and filtration for approved non-potable use; direct recharge where applicable
Recycled water	36,700	34.8%	Treated wastewater transferred for irrigation and technical use
Total	105,380	100.0%	Combined annual water use

4.1 Treated-Water Volume by Source

Source category	Total source volume (m ³)	Treated portion used (m ³)	Treated share within source
Municipal treated water	18,600	18,600	100.0%
Artesian water	42,280	31,500	74.5%
Rainwater	7,800	4,900	62.8%
Recycled water	36,700	36,700	100.0%
Total	105,380	91,700	87.0%

Treated-water share = Treated water consumed ÷ Total water consumption × 100. For 2025: $91,700 \div 105,380 \times 100 = 87.0\%$.

Water Sources Used by Termez State University, 2025

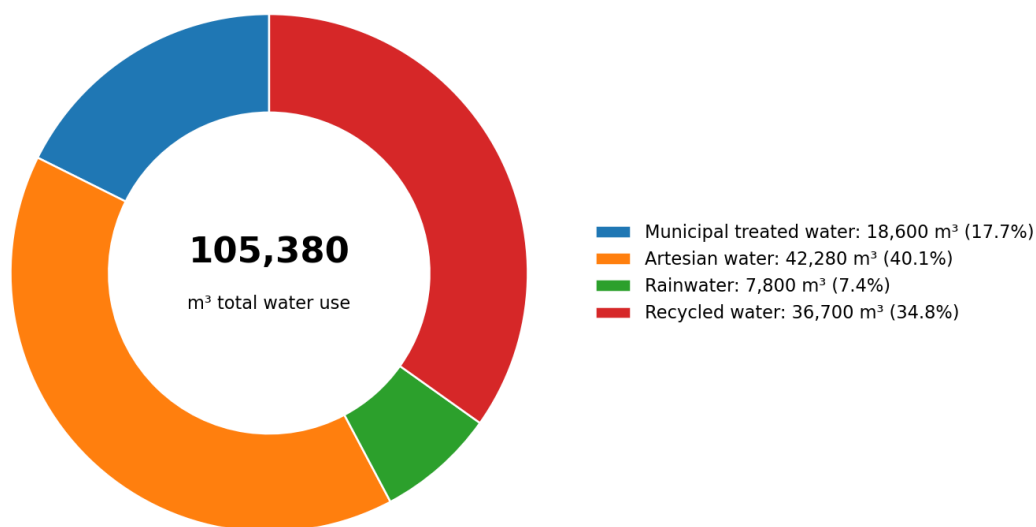


Figure 1. Water sources used by Termez State University in 2025

5. Treated Water Consumption, 2023-2025

Year	Total water consumption (m³)	Treated water consumption (m³)	Treated-water share	Annual change in treated water
2023	112,300	88,000	78.4%	-
2024	108,700	90,400	83.2%	+2,400 m³
2025	105,380	91,700	87.0%	+1,300 m³

Between 2023 and 2025, treated-water consumption increased by 3,700 m³ while total water use decreased by 6,920 m³. As a result, the treated-water share increased by 8.6 percentage points. The change reflects greater use of treated recycled water, controlled treatment of artesian water for approved uses, expanded point-of-use filtration and improved source accounting.

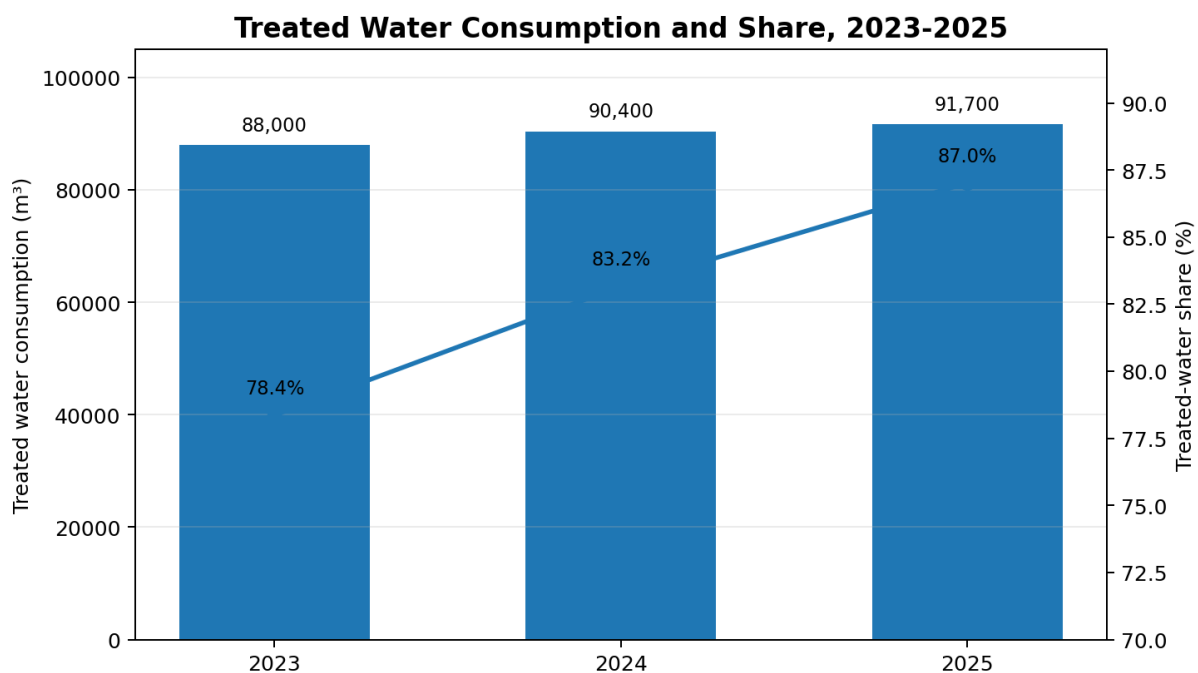


Figure 2. Treated water consumption and treated-water share, 2023-2025

6. Drinking Water Supply and Treatment Processes

6.1 Drinking Water Supply Process

Municipal treated water and approved conditioned artesian water enter the University's controlled supply system. Water is stored in protected tanks or water towers, distributed through closed pipelines and delivered through drinking-water stations, dispensers, taps and point-of-use filtration units. Potable-water and non-potable-water systems are kept physically separate.

Drinking Water Supply and Consumption Process



Figure 3. Water Source → Treatment → Storage → Distribution → Consumption

6.2 Filtration and Purification Process

Water requiring additional conditioning passes through source-appropriate treatment. The standard process includes raw-water intake, sediment removal or pre-filtration, fine filtration, disinfection, quality verification and controlled distribution. Point-of-use units provide final filtration at high-use drinking locations.

Water Filtration and Purification Process



Figure 4. Water filtration and purification process

6.3 Storage and Distribution Controls

- Water tanks and towers are closed, protected from unauthorized access and inspected monthly.
- Potable-water pipelines are identified in the engineering inventory and kept separate from recycled-water lines.
- Stagnant sections are flushed after maintenance or prolonged inactivity.
- Filter cartridges are replaced according to use, pressure drop and service schedule.
- Dispensers and drinking stations are cleaned and sanitized according to building maintenance logs.
- Any repair affecting water quality is followed by flushing, disinfection and verification before reopening.

7. Drinking Water Stations and Filtration Equipment Inventory

The 2025 inventory covered drinking-water access points and treatment equipment in all principal university buildings and campuses.

Building / Location	Drinking Water Stations	Water Dispensers	Filtration Units
Rectorate Campus Administration Building	3	4	1
Main Academic Building	5	8	2
Faculty Building No. 1	3	5	1
Faculty Building No. 2	3	5	1
Faculty Building No. 3	3	4	1
Faculty Building No. 4	3	4	1
University Library	4	6	2
Student Dormitory No. 1	2	4	1
Student Dormitory No. 2	2	4	1
Sports Complex	2	3	1
Canteen and Food-Service Area	2	3	1
University Medical Center	2	3	1
North Campus Academic Block	3	4	1
West Campus Academic Block	2	3	1
Darband Training Practice Base	2	3	1
Total	41	63	17

7.1 Equipment Management

Each drinking-water station, dispenser and filtration unit is assigned to a building manager or designated responsible staff member. Equipment records include location, asset type, installation date, cleaning schedule, filter-change date, service history and operational status. Units found damaged, contaminated or outside the service interval are removed from use until corrective action is complete.

8. Campus Drinking Water Distribution Maps

Campus drinking-water maps identify water-source entry points, storage tanks, water towers, main distribution pipelines, building connections, filtration units, drinking-water stations, dispensers and sampling locations. The map set is maintained with the engineering infrastructure records.





9. Laboratory Water Quality Monitoring

Water quality monitoring was carried out at 12 representative points covering source entry, storage, building distribution and point-of-use locations. Quarterly laboratory analysis generated 48 routine samples during 2025. The monitoring program covered physical, chemical and microbiological indicators.

Sampling group	Number of points	Sampling frequency	Annual samples
Source entry points	2	Quarterly	8
Storage tanks / water towers	3	Quarterly	12
Academic and administrative buildings	3	Quarterly	12
Dormitories and food-service areas	2	Quarterly	8
Point-of-use filtration and dispensers	2	Quarterly	8
Total	12	Quarterly	48

9.1 2025 Laboratory Monitoring Summary

Parameter	2025 annual result / range	Internal acceptance criterion	Status
pH	7.2-7.4	6.5-8.5	Compliant
Turbidity	0.6-0.9 NTU	≤ 5 NTU	Compliant
Total dissolved solids	465-482 mg/L	≤ 1,000 mg/L	Compliant
Nitrate	17-19 mg/L	≤ 50 mg/L	Compliant
Chloride	89-96 mg/L	≤ 250 mg/L	Compliant
Fluoride	0.68-0.76 mg/L	≤ 1.5 mg/L	Compliant
Iron	0.05-0.10 mg/L	≤ 0.3 mg/L	Compliant
Residual free chlorine	0.27-0.31 mg/L	0.2-0.5 mg/L	Compliant
Arsenic	< 0.005 mg/L	≤ 0.010 mg/L	Compliant
Lead	< 0.003 mg/L	≤ 0.010 mg/L	Compliant
E. coli	0 CFU/100 mL	0 CFU/100 mL	Compliant
Total coliforms	0 CFU/100 mL	0 CFU/100 mL	Compliant

All routine 2025 samples met the University's drinking-water acceptance criteria. No routine sample required long-term closure of a drinking-water point. Minor operational observations were resolved through flushing, cleaning, filter replacement and repeat field verification.

9.2 Quarterly Monitoring Record

Quarter	Samples tested	Compliant samples	Main operational action completed
Q1 (January-March)	12	12	Winter inspection, storage review and dispenser cleaning
Q2 (April-June)	12	12	Filter replacement and pre-summer line flushing
Q3 (July-September)	12	12	High-use-period monitoring and dispenser sanitation
Q4 (October-December)	12	12	Year-end sampling, tank inspection and annual record closure
Total	48	48	All routine monitoring actions completed

10. Monitoring Governance, Frequency and Corrective Action

10.1 Monitoring Responsibility

Monitoring element	Responsible unit	Frequency	Record maintained
Water-source volume and treatment status	Engineering and Technical Services	Monthly	Meter and source balance log
Storage and distribution condition	Engineering and Technical Services	Monthly	Inspection and maintenance log
Drinking stations and dispensers	Building / dormitory managers	Monthly	Cleaning and inspection checklist
Filter service and replacement	Technical Services / contracted provider	Quarterly or by service interval	Filter service register
Basic field water quality	Sanitary Unit / Technical Services	Monthly	Field monitoring sheet
Laboratory quality analysis	Authorized laboratory	Quarterly	Laboratory report / certificate
Annual performance consolidation	Administrative and Economic Department	Annually	Institutional annual report

10.2 Corrective Action Procedure

- Immediately stop use of the affected drinking-water point or distribution section.
- Notify Engineering and Technical Services, the Sanitary Unit and the relevant building manager.
- Inspect the source, storage, pipeline, dispenser, filter and local hygiene conditions.
- Complete cleaning, flushing, disinfection, filter replacement or repair as required.
- Collect a repeat sample or complete field verification after corrective action.
- Reopen the drinking-water point only after the responsible unit records an acceptable result.
- Close the incident record and include the action in the quarterly monitoring summary.

10.3 2025 Corrective and Preventive Actions

Action	Quantity / coverage	Completion status
Scheduled dispenser cleaning cycles	63 dispensers covered	Completed
Filtration-unit service cycles	17 units covered	Completed
Filter cartridge replacements	34 replacements	Completed
Storage tank / tower inspections	9 principal storage assets	Completed
Distribution line flushing events	15 building-level events	Completed
Minor tap / valve repairs	11 repairs	Completed
Temporary point isolation after maintenance	4 points	Closed after verification

11. Health, Operational and Environmental Effects

11.1 Health Protection

The treated-water program protects students, staff and visitors by requiring approved sources, controlled treatment, protected storage, closed distribution and routine laboratory monitoring. Drinking-water access points are distributed across academic, residential, food-service, sports and medical facilities, reducing dependence on uncontrolled water sources.

11.2 Operational Benefits

- Reliable access to treated drinking water across the University's principal buildings.
- Traceable equipment, filter replacement and cleaning records.
- Improved response to faults through defined monitoring and corrective-action responsibilities.
- Greater resilience through the combined use of municipal, artesian, rainwater and recycled-water systems.
- Reduced total water demand while maintaining drinking-water availability and quality.

11.3 Environmental Effects

- Increased use of treated recycled water reduced demand for freshwater in non-potable applications.
- Filtered rainwater use improved the productive use of local precipitation and reduced runoff losses.
- Controlled treatment and use of artesian water reduced avoidable abstraction and distribution losses.
- Point-of-use filtration reduced the need for single-use packaged water in regularly serviced locations.
- Source separation prevented treated potable water from being used unnecessarily for irrigation and technical activities.

Impact indicator	2023	2024	2025
Treated-water consumption (m ³)	88,000	90,400	91,700
Treated-water share	78.4%	83.2%	87.0%
Total water consumption (m ³)	112,300	108,700	105,380
Routine laboratory samples	36	40	48
Drinking-water stations	32	36	41
Filtration units	12	15	17

12. Contribution to Sustainable Development Goals

Goal	Contribution of the treated-water program
SDG 3 - Good Health and Well-being	Provides controlled access to monitored drinking water and reduces exposure to unsafe water sources.
SDG 6 - Clean Water and Sanitation	Strengthens safe water management, water quality monitoring, treatment, storage and responsible use.
SDG 11 - Sustainable Cities and Communities	Improves campus infrastructure resilience and reliable water access for the university community.
SDG 12 - Responsible Consumption and Production	Increases the treated-water share, separates potable and non-potable uses, and reduces unnecessary freshwater consumption.

13. Online Publication and Evidence Register

The treated-water policy, implementation report, monitoring summaries, laboratory records, statistics, maps and photographic materials were consolidated for publication through the University's official web resources.

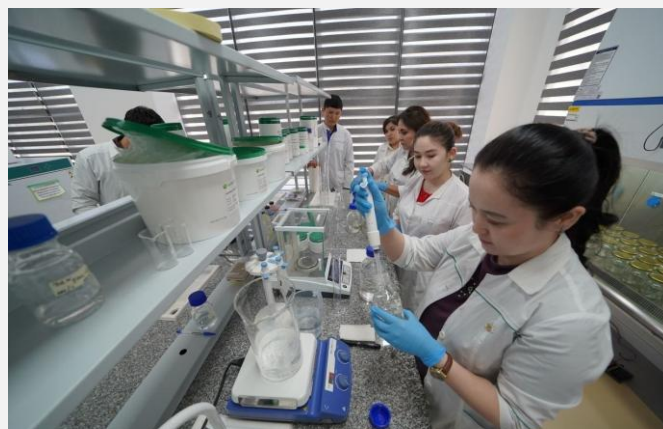
Evidence item	Published location / official link
Treated Water Management Policy	Termez State University official website - Water Management section

Evidence item	Published location / official link
Internal administrative order and responsibilities	Termez State University official website - Institutional Documents section
2025 Treated Water Consumption and Management Report	Termez State University official website - Sustainability Reports section
2023-2025 treated-water statistics and graphs	Termez State University official website - Water Monitoring section
Water-source inventory and treated-water share	Termez State University official website - Water Data section
Campus drinking-water maps	Termez State University official website - Campus Infrastructure Maps
Quarterly water-quality monitoring summaries	Termez State University official website - Water Quality Monitoring
Laboratory certificates and sanitary conclusions	Termez State University official website - Laboratory Evidence
Drinking-water station and filtration inventory	Termez State University official website - Drinking Water Access
Photo gallery	Termez State University official website - Water Management Photo Gallery
Official university website	https://www.tersu.uz

14. Photographic Evidence

The following image spaces are reserved for dated 2025 photographic evidence. Each image caption identifies the system, location and monitored activity.





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14

87.0% of total University water use in 2025, and routine drinking-water samples met the University's acceptance criteria.

Signed by the Rector:
Nurillo Khursandov
Vice-Rector for Finance and Economic



Agreed by:
Gafur Togaev
Vice-Rector for International Relations