

History of Mikawashima Water Reclamation Center

Mikawashima Water Reclamation Center was begun to build from 1914 and the operation started in March 1922, as the first modern sewage treatment plant in Japan. The center has been operating with various wastewater treatment processes, which are the Trickling filter process, the Paddle type activated sludge process (taking in air by the paddle rotation) (1936), and the Diffused conventional activated sludge process (1961).



▲Trickling filter process



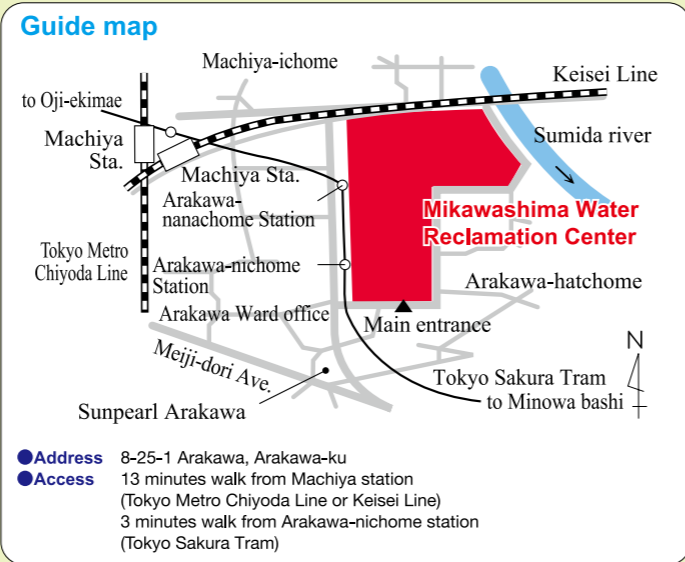
▲Paddle type

Arakawa Sizen Park

We provide the above-ground space of Mikawashima Water Reclamation Center as a park in Arakawa ward. This park consists of two parts in the north and south (61,100m²) and was selected as one of “New Tokyo 100 Views”. There are also baseball field, tennis court, children’s park and traffic garden.



▲Pond in the park



- **Address** 8-25-1 Arakawa, Arakawa-ku
- **Access** 13 minutes walk from Machiya station (Tokyo Metro Chiyoda Line or Keisei Line)
3 minutes walk from Arakawa-nichome station (Tokyo Sakura Tram)



There is a facility to enjoy the experience of learning about the sewerage system, its roles, and the importance of water environment.

- **Business hours:** 9:30 - 16:30
- **Entry Fee:** Free
- **Closed:** Mondays (open on holiday Mondays, closed the next day) and the year-end and New Year holidays
Open daily throughout the summer (July 16 - August 31)
- **Address:** Day (October 1)
2-3-5 Ariake, Koto-ku Ariake
Water Reclamation Center Management office (A-tower)
5th floor
- **Telephone:** 03 (5564) 2458
- **Website:** <https://www.nijinogesuidoukan.jp/>



Beware of crooked dealers who pretend to be related to the Bureau of Sewerage!

The Bureau of Sewerage does not rely on businesses to repair or clean drainage facilities in housing.

● **Tokyo Amesh**
Tokyo Amesh is the system that shows rainfall in and around Tokyo in real time.
The rainfall is measured by radars and ground rain gauges.
※ Tokyo Amesh is the registered trademark of the Tokyo Metropolitan Government.

● **Sewer Adventure**
Pass the sewer quiz to become a sewer master.

● **Bureau of Sewerage website**
<https://www.gesui.metro.tokyo.lg.jp/>

Facility tours of Water Reclamation Centers

Facility tours of water reclamation centers are available except weekends, holidays, and the New Year's season. Please contact us about reservations and details.

«Contact point for arranging facility tours»

Telephone: 03 (3241) 0944
Hours: 9:00 ~ 17:00 (weekdays only)



Water environment cultivated by the district Mikawashima Water Reclamation Center



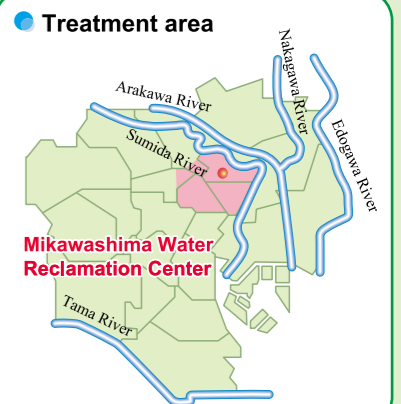
Earth-kun, the mascot of Bureau of Sewerage

Mikawashima Water Reclamation Center is the first modern sewage treatment plant in Japan. In the Center, there are ample greenery, and many cherry blossoms, which make scenic beauty in spring with the red brick facilities of Pumping Station at the Former Mikawashima Sewage Disposal Plant. The treatment area includes the whole area of Arakawa Ward, Taito Ward, most of Bunkyo Ward, Toshima Ward, part of Chiyoda Ward, Shinjuku Ward and Kita Ward, consequently the whole area amounts to 3,936ha. The treated water is discharged to Sumida River. Part of the treated water is further cleaned by filtration at Higashi-Ogu Purification Center and discharged to Sumida River.

Some part is used inside Mikawashima Water Reclamation Center for washing and cooling machines.

The generated sludge is pumped through pressure pipelines to Tobu sludge plant for treatment.

A “cherry blossom viewing party” is held in the spring.



(As of April 2023)

- **Operation started :** March 1922
- **Site area :** 197,878m²
- **Treatment capacity :** 665,000m³/day

- **Wastewater treatment facilities**
Grit chamber : 21
Primary sedimentation tank : 18
Reaction tank : 14
Secondary sedimentation tank : 32
High-rate filtration system: 1

● Average quality of influent and final effluent

The final effluent from the water reclamation center complies completely with the water quality standards of the Tokyo Metropolitan Environmental Security Ordinance and is sufficiently clean for fish to live in. (Units: mg/L)

Item	Influent			Final effluent		Regional water quality standards
	Ogu series	Aizome series	Asakusa series	Effluent	Higashi-ogu	
B O D	130	180	160	10	2	25 or below
C O D _{Mn}	75	96	82	11	7	—
Total nitrogen	30.7	33.4	33.0	13.3	13.5	30 or below
Total phosphorus	3.0	3.7	3.6	0.3	0.2	3 or below

Average values of 24-hour test conducted in FY2021

※The higher values of BOD and COD indicate the higher levels of water contamination. BOD describes the amount of oxygen required by microorganisms to eat organic material in water, and COD describes the amount of oxygen required by oxidizer to decompose organic material in water. The quality levels of discharged water are specified in terms of BOD for rivers and COD for seas. Total nitrogen and total phosphorus are closely related to the generation of red tides.



Sewerage System

Sewerage system is mainly composed of 3 components*: sewers, pumping stations and wastewater treatment plants (WWTPs)*. Sewers collect and carry wastewater. Pumping stations pump wastewater to avoid sewers getting deeper. WWTPs treat and clean wastewater. We perform inspection, cleaning and maintenance every day to keep them working properly.

*WWTPs in Tokyo are called "Water Reclamation Centers".

WWTP

Grit chamber

Wastewater flows into this chamber first. Large objects are removed, then sand and grit are settled out.

Primary sedimentation tank

As wastewater flows in slowly through this tank for 2 to 3 hours, solids sink to the bottom.

Reaction tank

Organic matter in wastewater is absorbed to activated sludge, where microorganisms break it down. As microorganisms grow, activated sludge becomes easy to settle.

Secondary sedimentation tank

As activated sludge formed in a reaction tank flows slowly in this tank for 3 to 4 hours, it is separated into effluent and sludge.

Advanced wastewater treatment

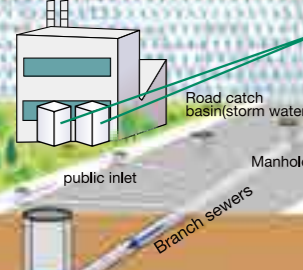
We introduce following facilities to clean treated water even more.

- ★ Sand filter/Biologically active filter
Removes residual suspended solids that the secondary sedimentation tank cannot remove completely.
- ★ A₂O process
Removes nitrogen and phosphorus efficiently in the reaction tank.

Chlorination tank

Treated water is chlorinated to disinfect coliforms and other bacteria before discharged into rivers and the sea.

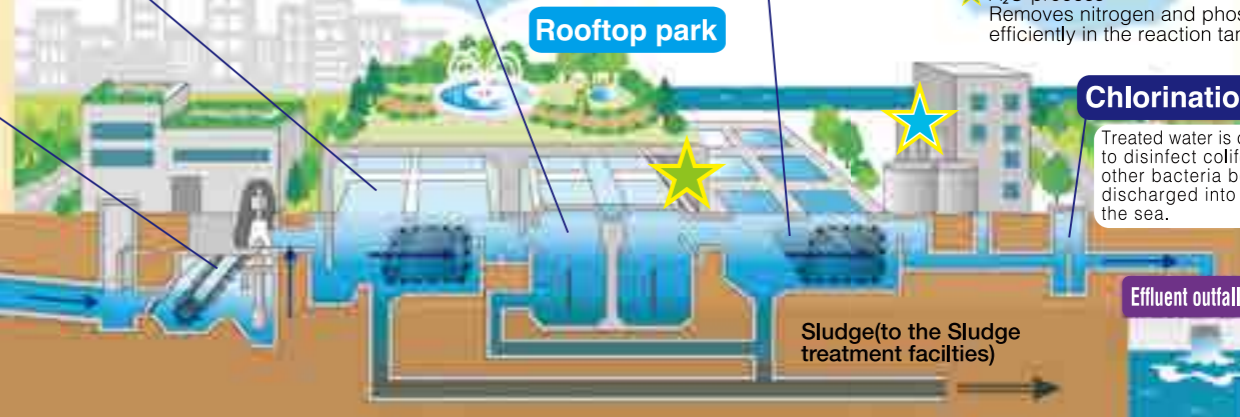
Homes, factories, offices, etc



Industrial pretreatment facility

An industrial pretreatment facility removes harmful substances such as heavy metals beforehand.

Grit chamber



Sewer

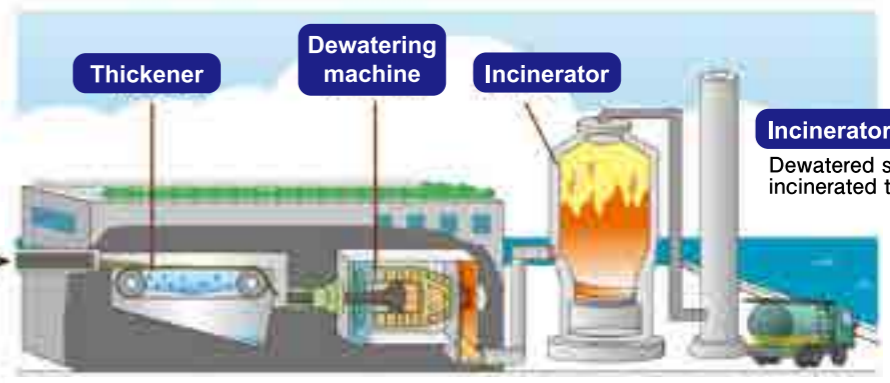
Sewers collect and carry wastewater to WWTPs. The internal diameter of the sewer ranges from 25cm to 8.5m.

Pumping Station

Sewers slope down to let wastewater flow naturally by gravity. Wastewater is pumped up to nearly ground level at pumping stations and flows naturally again.

Sludge treatment facilities

Sludge is thickened, dewatered and incinerated.



Thickener

The sludge is coagulated by adding chemicals, placed on a belt, and water is separated out by gravity filtration.

Dewatering machine

Thickened sludge is dewatered.

Incinerator

Dewatered sludge is incinerated to ashes.

※If a WWTP does not have sludge treatment facilities, it transports sludge to another WWTP with sludge treatment facilities.



The Role of Tokyo Sewerage

Improvement of a Living Environment by Treating Wastewater

We treat wastewater from houses and factories and ensure a comfortable living environment.

Flood Prevention by Draining Stormwater

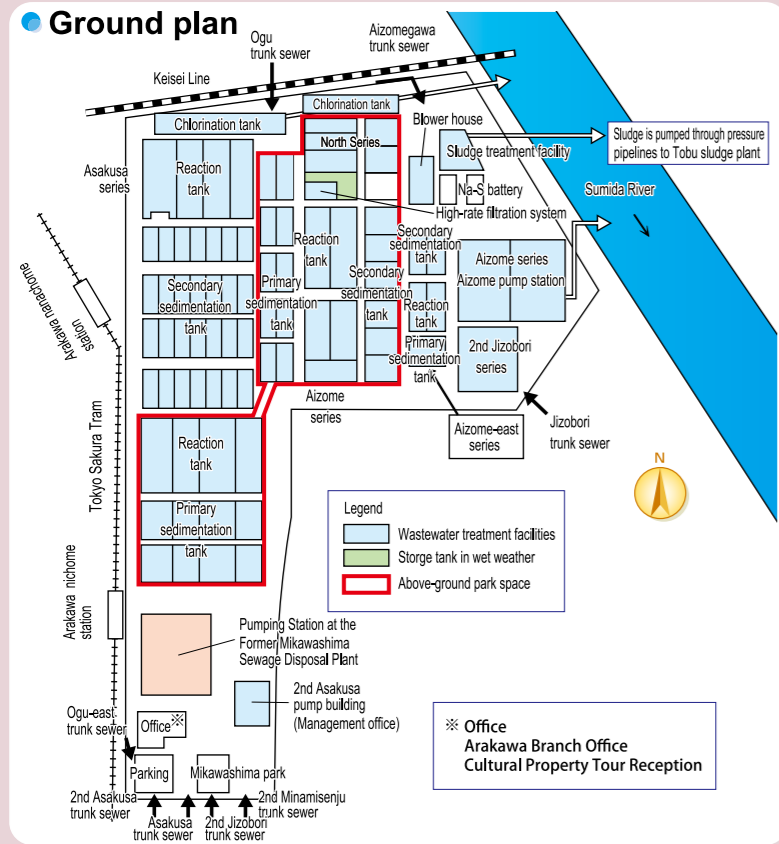
We protect the city from flooding by draining stormwater immediately from roads or residential areas.

Water Quality Control in Rivers and the Sea

We improve and control the water quality of rivers and the sea by treating wastewater and returning it to them.

Our New Role

Now we play a new role in creating a good urban environment. We use sewerage resources and energy effectively, for example, reclaimed water and sewerage heat. We also utilize rooftop spaces of our facilities as parks.



Features of Mikawashima Water Reclamation Center

Pumping Station at the Former Mikawashima Sewage Disposal Plant

The red brick pump pit that started operation in March 1922 was initially a symbolic facility of the Water Reclamation Center. However, this service was replaced with another pumping station on a separate line in March 1999 and abolished.

In December 2007, Pumping Station at the Former Mikawashima Sewage Disposal Plant was designated as a National Important Cultural Property (Building), the first in the field of sewerage system, since "it has high historical value as the representative remains of the Former Mikawashima Sewage Disposal Plant, which was the first modern sewage treatment plant in our country, and a series of well-preserved structures such as gate chambers and grit chambers that still remain in the facility are quite valuable in understanding the construction of a pumping station at a modern sewage treatment plant".

It has been open to the public since April 2013. A tour is available between 9:00 a.m. and 5:00 p.m., excluding Tuesday, Friday, the year-end and New Year holidays, by advance reservation only. For reservation, please call 03-6458-3940 (Japanese only).



▲Cherry blossoms and Facilities



▲Gate



▲Pump pit



▲Pump well connection