

Draft Answers to the Frequenty Asked Questions

Q1. What is the number of personnel in charge of Environment and Water Pollution respectively in Kawasaki City?

The number of personnel in charge of environmental pollution is about 60 and 13 for water quality management.

Q2. Major pollution source in Kawasaki City and the number of inspection

(1) Number of establishments that need monitoring

137 business establishments (BEs) are monitored by Kawasaki City with effluent testing without notice. The Water Pollution Control Law*¹ and the Kawasaki City ordinance*² designate certain types of facilities for water quality management and those establishments have the facilities discharging wastewater into public water bodies. In 2014, there are 133 establishments to be monitored in compliance with the water pollution control law and 131 in compliance with the Kawasaki City ordinance. The facilities discharging wastewater into the sewage system are monitored by the sewage department.

*1 Water Pollution Control Law

This law was enacted by the government of Japan designating 300 types of facilities as “Designated Facility”. Those BEs with designated facilities need to comply with the wastewater standards and those companies need to submit “Notification” to Kawasaki City. The wastewater standards established by the government of Japan can be strengthened by local authorities. Kawasaki City applies stricter standards by the ordinance established by Kanagawa Prefecture. As of 2014, there are 608 BEs with designated facilities by the law in Kawasaki City, of which about 133 are discharging wastewater including process wastewater in public water bodies, whereas the others are discharging it into the sewage system.

*2 The Kawasaki City ordinance on Pollution Prevention and Conservation of living conditions.

This is a comprehensive ordinance for environmental conservation established by Kawasaki City. Not only wastewater but, it covers a wide range of environmental issues such as exhaust gas, offensive odor, noise, vibration, land subsidence, soil contamination, vehicle related pollution and global warming. Not like the Water Pollution Control Law, these wastewater standards are applied to all the BEs in Kawasaki City. Currently more than 500 types of designated facilities are stipulated in the ordinance and any business with those designated facilities need to get permission from Kawasaki City to open a new establishment.

(2) Major Pollution Source in Kawasaki City

- a) Forests, Agricultural Land, Roads and other sources except for Factories are monitored by Kanagawa Prefecture.
- b) In 2012, more than half the load of COD, N and P from BEs designated by the Total Pollutant Load Regulation*³ was from the wastewater treatment plants (WWTPs).

*3 Total Pollutant Load Regulation

This regulation is one of those in the Water Pollution Control Law and applied to factories with more than 50m³/day effluent to the public water body. Every factory is assigned the maximum load to be discharged and obliged to measure the load and to keep the record.

- c) Pollution due to hazardous substances depends on the type of business operation of each factory.
- d) According to the results of inspections in 2013, 20 out of 207 BEs exceeded the standards. Please refer to 7(1) for the instructions given.

*Underground seepage of hazardous substances is not allowed.

The water pollution control law stipulates structural standards for floors and pipes of designated facilities and storage facilities dealing with hazardous substances, and obligation of self-inspection to prevent underground seepage. There are 140 Bes in Kawasaki City to follow this regulation.

3. Methodology to Check illegal discharge

- (1) Wastewater sampling and testing for inspection without any advance notice
137 (total 223) BEs (2014)
- (2) Obligation of Self-Measurement and recording in compliance with laws and regulations.
 - a) Inspection for implementation status of the self-measurements obligation
 - b) Questionnaire on the self-measurement.
Once a year: Comprehensive Water Pollutants Survey, 91 BEs (2014)
 - c) Penalties for breach of the self-monitoring obligation.
- (3) Reporting on Pollution Load
Once a month: 60 BEs designated by the Total Pollutant Load Regulation.
- (4) Continuous monitoring by using telemeters.

(a telemeter is a device used to remotely measure any quantity)

Once per hour, major 17 BEs with a lot of wastewater discharge/load

4. Emergency Response Cases

Fish Kill, Oil spill, Polluted-water discharge (discolored water, Odor, abnormal pH).

* It depends on the Volume and degree of pollution if urgent response is required. However, in case actual health damage is reported, immediate action is required, though there has been no such a case found in recent years.

5. How to identify the pollution source in the case of emergency

Upon receipt of report, investigation is to be conducted immediately with relevant departments.

- Conduct testing of polluted water with pH meter and Test-Kits and visual observation (color , odor, etc.)
- Trace the route of polluted water based on the characteristics of the polluted water and information from the informants and other sources.
- Investigate the area around suspicious factories in upstream and, if needed, conduct hearings if the route of polluted water is unknown.
- Once the polluter was found, confirm the site together with the polluter and instruct it to recover the pollutants and take corrective actions to prevent pollution.

6. Emergency response cases in the past

(1) Strong Acid Spill from a metal plating factory (2007)

Since a hazardous substance was detected in the annual measurement of public water bodies, the investigation was conducted with relevant departments and it was found that strong acid had been leaking in a metal plating factory into the ground. The strong acid was going further into the storm water drainage system melting the pipe. The work in the factory was suspended until the polluter repaired the facility and the storm water pipe. The polluter submitted a report on it. All the process was done only by the administrative guidance.

(2) Fish Kill in the river in Kawasaki City(2013)

After it was reported by a citizen that many fish are floating in the river, field investigation was conducted with relevant departments. Since many fish were floating, as many as 300 fish were picked up, the investigation and the collection were conducted at the same time. The river water sample was taken to the laboratory in Kawasaki Environment Research Institute for analysis and multiple pesticides were detected. It was assumed that the undiluted pesticides were dumped into the river, but the cause was left unknown since the trace was lost as the river washed it away.

(3) Fish Kill due to wastewater from construction site(2012)

After it was reported by a citizen that many fish are floating in a river with white turbid water, a field investigation was conducted with relevant departments. After tracing back the white turbid water, it was found that a construction site was the source. The polluter was discharging wastewater while casting concrete. The polluter encountered spring water in the excavated area, and it was continuously discharging the spring water mixed with the concrete. The wastewater was highly alkaline and that was the cause of the Fish Kill. Since by the time it was found, the discharge was stopped, the polluter was instructed to clean up the ditch connected to the river. The collected fish were all disposed of by Kawasaki City. The polluter was instructed to submit a report on it. All the process was done only by the administrative guidance.

7. Methodology to make polluters take corrective actions.

Though there are standards for wastewater by the Water Pollution Control Law, the target BEs are limited to designated ones and some parameters are not applied to those BEs that have less wastewater volume. However, Kawasaki City Ordinance is applicable to all the BEs and the higher number of parameters are designated than the Water Pollution Control Law. Kawasaki City can instruct polluters based on its own ordinance even if they follow the Water Pollution Control Law. Both the law and the ordinance have the articles on Improvement Order and Suspension Order and they were applied in the past. Since currently, however, administrative guidance is enough to make them take corrective actions, administrative guidance is now the mainstream to instruct polluters.

Administrative guidance given to polluters shown as follows.

(1) When not meeting standards

-Instruct the polluter to take emergency response such as suspension of discharge and recovery of pollutants.

-Instruct the polluter to report the cause, the amount of polluted water discharged, emergency response and corrective actions in writing.

(In case, any damage is confirmed in public water channel due to the polluted water, the management body of the public water channel would instruct the polluter to recover it to the original condition.)

(2) In the case of Accident

In case, polluted water was discharged into public water bodies by accidents, emergency measures in accordance with the law and the ordinance are taken and instructions are given to the polluter to report the cause, the amount of polluted water discharged, emergency response and corrective actions in writing.

(In case, any damage is confirmed in public water body due to the polluted water, the management body of the public water body is to instruct the polluter to recover it to the original condition.)

(3) Response to Complaints

When complaints are raised from citizens, interview with the polluter is to be done after the site investigation. The above mentioned actions in (1)&(2) are taken and some verbal instructions might be given when necessary.

8. Water Quality Monitoring Equipment and its Cost

(1) Source Monitoring System (Target BEs: 27 BE)

- Approx. 200million JPY (2million USD) for a 10 year lease

* No information about the equipment the BEs installed.

(2) Continuous monitoring based on the Water Pollution Control Law.

- Water quality analysis at the Kawaski Environment Research Institute or external contractors

- Each parameter has its unit price (1 Parameter costs from 1,000 JPY(10USD) to 36,000JPY(360USD). 80 parameters are annually measured at 26 monitoring points for rivers, 12 points for the sea. The total yearly cost is about 26million JPY (260 thousand USD))

(3) Rapid Testing (for accidents and complaints)

pH meter : 150,000JPY(1,500USD)

Testing Kit: some thousand yen per parameter (for 50 testing kits)

9. Overflow caused by heavy rain

Even storm water discharge from BEs is subject to the standards. Storm water run-off drainage and wastewater pipes should be separately designed and installed. BEs that need notification procedure are instructed to separate them in the process of preliminary document review. BEs handling coke piled up on the ground might cause water pollution with high SS concentration during periods of heavy rainfall. In this case, the BE is instructed to design and install treatment facilities to catch SS before discharging storm water. The approval is given to those BEs after it is confirmed.

10. How the public water quality was improved

1940's	Commencement of development of legal system for Pollution Control. Industrial pollution was getting worse without compulsory measures.
1960's	Regulatory approach for industrial pollution control measures was strengthened. Tokyo Metropolitan Government and Kanagawa Prefecture established Ordinances for pollution control. Construction of the first waste treatment plant in Kawasaki City
1970's	Environmental Agency was established. Environmental standards were established. Water Pollution Control Law was enacted. -> Effluent Standards applied to factories. Improvements made in the industrial sector, on the other hand, domestic wastewater from households causing river pollution became an issue. (Domestic Pollution in Populated Urban Areas). Sewage coverage in Kawasaki City at the end of 1970's: 30-40%
1980's	Water Pollution Control Law: Total Pollutant Load Regulation targeting BEs with more than/equal to 50m ³ /day. Water Pollution Control Law: Regulation on underground seepage was added. Tri-chloroethylene and Tetra-chloroethylene were added to Hazardous substances * Not only exhaust gas and wastewater, new environmental concerns such as global warming arose. Sewage coverage in Kawasaki City at the end of 1980's: 60-70%
1990's	Water Pollution Control Law: Institutional Framework to promote Domestic wastewater control measures was set up. Volatile Organic Compounds including dichloromethane and organophosphorous pesticides and selenium were added to Hazardous Substances Sewage coverage in Kawasaki City at the end of 1990's: 90% or more.

2000's	Boron, fluorine and Ammonium were added to Hazardous Substances Sewage coverage in Kawasaki City at the end of 1990's: 99% or more.
2010's	1,4 dioxane and vinyl chloride monomer were added to Hazardous Substances For the conservation of satisfactory water environment, "Comfortable and safe water environment, recovering human-water relationship".

The sewage coverage didn't consider the area outside the designated sewage-treatment area(Water front zone).

11. Economic assistance for the introduction of wastewater treatment plant

Financing facility: Subsidized interest payment.