

ENVIRONMENTAL REPORT

2022

 KUREHA ECOLOGY
MANAGEMENT CO., LTD.



Top Message



In addition to the situation in which we cannot expect recovery from the problem of COVID-19 infection, we see the prices of raw materials, fuels, and agricultural products soaring worldwide because of the invasion of Ukraine by Russia and the stagnation of logistics, which is having a significant impact on the global economy and social life. We have to assume that the business environment surrounding us will continue to face unprecedented uncertainty.

Under these rapidly changing circumstances, we will continue to promote our industrial waste treatment business, environmental engineering business, and environmental restoration and reconstruction-related business. In addition, we will work together with our group company Himeyuri Total Work, which operates the final disposal business, to become a company that is widely needed by society.

Amidst the growing worldwide need for "sustainable social contribution," we will aim to contribute to carbon neutrality, which is an urgent and important initiative, and promote recycling business in harmony with a recycling-oriented society based on the technological capabilities and social trust that we have cultivated over the years. Thus, we realize social contribution and sustainable growth. We will also continue to promote company-wide safety awareness and build a safety culture for sturdy CSR (corporate social responsibility) while pursuing SDGs.

Last year, with your warm support, we celebrated the 50th anniversary of our founding. Without resting on our laurels, we will continue to strive for qualitative improvements in safety, environment, and quality control in our daily business activities, and make every effort to become an even more trusted presence for our customers, local residents, and all other stakeholders.

We look forward to your continued cooperation in the years ahead.

Masahiro Namikawa
President and Representative Director



Corporate Philosophy

1. We tirelessly endeavor to achieve a harmonious relationship between people, society and the global environment.
2. We contribute to the enrichment and growth of the society by providing safe products and services.
3. We grow and develop ourselves with the community in which we operate.
4. We comply with laws and regulations, practice high ethical standards and operate in transparent manners as a trusted corporate citizen.
5. We develop and nurture a corporate culture which values the individuality and diversity of our employees and optimizes creativity and teamwork within.
6. We bring passion to researching and developing technologies that are ahead of the times.

Management System Basic Policy

Concept / Goals / Objectives

Strengthening the trust placed in us by stakeholders in the community and other businesses and striving to improve corporate value by observing laws, regulations, and voluntary standards by utilizing an integrated management system to engage in activities concerning quality, the environment, and occupational safety and health.

Activity Policy

- Aiming to improve the quality of the products and services we provide and enhance customer satisfaction.
 - Leveraging our experience as an environmental business to preserve the environment.
 - Creating a safe and secure workplaces in accordance with the health and safety management policy.
- We will strive to prevent crashes and falls, tumbles, and accidents involving heavy machinery.

Revised on May 12, 2022

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ENVIRONMENTAL REPORT

This report introduces various initiatives including our Responsible Care (RC) activities in fiscal 2021.

Guidelines used as reference:

- Environmental Reporting Guidelines 2012
 - Guide to Matters Noted in Environmental Reports (3rd Edition)
- The documents above were published by Ministry of the Environment

Report period:

April 1, 2021 – March 31, 2022
Including some information from FY2022 and about plans

Reporting departments:

All Kureha Ecology Management departments

Disclaimer

This report includes plans and forecasts. Changes in various conditions could render these forecasts inaccurate. Please note that some of the figures in the tables and graphs presented here have been revised from previous fiscal years considering changes to calculation methods and other factors.

Kureha Group Responsible Care Policy

- 1 Observe international rules and laws
- 2 Respect the environment and work safely
- 3 Provide society with safe products
- 4 Manage and put to good use information about the environment and safety
- 5 Forge a stronger relationship with society

Diagram of Kureha Group RC Committee



About Responsible Care (RC)

Responsible Care involves continuously conducting self-improvement activities aimed at preserving "the environment, safety, and health" through all aspects of a chemical's lifecycle - from the development of chemicals to their disposal and recycling following their manufacture, distribution, usage, and final consumption - as well as maintaining an open dialogue with the community. This is done based on the principle of business operators who manufacture or handle chemicals making decisions and accepting responsibility. The Kureha Group officially announced in 1995 that it would conduct RC activities.

We will also introduce our efforts to SDGs*.



*What are the SDGs (Sustainable Development Goals)?

The SDGs (Sustainable Development Goals) are international goals adopted at the United Nations Headquarters in September 2015 that will last until 2030. They aim to realize a world in which "no one is left behind" by tackling 17 goals and 169 targets to deal with global issues such as the global economic crisis, natural disasters, the environment problems, refugees, and poverty.

Business Overview

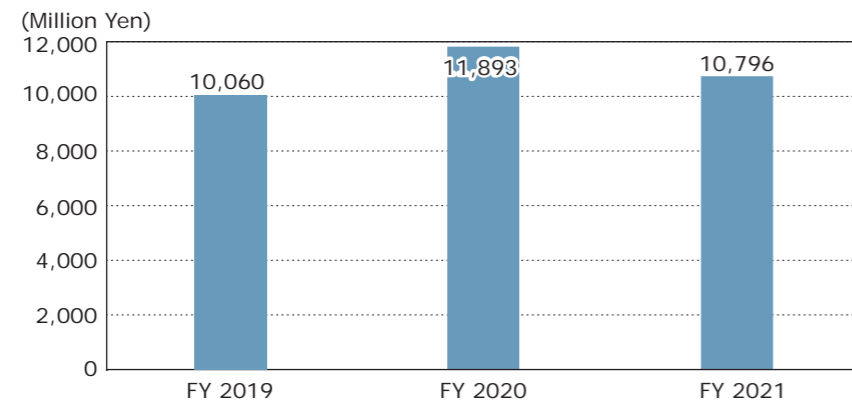
Company Profile

Company Name	Kureha Ecology Management Co., Ltd.
Headquarters	30 Shitanda, Nishiki-machi, Iwaki-shi, Fukushima, 974-8232 Japan
Main Business Sites	Headquarters, WASTECH Iwaki, WASTECH Kanagawa
Established	December 1, 1971
Paid-in Capital	¥240 million
Employees	395 (as of March 31, 2022)

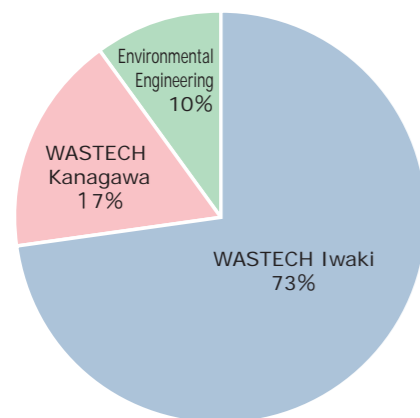
Business Overview

Main Businesses	Collection, transport, and disposal of industrial waste, environmental restoration, construction (environmental engineering), electrical power generation, etc.
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Sales



Sales by Business Sector (FY 2021)



As one of the initiatives of our business activities we focus on the perspective of reducing the burden on the global environment. With a view to contribution to the efficient use of energy and the realization of a recycling-oriented society, we are trying to solve problems while building further cooperative relationships with local communities and neighboring companies beyond conventional frameworks.

Katsushi Momose
Corporate Planning Division, Assistant to General Manager

Environmental Considerations Related to Our Business Activities

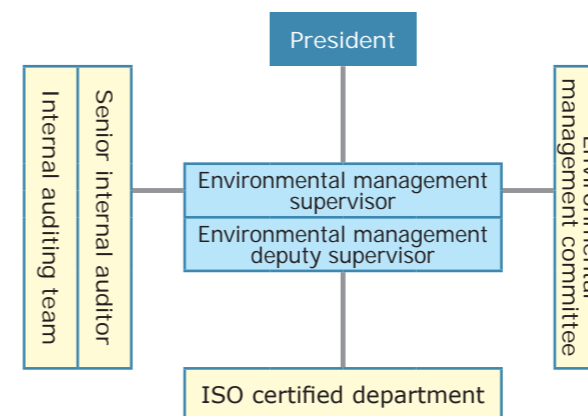
Usage of the Environmental Management System (ISO 14001)

We held the Environmental Management Committee once a month to grasp the progress of our environmental activities.

Environmental objectives and results of ISO 14001

Environmental Objectives	Goal	Result	Description
<General Affairs Dept> Strive to beautify and protect the environment inside and outside the company (mainly around the company).	Community beautification activities: more than 7 times / year	Achieved	8 times against the target of 7 or more
<Sales Division> Zero: external leaks of waste	Zero	Achieved	Achieved the goal (no external leak of waste).
<Wastech Iwaki> Zero of environmental complaints	Zero	Achieved	Achieved the goal (no environmental complaint)
<Wastech Kanagawa> Zero of environmental complaints	Zero	Achieved	Achieved the goal (no environmental complaint)
<Environment Engineering Dept> Zero: environmental accidents in external construction	Zero	Achieved	Achieved the goal (no environmental accident).
<Environment Sales Dept> Reduction of CO ₂ emission	36t / year	Achieved	Contributed to substantive reduction of CO ₂ by selling VOC exhaust gas treatment systems (2)

Framework for Initiatives of ISO14001



Internal Control Concerning Environmental Reporting Reliability

We conduct internal audits of ISO 14001 once a year at all departments in the scope of certification. In addition, examination by an external organization was conducted in January 2022.



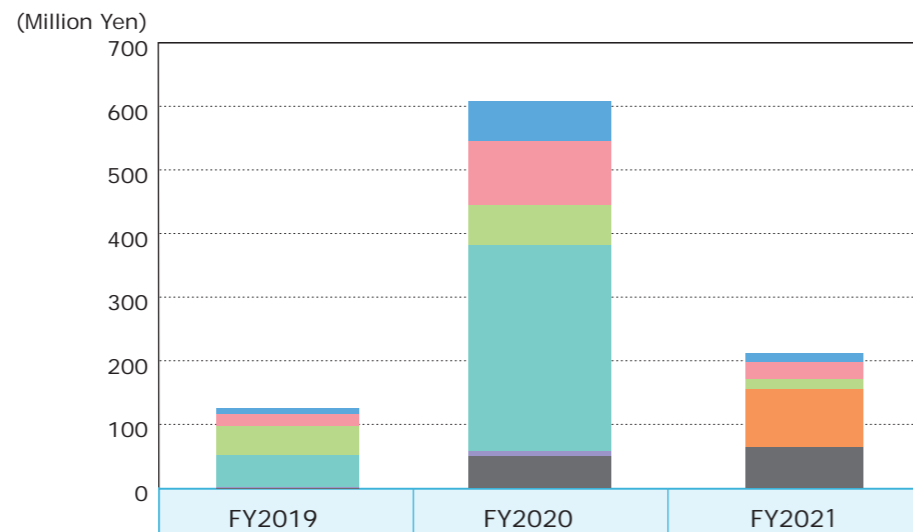
Economic Aspects of Environment-Conscious Management

Investment in Environmental Measures

As an environmental measure for fiscal 2021, we made capital investment of more than 210 million yen.

In addition to continuous investment of ① to ③ Antipollution measures (water quality, atmosphere, noises, vibrations and bad odors) since 2019, we paid special attention to ④ Energy saving and reduction of CO₂ emission and sequentially replaced Transportation Dept's collection & transportation vehicles by eco-friendly models. As for ⑦ Others, we relocated the chemical warehouse as part of our efforts to increase wastewater treatment capacity at WASTECH Iwaki. As a result, we improved our waste disposal facility system to meet our customers' needs better and strengthened our consideration for the environment at the same time.

INVESTMENT IN ENVIRONMENTAL MEASURES



Category	FY2019	FY2020	FY2021
① Antipollution measures (water quality)	9.07	61.40	12.98
② Antipollution measures (atmosphere)	17.81	101.82	26.29
③ Antipollution measures (noise, vibration, bad odor)	46.29	61.78	16.17
④ Energy saving and reduction of CO ₂ emission	0.00	0.00	90.94
⑤ Industrial waste and recycling related measures	50.47	324.12	0.00
⑥ Countermeasures of soil and groundwater contamination	1.35	9.19	0.00
⑦ Others	0.38	48.36	64.34

Compliance with Environmental Regulations

Compliance with environmental laws and regulations

We have stated "Compliance with laws, regulations and voluntary standards" in the basic management system policy. To comply with laws and regulations, we use the international standard ISO14001, which was certified in 1998, to register laws and regulations, and to assess compliance. As a result of the assessment, we have confirmed that the compliance is maintained in FY2021.

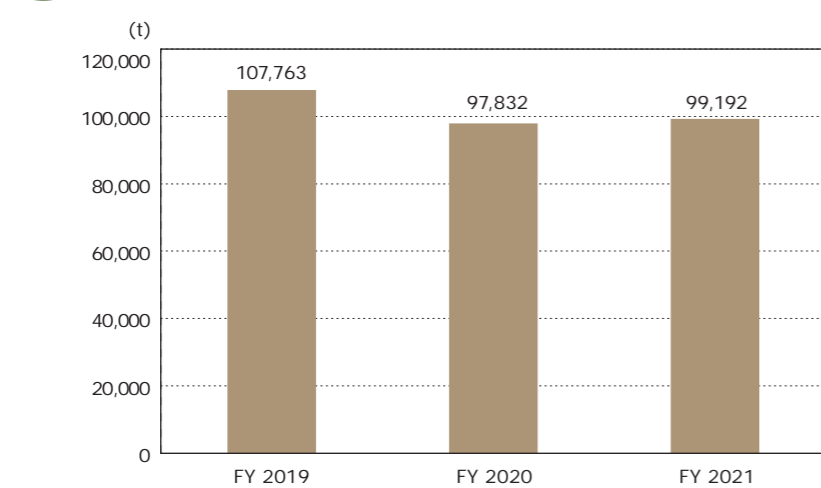
List of major environmental laws and regulations

No.	Names of Laws, Regulations etc.	Contents (in relation with)
1	Air Pollution Control Act	Prevention measures of air and water pollutions
	Water Pollution Control Act	Measurement, investigation, notification related to air and water pollutions
	Act on Special Measures concerning Countermeasures against Dioxin	Related to odor control measures
	Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof	Measurement, investigation, and notification related to malodorous substances and industrial waste
	Environmental Regulations of Fukushima Prefecture, Kanagawa Prefecture, Iwaki City and Kawasaki City	Prevention measures for vibration noise, etc.
2	Waste Disposal and Cleaning Laws	Maintenance & management standards for waste treatment facilities
		Standards for storage of industrial waste and specially controlled industrial waste
		Permission standards for collection and transportation business of industrial waste, specially controlled industrial waste
		Status report on industrial waste management including issuance of management slip
		Regular inspection of industrial waste treatment facilities by the government
3	Ministerial Ordinance for Establishing Criteria of Industrial Waste Containing Metals	Criteria related to landfill disposal of cinders and dewatered sludge
4	Act on Promotion of Global Warming Countermeasures	Greenhouse gas emissions related
5	Fire Service Act	On-site inspection by the government of dangerous goods storage etc.
6	Act on Rationalizing Energy Use	Obligation of regularly report on energy usage by specific companies
7	Guidelines for Mercury Waste	Environmentally appropriate treatment of mercury waste
8	Guidelines for Collecting and Transporting of Low-concentration PCB Waste, Guidelines for Processing of Low-concentration PCBs	Standards for collection, transportation and treatment of low-concentration PCB waste
9	Act on Rational Use and Appropriate Management of Fluorocarbons	Report on the amount of CFC destruction

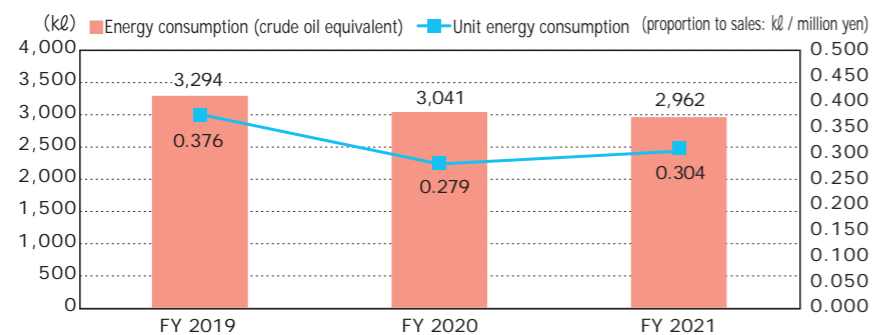
Status of Input and Output of Industrial Waste Treatment Business

Input

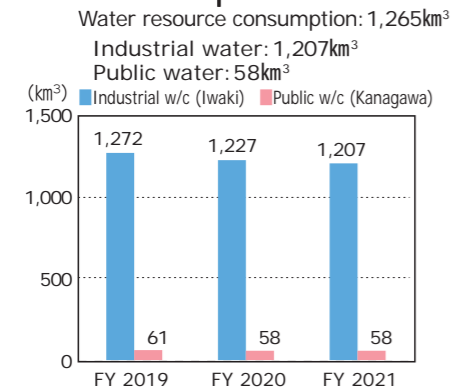
Received amount of waste



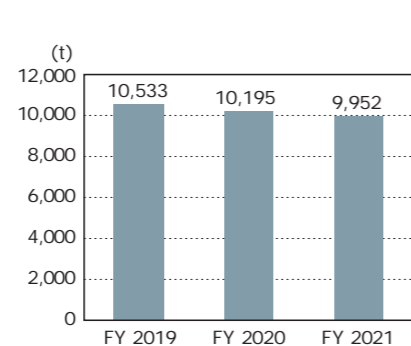
Energy consumption (Crude oil equivalent)



Water resource consumption



Raw material consumption



Waste treatment



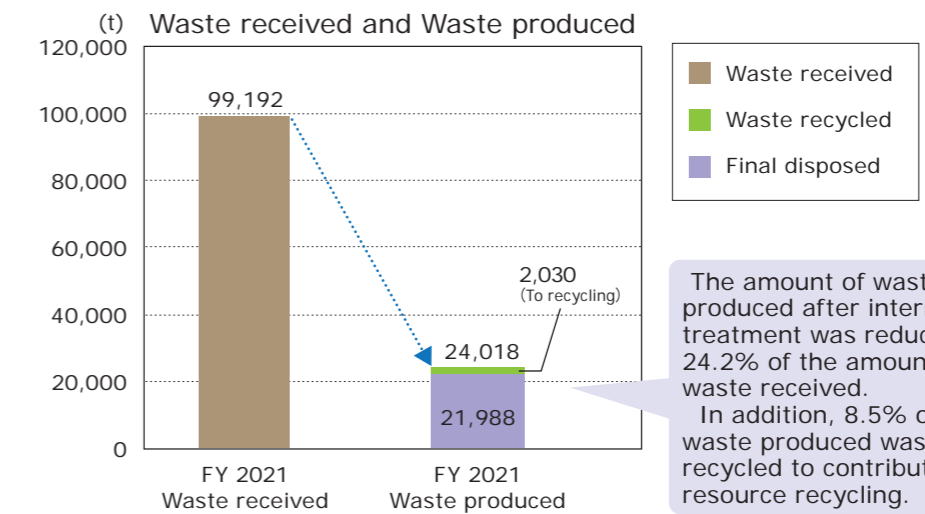
WASTECH Iwaki



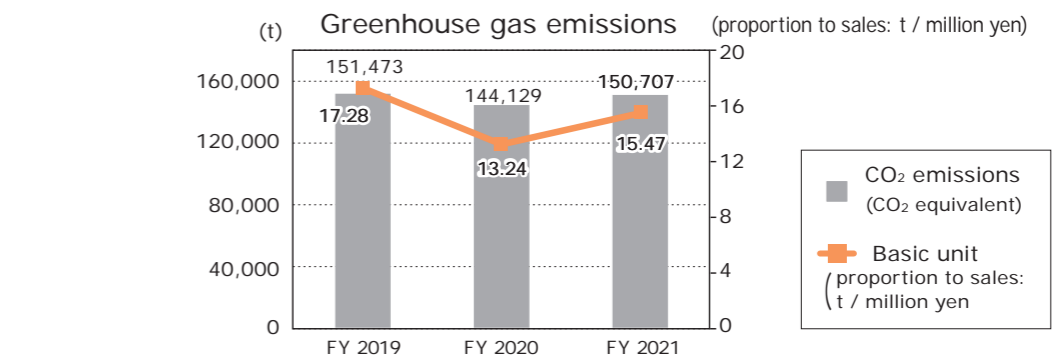
WASTECH Kanagawa

Output

Waste produced 24,018t (Waste recycled 2,030t, Final disposed 21,988t)



Greenhouse gas emissions (CO₂ equivalent)



Wastewater produced

1,081km³

Since WASTECH Kanagawa uses a closed system (a system that recycles wastewater without letting it go outside), the amount of wastewater is only for WASTECH Iwaki.



The Wastech Division will contribute to realization of sustainable society by utilizing and developing the features of facilities in Iwaki and Kanagawa, detoxifying environmentally hazardous substances, and continuously using waste energy through waste power generation and so on.

Yukihiro Ooka
Wastech Division, Deputy General Manager

In the Unit 7 and Unit 8 incinerators of WASTECH Iwaki, we incinerate various kinds of waste such as sludge containing chlorine and silicon, waste plastics, waste acid, waste alkali and medical waste.



Unit 7 incinerator



Unit 8 incinerator



In the technology section, we are striving to pursue high-quality and environmentally friendly treatment technologies for exhaust gas & wastewater as well as waste in each process of the input and output of the incinerator.

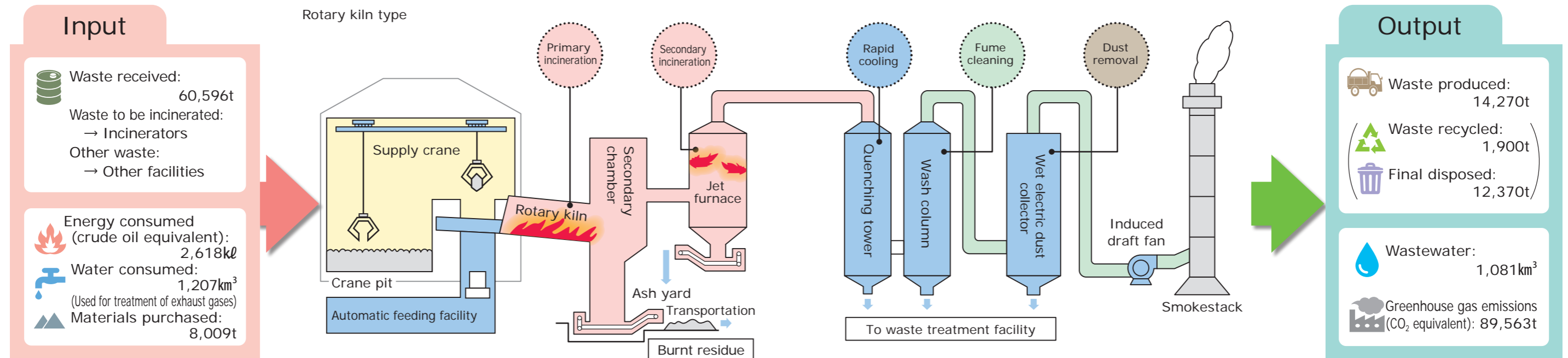
Every member keeps in mind "A stitch in time saves nine" and work with safety first.

Yohei Kusano

Wastech Division, Wastech Planning Dept., Technology Section Manager

Unit 7 & 8 Incinerators

Rotary kiln type



Unit 7 incinerator

Incineration of sludge: 182m³ / day
 Incineration of waste oil: 110m³ / day
 Incineration of waste plastics: 104t / day
 Decomposition of cyanide compound: 202m³ / day
 Incineration of industrial waste: 238t / day

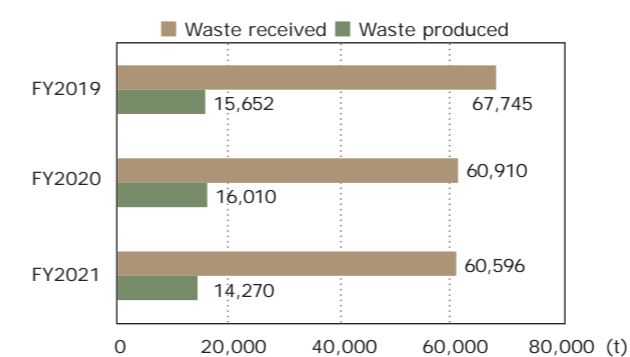
Unit 8 incinerator

Incineration of sludge: 182m³ / day
 Incineration of waste oil: 118m³ / day
 Incineration of waste plastics: 104t / day
 Decomposition of cyanide compound: 266m³ / day
 Incineration of industrial waste: 238t / day

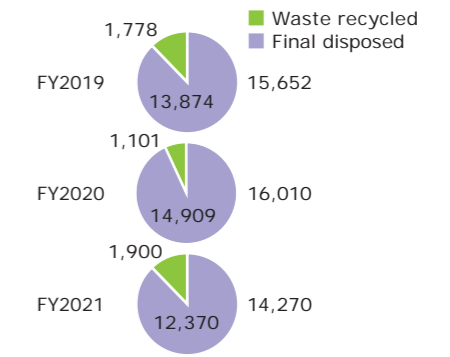


Receiving Station

Waste received and Waste produced



Breakdown of waste produced (t)



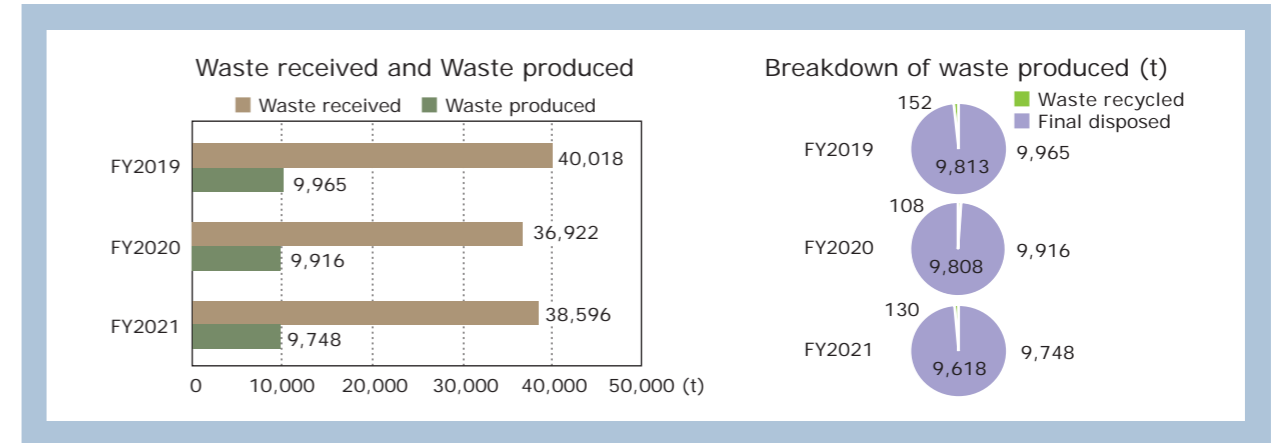
At WASTECH Kanagawa, we incinerate industrial waste and use exhaust heat effectively to generate electricity.

We are trying to contribute to minimization of fossil fuel use by making full use of operation know-how so that we can supply more electricity from a wide variety of waste materials with different calorific values and properties.



The large-scale renovation since FY2020 is proceeding smoothly, and the stability of operations has improved. We will continue to work hard on the waste treatment and power generation with safety first to meet the expectations of our customers.

Tetsuji Takaya
Wastech Division Kanagawa, Administration Manager



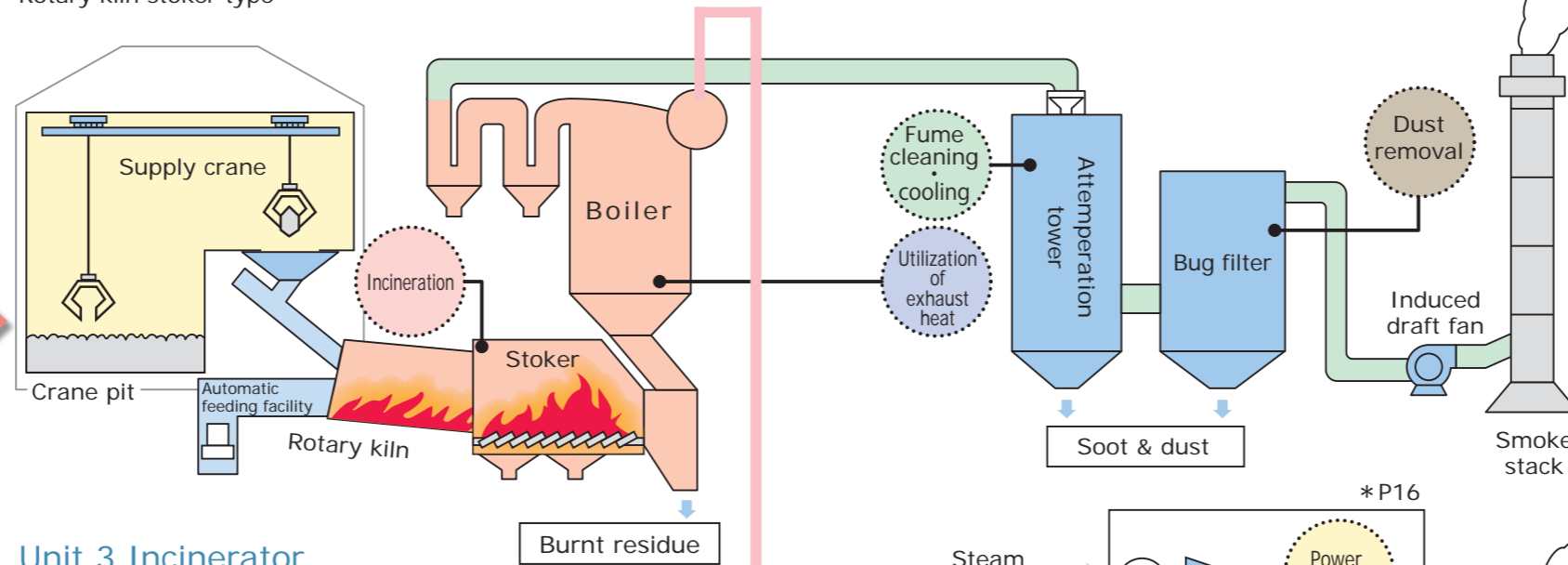
Input

- Waste received: 38,596t
- Waste to be incinerated: → Incinerators
- Other waste: → Other facilities

- Energy consumed (crude oil equivalent): 344kℓ
- Water consumed: 58km³
- Materials purchased: 1,943t

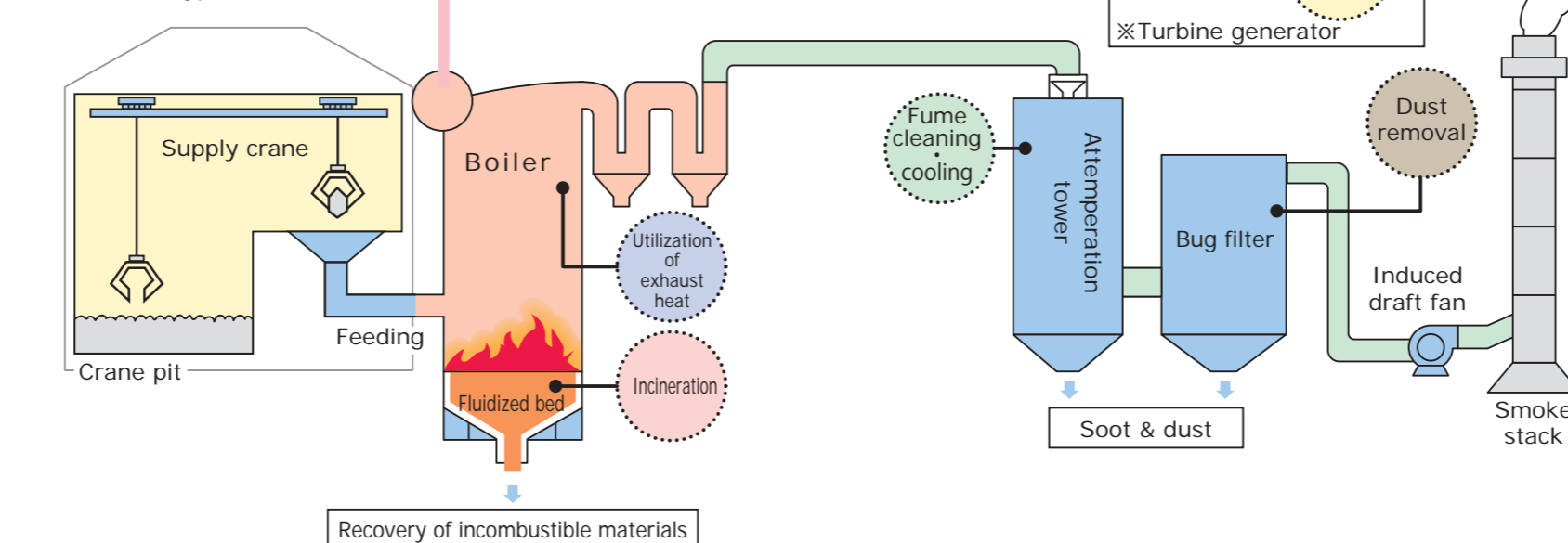
Unit 1 & 2 Incinerators

Rotary kiln stoker type



Unit 3 Incinerator

Fluidized-bed type



Total of Unit 1 & 2 incinerators

- Incineration of mixture: 140t / day
- Incineration of sludge: 112m³ / day
- Incineration of waste oil: 150m³ / day
- Incineration of waste plastics: 80t / day
- Incineration of other industrial wastes: 230t / day

Unit 3 incinerator

- Incineration of mixture: 70t / day
- Incineration of sludge: 48m³ / day
- Incineration of waste oil: 75m³ / day
- Incineration of waste plastics: 40t / day
- Incineration of other industrial wastes: 115t / day

Output

- Waste produced: 9,748t
- Waste recycled: 130t
- Final disposed: 9,618t

- Wastewater: 0km³
- Greenhouse gas emissions (CO₂ equivalent): 61,144t

(Note) In WASTECH Kanagawa, we use a closed system (a system that reuses wastewater without discharging it outside).

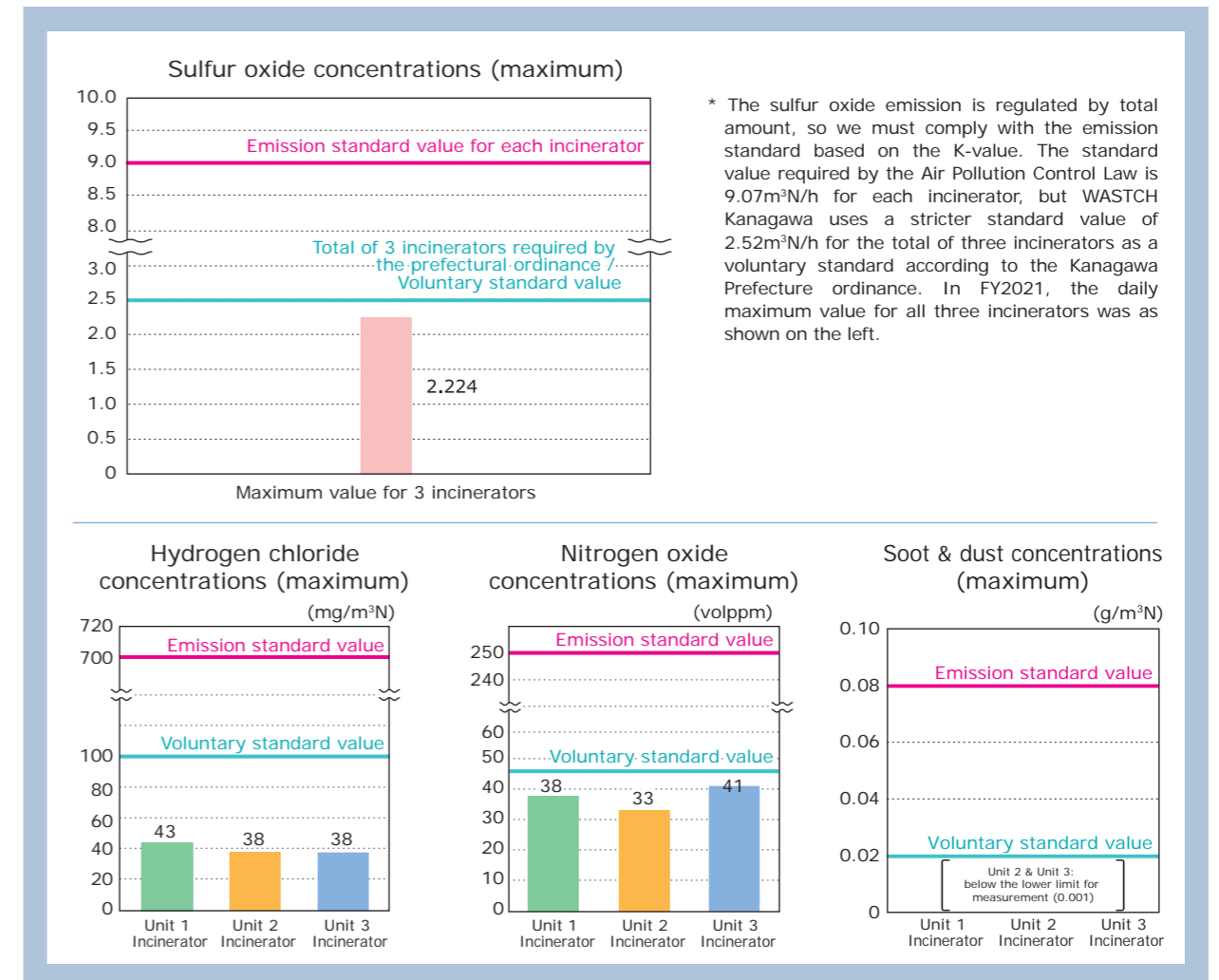
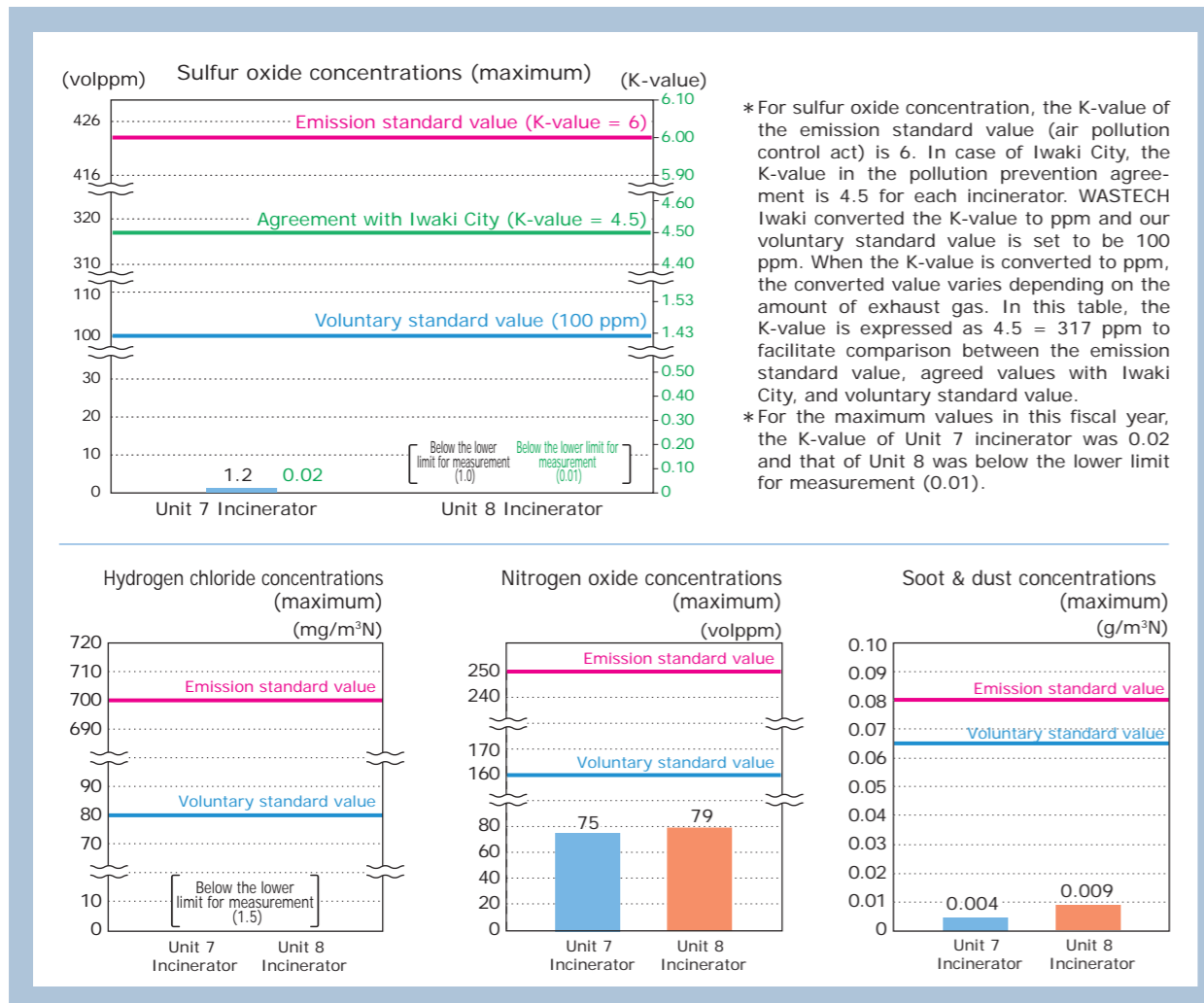
Kawasaki Logistics Center



This is a waste transshipment and storage facility adjacent to WASTECH Kanagawa. Waste carried in by small vehicles will be transported to WASTECH Iwaki by our large vehicles for disposal. We operate the facility considering transportation efficiency.

The concentrations of sulfur oxide, hydrogen chloride, nitrogen oxide, and soot & dust of the incinerators' exhaust gas in FY2021 are below the voluntary standard values owing to appropriate maintenance of waste disposal facilities, and compliant with the emission standards of laws & regulations.

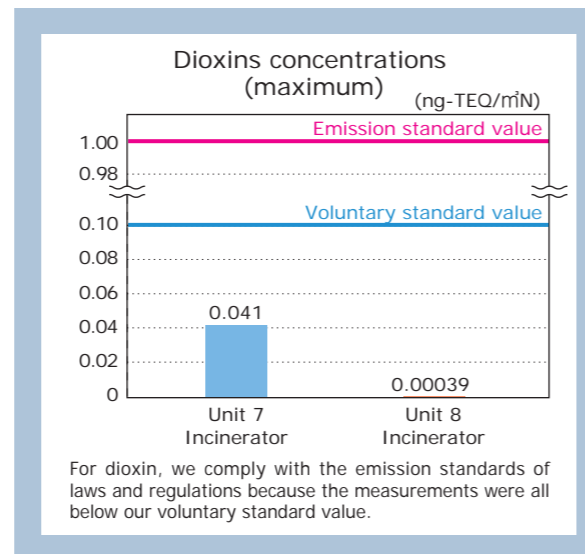
* The emission standard values are the emission standard values in the Air Pollution Control ACT.



Release and transfer of chemical substances

There are 31 substances applicable to Pollutant Release and Transfer Register Law (PRTR Law), and we properly submitted notifications. In this report we picked up dioxin, among priority substances and benzene, trichloroethylene and tetrachloroethylene among designated substances of the Supplementary Provisions to the Air Pollution Control Act.

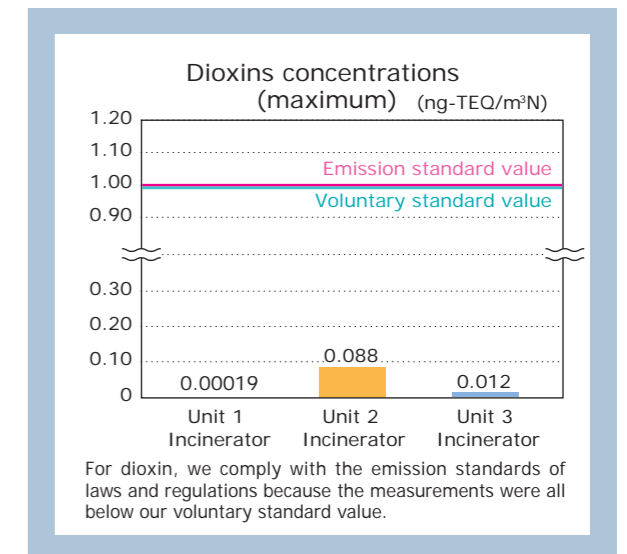
Transfer of dioxins: 1,603 mg-TEQ/year	Release of benzene: 5.4 kg/year
Release of trichloroethylene: 5.4kg/year	Release of tetrachloroethylene: 5.4 kg/year



Release and transfer of chemical substances

There is 1 substance applicable to Pollutant Release and Transfer Register Law (PRTR Law), and we properly submitted a notification.

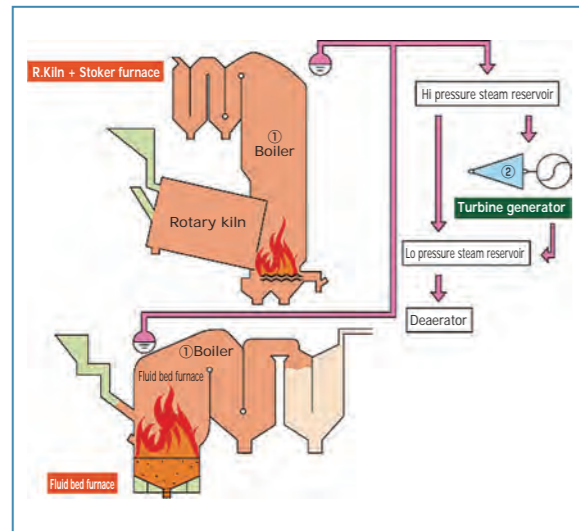
Transfer of dioxins:
4,964mg-TEQ / year



Waste Power Generation (Thermal Recovery) at WASTECH Kanagawa

WASTECH Kanagawa has a maximum power generation capacity of 4,800kW by thermal recovery that recovers the exhaust heat of three incinerators.

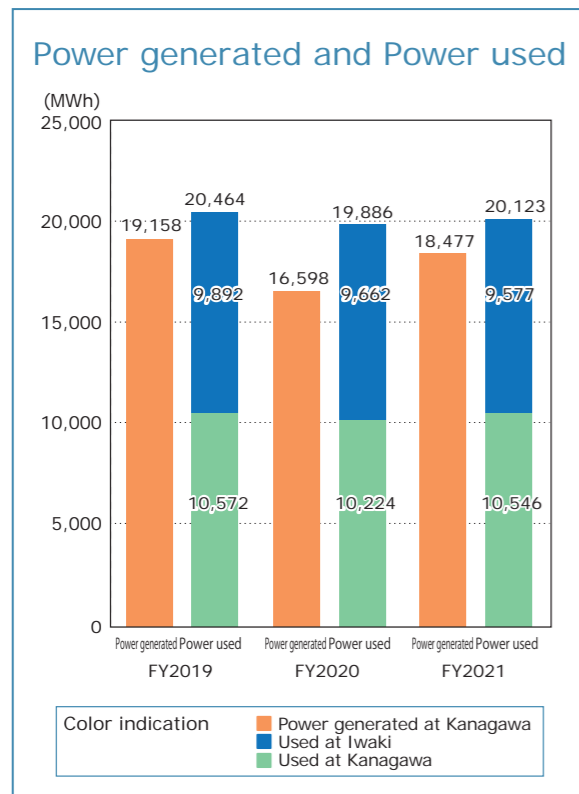
The power generated is used by WASTECH Kanagawa and surplus power is sold. Thus, we return excess energy to society in the form of electricity, contributing to the reduction of environmental load.



①Boiler
This cools the combustion gas and supplies the generated steam to the on-site equipment and power generation equipment.



②Turbine Generator
This generates power with the steam produced in the boiler. The generated power is used within the plant, and the surplus power is sold.



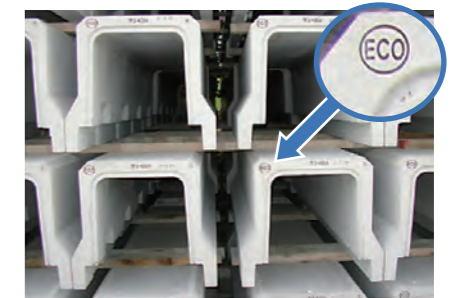
* This graph shows that the power generated at WASTECH Kanagawa is almost equal to the total power used by (WASTECH Kanagawa + WASTECH Iwaki).

Material Recycling

We outsource recycling of some of our waste to an external contractor after intermediate treatment.

●Example of using recycled material: PACIFIC METALS CO., LTD. (our contractor)

Molten slag MS5 (fine aggregate)



●Example of using recycled material: CHUO DENKI KOGYO CO., LTD. (our contractor)

An example used as leveling material for a photovoltaic power generation facility

Recycled material from wast



●It is used as base material, revetment material and etc



Example of recycling: revetment material (Photo: provided by Chuo Denki Kogyo Co., Ltd.)

Detoxification of Low-Concentration PCB Waste Treatment



Detoxification overview

We are processing at the following facilities that have been certified as harmless by the Minister of the Environment.






Building for pretreatment of housing/chassis/enclosure



Fixed-bed incinerator

We can treat all the low-concentration PCB wastes in the table below.

	Low concentration PCB waste	
	Waste electronic equipment, etc. with trace-level PCB contamination	Waste containing low-concentration PCBs
Low concentration PCB waste oil 	Insulation oil with trace-level PCB contamination Electrical equipment or insulating oil (used in OF cables) with PCB micro contamination	Waste oil containing low-concentration PCBs Waste oil, etc. with a PCB concentration of 5,000 mg/kg or less (mainly fluid)
Low-concentration PCB waste 	Trace-level PCB contaminants Objects contaminated through insulation oil with trace-level PCB contamination	Low concentration PCB contaminants Sludge, paper waste, wood waste, textile waste and plastic waste with PCB concentrations of 100,000 mg/kg or less (*). Unwanted items such as metal scraps, ceramic scraps, concrete debris, etc. with a PCB concentration of 5,000 mg/kg or less.
Low concentration PCB-treated Materials 	Trace-level PCB treated materials Objects treated to dispose of trace-level PCB waste oil or low concentration PCB contaminants	Treated materials containing low-concentration PCBs These are treated to dispose of PCB waste, and have a PCB concentration of 5,000 mg/kg or less (for scrap metal, etc., the PCB concentration of deposits is considered)



Reinforced pretreatment equipment (in the low-concentration PCB pretreatment building)

*Responding to the change in the definition of "low-concentration PCB waste"

As the results of facility improvement of the low-concentration PCB pre-treatment building as well as demonstration tests of combustion, on March 31, 2020, we obtained the certification of the Minister of the Environment for disposal of low-concentration PCB contaminated wastes at concentrations of 5,000 to 100,000 mg/kg (0.5 to 10.0%), making us the second case in Japan.

We will comply with the proper disposal methods required by law and will contribute widely to society through "proper and detoxification treatment of difficult-to-dispose-of wastes" including low-concentration PCBs.

Disassembly facility for disposed large-scale electrical equipment

W.I.L. Center^(*Note)



(*Note) "W.I.L. Center" stands for Wastech Iwaki Logistics Center.
(Wastech Iwaki Logistics)

We started operation of W.I.L. Center in April 2019.

We can carry out large-sized waste electrical equipment up to 30t quickly without dismantling it at your site.



You can carry in waste electrical equipment without dismantling for storing and dismantling it in this center.



We have reduced work time and improved waste storage capacity through workability improvement by use of machinery and utilization of storage space. Therefore we can provide faster and more flexible disposal services.

Contributes to detoxification of low-concentration PCB waste by the most appropriate method.

Depending on the conditions of the site where the large waste electrical equipment is placed, we can flexibly use the "on-site dismantling method" for carrying out. With the treatment technology we have cultivated so far and the operation of the W.I.L. Center, we will promote the detoxification of low-concentration PCB waste within the time limit set by the law.



Setting up a temporary installation for dismantling



Before dismantling of waste electrical equipment



Dismantling of waste electrical equipment



Packing style before carrying out



【Attention! Get ready early!】 Only less than 5 years until March 31, 2027, the deadline for low-concentration PCB waste disposal. As an experienced "waste concierge" we will solve your problems by utilizing chemistry and technology. Not to leave a negative legacy to the next generation, please feel free to contact us.

Shun Sasaki
Sales Division, Sales 3rd Dept, Low-conc. PCB Sales Section Manager

Environmental Engineering Business



We contribute to the preservation of the earth through the manufacture and delivery of environmental equipment.



The Environmental Sales Department is working to preserve the air and water environment and contribute to building a sustainable society through providing environment-related equipment based on our unique technology. We also focus on enlightenment of people and application development of environment-related equipment for the next generation.

Atsushi Nakano

Environment Engineering Division, Engineering Sales Dept, Chief



The Environmental Engineering Department provides customers with total engineering services, from planning to design, construction, trial operation, and maintenance services of environment-related facilities, and positively contributes to global environment preservation and reduction of environmental burdens.

Katsushi Sato

Environment Engineering Division, Environmental Technology Dept, Deputy Manager

VOC effluent gas treatment equipment "GASTAK"

Recovery of organic solvents, removal of harmful and malodorous substances

Our "GASTAK" is revolutionary exhaust gas treatment equipment aimed at recovering the organic solvent contained in the exhaust gas and removing harmful and malodorous substances in the exhaust gas.



GASTAK
"Convertek"

Excerpt from Converting Technical Institute's magazine

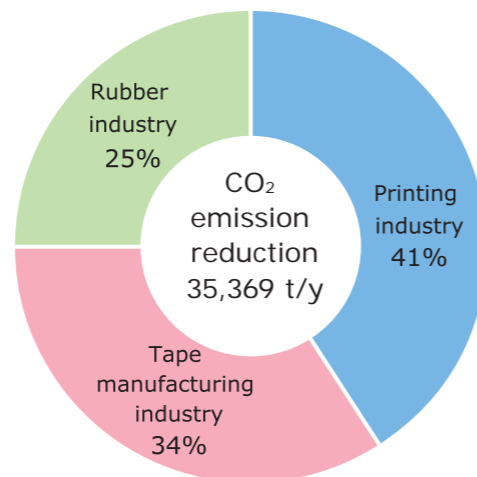
Contribution to CO₂ emissions reduction

If the solvent components contained in the exhaust gas are released without treatment, they will be decomposed in the atmosphere and eventually converted to CO₂.

On the other hand, if the solvent components are liquefied and recovered in the recovery unit, the solvent components in the exhaust gas can be reused without changing to CO₂, thus reducing the amount of CO₂ generated from exhaust gas treatment.

The estimated annual CO₂ emission reduction is shown in the graph based on the cases that we have delivered for the purpose of solvent recovery so far.

We will continue to contribute to the reduction of environmental load in this field as well.



Estimated annual CO₂ emission reduction by our delivered 17 solvent recovery systems

Water treatment equipment

Prevention of corrosion of water supply facilities by improving water quality

The calcium hydroxide solution injection device called "HONESTLIMER" for water suppliers has been introduced at water purification plants throughout the country. This device prevents the corrosion of and dramatically extends the service life of water facilities (water purification and distribution equipment), improving water quality and creating safe and delicious water.

Calcium hydroxide solution injection equipment
(Source: Karatsu City Water and Sewage Bureau, Kuri Water Purification Plant)



Appropriate water quality management of drinking water

When it is necessary to control the high pH value of raw water that a water treatment plant takes, we provide our own unique carbon dioxide gas injection equipment with outstanding safety and ease of handling to help achieve appropriate water quality control at the plant.

Carbon dioxide gas injection equipment
(Source: Yonago City, Togami Water Source)



Ecosystem-friendly algae control

Water bloom, which is caused by cyanobacteria in lakes, marshes, and reservoirs because of the eutrophication of rivers, lakes, and marshes, has been a problem.

"SHALLOW CLEAN" focuses on light as an essential element of water bloom and blocks out all but the necessary minimum of light on a section of a water surface to control abnormal growth of algae without destroying the water's ecosystem.



Before SHALLOW CLEAN was installed



84 days after SHALLOW CLEAN was installed

Water treatment equipment and social contribution

Water circulates in the natural environment while maintaining relationships with all living things. The precious water resource is in extreme danger due to pollution of rivers and lakes.

We will continue to contribute to the provision and maintenance of a healthy water environment in various fields with our unique technologies, such as preventing the generation of red water by avoiding the corrosion of water pipes to ensure a stable supply of good-tasting water, purifying polluted wastewater to maintain beautiful rivers, and restoring beautiful lakes and marshes by removing blue-green algae, a symbol of pollution of closed water areas.

Building Safety Culture

We have been working with "Building Safety Culture" as a safety and health management policy.

Based on our Safety and Health Management Policy, "Safety comes first," we will further raise safety awareness and build a safety culture.

As one of the measures to raise safety awareness, we are making preparations so that we can conduct various trainings within the company. In fiscal 2021, we conducted special trainings for the leaders of vehicle-based material handling and transportation equipment, loading and unloading work leaders, and employees who use full-harness type fall prevention equipment, leading to accident prevention.

We will continue to promote safety and health activities, keeping in mind that "safety comes first" so that not only our employees but also everyone involved can laugh with their families without getting injured.



Main Activities in FY2021

- ① Identify risk areas for disaster occurrence and implement protective measures
- ② Build a safety culture by utilizing external knowledge
- ③ Strengthen safety management system
- ④ Enhance safety education
- ⑤ Special patrols by the president and directors
- ⑥ Enhance and upgrade risk assessment
- ⑦ Enhance preventive activities of nearly misses
- ⑧ In-house broadcast to raise safety awareness



●Operation of the occupational health and safety management system, ISO 45001

In order to improve the safety level, we were certified and registered for the ISO 45001 occupational safety and health management system in April 2019 after a certification examination by a registration examination body in March 2019. In January 2022, we took a renewal examination. The effectiveness of our management system was certified, and the registration certificate was renewed in April 2022. We will continue to make effective use of our management system to create workplaces where no one feels pain, and to promote safety culture.



Safety and Health Activities



●Comprehensive Emergency Drills and Safety Patrols (Iwaki, Kanagawa)

At WASTECH Iwaki, with the cooperation of the Nakoso Fire Department of Iwaki City, we conducted a comprehensive emergency drill together with the self-defense fire brigade of Kureha Corporation Iwaki Plant.

We assumed the conditions below for the drill:

Assumptions for the drill

- ① White smoke and heat were produced from the waste on the vehicle bed.
- ② One person was injured during the initial response and was transported by ambulance.
- ③ White smoke was temporarily contained with dry sand, but a fire broke out from the waste container.
- ④ The fire was extinguished by spraying water in corporation with the public fire department.



WASTECH Iwaki, November 17, 2021

WASTECH Kanagawa conducted a disaster prevention drill under the conditions below:

Assumptions for the drill

- ① A lithium battery fell into the iron hopper, producing white smoke.
- ② The disposal of waste was partly postponed, construction work by external partner companies was suspended, and evacuation guidance was provided.
- ③ During the initial firefighting, some people were injured. Firefighting was carried out with rescue activities.
- ④ After confirming that the fire was extinguished, we lifted the ban on traffic and requested the resume of construction.



WASTECH Kanagawa, November 27, 2021

●Number of Disasters & Identified Near-misses (potential disasters)

In both Iwaki and Kanagawa, we take safety measures to reduce the occurrence of disasters on the premises through utilization of managerial patrols and other patrol systems as well as discovery of dangerous spots and situations from various perspectives to address them. In particular, we set a priority action policy to strive to prevent crashes & falls, overturning, and accidents involving heavy machinery while working on continuous improvement. In addition, as an initiative from FY2021, we decided to define not only the hazardous sources felt in daily work, but also those assumed as near misses (potential disasters). As a result, more hazards are defined and then for serious hazards we will implement risk assessments to continuously subdue accidents through appropriate control and management.

Accident Occurred

Description	Year(FY)	2019	2020	2021
Fatal accident		0	1*	0
Lost time accident		1	2	2
Non-lost time accident		2	6	4
Minor injury		2	0	1
Serious near-miss		0	1	2
Total		5	10	9

*Note Accident of the main contractor that occurred on the premises

Lost time accident

Accidents resulting in lost work time of 4 days or more

Non-lost time accident

Accidents requiring 1 to 3 days off work : no day off but requiring continuous hospital visits

Minor injury

Accidents not requiring time off from work (minor injuries requiring examination and treatment at a hospital (no continuous visit), injuries requiring first-aid treatment)

Serious near-miss

Cases in which the company determined that an extremely dangerous event had occurred, although it led to no personal injury.

Near Misses(Nearly escaped accidents)

Accident type	Year(FY)	2019	2020	2021
Injuries when sandwiched		15	23	
Caught-in injuries		2	0	
Fall injuries		223	173	
Falls from height		24	48	
Puncture wounds or lacerations		23	35	
Contusions		87	81	
Falling/flying objects		67	41	
Eye injuries		12	15	
Chemical burns		48	51	
Electric shocks		4	1	
Traffic accidents		374	391	
Equipment damage		15	7	
Other accidents		72	64	
Total		966	930	

Accident type	Year(FY)	2021
Fall / tumble		87
Falling down		361
Clash		150
Flying / falling		101
Disintegrate/collapse		14
Smashed		42
Sandwiched / caught in		38
Cut/scratched		49
Stepping through		7
Drowning		0
Contact with hot/cold objects		69
Contact with harmful agents		84
Electric shock		6
Explosion		0
Rupture		0
Fire		5
Traffic accident (on road)		631
Traffic accident (others)		9
Recoil of movement / unreasonable movement		42
Others		75
Unclassifiable		9
Total		1,779

*We changed the "accident type" to the type based on the classification of the Ministry of Health, Labor and Welfare in FY2021.



Under the basic principle of "Safety takes precedence over everything," we worked hard to further stimulate near-miss prevention activities led by the Promotion Committee and enhance the content of Safety and Health Week. We will continue to strive to build a safe and hygienic work environment.

Hironori Kakiage

Environment and Safety Division, Environment and Safety Dept, Health and Safety Section

●Reporting the conclusions of near-miss prevention activities

We had an overall reporting session of Promotion Committee of Near-miss Prevention Activity (hereafter, just as Committee) on February 17, 2022. This Committee was established in May 2021 to further stimulate near-miss prevention activities. Committee members selected from various departments formed three groups to promote the activities. The overall reporting session was intended to show the conclusions the activities taken to date. Each group gave a presentation on what activities they did and what results they obtained, including a question-and-answer session.



February 17, 2022

●The 2nd Safety Conference

We had the 2nd Safety Conference in the conference room of the head office on January 17, 2022. We held the conference in conjunction with a web conference to prevent the spread of COVID-19 infection, and many employees participated in it from sales offices around the country.

At the beginning, President Sano (at the time) said, "Let's use this opportunity to return to the basics and work together to build a strong safety culture."

Next, Mr. Hashimoto, General Manager of the Environment & Safety Dept, gave a lecture on the trends in the occurrence of personal accidents in 2021 and countermeasures.



In the conference, we had an award ceremony for the safety and health campaign based on the improvement reporting system. The purpose of this campaign is to raise employees' health and safety awareness by awarding excellent health and safety improvement reports. During the period from September to October last year, 144 improvement reports were submitted, and 17 received awards.

Then, Mr. Hitoshi Ogura, President of Management Dynamics Co. gave a special lecture on improvement methods to eliminate disasters from a manager's perspective.

At the end of the competition, all participants returned to the basics for renewal of their determination to create a workplace where they can work without accidents, cheerfully, and in good health.



January 17, 2022

●Drills Assuming Emergencies

The Environmental Restoration Section had a leakage prevention drill at the W.I.L. Center. This drill assumed that the radiator came into contact with a pillar when it was being moved by a forklift, and the remaining oil leaked out. In the drill, participants used real emergency kits and others for leakage, and they seriously confirmed their emergency procedures.

After the drill, we also confirmed how to wear the full harness-type fall prevention equipment used when working at height, and checked whether the harness was loose and whether the name was on it.



June 4, 2021

●Lectures on Health by Industrial Physicians

A lecture by Dr. Tsurimaki, our industrial physician, was held at the head office. The lecture was given in a way that employees from local sales offices could also participate by using a web conference. The theme was "After the COVID-19 infection (focusing on vaccines)." Dr. Tsurimaki explained the effects and adverse reactions of the vaccine based on specific data, and the participants listened attentively.



October 21, 2021

Various Initiatives



Awareness Campaign to Prevent Overloading

In WASTECH Iwaki and WASTECH Kanagawa, we carried out an overload prevention awareness campaign in conjunction with Weighing Day on November 1, 2021.

Overloading is an act of carrying loads that exceed the specified weight. It is prohibited by law and may cause the vehicle to have a cargo shifting or lose its balance, leading to a serious accident.

On the day of the campaign, we set up a yellow banner with the words "We do not! Never let you do it! No overloading!" and handed towels to the drivers, requesting their attention.



November 1, 2021

Participated in Removal of Illegal Dumped Waste in Iwaki City

On November 4, as a member of Iwaki Area Council of Fukushima Industrial Resources Recycling Association, we participated in the removal activity of illegal dumped waste in Iwaki City.

Iwaki City Fukushima designates October as "Illegal Dumping Eradication Month" every year.

As part of this campaign, our employees participated in it to remove waste and to raise awareness.



Attended EcoPro Online 2021

We attended the online exhibition "EcoPro Online 2021".

This exhibition is about carbon neutrality and SDGs (Sustainable Development Goals). Focusing on the VOC exhaust gas treatment system "GASTAK" that contributes to carbon neutrality and the development of next-generation energy, we exhibited unique services provided by our proprietary treatment technologies and facilities, such as water purification equipment and proper treatment of industrial waste.



November 25 to December 17, 2021

Attended Chemical Material Japan 2021 -ONLINE-



October 18 to October 29, 2021

We attended the online exhibition "Chemical Material Japan 2021 -ONLINE-".

This exhibition covered the chemical industry area. For the purpose of introducing our company as "concierge of waste" we exhibited seven concepts or items below: ① burial system ② incinerator dismantling ③ waste related to environmental restoration ④ low concentration PCB waste ⑤ why Kureha Ecology Management incinerates waste ⑥ VOC exhaust gas treatment system "GASTAK" that contributes to carbon neutrality ⑦ our incineration treatment flow.

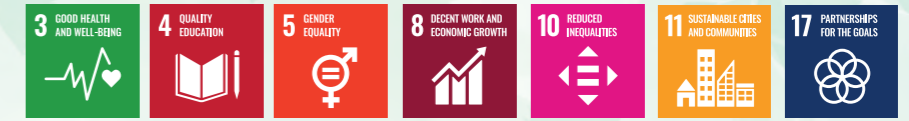
Attended Kawasaki International Eco-Tech Fair

We attended the online exhibition, the 14th Kawasaki International Eco-Tech Fair from November 16 to 26.

This exhibition aims to disseminate environmental technologies that solve environmental problems from Kawasaki City to Japan and overseas.

This year, as in the previous year, the fair was held online. We exhibited a wide range of items, including our waste consultation desk "Waste Concierge," VOC exhaust gas treatment system "GASTAK," and Westec Kanagawa's "Thermal Recovery" (a power generation method that uses exhaust heat).

Various Initiatives



Cooperating to Foam Fire Extinguishing Drill

The Iwaki City Fire Department conducted a drill using foam fire extinguishing agent at WASTECH Iwaki on March 15. In response to a request from the Department, we cooperated by providing a building in WASTECH Iwaki as a place for the drill.



March 15, 2022

Emergency Lifesaving Drill

We had a first-aid workshop by the Nakoso Fire Department at the Iwaki City Nakoso branch conference room.

In order to save a person who suddenly collapsed, it is important to provide appropriate first aid quickly before the ambulance arrives, and the participants seriously worked to acquire this knowledge and skills.

We truly realized the significance of learning cardiopulmonary resuscitation techniques not to interrupt the "lifesaving relay" that passes on the baton of life, and also to prepare to follow the emergency rescue procedure in an emergency.



December 2, 2021

Briefing on Food and Radioactivity

As part of environmental education at the WASTECH Division, we had briefings on food and radioactivity.

We have these briefings regularly, and in FY2021, we had them twice in an online format on January 25 and February 14, and external lecturers gave lectures titled "Tritium" and "Trends in Radioactive Contamination of Marine Products in Fukushima Prefecture and the Current Status and Issues of Fisheries Revival."



January 25, 2022

Creating a Workplace Free of Harassment

In response to the revision of Act on Comprehensively Advancing Labor Measures and the enactment of measures against power harassment, it became mandatory to take measures to prevent it. Harassment in workplace not only harms the dignity of individual employees and disrupts the effective exercise of their abilities, but also hinders workplace order and the execution of work, resulting in adverse social evaluation generally.

We do not tolerate not only power harassment but also any harassment. In order to ensure that all employees can always maintain a high level of awareness of harassment issues, we prudently informed the revision of the Act and our policies to employees. We also conducted online harassment prevention training. We make all of these initiatives with the aim of creating a workplace where employees can work with peace of mind.



In Honor of the Achievements

Commendation for Excellent Workers by Fukushima Prefecture Industrial Resource Recycling Association

At the 9th ordinary general assembly of the Fukushima Prefecture Industrial Resource Recycling Association on June 4th 2021, Mr. Yasuhiro Ono, Manager of Transportation Dept, received an excellent employee award. This commendation is given to those who have been engaged in the industrial waste business for 10 years or more and who have excellent performance as a good example for others.

Upon receiving the award, Mr. Ono said, "On June 4, I received the Excellent Worker Award at the general assembly of the Fukushima Industrial Resource Recycling Association, and I would like to express my gratitude to the many customers, superiors, seniors, and colleagues who have supported me in our environmental business for 36 years. I am determined to continue to make further efforts to live up to the award, and I ask for your continued guidance and encouragement."



June 4, 2021

In Recognition of Daily Activities - Commended by Kanagawa Industrial Resource Recycling Association

Atsushi Hitomi, Daiki Kuribayashi, and Yumi Murata of WASTECH Kanagawa were awarded as excellent employees by the Kanagawa Industrial Resource Recycling Association. This award is given to those who have worked at the relevant office as an employee for 10 years or more, have excellent performances, and stand out as role models for others.



Award winner, Mr. Hitomi (center)



Award winners, Mr. Kuribayashi (left), Ms. Murata (right)

June 16, 2021

Received Excellent Driver Award - Joint Commendation of Chief of Police and Chief of Association



December 6, 2021

Yoshichika Kamata of the Transportation Dept received the Excellent Driver Award jointly by the Iwaki Minami Police Station Chief and the Iwaki Minami District Traffic Safety Association on December 6, 2021. This award is given to a good driver who has been an example for others with no accidents or violations for many years.

In response to the award, Mr. Kamata said, "I was honestly surprised to receive this award. I am determined again to drive safely. Thank you."



Recognized for Contribution to Blood Donation Efforts - Received Golden Order of Merit Medal from Japan Red Cross



June 16, 2021

In recognition of our contribution to blood donation activities over many years, we received the Golden Order of Merit Medal from the Japan Red Cross Society.

We cooperate with group blood donation twice a year and many employees participate in the activities. The website of the Japan Red Cross Society states that "the blood used for transfusion cannot yet be artificially produced and cannot be stored for a long time," and the cooperation of healthy people is essential for those who need it.

Presently, due to the influence of the COVID-19 infection, the number of blood donors is decreasing. We will continue cooperation to help overcome this situation.

Various Initiatives of Himeyuri total work Co., Ltd.



We made Himeyuri total work Co., Ltd. that operated a final disposal site a wholly owned subsidiary on April 1, 2019. Himeyuri acquired "Eco Action 21" ^(*2) certification in December 2009, and has been making continuous efforts to improve the environment as a registered business operator.

(*2) "Eco Action 21" is a unique Japanese environmental management system established by the Ministry of the Environment.



Heitarou tertiary disposal site completed in 2018

Initiatives to Reduce Environmental Impact through Introduction of Electric Vehicles and Solar Power Generation

We introduced electric vehicles in May 2019 to reduce gasoline consumption. By raising awareness of active use, the mileages of company-owned vehicles in FY2021 became equal between electric and gasoline vehicles.

In addition, we installed a solar power generation facility "Himeyuri total work Power Plant" and sell all of the generated power. The total power generation in FY2021 was 295,160 kWh, which is equivalent to the amount of electricity consumed by 68 average households ^(*3) in one year.



(*3) Estimate based on statistics from the Ministry of the Environment (FY2017)
<https://www.env.go.jp/earth/ondanka/kateico2tokei/2017/result3/detail1/index.html>

Himeyuri Audit Committee

We have had the Himeyuri Audit Committee twice a year, in spring and autumn, since March, 2000 to have the status of maintenance and management of disposal sites checked from a third-party perspective. This Committee is made up of representatives of the neighbors including ward mayors and representatives of the adjoining common area. The contents of the audit cover the amount of waste received, the status of landfills, and the status of maintenance and management of landfills and leachate treatment facilities.

In FY2021, paying careful attention to the spread of the COVID-19 infection, we held it on April 24 for the spring meeting and October 23 for the autumn meeting.

We will continue the Himeyuri Audit Committee as a place for open and meaningful communication with neighbors.



October 23, 2021

Cooperation in disaster response ~ Opening parking lots to local residents

Recently, disasters, especially those caused by heavy rain, have been spreading across the country. Himeyuri opens its parking lot for its employees as a temporary evacuation site for local residents.

It contributes to the safety of local residents in times of emergency.



Exhibition Room and Greening Activities

We opened an exhibition room for visitors in Himeyuri's building. Here, you can see the history and business overview in an easy-to-understand manner through panels and dioramas.

In addition, we engage in greening activities around and within the company building to welcome customers.



We will continue to make constant efforts as a company rooted in the community that treasures the harmony between people, society and the global environment.

History

December 1971	Establishment of Kureha Kompo Co., Ltd.
October 1975	Changed to Kureha Gyomu Co., Ltd.
March 1977	Permission was acquired to conduct operations to collect, transport, and dispose of industrial waste in Fukushima Prefecture
July 1984	Changed to Kureha Kankyo Co., Ltd.
October 1986	Unit 7 incinerator was developed, installed, and operated in-house
May 1993	The Unit 8 incinerator is developed, installed, and operated in-house
March 1998	ISO14001 certification is acquired
April 1998	Unit 7 incinerator was renewed in-house
April 2006	Changed to Kureha Ecology Management Co., Ltd.
June 2006	Paid-in capital increased to ¥240 million
April 2010	The Kanagawa Plant was opened
April 2011	The Kawasaki Logistics Center was opened
April 2012	The Environmental Solutions Division was opened
April 2014	WASTECH Park becomes WASTECH Iwaki and the Kanagawa Plant became WASTECH Kanagawa
March 2017	ISO9001 certification was acquired
April 2019	Himeyuri total work Co.,Ltd. became our wholly owned subsidiary W.I.L. Center was opened ISO45001 certification was acquired
December 2022	Celebrating 50th Anniversary



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The Environmental Report 2022 is also published on our website:
<https://www.kurekan.co.jp/en/>

MEMO



"Ikoji" Plaza



Exhibition area



Regional Exchange Hall



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WASTECH Kanagawa

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