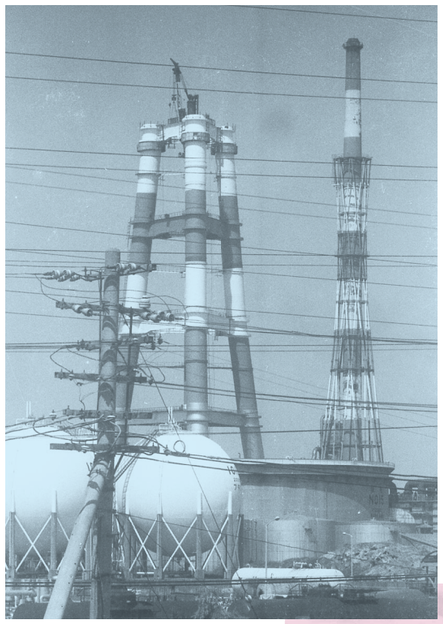
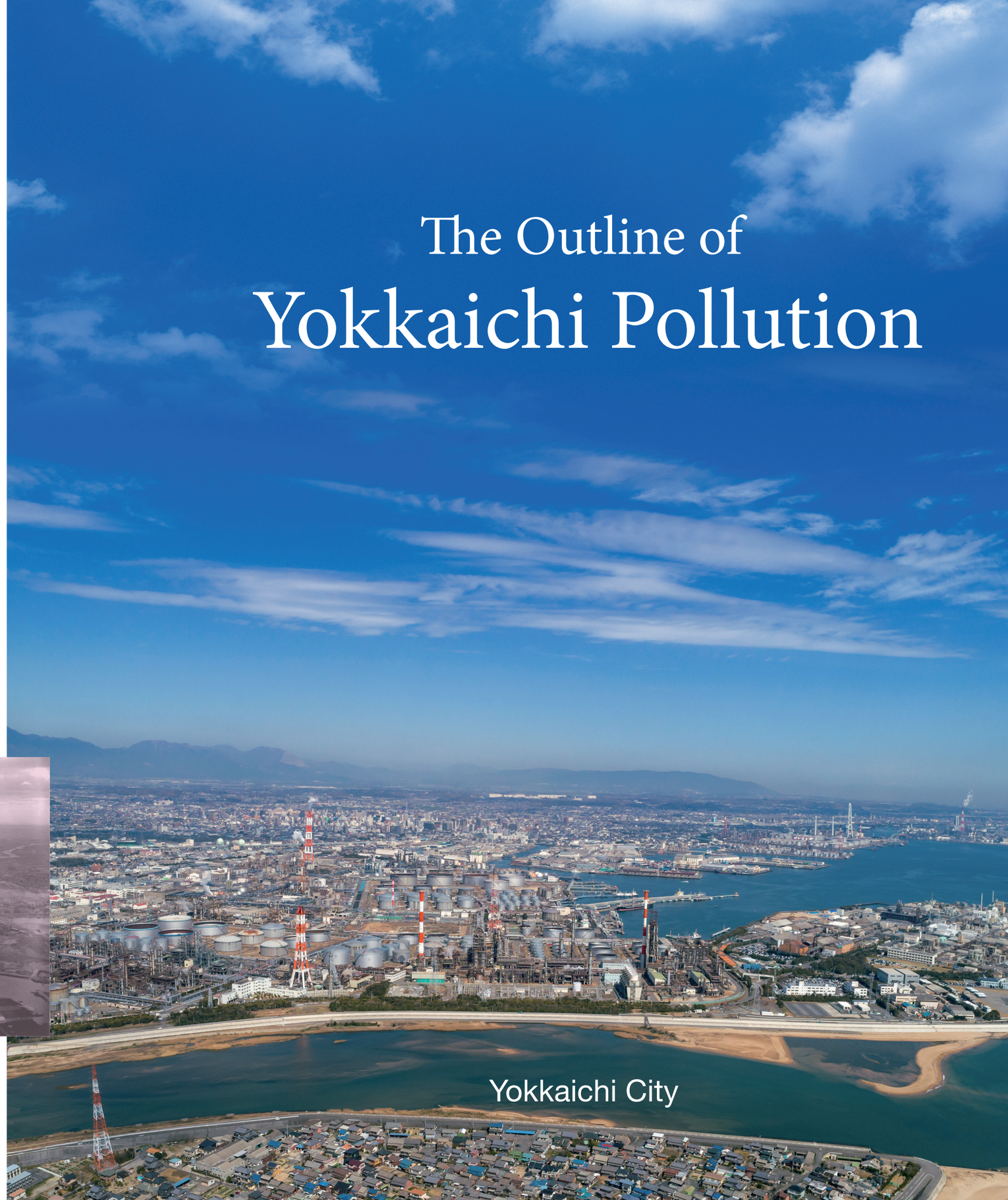






The Outline of
Yokkaichi Pollution



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Chapter 1 Yokkaichi City

1.1 Overview of the City

Yokkaichi City is located in the northern part of Mie Prefecture between the Suzuka Mountains to the west and Ise Bay to the east. It has a mild climate.

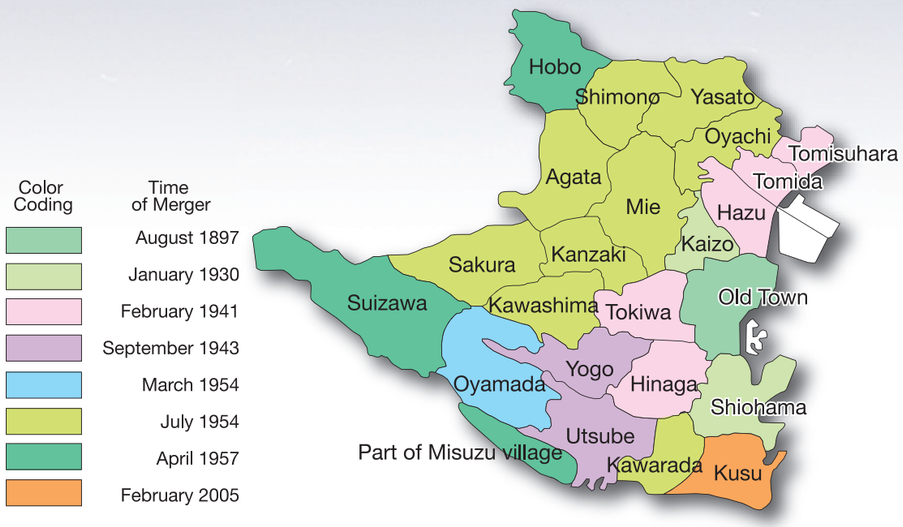
It covers an area of 206.45㎢ with a population of 311,527 (as of April 1st 2020), accounting for about 17% of Mie Prefecture.



1.2 History of the City

The name “Yokkaichi Baura” appeared in a 1473 geographical proclamation by the Outer Shrine Agency of Ise Grand Shrine, so we know that “Yokkaichi” (market on any calendar day with the number four), which is said to be the origin of the name of the current city, already existed at this time. The city developed along with the port. It also became known as an administrative and commercial center of Hokusei area which was a post town on the Tokaido Highway in the Edo Period. In the Meiji era, light industries such as yarn manufacturing and spinning industries flourished. As time progressed, the coastal area was reclaimed and a heavy chemical industry zone was formed.

When the national city system took effect in 1897, it continued to merge with surrounding towns and villages. In recent years, it merged with Kusu-cho in 2005, expanding to the current city area.



Map of Yokkaichi Petrochemical Complexes(current state)



Chapter 2 Development of Coastal Areas since Modern Times

2-1 Reconstruction of Yokkaichi Port

When Sanemon Inaba, a shipping agent, reconstructed Yokkaichi Port in the Meiji era and handling volume of the port increased, Yokkaichi Port was designated as the first open port of Ise Bay in 1899. When the door to the world was opened, large-scale factories were constructed, introducing western technology, and it greatly affected the modernization of local industries such as Yokkaichi Banko-yaki earthenware, vegetable oil, fishing nets, and hand-stretched noodles that had been flourishing.

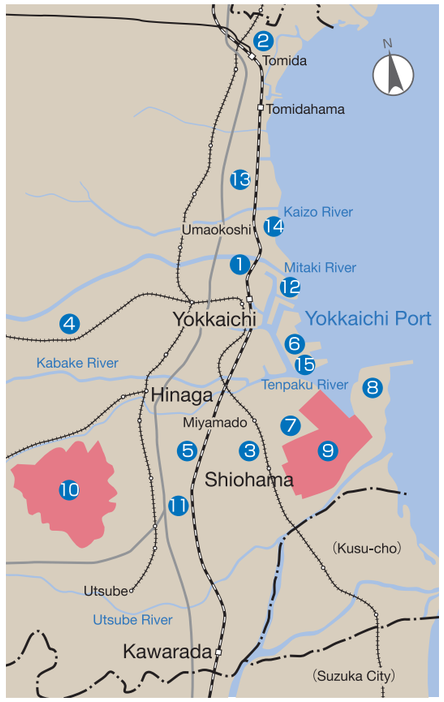
2-2 Development of Seaside Industrial Area

As Yokkaichi Port expanded and land reclamation progressed,efforts to attract factories intensified from 1916. Initially attraction and concentrated establishment of wool factories such as the Yokkaichi Plant of Toyo Keito Boseki Co., Ltd. (textile industry established in October 1932) continued and a large wool industrial area centered around Yokkaichi Port was created. The volume of wool imported to Yokkaichi Port drastically increased and it became the largest port for wool import in Japan in 1936.

In the first decade of the Showa era, the target of factory attraction changed significantly from light industry, centered around the wool industry, to heavy chemical industry. With the start of the operation of Nihon Itagarasu Co., Ltd. (glass industry) Yokkaichi Plant in December 1936, Ishihara Sangyo Kaiun Co., Ltd. (chemistry related industry) and Toho Jukogyo Co., Ltd. (chemistry related industry) decided to build plants in the Shiohama area in 1937 and 1938, and Yokkaichi Coastal Area was suddenly transformed into a heavy chemical industrial area.

Main Factories Located in Yokkaichi During the War (Source:"The History of Yokkaichi City")

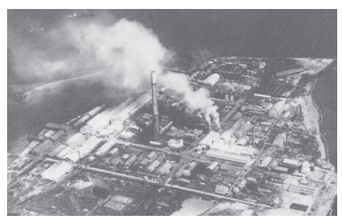
❶Toyo Boseki Co.,Ltd.Yokkaichi Plant ❷Toyo Boseki Co.,Ltd.Tomida Plant ❸Toyo Keito Boseki Co.,Ltd. ❹Mie Seijusho Co.,Ltd.
❺Toyo Muslin Co.,Ltd. ❻Nihon Itagarasu Co.,Ltd. ❼Toho Jukogyo Co.,Ltd. ❽Ishihara Sangyo Kaiun Co.,Ltd. ❾Navy Fuel Supply Facilities No.2
❿Navy Fuel Supply Facilities No.2(Yamano Plant-Branch factory built in the hill area) ⓫Army Seiju Factory, Yokkaichi Seiju Branch Factory
⓬Daikyo Sekiyu Co., Ltd. ⓭Fujidenki Seizo Co., Ltd. ⓮Uraga Dock Co., Ltd. ⓯Daiichikogyo Seiyaku Co., Ltd.



Navy Fuel Supply Facilities No.2


❸ Toyo Keito Boseki Co., Ltd.
(current Toyobo Co.,Ltd.)


❻ Nihon Itagarasu Co.,Ltd.


❽ Ishihara Sangyo Kaiun Co.,Ltd.
(current Ishihara Sangyo Co.,Ltd.)


⓫ Army Seiju Factory, Yokkaichi Seiju Branch Factory
(The photo shows Toa Boshoku Co.,Ltd. in the mid 1950s, current Toabo Material Co., Ltd. whose plant site was purchased by the company after the war)


⓬ Daikyo Sekiyu Co., Ltd.
(current Cosmo Oil Co.,Ltd.)
(The photo shows the company in the mid 1940s)

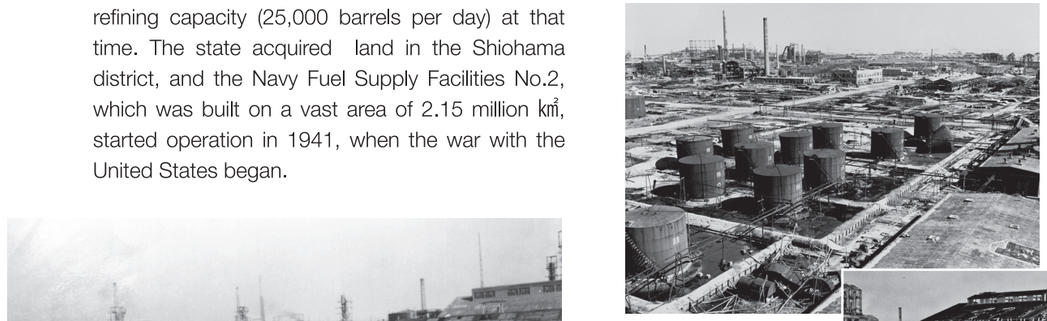

⓯ Daiichikogyo Seiyaku Co.,Ltd

2-3 Advancement of the Navy Fuel Supply Facilities No.2 and War Damage

The National Mobilization Law was promulgated in 1938 and during the shift to a full-scale war-time regime, the Yokkaichi coastal industrial zone was rapidly transformed into a military industrial base.

The decisive factor was the establishment of the Navy Fuel Supply Facilities No.2 in the Shiohama district. The fuel factory had Japan's largest oil refining capacity (25,000 barrels per day) at that time. The state acquired land in the Shiohama district, and the Navy Fuel Supply Facilities No.2, which was built on a vast area of 2.15 million ㎡, started operation in 1941, when the war with the United States began.

However, as the war situation worsened, Yokkaichi City was the target of a total of nine American air raids. The Navy Fuel Supply Facilities No.2 also suffered enormous damage and the plant became inoperable.


Navy Fuel Supply Facilities No.2 after Damage
(Photo provided by: American National Archives)


Construction of the Navy Fuel Supply Facilities No.2
(photo provided by Mitsuru Sugiyama)

2-4 Utilization of Former Navy Fuel Supply Facilities No.2 Site and Formation of Petrochemical Complex No.1(Shiohama)

In the early days of the occupation, the Supreme Commander for the Allied Powers (GHQ) regarded the oil industry as a munitions industry and put it under strict control. However, during the Cold War, the United States changed its stance and decided not to dismantle Japan's potential military power. Instead, it decided to support Japan's economic reconstruction as a military base in the Far East and regulations were eased.

After the war, Japanese government regarded the petrochemical industry as one of the cores of industrial development, and in July, 1955, the Ministry of International Trade and Industry decided on the "development measures for the petrochemical industry" to increase production of synthetic fibers and synthetic resins, which were in high demand. The government also aimed to increase domestic production of ethylene-based products for which Japan had been fully dependent on import from foreign countries.

In the 1950s a movement of regional development of coastal area centered on Yokkaichi Port became active and oil companies quickly took notice of the site of former Navy Fuel Supply Facilities No.2 which the national government tried to sell off, and fierce competition ensued to acquire the land.

From the Postwar Reconstruction to the High Economic Growth Period

In the early 1950s, Japan realized postwar reconstruction and, later in the decade, the country entered a period of high economic growth by promoting heavy chemical industrialization.

As energy sources changed from coal to oil (an energy revolution), a large amount of synthetic fibers such as nylon and plastics were also made from the oil. Home appliances such as televisions, washing machines and electric refrigerators became popular and people's lives became richer.

On August 26 1955, the national government decided to approve the utilization of the former military fuel factories [Yokkaichi, Tokuyama (current Shunan City), Iwakuni]. In Yokkaichi the policy to sell the former Navy Fuel Supply Facilities No.2 site to Showa Sekiyu, Co., Ltd. (petroleum industry) and to build a petrochemical complex in collaboration with the Mitsubishi Group and the Shell Group was announced. Thus, the problem of how to utilize the site was finally settled.

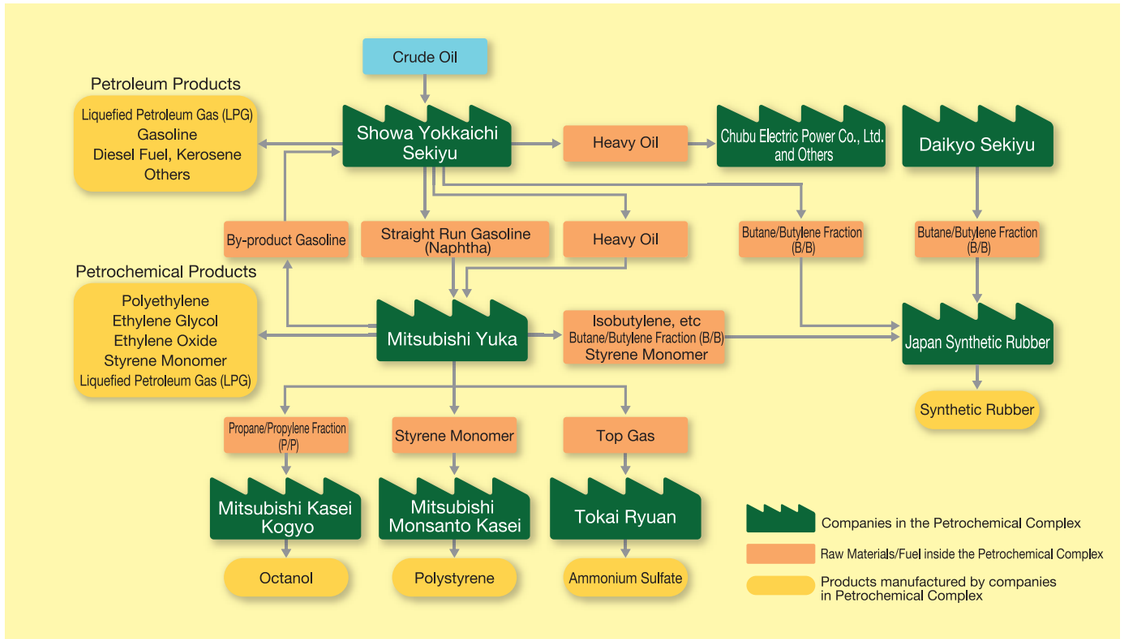
In the Shiohama district, the plants of Mitsubishi group companies such as Mitsubishi Monsanto Kasei Co., Ltd. and Mitsubishi Kaseikougyo Co., Ltd. were already built before the formation of the complex. As for electric power, the Chubu Electric Power Co., Ltd. Mie Thermal Power Station began operation in November 1955 to meet the increased domestic demand for electricity.

Under these circumstances, Petrochemical Complex No.1 began full operation along with the start of operation of Showa Yokkaichi Sekiyu Co., Ltd. Yokkaichi Oil Refinery in April 1958 and that of Mitsubishi Yuka Co., Ltd. (petrochemical industry) Yokkaichi Plant in June 1959.



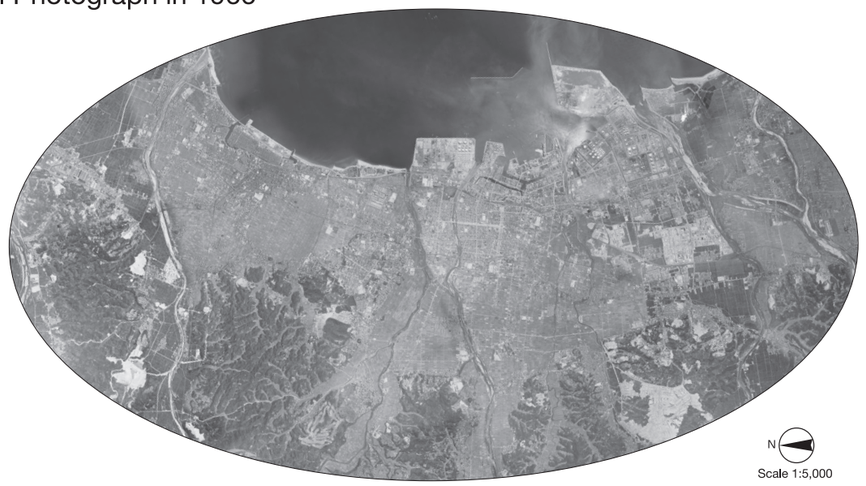
Petrochemical Complex in 1960 (Yokkaichi City Collection)

Petrochemical Complex Related Diagram Petrochemical Complex No.1 (Initial Stage)



Chapter 3 Outbreak of Yokkaichi Pollution

Aerial Photograph in 1966



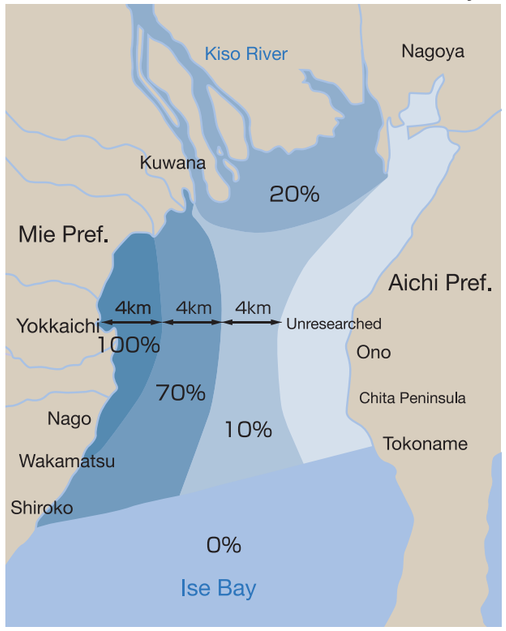
3-1 Water Pollution

The continuous construction of wool and heavy chemical industries stimulated the economic activities of the Yokkaichi area, but factory wastewater and drainage caused conditions consistent with the onset of pollution. As early as April 1932, city council members asked about the effects on the local seafood in the city assembly.

However, with the full-scale operation of the coastal petrochemical plants inside the complex from the 1960s, the problem of polluting the bay with wastewater containing oil that had not been sufficiently treated became serious. Isozu, located in the southern part of the Shiohama district, was a commercial fishery town with one of the highest fish catches in the Ise Bay, but the seawater pollution not only reduced the amount of fish caught, but also generated foul-smelling fish (odorous fish). In 1960, because the Tokyo Tsukiji Central Wholesale Market was warning, “The fish in Ise Bay have an oily smell, and therefore caution is required”, the people involved in the fishing industry were seriously affected.

An investigation conducted by Mie Prefecture revealed that the smelly fish was caused by odorous substances contained in the wastewater, which entered the fish body through the gills. It was also found that the distribution of fish with offensive odor spread 6 km north, 1.1 km northeast, 7 km southeast, and 15 km south from Yokkaichi Port.

Distribution of Odorous Fish in Ise Bay



Percentage of Odorous Fish Living in the Water Area Concerned
(This is the material that the Prefectural Fisheries Division received from fishermen in March1960.)
Source: “Yokkaichi Pollution-Lessons Learned and Challenges for the 21st Century” (written by Katsumi Yoshida)

3-2 Air Pollution

When the Petrochemical Complex No.1 started full-scale operation in 1959 Yokkaichi City began to receive various complaints such as lack of sleep at night because of the noise and gas emitted from factories. The neighboring residents' association of the Shiohama district demanded countermeasures. In those days, the residents were suffering from influence of pollution such as noise, soot, smoke, vibration and odor all day long.

Particularly, air pollution mainly caused by sulfur oxides caused health hazard asthma, which became a major social problem as a typical example of Yokkaichi Pollution.

In the Shiohama district, the number of patients with asthma symptoms began increasing around the middle of 1961.



Yokkaichi Waterfront Industrial Zone (photo provided by Mie Prefecture)

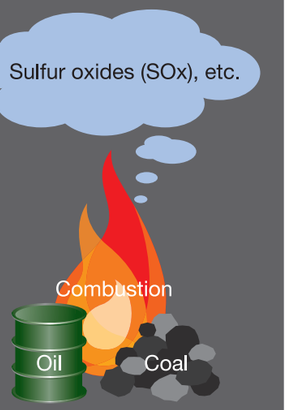
It was around the summer of 1961 that the number of asthma patients going to Nakayama Clinic at Isozu increased. The plaintiffs who later filed a pollution lawsuit became sick around this time. The incidence of patients was particularly high in children under 10 years of age, and the elderly, and most of them were residents of the Shiohama district including Isozu.

When the Petrochemical Complex No.2 started operation in the Umaokoshi district in 1963, pollution-related health damage spread to other districts and eventually it began to be called "Yokkaichi Asthma" named after the city.

The petrochemical complex was a large-scale assembly of plants and used a large amount of petroleum fuel as an energy source. Sulfur oxides in the form of sulfurous acid gas generated by the combustion of sulfur contained in petroleum caused highly-concentrated pollution and the damage spread to the surrounding areas.

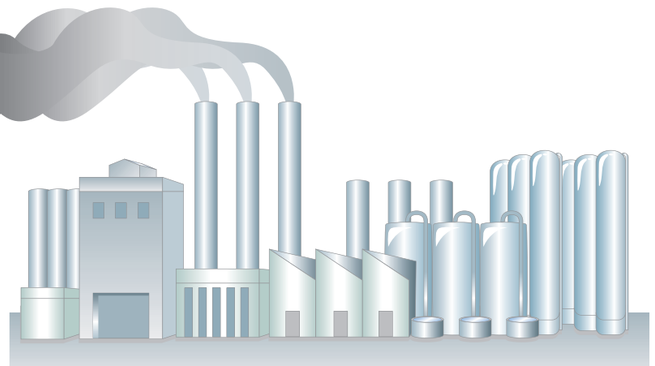
What is sulfurous acid gas?

Sulfurous acid gas is sulfur dioxide. Sulfur oxides (SOx) are generated when the sulfur (S) content of impurities in oil, coal, etc., burns.



Sulfur oxides are the generic term for sulfurous acid gas (SO_2) and sulfur trioxide (SO_3: sulfuric acid anhydride), which are in sulfurous acid gas.

Sulfur oxides such as sulfurous acid gas are easily dissolved in water and are considered to stimulate the nose, throat, and bronchi causing respiratory diseases such as asthma.



Chapter 4 Initial Response

4-1 Initial Response to Water Pollution

The public problem of odorous fish caused by water pollution was calmed down by the fishery compensation with the involvement of the local government. However, this was not a fundamental solution. Regulation of wastewater only proceeded after 2 Water Quality Control Laws were applied in1966 (Water Quality Conservation Law and Factory Wastewater Control Law). This regulation set standards for petroleum-based oil and organic dirt which caused the odorous fish, but it was insufficient, because it did not include pH regulation which was regulated in other regions.

4-2 Initial Response to Air Pollution

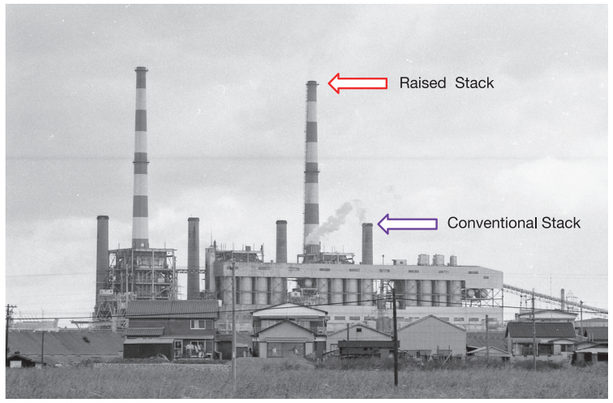
(1) Field Investigations and Advisory Recommendations by the Kurokawa Investigation Team

In response to the air pollution which was becoming increasingly serious, and due to strong demands from Yokkaichi City and Mie Prefecture, the Special Committee to Investigate Air Pollution in Yokkaichi City (Yokkaichi-chiku Taikiosen Tokubetsu-chosakai) ※ commissioned by the Ministry of Health and Welfare and the Ministry of International Trade and Industry visited the site to designate Yokkaichi as an area to which the Smoke and Soot Control Law would be applied in November 1963.

The investigation report submitted in March 1964 made recommendations on 10 items, such as promptly designating Yokkaichi as a designated area under the Smoke and Soot Control Law.

The report also recommended measures to prevent pollution that the companies and the government should implement.

※Since the team was headed by Matake Kurokawa, the former director of the Institute of Technology, the team was later called the Kurokawa Investigation Team.



Raising Stack Height

(2) Corporate Measures:Raising Stack Height

Around 1965, companies promoted tall stacks to diffuse and dilute soot and smoke into the atmosphere as a pollution preventive measure.This was based on the recommendations made by the Kurokawa Investigation Team.

The effect of the tall stacks was remarkable in Isozu, which had been directly and severely affected by the air pollution, since Isozu was located right under the Petrochemical Complex No.1. The air pollution which sharply affected Isozu was characterized as "gust pollution" in which pollutants such as sulfurous acid gas emitted from fixed sources fell to the ground without being sufficiently diffused when the wind speed was high. This peak pollution was significantly improved by the taller stacks. The number of new pollution patients of Isozu peaked between 1965 and 1966, and then began to decrease.

Although the emergence of extremely high concentration of air pollution disappeared due to tall stacks, it led to an expansion of areas with air pollution, and so measures to radically reduce sulfur oxide emission were sought.

(3) Administrative Response: Development of Monitoring and Measurement System

In November 1960 Yokkaichi City began to measure sulfur oxides by the lead-dioxide method and dust-fall in order to understand the status of the air pollution.

Mie Prefecture also installed an automatic measuring device for sulfurous acid gas in the Isozu district in December 1962. It also installed a station for continuous monitoring and measuring air pollution with a telemetry system in Yokkaichi City and it became possible to measure the status of air pollution instantaneously in November 1966. As a result, it became possible to issue warnings etc., flexibly to take emergency measures.

In August 1967, the Mie Prefectural Pollution Center was established in response to a petition from Yokkaichi City. The Center was established by unifying former study and research organizations to strengthen inspection and analysis work necessary for pollution control. It constantly monitored the air pollution in Yokkaichi City by utilizing the above-mentioned telemetry system (4 locations in the city), and clarified the air pollution structure to include odor.



Air Pollution Telemetry Central Monitoring Station
(Yokkaichi City Collection)

4-3 Initial Response to Pollution-Related Patients

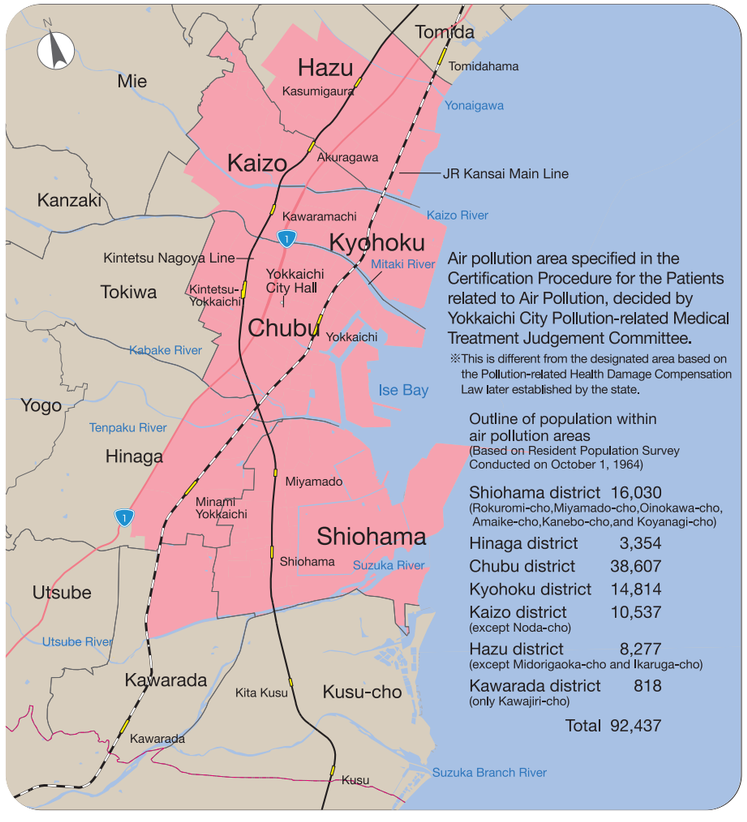
Patients had to pay for medical expenses on their own under the medical insurance system of that time. The financial burden for long-term treatment was so severe that the patients were in a very difficult situation.

For this reason, the Shiohama Residents' Association decided to subsidize medical expenses (expenditure from the association membership fees) in August 1963, but the financial resources ran out in three months.

During the increasing demand from the local community, the Yokkaichi Medical Association, and the city council, Yokkaichi City became the first city in Japan to establish a system (Yokkaichi City Pollution-related Medical Treatment Judgement Committee System) to cover the medical expenses of patients suffering from health damage due to air pollution in 1965.

As a result, all patients who met the three relevant epidemiological criteria (specifically living in a designated area for a period of three years or longer, and suffering from a designated disease such as bronchial asthma) would have their medical expenses paid by the city.

Yokkaichi City's medical expense aid system was an epoch-making measure that would later become the origin of the victim relief system. This system continued until it was taken over by the national government in 1970, during which time 732 patients became certified.



Air pollution area specified in the Certification Procedure for the Patients related to Air Pollution, decided by Yokkaichi City Pollution-related Medical Treatment Judgement Committee.

※This is different from the designated area based on the Pollution-related Health Damage Compensation Law later established by the state.

Outline of population within air pollution areas
(Based on Resident Population Survey Conducted on October 1, 1964)

Shiohama district (Rokuromi-cho,Miyamado-cho,Oinokawa-cho, Amaike-cho,Kanebo-cho,and Koyanagi-cho)	16,030
Hinaga district	3,354
Chubu district	38,607
Kyohoku district	14,814
Kaizo district (except Noda-cho)	10,537
Hazu district (except Midorigaoka-cho and Ikaruga-cho)	8,277
Kawarada district (only Kawajiri-cho)	818
Total	92,437

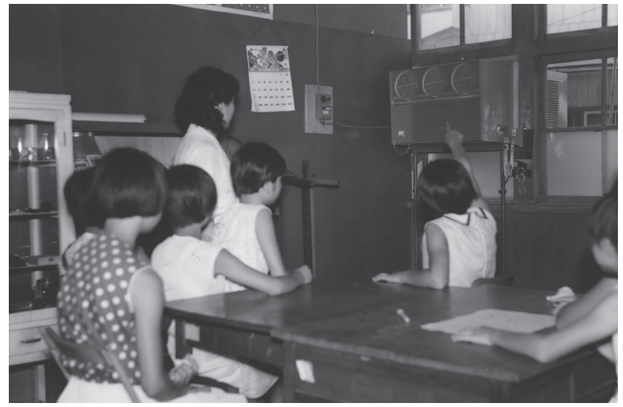
4-4 Response for Local Children

In April 1965, Yokkaichi City installed a total of 92 air purifiers at four elementary schools (Shiohama, Naya, Mihama, Higashi Kyohoku) in polluted areas, and distributed "pollution prevention masks".

Since Shiohama Elementary School, located adjacent to the Petrochemical Complex No.1, had a large number of children who were certified patients, the school made various efforts to protect the children from pollution. The school set up a gargle place with a lot of faucets so that a large number of children could gargle at one time during the recess time. Gargling and rubbing down the body with a dry cloth were encouraged as part of efforts to make children stronger and healthier.

Daily Activity Schedule with Gargling Included

Shiohama Elementary School Weekly Program for Health Education <Spring, Summer, Fall> Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	
8:20～8:30	Dry Cloth Rub Down (to the school broadcast)
8:30～8:35	Gargle (with 2% sodium bicarbonate water)
8:35～8:40	Health Observation (conducted individually on 10 items)
8:40～9:25	First Class
9:25～9:35	Recess
9:35～10:20	Second Class
10:20～10:40	Physical Exercise
10:40	Gargle
10:40～11:25	Third Class
11:25～11:35	Recess
11:35～12:20	Fourth Class
12:20	Hand Washing and Gargle
12:20～1:15	Lunch,Recess,Take Liver Oil
1:15～1:35	Classroom Cleaning
1:35～1:40	Gargle (with 2% sodium bicarbonate water)
1:40～2:25	Fifth Class
2:25～2:35	Recess
2:35～3:20	Sixth Class
※After physical education, children wash their hands and gargle.	



Air purifiers installed at the nurse's office (Yokkaichi City Collection)



School children leaving a school with pollution prevention masks
(Photo provided by Shiohama Elementary School)



Gargling at Shiohama Elementary School
(Photo provided by Shiohama Elementary School)

Chapter 5 Yokkaichi Pollution Lawsuit

5-1 Until Filing Suit

Following the death of an asthma patient in April 1964, people in the anti-pollution campaign went to court to ascertain the liability of companies and the source of pollution. Michitaka Kainou (former Tokyo Metropolitan University professor/ lawyer), a member of the Tsuru Investigation Team※ in the statistical study group, visited Yokkaichi in June of the same year, commissioned by the Ministry of Health and Welfare. This began after Kainou told Tatsuo Maekawa, a member of the city council (the Japan Socialist Party), that a lawsuit for damages was possible.

Around the spring of 1966, Mr. Maekawa, also a representative member of the Yokkaichi Pollution Control Council (Yokkaichi Kogai Taisaku-kyogikai established in 1963), which consisted of reformist legislators, members of reformist parties, and labor union members in the district visited Tokai Lawyer Corps for Laborers, organized mainly in Nagoya, for consultation on litigation.

Hiroshi Noro, an attorney of the defense team, responded to the request, and set about preparing for the lawsuit. The first preparatory meeting was held in August.

※Since the team was headed by Shigeto Tsuru, a professor at Hitotsubashi University, it was later called Tsuru Investigation Team.

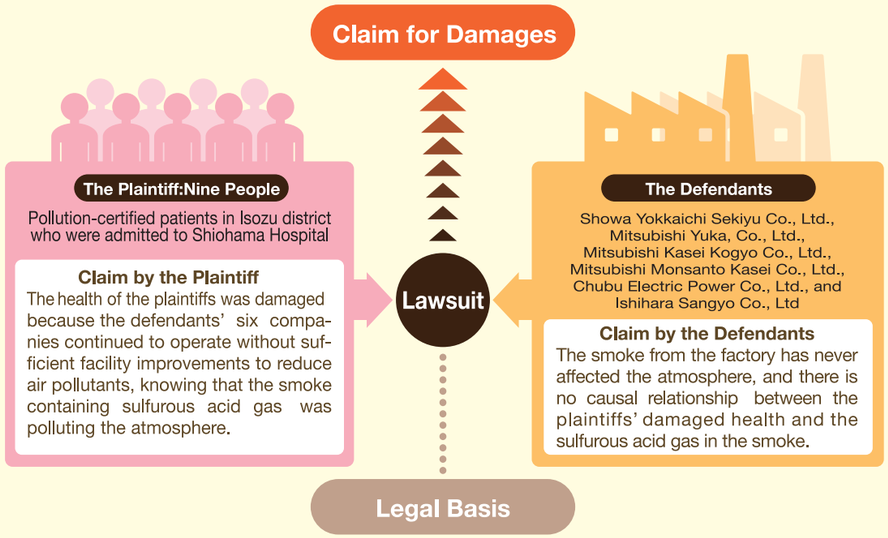


The Yokkaichi Branch of the Tsu District Court where the Yokkaichi Pollution Lawsuit was Filed

5-2 From Filing Suit to Judgment

The lawsuit was delayed because local organizations supporting a trial were undecided. But in August 1967, the Sanshi District Civil Service Workers Union (Sanshi-chiku Koumuin-kyotokaigi) consisting of the Yokkaichi Municipal Workers' Union (Yokkaichi-shi Shokuin-rodokumiai) and the Mie Prefectural Teachers' Union (Mie-ken Kyoshokuin-kumiai) decided to support the trial. And on September 1st 1967 a lawsuit on air pollution was filed.

The plaintiffs were nine pollution-certified patients living in Isozu district, and the defendants were six companies located in the Petrochemical Complex No.1 (Showa Yokkaichi Sekiyu Co., Ltd., Mitsubishi Yuka, Co., Ltd., Mitsubishi Kasei Kogyo Co., Ltd., Mitsubishi Monsanto Kasei Co., Ltd., Chubu Electric Power Co., Ltd., and Ishihara Sangyo Co., Ltd.)



Civil Code Article 709 (Damage Compensation for Misconduct)
Civil Code Article 719 (Joint Unlawful Conduct)

The main litigation issues were: 1) Is there a causal relationship between the plaintiffs' health damage and the smoke? 2) Can you establish that an unlawful conduct has been jointly performed by the six defendants? 3) Can they be held responsible for their intentional or negligent liability?

The first oral proceedings were held at the Yokkaichi Branch of the Tsu District Court on December 1 1967 and a five-year trial began. During that time, 54 oral proceedings, two days of field examination and one clinical hearing were conducted. The trial was concluded on February 1st 1972 and a court decision was issued on July 24 of the same year.

The ruling acknowledged 1) the causal relationship between the plaintiffs' onset of the illness and smoke emission 2) unlawful conduct jointly performed and 3) negligence in location and operation, and ordered the defendants jointly to pay a total of 88 million yen in damages.

Regarding the emission of the pollutant, a court decision stated, "A company should disregard economic efficiency and profitability and take measures to prevent pollution by mobilizing the best technology and knowledge in the world". It was a significant setback to the industrial world at that time.

Regarding the national and local governments, the judge pointed out their responsibility for promoting the attraction of the companies without careful study or examination (current environmental assessment) in advance from the viewpoint of economic priority.



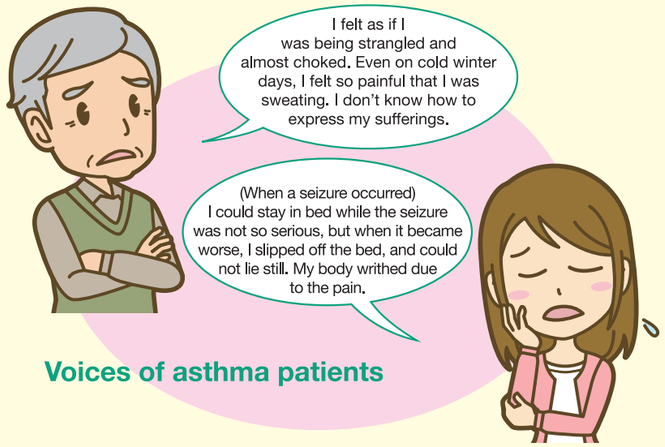
Nine plaintiffs
(pollution-certified patients living in Isozu district)



Town of Isozu where the nine plaintiffs were living
(The Petrochemical Complex No.1 can be seen across the river)



Court on the day of the issuance of the judgment
(photo taken on July 24 1972)





Plaintiffs reporting victory

5-3 Second Lawsuit and Voluntary Negotiations

One of the lawsuit's support groups, the Association to Record Pollution (Kogai wo Kirokusuru-kai) held study sessions with the residents of Isozu and promoted a campaign against pollution. The Citizen Soldiers Association to Fight Yokkaichi Pollution (Yokkaichi Kogai to Tatakau Shiminhei-no-kai) was formed in 1971 to connect the campaign with the pollution lawsuit support activities.

A second lawsuit was proposed at a study session in the same year, and the Shiohama Mothers' Association to Protect Children from Pollution (Kogai-kara Kodomo wo Mamoru Haha-no-kai) led the way to prepare for the lawsuit. However, when Isozu's pollution certified patients and their 140 surviving families began voluntary negotiations with the six defendant companies and an agreement was reached in 1972, the filing of the second lawsuit was dropped.

On the other hand, 108 people from the Association of Pollution Certified Patients at Kyohoku District (Kyohoku-chiku Kogai-nintei Kanja-no-kai) asked three companies at Petrochemical Complex No.2 for a "restoration of the blue sky" and conducted voluntary negotiations to prevent pollution. However, halfway through the negotiations, the companies decided to take the foundation's compensation method, so the request of the patients' association was unsettled.



General Assembly to Form Plaintiffs for the Second Lawsuit, September 1971

Pollution-related Events during the Trial Period

The period from the filing of Yokkaichi Pollution lawsuit until the court decision was also the time when pollution problems became more serious nationwide. A sense of crisis among citizens against pollution and anti-pollution campaign increased.

In response to this, various laws and regulations relating to pollution were established with the Basic Pollution Control Law, which could be referred to as the Constitution for Pollution Control, and the basic framework for pollution regulations was completed.

1967 Establishment of the Basic Law for Environmental Pollution Control
➡ pollution prevention plan, environmental standards, and various regulation laws (atmosphere, water quality, noise, bad odor, vibration, etc.) were established one after the other.
1968 Mie Prefectural Pollution Prevention Ordinance was established.
1969 Environmental Standards for Sulfur Oxides were established. (old standard)
➡ 1973 revised to current standards.
Acid drainage incident by Nihon Aerosil Co.,Ltd and Ishihara Sangyo Co., Ltd.
1970 So-called "Pollution National Diet" (deletion of Harmonization Clause of Basic Pollution Control Law and enactment and strengthening of each regulation law).
1971 Revision of Mie Prefectural Pollution Prevention Ordinance for regulation of total amount of sulfur oxides.
1972 Air Pollution Control Law and Water Pollution Control Law were partially revised and a System for Absolute Liability Compensation was introduced.

Chapter 6 Environmental Improvement Efforts

6-1 Establishment of Pollution Control Cooperation Foundation

Yokkaichi City launched an independent system to certify pollution-related patients, and paid medical expenses which were not covered by the medical insurance system to pollution-certified patients. However, in this system, aid was limited to medical expenses, and compensation for living expenses for the pollution-related patients was not provided. It was therefore, merely a relief system during a transitional period.

The Special Measures Act on Relief of Health Damage Due to Pollution (hereinafter referred to as Relief Act) was implemented in February 1970, but it provided medical expenses, medical allowance, and nursing care allowance only related to air pollution and water pollution. Since the principle that a polluter company should be liable for payment of expenses was not established, compensation other than medical expenses (living expenses, etc.) was not included.

The Yokkaichi Pollution Control Cooperation Foundation was established in September 1973 with the approval of the Governor of Mie Prefecture. The Foundation's relief activities were: ① For certified patients (excluding plaintiff patients and parties of voluntary negotiations) based on the Relief Act and Yokkaichi City Pollution-related Medical Treatment Judgement Committee System ② to provide the living expenses (pension), condolence-money, and lump-sum payments which were not covered by these systems. In this way, a system to provide compensation for medical expenses and living expenses was implemented, prior to the national system.

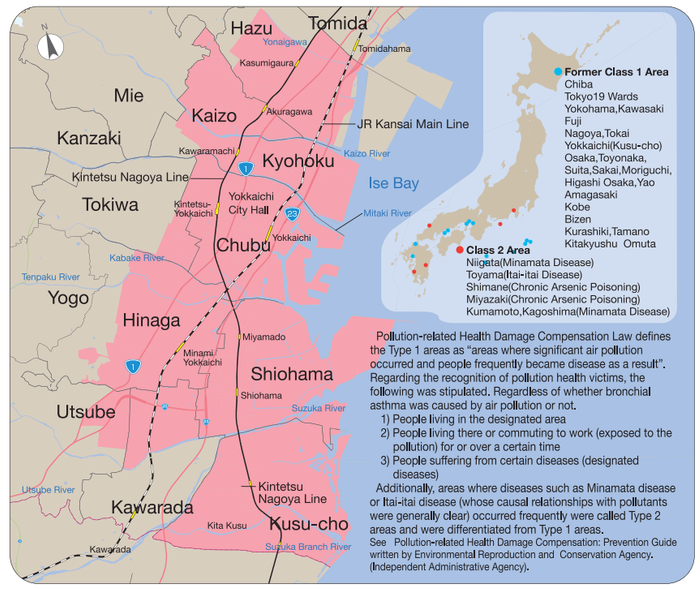
There were initialy18 (later increased) companies which were members of the foundation, and the operation of the foundation was covered by contributions which were equally divided among the companies and based on the amount of sulfur oxide emissions from these companies.

The foundation-style compensation ended in fiscal 1977 due to the enactment of the Pollution-related Health Damage Compensation Law by the state, described below.

6-2 Enactment of Pollution-related Health Damage Compensation Law

The state, which was considering the establishment of a damage compensation system for pollution victims based on the principle of compensation payment by polluters, enacted the Pollution-related Health Damage Compensation Law in October1973. As a result, part of Yokkaichi City and the entire area of Kusu-cho were designated as Type 1 areas (areas where significant air pollution occurred and people frequently became disease because of it) where the Pollution-related Health Damage Compensation Law was applied.

Applied Area of Pollution-related Health Damage Compensation Law



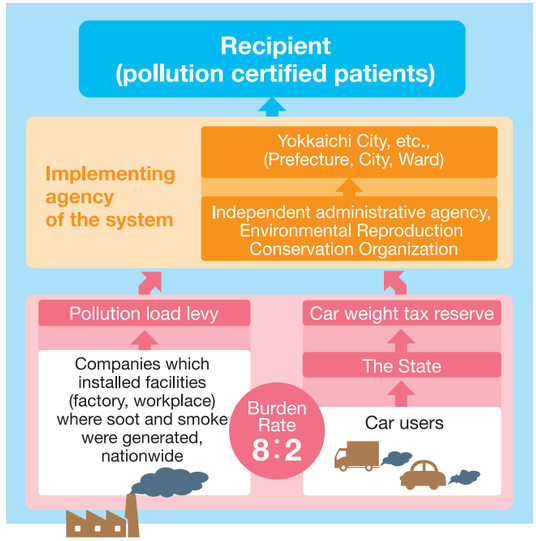
There are 7 kinds of compensation subsidies described below:

① Medical treatment and related expenses (total costs) ② Disability compensation costs (15 years of age and over, divided into Special Level, Level 1, Level 2 and Level 3, according to the degree of disability, and this is also considered to have an element to compensate for living expenses) ③ Survivor's compensation fee ④ Survivor's compensation lump sum ⑤ Child compensation allowance (paid according to the degree of disability for non-certified children under the age of 15) ⑥ Medical treatment allowance (transportation expenses required for hospitalization, hospital visits, etc. and miscellaneous expenses) ⑦ Funeral fees.

Additionally, rehabilitation, home medical treatment guidance, influenza vaccination cost subsidy, etc., were provided as pollution insurance welfare services.

※The title of the Pollution-related Health Damage Compensation Law was changed to the Law on Pollution-related Health Damage Compensation, etc. in September 1987 when revisions were made.

Mechanism of the Current Compensation System for Pollution Victims Whose Health was Damaged



6-3 Total pollutant Load Control and Air Pollution Control Law

The Air Pollution Control Law was enacted in 1968 to replace the Smoke and Soot Regulation Law and the emission standards were revised from the density regulation to the emission regulation with consideration of the impact on the ground. However, since they were regulations for each facility, it was not enough for the situation in Yokkaichi where plants were concentrated.

In 1971 Mie Prefecture revised the Pollution Prevention Ordinance and introduced a regulation on the total amount of sulfur oxides ahead of the national government.

This started to greatly improve the air pollution in Yokkaichi. The actual total amount regulation was implemented in 1972, and was set to achieve its goal in 1977. The goal was achieved one year earlier, and during this period, the emission amount of sulfur oxides in Yokkaichi area was greatly reduced.

The Effects of Total Amount Regulation

In the total amount regulation, firstly a method was established to simulate (predictive calculation) the emission density in the current environment of the area. Using this method, the targeted emission density of the area was set. In order to achieve the target, the total amount of emissions allowed in the entire region was set and emission amount from each factory was regulated based on this.

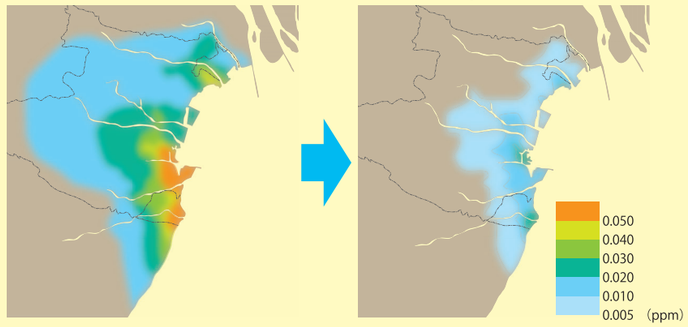
The following figures show the results of simulation of emission concentration in the environment of Yokkaichi area when the regulation was implemented by Mie Prefecture.

Before Total Amount Regulation

Concentration Distribution Map of Sulfurous Acid Gas to the Environment in 1971

After Total Amount Regulation

Concentration Distribution Map of Sulfurous Acid Gas to the Environment when the target was achieved to reduce sulfur oxide emissions to about one-third and to accomplish environmental conservation goals (0.017ppm).



◆From the Report of the Project Team to Analyze Mie Prefectural Air Pollution
◆In these figures, the parts of the mesh density notation in the above report were processed into isobaric line display for easy comparison.

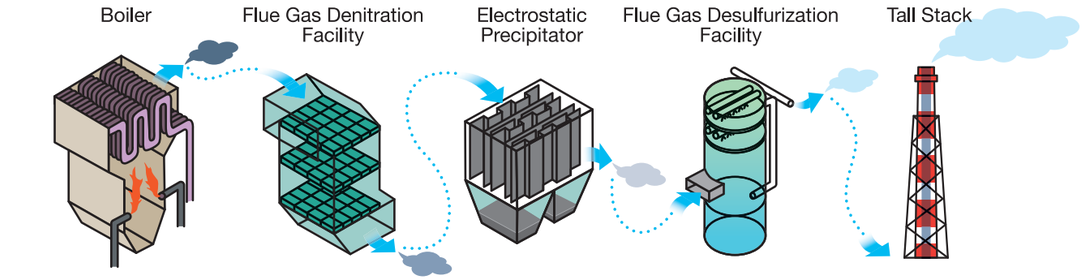
6-4 Corporate Efforts

Companies began to take further measures to prevent pollution as the pollution problem became more serious, both complaints from citizens and administrative requests increased. In response to this pollution-related laws and ordinances were established and implemented.

In order to regulate air pollution, in addition to the tall stacks that were taken as an initial measure, low sulfur fuel was used to reduce sulfur oxides and flue gas desulfurization devices were installed.

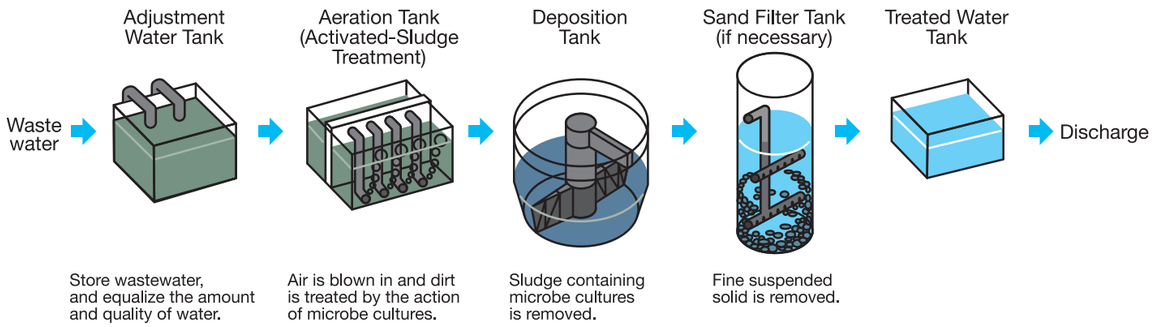
In order to control water quality contamination, treatments such as oil-water separation and precipitation were initially conducted. However, organic contamination was not sufficiently removed. Therefore, wastewater treatment equipment with microbe cultures, such as the activated-sludge method, was implemented.

Flow of Smoke and Soot Treatment



Depending on the fuel, a combination of denitration, dust collection, and desulfurization facility is used to treat smoke and soot in large-scale facilities.

Flow of Wastewater Treatment



◆This is an example of the flow of petrochemical wastewater treatment.

Dirty wastewater (process drainage) is pretreated as needed by a floating separator, oil-water separator (oil separator), and in a neutralization tank and placed in an adjustment water tank.

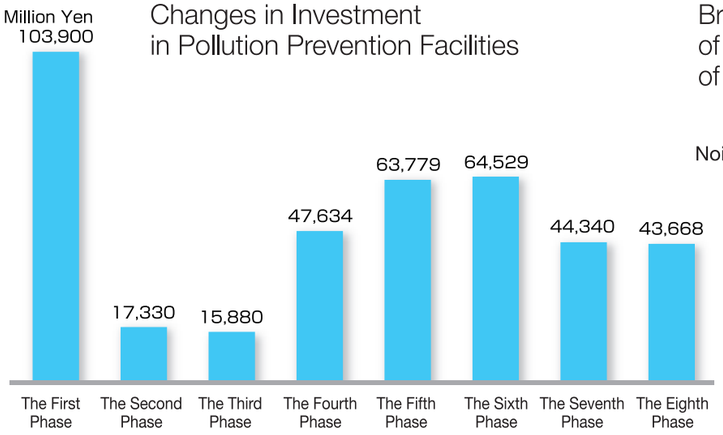
6-5 Pollution Prevention Program

The first plan of the Yokkaichi Area Pollution Prevention Program for Yokkaichi City, Kusu-cho, Asahi-cho and Kawagoe-cho was formulated in December 1970. The plan was created by the governor of Mie Prefecture to comprehensively take various measures to prevent pollution, based on the Basic Pollution Control Law.

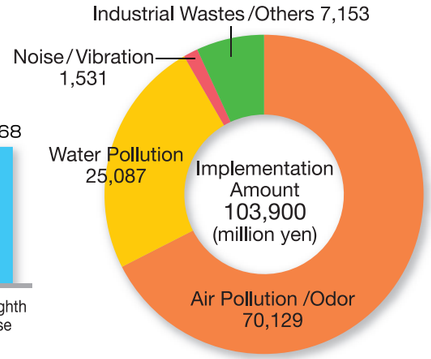
Based on this program, the companies took measures to prevent air pollution, water pollution, noise, vibration, odor, etc., at their pollution generating sources. They also took measures to control industrial waste. Additionally, local governments implemented pollution-related projects such as improvement of sewage and human waste treatment, establishment of waste treatment plant, and carried out river purification projects, land readjustment projects, and intersection three-dimensional projects.

Over the eight periods from 1971 to 2010, until the completion of the plan, the huge amount of 983.7 billion yen was invested both by the public and private sectors, and environmental improvement was promoted with various pollution prevention measures.

Changes in Investment in Pollution Prevention Facilities



Breakdown of Investment Amount of the Pollution Prevention Program of the First Phase



Petrochemical Complex No.3

Petrochemical Complex No.3 was constructed on an artificial island (named Dejima), to separate housing and industrial areas, based on the reflection of the pollution that occurred in Petrochemical Complexes No.1 and No.2. Furthermore, a buffer green zone was developed along the coastal area of the opposite bank.

In May 1969, companies planning to construct plants in Petrochemical Complex No3 signed a pollution prevention agreement with the city. The agreement stipulated the active implementation of pollution prevention, temporary suspension of operations in the event of pollution, and on-site inspection rights of the city. Moreover, a joint council was set up that included local residents to ensure the smooth implementation of the agreement.

The Pollution Prevention Agreement spread to the companies in Petrochemical Complexes No.1 and No.2, and the companies actively worked on pollution control measures.

6-6 Result of Efforts

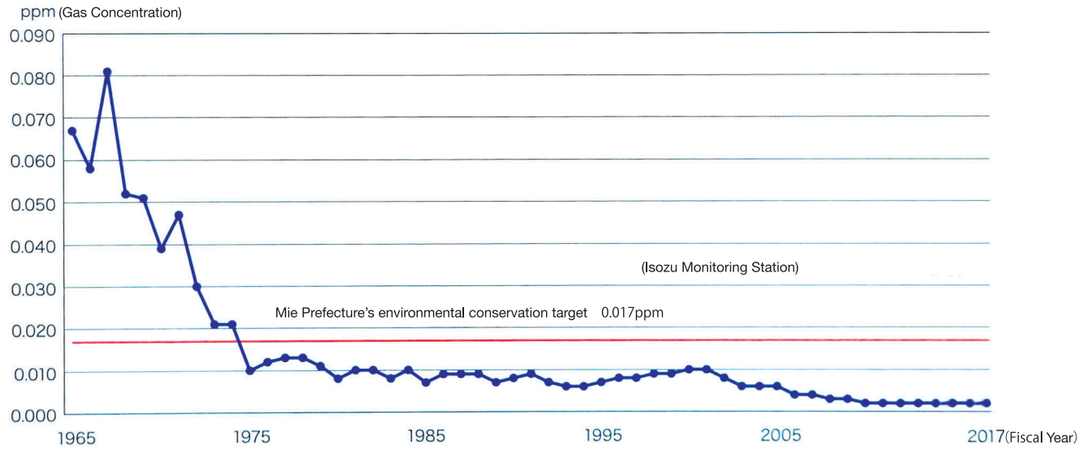
As a result of these efforts, the environment of Yokkaichi has greatly improved, including a significant decrease of concentration of sulfurous acid gas, which is the main cause of asthma.

Air pollution has improved nationwide, and on March 1st 1988, the designation of all 41 areas including the Yokkaichi area ※ as Type 1 areas, was lifted, and no patients will be certified after that. Currently, compensation continues to be paid for the already certified patients as before, and measures are taken with an emphasis on preventing health hazards.

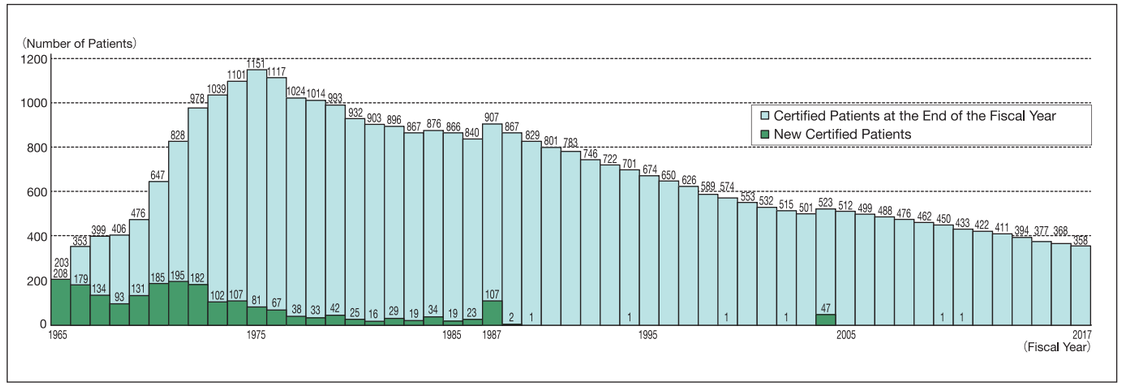
※Refers to a part of Yokkaichi City and the whole area of Kusu-cho,which were designated as a Type 1 area of the Pollution-related Health Damage Compensation Law.

Fiscal Year Changes in Sulfurous Acid Gas Concentration Over Time

Mie Prefecture's environmental conservation target (equivalent to national environmental standard) was achieved throughout Yokkaichi City in the fiscal year 1976.
Even lower values have been maintained since then.



Fiscal Year-end Changes in the Number of Certified Patients



・It is considered that the rapid increase in the number of certified patients in the fiscal year 1987 was caused by the revision of the Pollution-related Health Damage Compensation Law.
・The number of certified patients in Yokkaichi City includes that of certified patients unique to Yokkaichi City.
・The increase in the number of newly certified patients in 2004 is due to the merger of Yokkaichi City and Kusu-cho.

Chapter 7 Seeking a Better Environment

7-1 ICETT

Yokkaichi City established the Center for Environmental Technology Transfer together with Mie prefecture in 1990.

Its purpose is to transfer industrial pollution prevention technology and administrative methods to other countries by making use of the experience of Yokkaichi Pollution.

In 1991, a total amount of 3 billion yen contributed by the prefecture and the city, and 3.2 billion yen which was newly obtained from the Chubu business community, etc., led to establishment of the current International Center for Environmental Technology Transfer (abbreviated name: ICETT).

ICETT is making international contributions in the environmental field by inviting government officials in charge of environmental conservation in developing countries to participate in human resource development projects sponsored by the Center.



On-site Training for Overseas Trainees (Photo provided by ICETT)



ICETT (Photo provided by ICETT)

7-2 Global 500 Award

The Global 500 Award is a system in which the United Nations Environment Program (UNEP) commends individuals and groups who have made achievements in protecting and improving the environment, which is the foundation of sustainable development.

Yokkaichi City has endeavored to form a balanced industrial base by attracting industries to inland areas and locating high-tech industries, as well as making efforts to improve the environment. The city also set the goal to improve conservation of the global environment, and established ICETT to convey the pollution prevention technology developed in the process of overcoming pollution to other countries and actively implemented various measures, aiming to become an environmentally advanced city.

These efforts received high praise and the city received the Global 500 Award from UNEP in 1995.

Toward the Conservation and Creation of a Good Environment

In order to preserve a good environment and promote sustainable town development with less impact on the environment, Yokkaichi City enacted the Basic City Ordinance for Environment in March 1995. In September of the same year, citizens, companies, and the government came together and made a Declaration of Comfortable Environment City, aiming to realize a desirable environmental city image.

7-3 Yokkaichi Pollution and Environmental Museum for Future Awareness

Yokkaichi Pollution and Environmental Museum for Future Awareness opened on March 21st 2015 with the objectives to pass on the history of pollution and lessons from the history to future generations, to improve environment and pursue both industrial growth and environmental conservation simultaneously, and to communicate knowledge and environmental technologies obtained from such efforts to people in Japan and around the world. The Museum inherited the functions of the Yokkaichi City Environmental Learning Center which was built in 1999. The Museum was established as a base facility to study pollution and environment to a larger extent.

Visiting the Yokkaichi Municipal Museum' s permanent collection exhibit room Jiku-kaido (Travel Through Space and Time) and the Planetarium GINGA PORT 401 will help you understand the relationship between our lives and the environment and think about the environment on a global level.



Yokkaichi Pollution and Environmental Museum for Future Awareness

Chapter 8 Chronology Related to Yokkaichi Pollution

Year, Month	Important Events	Laws, Regulations
1941, 1	Ishihara Sangyo Kaiun Co., Ltd. (Current Ishihara Sangyo Co., Ltd.) Yokkaichi Plant started operation.	
2	Navy Fuel Supply Facilities No.2 started operation.	
1943, 7	Daikyo Sekiyu Co., Ltd. (Current Cosmo Oil, Co., Ltd.) Yokkaichi Refinery started operation	
1945, 8	The end of the war.	
1952, 1	Mitsubishi Monsanto Kasei, Co., Ltd. (Current Mitsubishi Chemical Co., Ltd.) Yokkaichi Plant started operation.	
1953, 7	Mitsubishi Kasei Kogyo, Co., Ltd. (Current Mitsubishi Chemical Co., Ltd.), due to the merger with Toho Kagaku Kogyo, Co., Ltd., Yokkaichi Plant started operation.	
1955, 7		(Nation) The Ministry of International Trade and Industry decided to implement Petrochemical Industry Development Measures.
8	It was decided that the former site of the Navy Fuel Supply Facilities No.2 would be sold off to the private sector.	
9	Chubu Electric Power Co., Ltd., Mie Thermal Power Station started operation (by burning coal).	
1958, 5	Showa Yokkaichi Sekiyu Co., Ltd., Yokkaichi Refinery started operation.	
12		Water Quality Conservation Law andFactory Wastewater Control Law were enacted.
1959, 5	Petrochemical Complex No.1 started operation.	
6	Mitsubishi Yuka Co., Ltd. (Current Mitsubishi Chemical Co., Ltd.) Yokkaichi Plant started operation.	
1960, 3	The Tokyo Tsukiji Central Wholesale Market declared that since the fish of Ise Bay had an oily smell, a strict inspection was required.	
4	The Residents' Association of the Shiohama district petitioned the city so that noise and emission of polluted gas would be eliminated.	
4	Nihon Goseigomu Co., Ltd. (Current JSR Co., Ltd.) Yokkaichi Plant started operation.	
8	(City)Yokkaichi Municipal Pollution Prevention Committee was established.	
11	(City) Yokkaichi City began to measure sulfur oxides by the lead-dioxide method and dust-fall..	
1961, 3	(City)Yokkaichi Municipal Pollution Prevention Committee reported that the amount of sulfurous acid gas in Isozu was nearly 6 times as high as that of other districts.	
10	Yokkaichi City completed Landfill (690,000㎡) of Umaokoshi.,	
10	Chubu Electric Power Co., Ltd., Mie Thermal Power Station: Japan's first heavy oil-only fuel power generation boiler was built.	
	Katsumi Yoshida Prof. of Mie Prefectural University and others started to survey medical bills (receipts) for National Health Insurance members.	
	Around this time, the number of people who complained of asthma symptoms in Isozu increased.	
1962, 6		The Smoke and Soot Control Law was enacted.
8	(Prefecture/City) In response to demands from residents at Shiohama district, free medical examination for pollution diseases carried out at Shiohama Hospital.	
9	(Prefecture/City) Yokkaichi District Air Pollution Countermeasures Council established. (epidemiological survey of air pollution and asthma patients). (→The council was dissolved in October 1971).	
12	(Prefecture) An automatic measuring device for sulfurous acid gas (the first in the prefecture) was installed in Isozu.	
1963, 3	Daikyo Sekiyu Co., Ltd. Umaokoshi Refinery started operation.	
6	Daikyowa Sekiyu Kagaku, Co., Ltd. (Current TOSOH Co., Ltd./KH Neochem Co., Ltd.) started the operation.	
6	Chubu Electric Power Co., Ltd., Yokkaichi Thermal Power Station started operation.	
6	Fishermen in Isozu tried to forcefully block the drainage outlet of Chubu Electric Power Co., Ltd. Mie Thermal Power Station. (Isozu Fishermen's Rebellion)	
7	(Prefecture) Pollution Control Office was set up.	
7	Yokkaichi Pollution Control Council established mainly by Mie Prefecture Sanshi district labor union council (chiku-rou).	
8	(City) Pollution Control Section was set up in the civil affairs department.	
8	Shiohama Residents' Association started to pay medical expenses for patients in the district from the association's membership fees.	
9	Professor Katsumi Yoshida of Mie Prefectural University presented the relationship between sulfurous acid gas and asthma at an academic conference.	
11	(Nation) Special Committee to Investigate Air Pollution in Yokkaichi City (Kurokawa Investigation Team), commissioned by the Ministry of Health and Welfare and the Ministry of International Trade and Industry visited the site to make an investigation. (→The report was submitted in March 1964).	
	Petrochemical complex No.2 started full-scale operation.	
1964, 1	Yokkaichi Medical Association established the Pollution Control Committee. (→An open inquiry letter was submitted to the mayor in July 1964).	
4	Chubu Electric Power Co., Ltd., Yokkaichi Thermal Power Station installed a desulfurization facility for research.	
4	(City) Pollution Control Section was set up in the health department.	

Year, Month	Important Events	Laws, Regulations
5		(Nation) Yokkaichi City and Kusu-cho in Mie-gun became designated areas under the Smoke and Soot Regulation Law.(→applied in 1966).
6	(Nation) The Statistical Study Group (Tsuru Investigation Team) commissioned by the Ministry of Health and Welfare conducted a field survey.	
12	(City) Decided to cover full cost of medical expenses of pollution-related patients. (In February 1965, Yokkaichi City Pollution-related Medical Treatment Judgement Committee was established). (→The first board meeting held in May 1965).	
1965, 4	(City) Air purifiers were installed in some elementary schools and junior high schools in the city.	
	The Association to Protect Yokkaichi Pollution Patients inaugural rally held.	
	(City) Pollution prevention masks (smog masks) were handed out to about 3,000 children at 4 elementary schools in the polluted area.	
6	(Prefecture)Patients' rooms equipped with air purifiers were set up at Shiohama Hospital.	
	Beginning around this time until the early 1970s, factories were installing tall stacks.	(City) Former Kusu-cho, Mie-gun declared an environmentally hygienic city.
1966, 3		(Nation) The Yokkaichi/Suzuka water areas were designated areas based on the Water Quality Conservation Law.
7	A pollution certified patient committed suicide.	
8	Tokai Lawyer Corps/Yokkaichi Pollution Control Council held the first preparatory meeting about the pollution lawsuit.	
	(City) The Yokkaichi Urban Pollution Control Study Group reported on the Urban Pollution Control Master Plan.	
11	(Prefecture) The prefecture started the air pollution continuous monitoring by a telemetry system at 4 stations in Yokkaichi City.	
	A group of 67 households of Heiwa-cho in the Shiohama district were relocated. (→until 1968).	
12	(City) The Construction of Yokkaichi City Central Green Field Park started. (280,000㎡). (→Completed in March 1969).	
1967, 2	(City) Landfill of Kasumigaura for the Petrochemical Complex No.3 was decided by vote.	
6	A pollution certified patient committed suicide.	
	The Yokkaichi Pollution Control Council held Citizens' Rally in Memory of the Victims and Protest against Pollution.	
7		(Prefecture) Promulgation of Mie Prefecture Pollution Prevention Ordinance. (Enforced in January 1968).
8		(Nation) Promulgation and enforcement of the Basic Law for Pollution Control.
	(Prefecture) The Pollution Center was established in Yokkaichi City.	
9	Nine pollution certified patients in Isozu filed a lawsuit (Yokkaichi Pollution Lawsuit) to claim damages against six companies located in Petrochemical Complex No.1.	
10	A junior high school student who was a pollution certified patient died of asthma attack.	
11	The Association to Support Yokkaichi Pollution Lawsuit was established.	
12	The first oral argument of Yokkaichi Pollution Lawsuit was held.	
12	A group of 44 households of Amaike-cho were relocated. (→until 1968).	
1968, 6		(Nation) The Smoke and Soot Regulation Law was abolished. The Air Pollution Control Law and Noise Regulation Law were promulgated. (→Enforced in December 1968).
7	The Association to record Yokkaichi Pollution was established.(The first issue of "Record Pollution"was published).	
9	(Prefecture) The Council for Yokkaichi Area Pollution Control Measures was established.	
10	The Association of Yokkaichi Pollution Certified Patients was established.	
1969, 1	Daikyo Sekiyu Co., Ltd. Yokkaichi Refinery: Heavy oil indirect desulfurization equipment started the operation.	
2		(Nation) The Environmental Standards for Air Pollution by Sulfur Oxides were decided by the cabinet.
3	One plaintiff passed away.	
5		(City) Yokkaichi City concluded Pollution and Disaster Prevention Agreement with seven companies planning to build plants in the Petrochemical Complex No.3.
8	Strong acid wastewater discharge from Nihon Aerosil Co., Ltd. Yokkaichi plant was uncovered. (persons responsible were arrested by Yokkaichi Maritime Security Department, but no prosecution was decided in December 1970).	
12	Ishihara Sangyo Co., Ltd. Yokkaichi Plant caused a waste sulfuric acid discharge case. (persons responsible were arrested by Yokkaichi Maritime Security Department).	
12	Activated sludge treatment equipment was installed at Yokkaichi Joint Wastewater Treatment Plant Ltd.,.	
		(Nation) The Law Concerning Special Measures for the Relief of Pollution-related Patients was promulgated and was enforced in February 1970. A part of Yokkaichi City became a designated area.
1970, 3	Shiohama Mothers' Association to Protect Children from Air Pollution was established.	

Month	Important Events	Laws, Regulations
4		(Nation) The Cabinet decided on the Environmental Standards for Water Pollution.
12		(Prefecture) The Prime Minister approved the Yokkaichi Area Pollution Prevention Program Phase I (fiscal year 1971~1975) started.
		(Nation) At 64th Extraordinary Diet Session(Pollution Diet), The Basic Law for Environmental Pollution Control was revised.(The Harmonization Clause with the Economic Development was deleted).
		(Nation) Due to the Water Pollution Control Law, (The Water Quality Conservation Law and The Factory Effluent Control Law were abolished). The entire Prefecture became a regulated area.
71, 2	(City) Construction of Kasumigaura Green Field Park started. (212,000㎡). (→Completed in March 1973).	
	Establishment of the Citizen Soldier's Association to Fight Yokkaichi Pollution. [Publication of the Bulletin "Kogai Tomare" (Stop Pollution)].	
4	The 36th oral argument was held at the Yokkaichi Pollution Lawsuit. (The first cross-examination at Shiohama Hospital).	
		(Prefecture/City/Company) The Yokkaichi Area Pollution Prevention Program Phase I (fiscal year 1971~1975) started. (Dredging of accumulated sludge in the port etc.).
5		(Nation) The Cabinet decision on the Environmental Standards for Noise.
6		(Nation) Promulgation of the Offensive Odor Control Law
7	The youngest plaintiff passed away.	
		(Nation) The Environmental Agency was established.
9	Pollution-certified patients/families formed a Group of Plaintiffs for the Second Pollution Lawsuit.	
10	The 46th oral argument of the Yokkaichi Pollution Lawsuit was held. (the last cross-examinations to the plaintiffs).	
		(City) Yokkaichi became an ordinance-designated city based on the air pollution control Law.
		(Prefecture) Mie Prefecture Pollution Control Ordinance enacted. (complete revision of the old pollution control ordinance; introduction of The Total Pollution Load Control of Sulfur Oxides Law was enforced in April 1972).
72, 1		(Nation) "The Environmental Standards for Suspended Particulate Matters"were notified.
2	The 54th oral argument of the Yokkaichi Pollution Lawsuit was concluded.(Final Closing Argument by the Plaintiffs).	
3	Petrochemical Complex No.3 started the operation.	
4	(Prefecture) Mie Prefecture Environmental Analysis Project Team was established. (Specific methods for controlling the total amount of sulfur oxides assessed, results reported in November 1972).	
6	Mitsubishi Yuka Co., Ltd. announced temporary abandonment of the plan to advance to Kawarada district.	
7		(Prefecture) Mie Prefectural Pollution Preliminary Examination Committee Ordinance enforced.
	The Court Decision of Yokkaichi Pollution Lawsuit: plaintiffs' entire Victory. Six-company defendants gave up the appeal.	
	The governor expressed the intention to establish a foundation for the relief of Yokkaichi Pollution victims.	
9	Voluntary negotiations by pollution-related patients at Isozu started. (Negotiations were concluded in November 1972).	
73, 3	(Prefecture) Continuous monitoring of smoke and soot emission status from the sources at 16 major factories at Yokkaichi area by telemetry methods started.	
5		(Nation) Notification of Environmental Standards related to Air Pollution. (Revision of Environmental Standards for Sulfur Dioxide, etc.).
9	Establishment of the Yokkaichi Pollution Control Cooperation Foundation. (→The Foundation was disbanded in March1978).	
10		(Nation) Promulgation of the Pollution-related Health Damage Compensation Law.(→enforced in September 1974).
	Around this time, the installation of full-scale flue gas desulfurization equipment progressed.	
74, 6		(Nation) Promulgation of the Law to Partially revise the Air Pollution Control Law. (introduction of Total Pollution Load Control of Sulfur Oxides).
9		(Prefecture) Revision of The Mie Prefecture Pollution Prevention Ordinance. [The total Pollution Load Control etc. of Nitrogen Oxides and COD (Chemical Oxygen Demand)].
11		(Nation) Entire Kusu-cho, Mie-gun became an designated area, based on the Pollution-related Health Damage Compensation Law.
75, 3	Shin-Daikyowa Sekiyu Kagaku Co., Ltd. Yokkaichi Plant installed flue gas denitration equipment for the first time in Japan.	
		(City) Conventional Pollution Disaster Prevention Agreement was divided into the Pollution Prevention Agreement andDisaster Prevention Agreement, and the city and the companies in petrochemical complexes concluded the Agreement.
76, 6		(Nation) Promulgation of The Vibration Regulation Law.
77, 3	(City) Environmental standards for sulfur dioxide were accomplished in Yokkaichi area. (based on the result of the measurement taken in the fiscal year 1976).	
10	A joint memorial monument to pollution victims unveiled.	
78, 4	(City) Measuring automobile exhaust gas started at Naya Municipal Elementary School.	
		(Prefecture/City) The Yokkaichi Area Pollution Prevention Program Phase II (fiscal year 1978~1982) started.

Year, Month	Important Events	Laws, Regulations
1978, 6		(Nation) Introduction of The Total Pollution Load Control of COD Law due to revision of The Water Pollution Control Law.
7		(Nation) Revision of Environmental Standards on Nitrogen Dioxide.
1979, 3		(Prefecture) Guidance Guidelines Regarding the Implementation of Environmental Impact Assessment were enforced.
4	(City) Construction of Mitaki Sanatorium for Pollution-related Health Victims completed.	
1982, 7	Patient Association members all over the country participated in a Citizen's Rally to remember the 10th Anniversary of the court decision of Yokkaichi Pollution Lawsuit called by the former lawsuit defense team.	
1983, 4		(Prefecture/City) Yokkaichi Area Pollution Prevention Program Phase III (fiscal year 1983~1987) started.
1987,2	(Prefecture/City) The governor and the mayor submitted their opinion to the Prime Minister about the delisting of The Pollution-related Health Damage Compensation Law.	
11		(Nation) Pollution-related Health Damage Compensation Law was partly revised. (Cancellation of designated Type 1 area, etc.).
1988, 3		(Nation) The Pollution-related Health Victims Compensation Law was enforced and newly certify system for pollution patients was abolished.
4	(City) The Yokkaichi City Pollution Control Council, etc. was reorganized and the Yokkaichi City Environmental Conservation Council was established.	
	(City) Pollution Control Section was reorganized into Environmental Conservation Section.	
		(Prefecture/City) Yokkaichi Area Pollution Prevention Program Phase IV (fiscal year 1988~1990) started.
1990, 3	(Prefecture/City) Center for Environmental Technology Transfer (current International Center for Environmental Technology Transfer) was established. Approved in December 1990.	
9		(Nation.) Water Pollution Control Law was partially revised. (promotion of measures to treat domestic wastewater).
1991, 4		(City) Yokkaichi became an ordinance-designated city based on Water Pollution Control Law.
		(Prefecture/City) The Yokkaichi Area Pollution Prevention Program Phase V (fiscal year 1991~1995) started.
8		(Nation) Notification of Environmental Standards Related to Soil Pollution Control.
1992, 7	A Collection of Photographs to Record Yokkaichi Pollution published by pollution lawsuit lawyers and the Association to Record Yokkaichi Pollution.	
1993,11		(Nation) Promulgation and enforcement of the Environment Basic Law. (The Basic Law for Environmental pollution control was abolished).
1995, 3		(Prefecture) Mie Prefecture Environment Basic Ordinance enacted.
		(City) Yokkaichi City Environmental basic Ordinance for Environment and Yokkaichi City Environmental Plan were enacted.
6	(City) Yokkaichi City received Global 500 Award.	
9	(City) Declaration of Comfortable Environment City.	
1996, 4		(Prefecture/City) The Yokkaichi Area Pollution Prevention Program Phase VI (fiscal year 1996~2000) started.
6	Pollution History Exhibition was held at Yokkaichi Municipal Museum.	
8	Yokkaichi Municipal Environment Learning Center opened.	
1997, 6		(Nation) Promulgation of Environmental Impact Assessment Law.
10	100th anniversary of Yokkaichi Municipal Government.	
12		Conference to Prevent Global Warming; Kyoto Protocol was adopted.
1998, 7	Establishment of Bereaved Family Association of Yokkaichi Pollution Victims.	
12		(Prefecture) Promulgation of Mie Prefectural Environmental Impact Assessment Ordinance.
2000, 2	(City) ISO14001 certification obtained.	
2001, 1		(Nation) The Ministry of the Environment was established.
4		(Prefecture/City) The Yokkaichi Area Pollution Prevention Program Phase VII (fiscal year 2001~2005) started.
2003, 7	Association of Yokkaichi Pollution Certified Patients and Bereaved Family Association of Yokkaichi Pollution Victims were united and the Association of Yokkaichi Pollution Patients and Families was established.	
2005, 1	Pollution reference library opened in Yokkaichi Municipal Environment Learning Center.	
2		The Kyoto Protocol, which set greenhouse gas reduction targets came into effect.
	Yokkaichi City and Kusu-cho, Mie-gun were merged.	
2006, 4		(Prefecture/City) The Yokkaichi Area Pollution Prevention Program Phase VIII (fiscal year 2006~2010) started.
2012, 7	40th anniversary of court decision of Yokkaichi Pollution Lawsuit.	
2015, 3	Yokkaichi Pollution and Environmental Museum for Future Awareness opened. (Yokkaichi Municipal Environment Learning Center closed).	
2017, 7	45th anniversary of court decision of Yokkaichi Pollution Lawsuit.	

Introduction

The environmental pollution known as Yokkaichi Pollution emerged in the 1960s in Yokkaichi City, where many people were suffering from pollution-related health problems.

This booklet summarizes the historical process from the outbreak of Yokkaichi Pollution to present day, focusing on the efforts to improve the environment. We will be very happy if you make use of it in conjunction with the exhibition at the Yokkaichi Pollution and Environmental Museum for Future Awareness, which opened on March 21 in 2015 to help facilitate understanding.

Yokkaichi Pollution and Environmental Museum for Future Awareness

Introductory Remarks

- Proper nouns such as place, company, organization names, and titles of persons etc. are those of the time.
- Many of the photos related to Yokkaichi Pollution were provided to Yokkaichi City by the late Mr. Yoshiro Sawai.

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