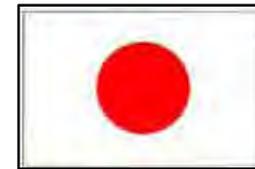

Supervisory Guidance for Water Suppliers in Japan



Water Supply Division,
Health Service Bureau,
The Ministry of Health, Labor and Welfare

Contents

- 1 **Supervisory guidance**
 - 2 On-the-Spot Inspections of Water Suppliers
 - 3 Training and Other Informational Activities
 - 4 Cases of Disasters and Incidents
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1-1 Types of Supervisory Guidance

Prior guidance: Approval

- Approval for a business
 - ~Article 6 of the Water Supply Law~
 - The operation of a water supply business requires approval by the national government.
 - In principle, a water supply business should be run by a municipality.

- Approval for a business change
 - ~Article 10 of the Water Supply Law~
 - Expansion of a business or changes of water source, purification process and suchlike require the approval.

Ex post facto supervision

- Reports and site inspections
 - ~Article 39 of the Water Supply Law~
 - Reports on the progress of a business are collected.
 - On-the-spot inspection is conducted at the offices and facilities to check the equipment, water quality, water volume, accounts, etc.

- Training and other informational activities
 - To ensure the appropriateness of the business, training regarding policies and technical issues is conducted for the staff of the suppliers.

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2-1 On-the-Spot Inspections

Reason for conducting them:

Clause 1, Article 39 of the Water Supply Law: Receiving of reports and on-the-spot inspections

The inspections conducted so far are shown below.

Year	Number of water suppliers	Problems pointed out in written form	Problems pointed out verbally	Problems pointed out verbally/in written form combined	Problems detected per water supplier	Remarks
2001	70 suppliers	15 suppliers	70 suppliers	70 suppliers	-	
2002	104 suppliers	47 suppliers	104 suppliers	104 suppliers	-	
2003	106 suppliers	36 suppliers	93 suppliers	93 suppliers	-	
2004	107 suppliers	157 cases	999 cases	1,156 cases	10.8 cases /1 suppliers	Total numbers of detected cases have been counted since 2004.
2005	82 suppliers	115 cases	746 cases	861 cases	10.5 cases /1 suppliers	Total numbers of detected cases have been counted since 2004.
2006	62 suppliers	118 cases	735 cases	853 cases	13.8 cases /1 suppliers	Total numbers of detected cases have been counted since 2004.
2007	48 suppliers	127 cases	893 cases	1,020 cases	21.3 cases /1 suppliers	Total numbers of detected cases have been counted since 2004.

Source: Water Supply Division, Health Service Bureau, the Ministry of Health, Labor and Welfare

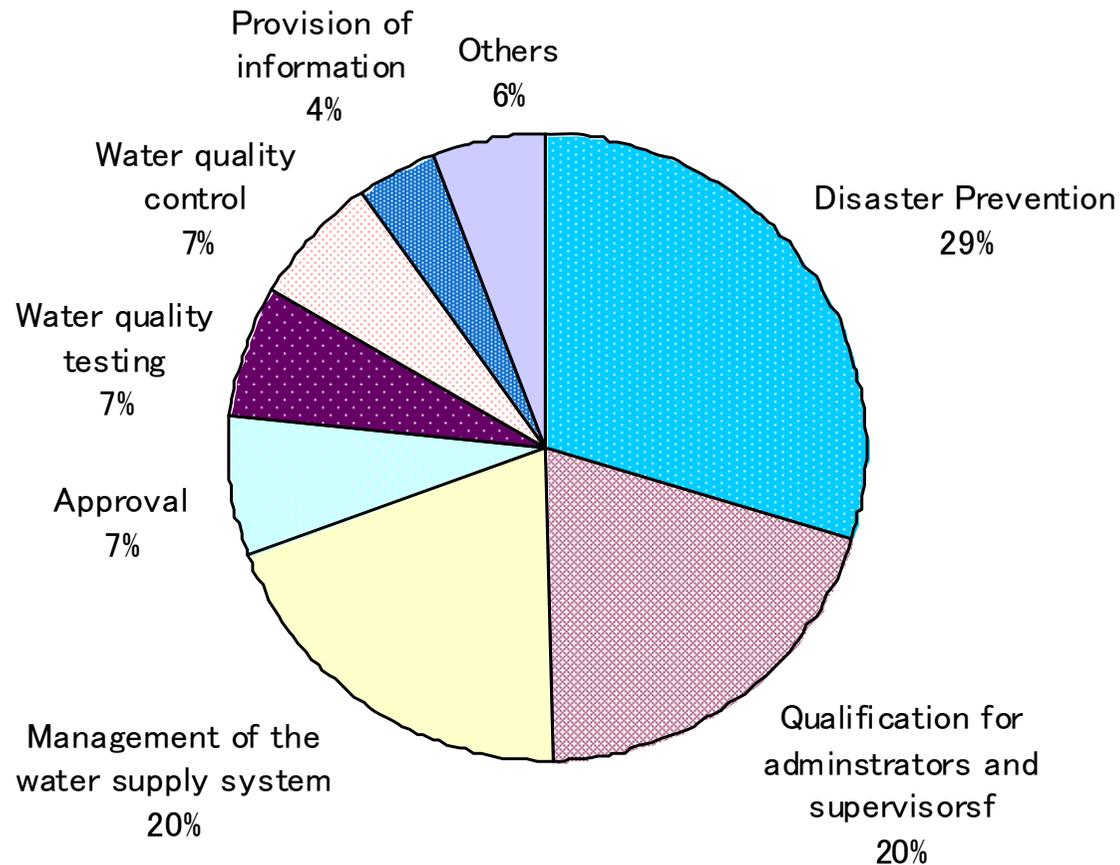
2-2 Checklist for On-the-Spot Inspections

◇ **The following particulars are checked.**

- **Supervision by the technical administrator of water works, the construction supervisor and suchlike**
- **Approvals, reports and the implementation of pre-supply inspections**
- **Compliance with the facility standards and other practices for the management of water supply systems**
- **Medical checkups for the staff, hygienic activities and other practices related to control of hygiene**
- **Implementation of water quality tests and compliance with the water quality standards**
- **Development of systems concerning pollution near the water source and water quality control**
- **Preparations and preventive actions against natural disasters, terrorism and other crises**
- **Provision of information to the customers regarding water quality, major projects, financial conditions, regulations, risk management and other related issues**
- **Conservation of resources and environment**
- **Others: Status of preparing a document defining the community's vision of its water supply**

2-3 Breakdown of Problems Detected during On-the-spot Inspections: 2007

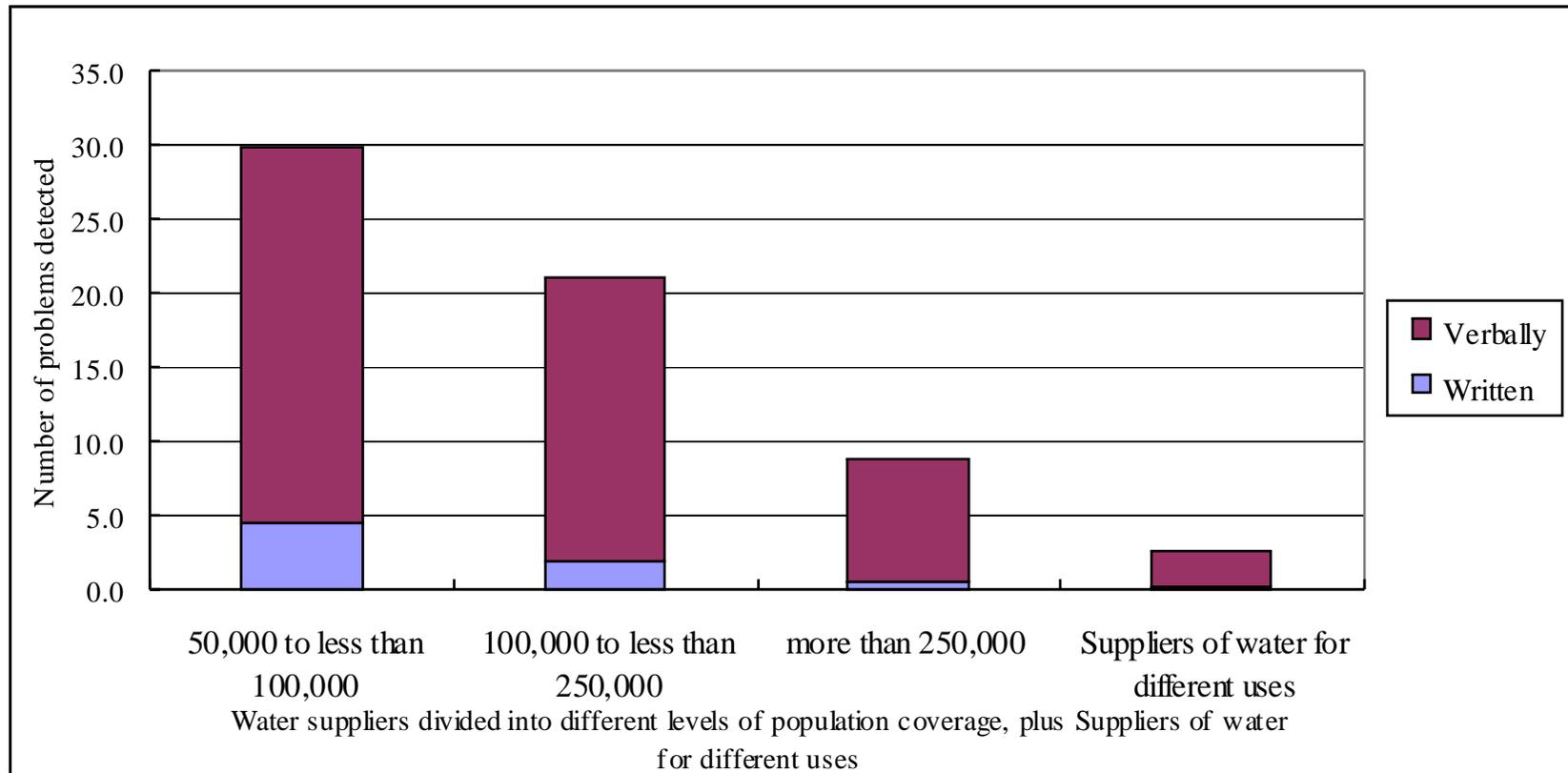
The following percentages concern both the problems pointed out either in written form or verbally in 2007.



Source: Water Supply Division, Health Service Bureau, the Ministry of Health, Labor and Welfare

2-4 Number of Problems Detected by Business Scale: 2007

Number of problems detected by business scale of water suppliers: 2007



Source: Water Supply Division, Health Service Bureau, the Ministry of Health, Labor and Welfare

2-5 Problems Detected during On-the-spot Inspections (1)

◇ **Tendencies apparent in the results of on-the-spot inspections**

○ **Smaller water suppliers have a disproportionate number of problems.**

◇ **Problems pointed out in written form**

○ **Many of these problems concern licensing or water quality tests.**

◇ **Problems pointed out verbally**

○ **The most common issue in this category is disaster prevention.**

○ **This is followed by licensing, approval and the management of water supply systems.**

*** On-the-spot inspections had been carried out at all Minister-approved water suppliers up to 2007.**

*** Water suppliers are required to take actions necessary for solving the problems detected. The problems identified during the on-the-spot inspections in 2008 will be fewer than those in the previous year.**

2-6 Problems Detected during On-the-Spot Inspections (2)

◇ Inspectors' views

- **Technical administrators of waterworks fail to fulfill their responsibilities.**
- **Technical administrators of waterworks are not selected systematically and properly to carry out their duties.**
- **Systematic actions to be taken in the event of ramshackle water supply systems are lacking. The actions may include functional diagnoses, creating update plans and suchlike.**
- **Possible sources of pollution around the water source, such as factories and offices, are not properly identified.**
- **Manuals specifying the actions to be taken in the event of a water quality incident, terrorism, earthquake, blackout, water deficiency and other kinds of crises are not provided.**
- **Earthquake-resistant measures for basic tap water facilities and equipment are poorly developed.**
- **Customers are not sufficiently informed of the results of water quality tests and other issues regarding water supply businesses.**
- **Provision of community's visions of water supply have not progressed well.**

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3-1 Training and Other Informational Activities

(Organized by the Ministry of Health, Labor and Welfare)

◇ Opportunities to provide information

- Tap water technical training **(Details mentioned below)**
 - Intended for those assigned to the implementation or supervision of technical issues concerning tap water management
 - Training is focused on the relevant year's administrative tendencies related to water supply and examples of good practices of risk management
- National meeting of directors of welfare-related departments
 - Intended for directors of welfare-related departments of prefectural governments
 - Attendants are informed of the administrative tendencies of the jurisdiction of the Ministry of Health, Labor and Welfare overall. Water supply is part of the jurisdiction.
- National meeting of the heads of health supervisory sections
 - Intended for the heads of welfare sections of prefectural governments
 - Attendants are informed of the administrative tendencies related to public welfare, part of the jurisdiction of the Ministry of Health, Labor and Welfare and also includes water supply.
- Meeting of the people in charge of water supply service
 - Intended for members of prefectural governments in charge of the water supply, and for water suppliers
 - Attendants are informed of the tendencies of water supply administration, namely the results of the relevant year and the plan for the following year

3-2 Details of Tap Water Technical Training (1)

(Ministry of Health, Labor and Welfare)

2008: Tap water technical training

- 1. Opening address**
- 2. Administrative tendencies of water supply in recent years**
 - (1) Administrative tendencies of water supply**
 - (2) Recent facts about the qualitative management of tap water**
 - (3) Results of the on-the-spot inspection conducted in 2007**
 - (4) Revision of Waterworks Vision**
- 3. Lecture**

Title: Report of e-Water II project
- 4. Presentation of reported concerning risk management**
 - (1) Leakage from a water pipe**
 - (2) Plan of earthquake-resistance**
 - (3) Lessons learned from the Iwate coast northern part Earthquake**
- 5. Q&A**

3-3 Details of Tap Water Technical Training (3)

(Ministry of Health, Labor and Welfare)

Implementation of the tap water technical training in 2007

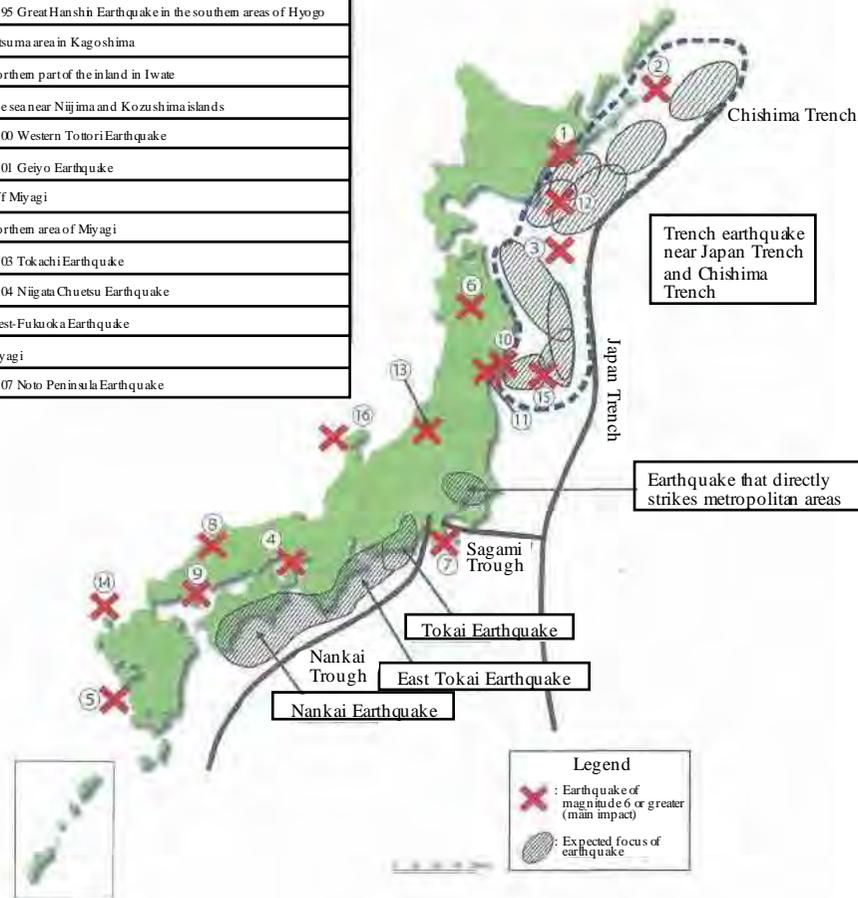


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4-1 Occurrences of Earthquakes in Japan of Magnitude 6.0 or Greater

	Date	Name and focus
①	Jan. 15, 1993	1993 Kushiro Earthquake
②	Oct. 04, 1994	1994 East-of Hokkaido Earthquake
③	Dec. 28, 1994	1994 Sanriku Hanka Earthquake
④	Jan. 17, 1995	1995 Great Hanshin Earthquake in the southern areas of Hyogo
⑤	May 13, 1997	Satsuma area in Kagoshima
⑥	Sep. 03, 1998	Northern part of the inland in Iwate
⑦	Jul. 01, 2000	The sea near Niijima and Kozushima islands
⑧	Oct. 06, 2000	2000 Western Tottori Earthquake
⑨	Mar. 24, 2001	2001 Geiyo Earthquake
⑩	May 26, 2003	Off Miyagi
⑪	Jul. 26, 2003	Northern area of Miyagi
⑫	Sep. 26, 2003	2003 Tokachi Earthquake
⑬	Oct. 23, 2004	2004 Niigata Chuetsu Earthquake
⑭	Mar. 20, 2005	West-Fukuoka Earthquake
⑮	Aug. 16, 2005	Miyagi
⑯	Mar. 25, 2007	2007 Noto Peninsula Earthquake



4-2 Niigata Chuetsu Earthquake, October 2004

Damaged road: cave-in



4-3 Niigata Chuetsu Earthquake, October 2004

Collapse of an equipment shed



2005 07 29

4-4 Noto Peninsula Earthquake, March 2007

A damaged house



4-5 Noto Peninsula Earthquake, March 2007

Damage to a stainless-steel water pool



4-6 Noto Peninsula Earthquake, March 2007

Damage to the elastic part of a water pipe bridge



4-7 Niigata Chuetsu Earthquake, July 2007

A damaged road: dislocated coupling



4-8 Niigata Chuetsu Earthquake, July 2007

A crack in the dam structure



4-9 Water Supply Cutoff Due to Significant Turbidity in Raw Water: Kitami-shi in 2007

1) Details of the incident

(1) Date and time: 10:30 p.m., Friday, June 22, 2007

(2) Cause: Increase in the turbidity of raw water after heavy rain in the upper reaches of the river catchment: the turbidity reached nearly 15,000 degrees, which exceeded the processing capacity. As a result, the water intake was stopped.

2) Water cutoff

(1) Households: 57,872

(2) Restoration process

Saturday, June 23, 2007: The supply of water from the purification plant stopped.

As the plant was restored, the water supply gradually recovered from the cutoff.

The water supply was resumed in all areas on Wednesday, June 27, 2007.

4-10 Water Supply Cutoff due to Significant Turbidity in Raw Water: Kitami-shi in 2007

Muddy raw water runs through a sluice gate.



4-11 Water Leakage in Okayama-shi in 2007

Details of the incident

- About 9:00 a.m., Sunday, May 20, 2007
 - A water pipe with a diameter of 1000 millimeters burst in the central area of Okayama-shi.
 - Nearly 40,000 cubic meters of tap water leaked out.
 - Nearly 72,000 households and 155,000 people suffered from low water pressure and turbid water.
-

4-12 Water Leakage in Okayama-shi in 2007

Water leaked from an asbestos cement pipe with a diameter of 1000 mm.



4-13 Water Leakage in Okayama-shi in 2007

Buildings of this area, including the shop shown below, were inundated above the floorboards.



4-14 Water Leakage in Okayama-shi in 2007

Damaged pipe and road



4-15 Collapse of a Viaduct in Shizuoka-shi, 2006

Description

- Reported at 4:40 a.m. on July 4, 2006
 - The bridge fell at 4:30 a.m. on July 4, 2006 (recorded in water supply data)
 - Name of the bridge Minatomachi 1-chome Suikankyo
 - Name of the river Tomoe River (grade 2)
 - Year of construction 1931 (early period of the Shimizu era)
 - Pipe type Cast iron pipe (CIP)
 - Diameter 400 millimeters
 - Extension of the bridge 55 meters
 - Structure of the bridge Steel-frame truss bridge with two piers
-

4-16 Collapse of a Viaduct in Shizuoka-shi, 2006

The bridge was damaged.

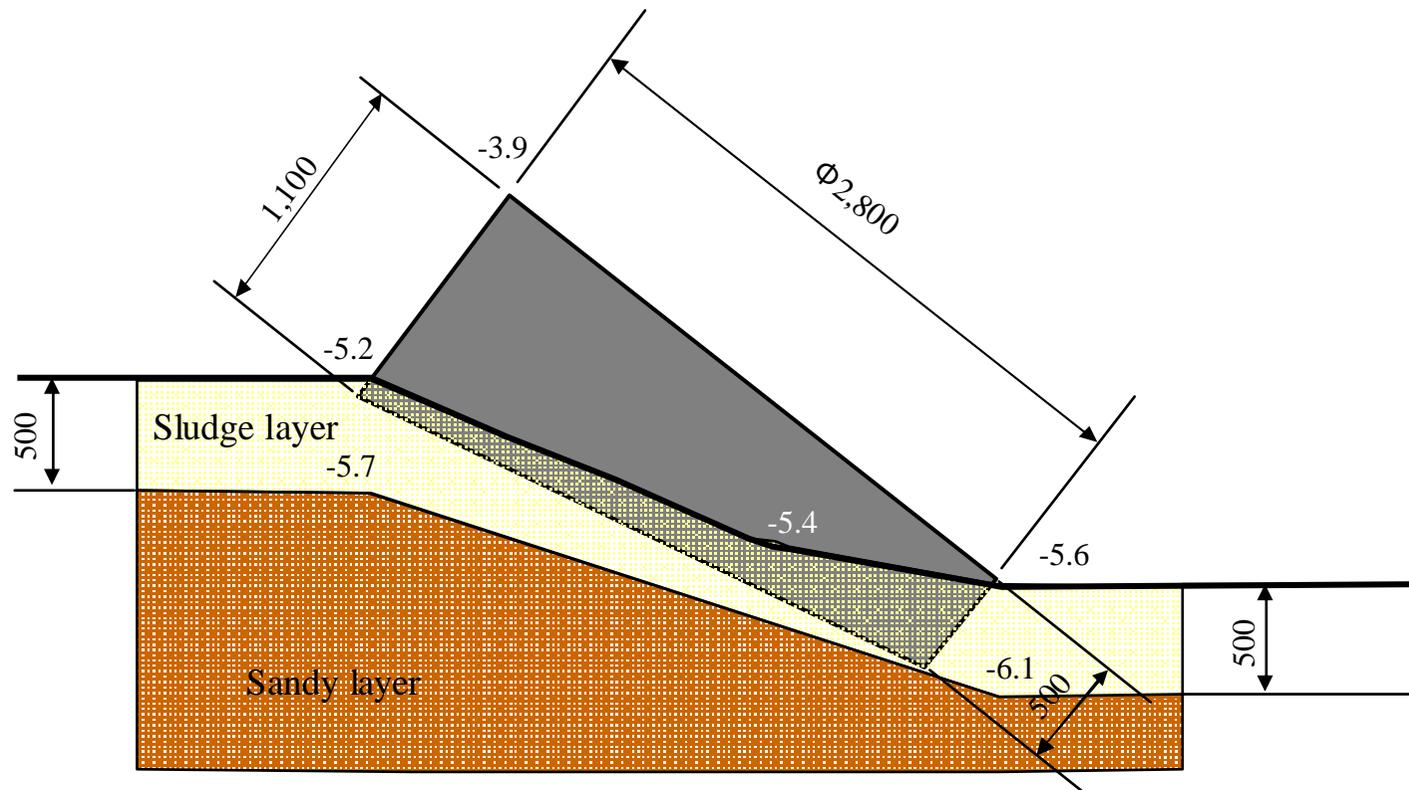


4-17 Collapse of a Viaduct in Shizuoka-shi in 2006

Detailed illustration of the remaining part of the pier on the left bank

Upstream

Downstream



4-18 Caved-in Water Supply Tunnel in Hiroshima, 2006

○ Description

Date: Friday, August 25, 2006

Place: In a 2.9-kilometer water supply tunnel between Kaitacho, Aki-gun and Aki-ku, Hiroshima-shi

Cause: Bedrock and suchlike caved in and blocked the inside of the water supply tunnel (L = 10.5 meters)

Restoration: Construction was completed on Monday, September 11, 2006 and water began to flow through the tunnel again on the same day.

○ Water cutoff

Kure-shi: Up to 48,200 persons in 20,100 households Water supply was restored on September 2.

Etajima-shi: Up to 23,900 persons in 11,950 households Water supply was restored on September 6.

Total: Up to 72,100 persons in 32,050 households

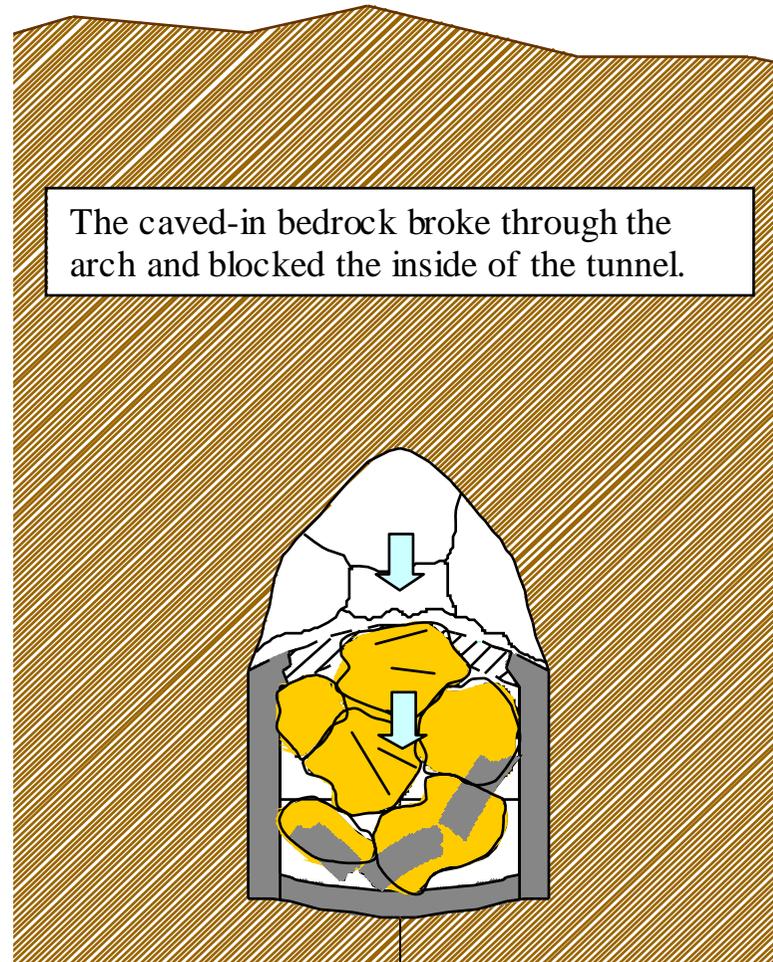
4-19 A Caved-in Water Supply Tunnel in Hiroshima, 2006

Bedrock caved into the tunnel.



4-20 Caved-in Water Supply Tunnel in Hiroshima, 2006

How the bedrock caved into the tunnel



THE END



Wooden pipes were used in the early years after the establishment of Kawasaki Waterworks Bureau.