

**National Statement on CW
Issues:
Measures against the Potential
Hazard of OCWs in Japan**



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Main Topics of this Presentation

- ◆ Potential hazard of OCWs in Japan
- ◆ MOE's investigation on OCWs in Japan
- ◆ Conclusions

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Japanese Chemical Weapons at the World War II

◆ Chemical Agents

Classification	Common Name in Japanese Forces	Chemical Component
Blister Agent	Yellow Agent	Mustard / Lewisite
Vomiting Agent	Red Agent	Diphenylchloroarsine (DA / Clark II), Diphenylcyanoarsine (DC / Clark I)
Tear Agent	Green Agent	Chloroacetophenone
Choking Agent	Blue Agent	Phosgene
Blood Agent	Brown Agent	Hydrogen Cyanide
Smoking Agent	White Agent	Trichloroarsine

◆ Contained in:

- Chemical shells (ϕ 75mm, 90mm, 105mm, 150mm)
- Chemical bombs (15kg, 50kg)
- Canisters
- Dram Containers

National Surveys on OCWs in 1973 (1)

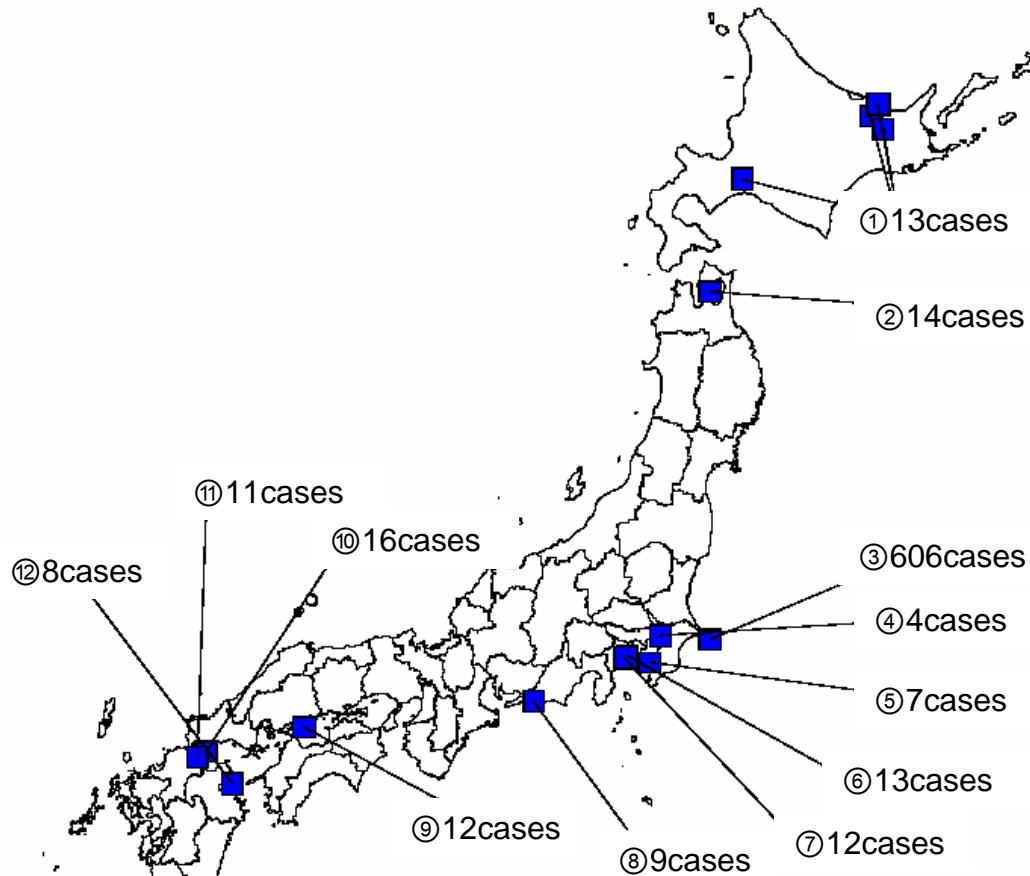
◆ Purposes

- Collect information on storage and disposal of OCWs at the end of the World War II
- Collect information on discovery, accident and minesweeping of OCWs after the World War II

◆ Findings

- 18 sites were presumed to have had OCWs in Japan at the end of the war. OCWs were dumped in the sea at 8 sites in Japan.
- OCWs' victims had been reported for 20 cases.

National Surveys on OCWs in 1973 (2)



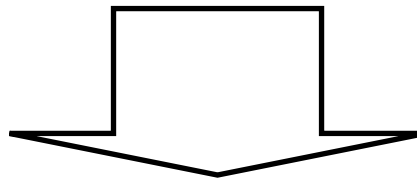
Total 823 cases

Discovery, accident and minesweeping of OCWs after the War

Recent Cases (1)

Construction workers suffered from OCWs
(in **Samukawa Town** and **Hiratsuka City**)

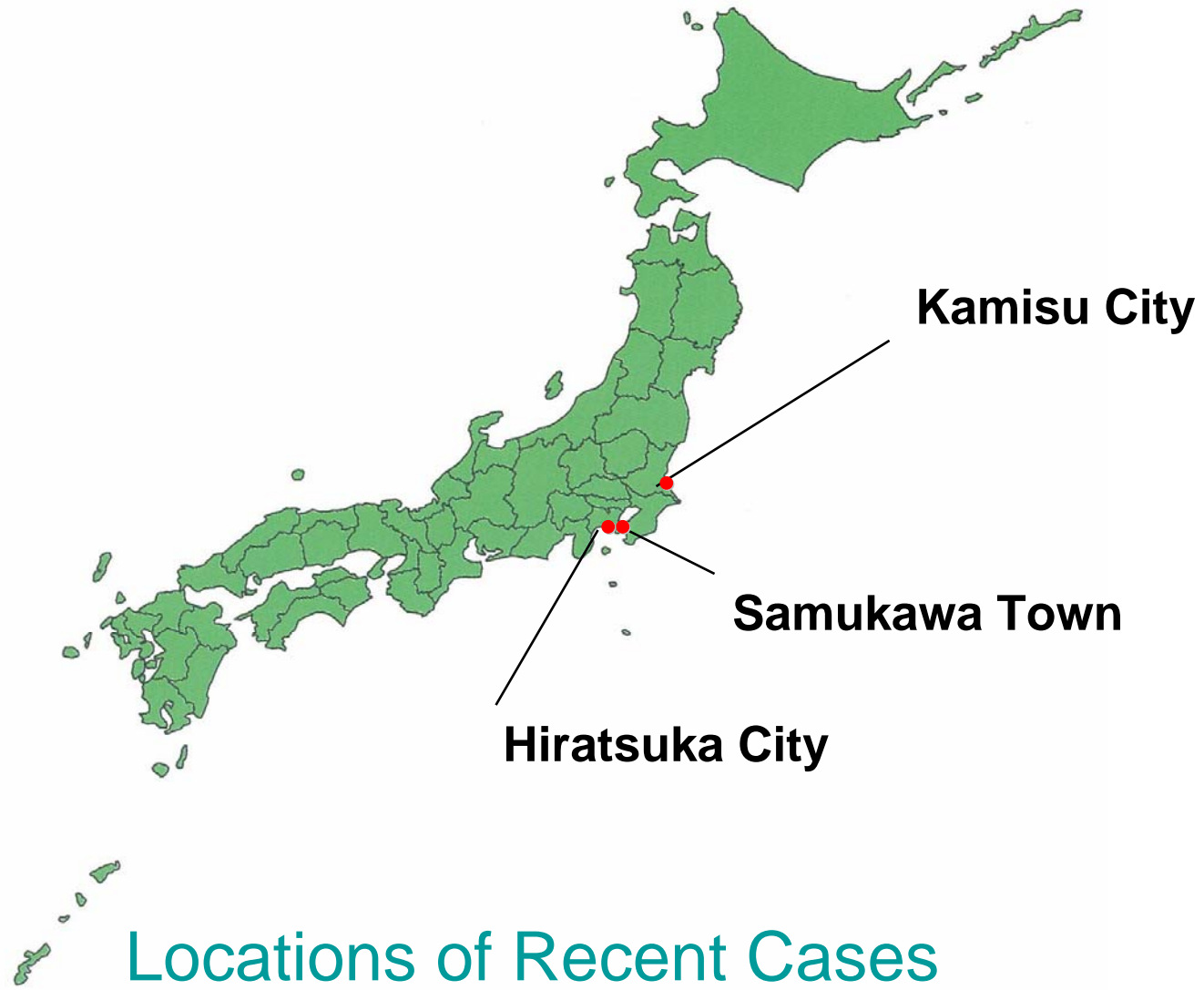
Organoarsenic contamination of groundwater was
detected (in **Kamisuru City**)



(in 2002-
2003)

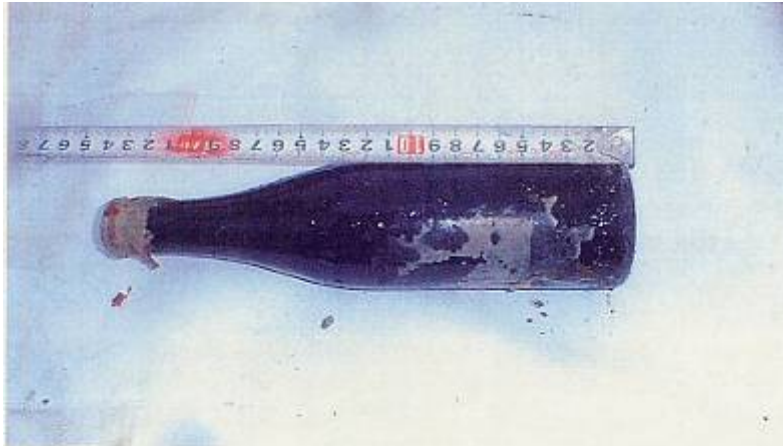
Japanese government decided to take actions
against such problems in 2003.

Recent Cases (2)



Recent Cases (3)

Findings in Samukawa Town



Dug-out beer bottle

- The number of bottles found : 806
- Content of bottles :
Mustard / Lewisite
(Yellow Agent)



Dug-out soils were covered to prevent spreading.

Recent Cases (4)

Findings in Hiratsuka City



Dug-out round glass bottle which contains
Hydrogen Cyanide
(Brown Agent)



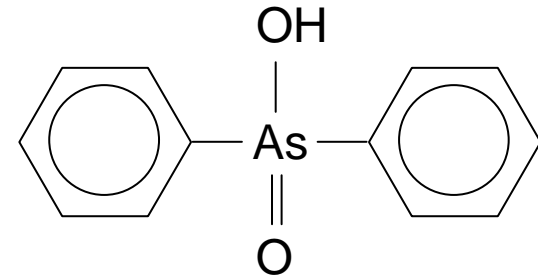
There was either white powder, clear fluid or soil in glass bottles.

Recent Cases (5)

Findings in Kamisu City



A solidified cement mass
mixed with DPAA



Diphenylarsinic Acid
(DPAA)

- **DPAA is an artificial organoarsenic.**
- **It could be a precursor of diphenylchloroarsine (DA/Clark II) or diphenylcyanoarsine (DC/Clark I).**

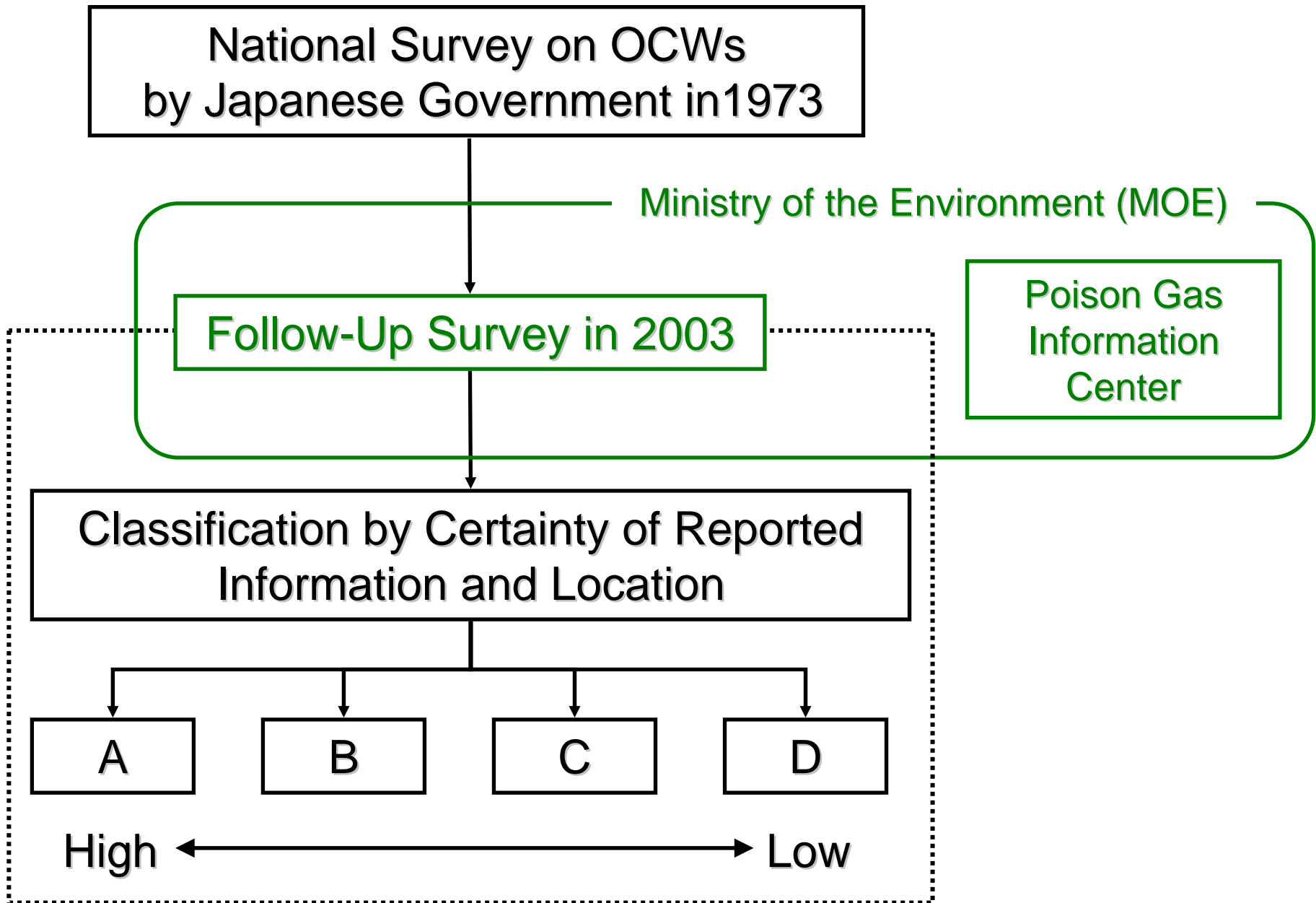
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Overview of the Follow-Up Survey (1)



Overview of the Follow-Up Survey (2)

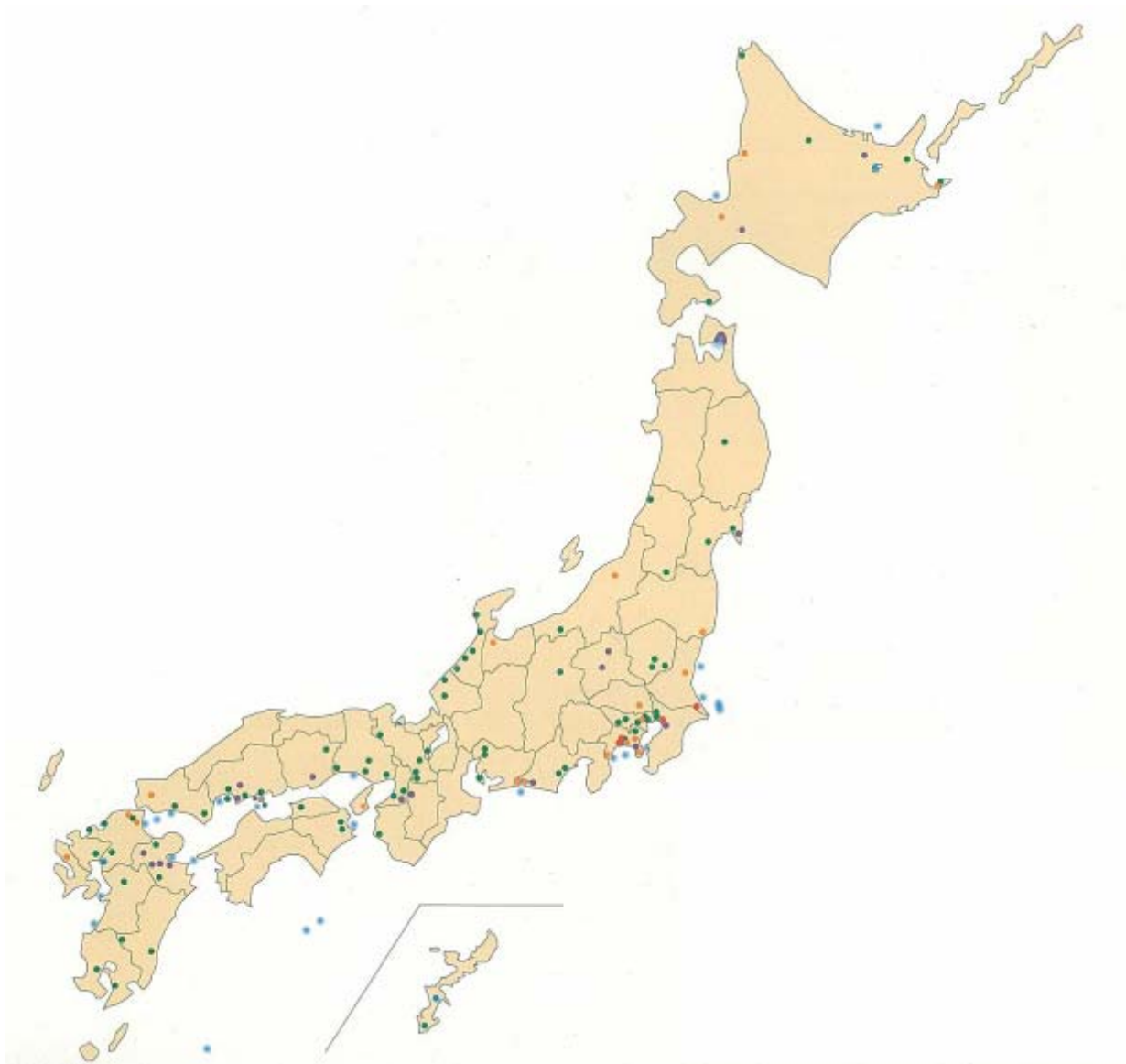
◆ 114 sites on land

Category	Definition	Measure	No. of sites
A	Information on the existence of OCW is certain, and location is identified.	Environmental investigation to prevent their potential hazard and treatment if found, relevant by department of the central government.	4
B	Information on the existence of OCW is certain, but location is not identified.	Information gathering, and environmental investigation if necessary, to confirm safety for daily life.	16
C	Information on the existence of OCW is not certain, but location is identified.		21
D	Other than A to C	Continuing information gatherings	73

◆ 29 sites in water

- Information gatherings on the cases in water

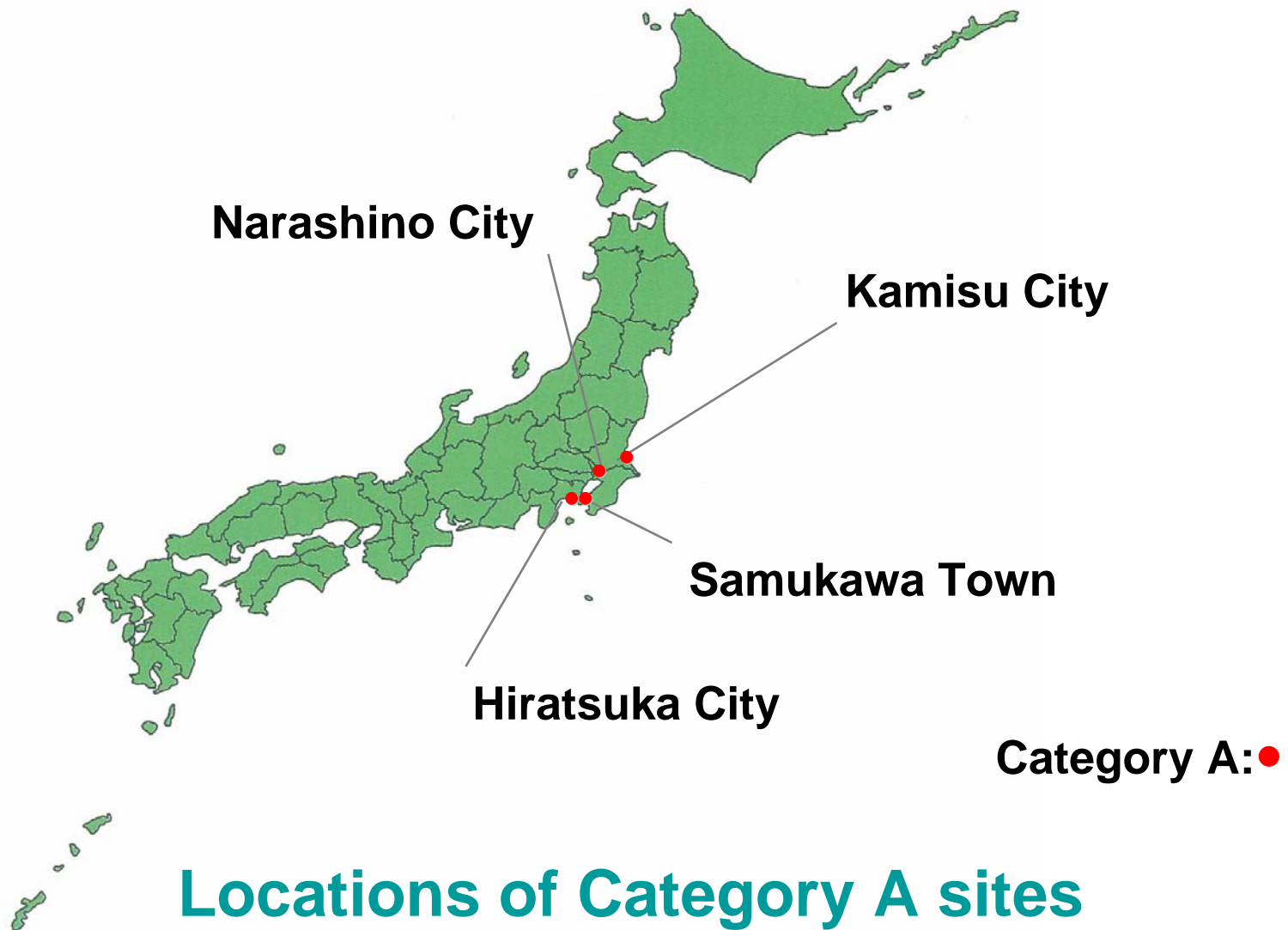
Overview of the Follow-Up Survey (3)



Category	
On Land	● : A
	● : B
	● : C
	● : D
● : in water	

Locations of 138 survey sites

Overview of the measures for Category A sites (1)



Overview of the measures for Category A sites (2)

◆ Results of MOE's investigation at the site in Kamisu City



Operation in Kamisu City

- 87 tons of solidified cement masses including DPAA were discovered in 2005.
- It is likely to be a cause of the groundwater and soil contaminations.
- It is judged that they were dumped by someone in or after 1993.

Overview of the measures for Category A sites (3)

◆ Measures for the site in Kamisu City

- Advise local residents not to drink water from DPAA-contaminated wells
- Monitor groundwater regularly
- Deal with victims of health damage by drinking well water contaminated by DPAA
- Research about toxic potency about DPAA
- Treat contaminated soils and solidified cement masses at the waste incineration

Overview of the measures for Category A sites (4)

Samukawa Town and Hiratsuka City

Narashino City

Construction sites
with OCWs



Former school of
Japanese Imperial
Army



OCWs treated by
Ministry of
Land, Infrastructure
and Transport
(MLIT) on
public lands.

Environmental
investigation by
Ministry of the
Environment
(MOE) on
surrounding lands.

Environmental investigations by
Ministry of the Environment
(MOE)

“No risk to daily life”
confirmed **except at
the site to be
investigated**

“No risk to daily
life” confirmed

Overview of the measures for Category A sites (5)

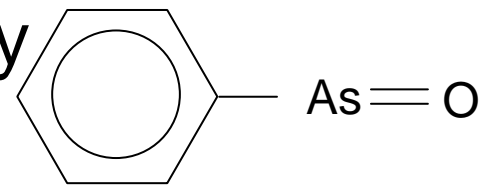
◆ Results of MOE's investigation so far and measures for the site in Hiratsuka City

- Found suspicious white blocks from the ground
- The blocks were identified as phenylarsine oxide (PAO) which is thought to be a precursor of DA and DC.
- Now preparing to remove and treat these blocks and the contaminated soil

• M

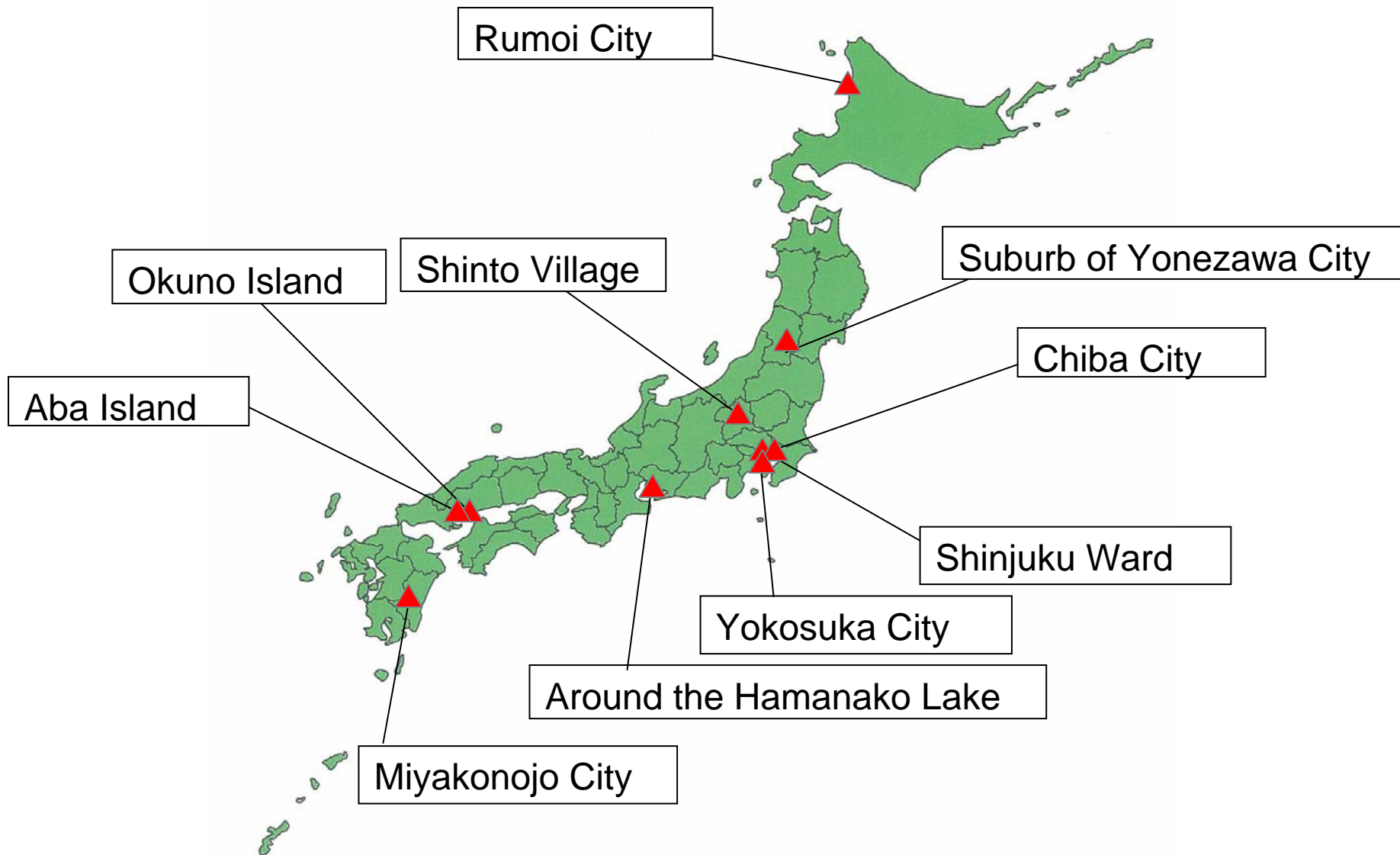


regularly



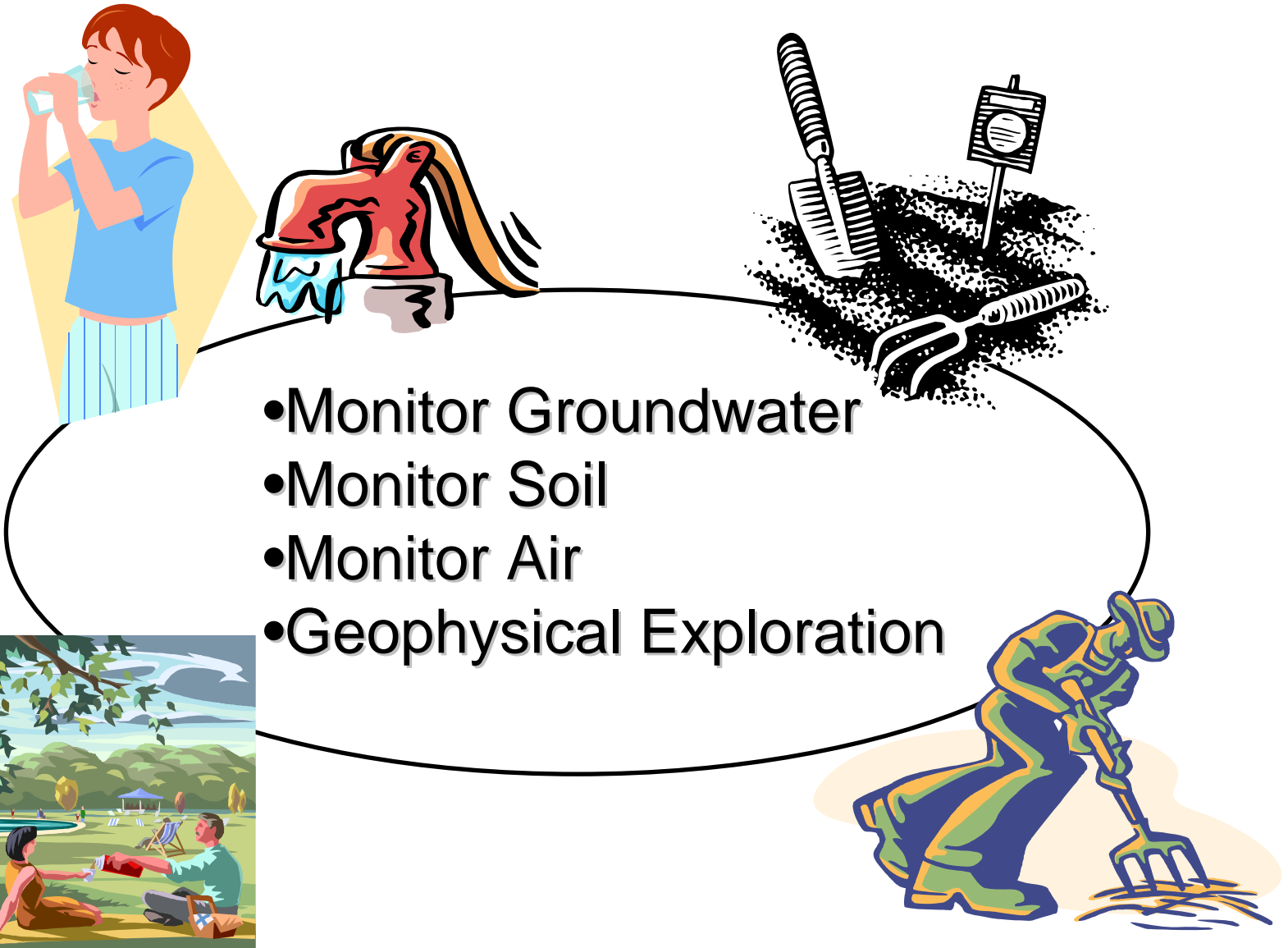
Phenylarsine Oxide
(PAO)

Overview of the measures for Category B/C sites (1)



10 sites with environmental investigation

Overview of the measures for Category B/C sites (2)



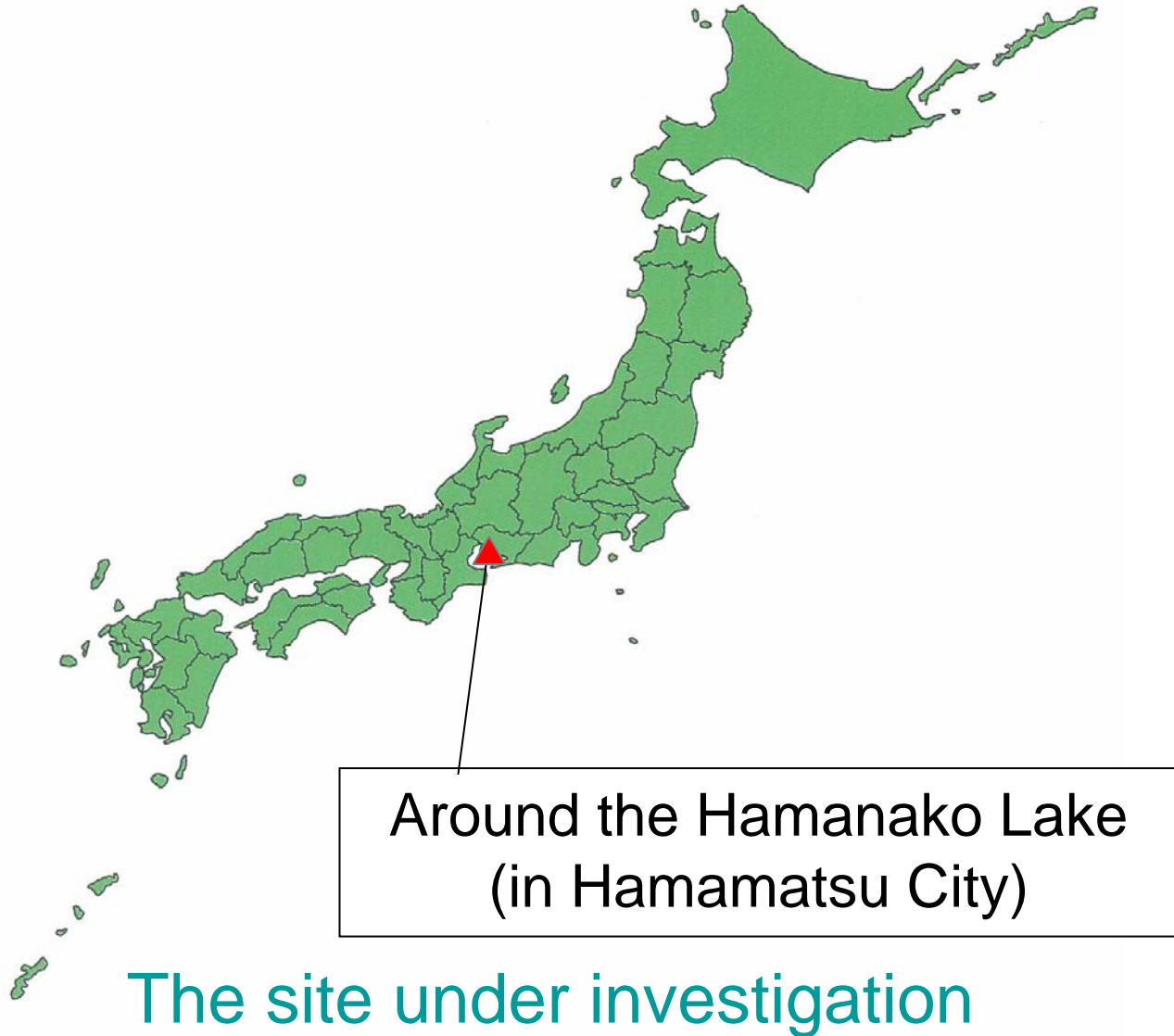
Methods of environmental investigation

Overview of the measures for Category B/C sites (3)

◆ Results of MOE's investigations and present status

- Trace of DPAA or PAA was detected in groundwater and soil at the site in Okuno Island. But the groundwater is not utilized there at present.
- No chemical component of chemical agents was detected at any site.
- At present, there is no conceived risk of health damage by environmental contamination due to OCWs, **except at one site currently under investigation.**

Overview of the measures for Category B/C sites (4)



Overview of the measures for Category B/C sites (5)

◆ Results of MOE's investigation so far and measures for the site in Hamamatsu City



A chemical drum container

- A suspicious metal object was detected under the ground by geophysical exploration. This may be a chemical drum container manufactured by the Japanese Imperial Forces.
- Now preparing to dig the ground and confirm and treat the buried object

Poison Gas Information Center in MOE

◆ Purpose

- Prevention of potential accidents by OCWs

◆ Functions

- Gather information on OCWs
- Respond to public inquiries
- Provide information through brochures and website to the public with updates

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Conclusions

- Safety for daily life against potential health hazard of OCWs has been confirmed by MOE's environmental investigation in almost all sites except at a few sites to be investigated.
- Negative impacts by OCWs on health and environment remain as the groundwater and soil contaminations by organoarsenic compounds in the few sites.
- Preparation for prompt actions is needed to prevent and minimize damages on on-site worker and general public when OCWs are found by chance.

Thank you for your attention



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