

NOTIFICATION: “The results of the survey on the enforcement status of the Soil Contamination Countermeasures Act & Numbers and Trends of soil contamination investigations and countermeasures in the fiscal year 2004”

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Ministry of the Environment has conducted the annual survey into enforcement status of the Soil Contamination Countermeasures Act and the cases of soil contamination investigations and countermeasures, which have been reported or recognized by prefectures and/or cabinet-order designated cities. The results of the survey in 2004 have been rounded up and just released here. Further details about these results are posted on the website of Ministry of the Environment (<http://www.env.go.jp/water/dojo/chosa.html>.)

1. The execution status of the Soil Contamination Countermeasures Act

Both numbers of soil contamination investigations, and Designated Areas, based on the Soil Contamination Countermeasures Act (hereinafter referred to as “the act”) increased in fiscal 2004 compared to those of fiscal 2003, and remedial actions such as soil removals are in progress (the survey data of fiscal 2002 is rounded up from the enactment date of the act (February 15th 2003) to 2003 March 31).

(1) Soil Contamination Investigations

The number of “soil contamination investigations” reported in fiscal 2004, which starts in April 2004 and ends in March 2005, based on the act amounts to 130. The total number of the investigations after the enactment of the act reaches 196 (Figure 1).

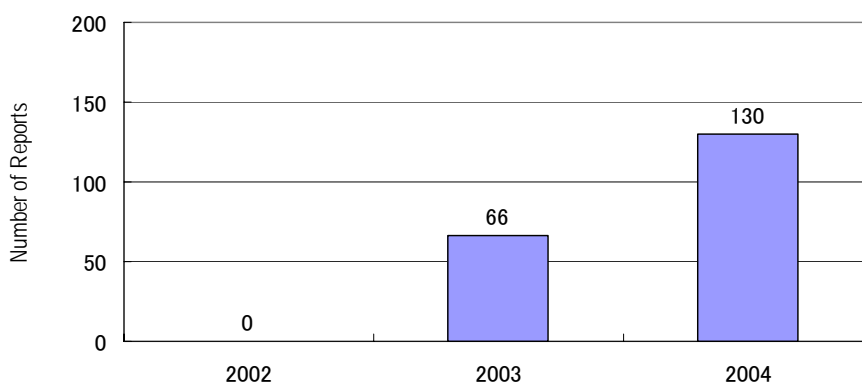


Figure 1 Number of “Soil Contamination Investigations” reported in each fiscal year

(2) Designated Areas

As a result of soil contamination investigations, 43 lots have shown lab-analysis data exceeding the soil standards regarding the designated hazardous substances stipulated in the act (hereinafter referred to "SCCA standard") and have resulted in being put on Designated Area Register in 2004, and the total number of these lots from fiscal 2002 to fiscal 2004 reaches 64 (Figure 2).

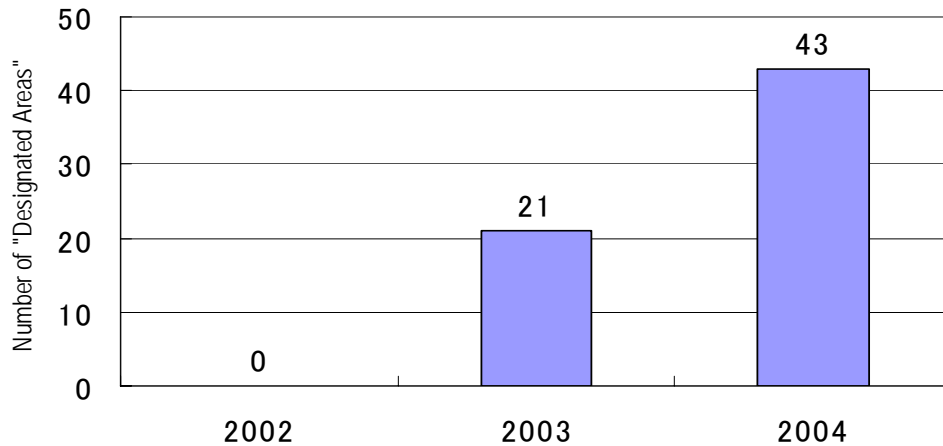


Figure 2 Number of "Designated Areas" registered in each fiscal year

The number of Designated Areas where hazardous substances have been removed so as to be cancelled from Designated Area Register lists amounts to 22 in 2004, and the total number of these areas from fiscal 2002 to fiscal 2004 reaches 26 (Figure 3). Consequently, the number of designated areas at the end of the fiscal 2004 is 38.

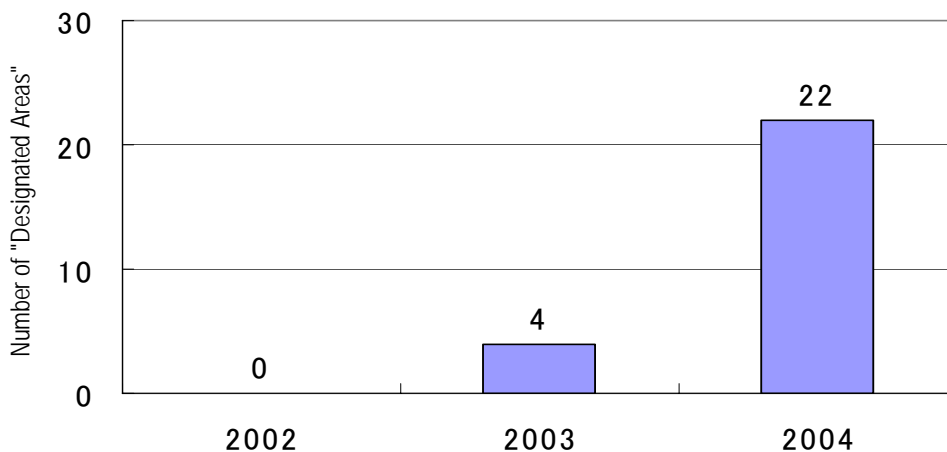
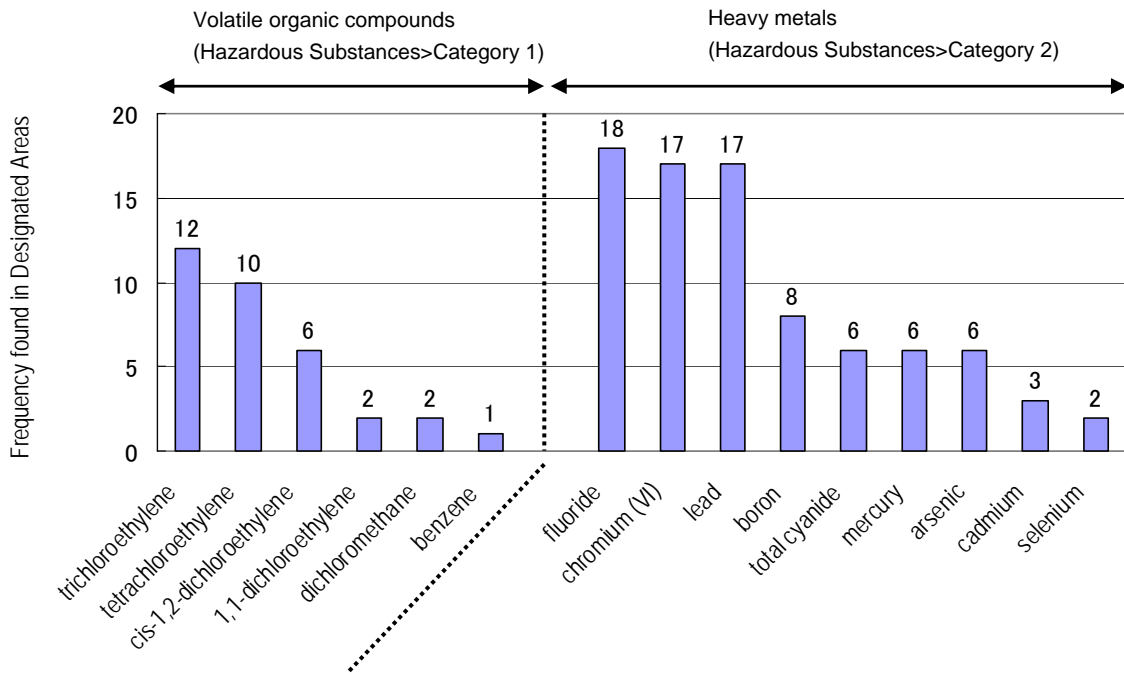


Figure 3 Number of delisted "Designated Areas" in each fiscal year

(3) Substances exceeding the SCCA standards

Type of designated hazardous substances that exceeded the SCCA standard found in the 64 Designated Areas is as follows: trichloroethylene and tetrachloroethylene are prevalent for volatile organic compounds, fluoride and fluoride compounds, hexavalent chromium, and lead and its compounds are prevalent for heavy metals (Figure 4).



(Note #1) Because more than one hazardous substance can be found in a single designated area, the summation of numbers in the above figure is not equal to the total number of designated area.

(Note #2) The following hazardous substances have not been found in the designated areas.
 (Hazardous Substances > Category 1) Carbon tetrachloride, 1,2-dichloroethane, 1,3-dichloropropene, 1,1,1-trichloroethane, and 1,1,2-trichloroethane
 (Hazardous Substances > Category 3) Simazine, thiuram, thiobencarb, PCBs, and organic phosphorus

Figure 4 Frequency of Designated Hazardous Substances exceeding SCCA standard at Designated Areas
 (Totals from the enactment of the Act through FY2004)

2. Cases of soil contamination investigations and countermeasures of contaminated soil (including cases which are not in accordance with the act)

This section summarizes the situations on soil contamination investigations and remedial actions that have been reported to prefectures and/or cabinet-order designated cities. In the summary below, numbers include investigations or remedial actions implemented under the act, ones required by local bylaws or guidelines, as well as the ones voluntarily conducted.

(1) Investigations

The total number of cases of soil contamination investigations that have been reported to prefectures and/or cabinet-order designated cities from FY1975 to FY2004 amounts to 3,677. Of those, the number of investigations that had picked up the data exceeding the SCCA standard or the soil environmental quality standard is 1,906. In FY2004, there were 454 cases with results more than these standards out of 838 investigations (Fig.5, Table 1).

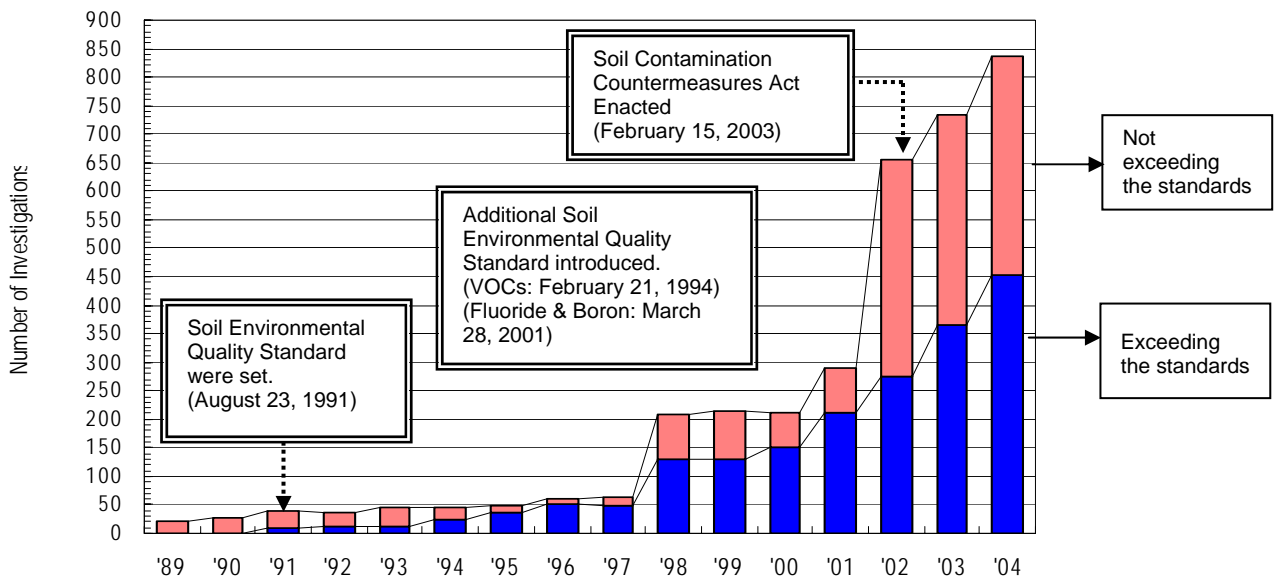


Figure 5 Changes in number of soil investigations and the ratio of exceeding cases in each fiscal year

FY	'74	'75	'76	'77	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90
# of investigations	2	7	6	2	10	5	3	10	2	18	10	18	12	14	27	22	26

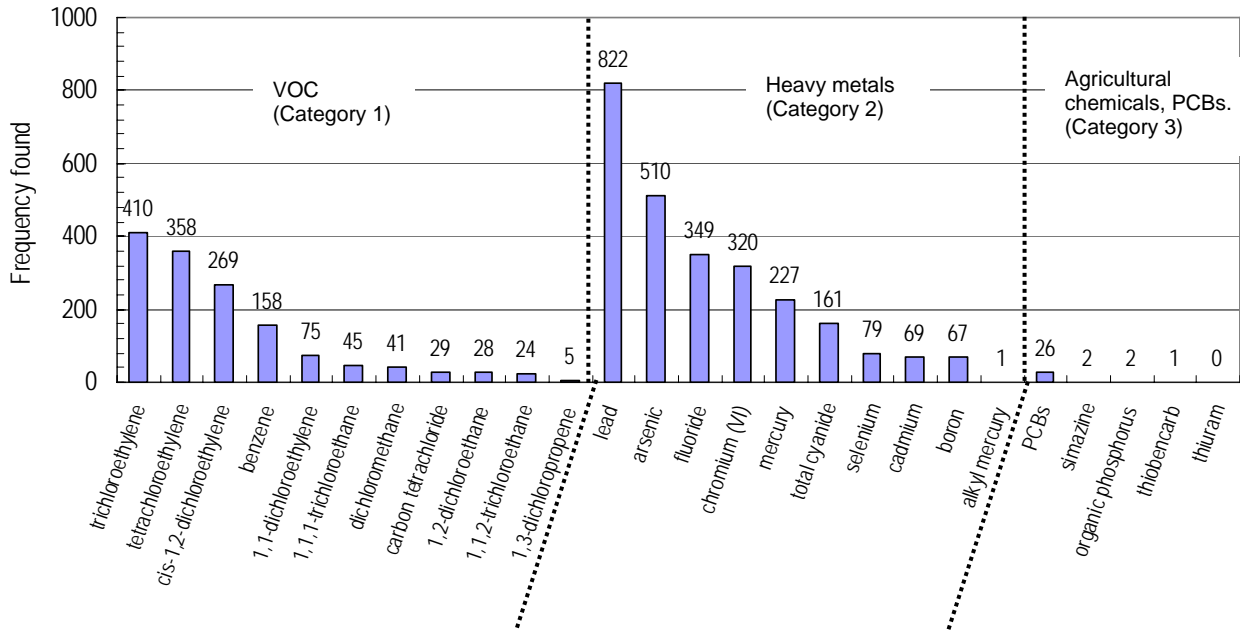
FY	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	Total
# of investigations	40	35	44	44	47	60	64	209	213	210	289	656	734	838	3,677
Under the SCCA	-	-	-	-	-	-	-	-	-	-	-	0	66	130	196
Exceeding Stds.	8	11	13	25	37	50	48	130	130	151	210	274	365	454	1,906
Under the SCCA	-	-	-	-	-	-	-	-	-	-	-	0	21	43	64

Note 1) The above table is the summary of the cases that prefectures and cabinet-order cities have compiled since FY1975. Investigations that were conducted before FY1975, which prefectures and/or cabinet-order cities had later come to know, are also included in the table.

Note 2) The numbers of the investigations in the above table are calculated based on what governors of prefectures and/or cabinet-order cities had received in each fiscal year. For "Under the Act" row, the count increases each time when the governors received a report on "Soil Contamination Investigation." For the numbers exceeding the standard under the Act, those numbers show the total "Designated Areas" registered during each fiscal year.

Table 2 Number of soil investigations and the ratio of exceeded cases in each fiscal year

Designated hazardous substances which exceeded the SCCA standard or the soil environmental quality standard for the 1,906 cases are as follows: trichloroethylene, tetrachloroethylene, and cis-1,2- dichloroethylene for volatile organic compounds (Category 1), lead and its compounds, arsenic and its compounds, and fluoride and its compounds in heavy metals (Category 2), in order of the prevalence respectively.



(Note) Because more than one hazardous substance can be found in a single investigation case, the summation of numbers in the above figure is not equal to the total number of the investigations.

Figure 6 Frequency of Designated Hazardous Substances exceeding SCCA standard Or Soil Environmental Quality standard (Totals from FY1991 through FY2004)

(2) Remedial actions

The type of remedial actions for the cases, in which hazardous substances were found with lab-data exceeding the standards (454 in FY2004, total number since FY1991 is 1,906), is shown in Table 2. Looking at the results during FY2004, for VOCs (Category 1), in-situ cleanup technologies, such as soil vapor extraction, pump and treat, and bioremediation, have been frequently adopted, while excavation of contaminated soils has been mostly adopted for cleaning up soils contaminated with heavy metals (Category 2) or agricultural chemicals (Category 3). Excavation is also frequently adopted for complex contaminations.

Table 2 Remedial actions adopted in the past

	# of countermeasures		VOCs Category 1		Heavy metals Categories 2 & 3		complex contaminations	
	FY2004	total	FY2004	total	FY2004	total	FY2004	total
	Monitoring of groundwater quality	9	(315)	7	(166)	1	(101)	1
Removal of Soil Contamination	382	(1,860)	81	(622)	211	(898)	90	(340)
Excavations	296	(1,246)	32	(209)	205	(844)	59	(193)
Insitu Cleanup	86	(614)	49	(413)	6	(54)	31	(147)
Bioremediation	18	(44)	10	(27)	0	(3)	8	(14)
Chemical Decomposition	16	(54)	7	(25)	2	(7)	7	(22)
Soil Vapor Extraction	20	(199)	13	(160)	1	(4)	6	(35)
Pump and Treat	24	(282)	13	(189)	2	(31)	9	(62)
Soil Washing	5	(15)	4	(5)	0	(6)	1	(4)
Others	3	(20)	2	(7)	1	(3)	0	(10)
Insitu Containment	11	(85)	0	(7)	7	(54)	4	(24)
Sheetpiles	8	(37)	0	(3)	5	(21)	3	(13)
Soil/Cement Mixing Walls	0	(20)	0	(2)	0	(13)	0	(5)
Others	3	(28)	0	(2)	2	(20)	1	(6)
Offsite Containment	3	(8)	0	(0)	2	(5)	1	(3)
Stabilization (insitu)	3	(62)	0	(2)	2	(51)	1	(9)
Stabilization (exsitu)	2	(51)	0	(2)	2	(43)	0	(6)
Concrete Vault Containment	0	(31)	0	(2)	0	(23)	0	(6)
Topsoil shuffling	13	(25)	3	(4)	7	(15)	3	(6)
w/ on-site clean soils	3	(4)	0	(0)	2	(3)	1	(1)
w/ off-site clean soils	10	(21)	3	(4)	5	(12)	2	(5)
Soil Caps	10	(72)	0	(2)	10	(61)	0	(9)
Pavements	24	(167)	0	(8)	21	(129)	3	(30)
w/ concrete	12	(81)	0	(4)	11	(66)	1	(11)
w/ asphalt	12	(86)	0	(4)	10	(63)	2	(19)
Signs and fence	1	(58)	0	(11)	1	(37)	0	(10)
Others	6	(249)	1	(112)	4	(109)	1	(28)
total	362	(1,681)	66	(431)	232	(1,018)	64	(232)

(Note #1) Numbers in the parenthesis show the totals from August 1991, when soil environmental quality standard was first introduced, to the end of FY2004.

(Note #2) When multiple countermeasures are applied at a single site, each method is counted as one.

(Appendix 1) The numbers of soil contamination investigations and designated areas as of August 31st 2006 (preliminary figures)

Preliminary figures of the reported number of soil contamination investigations and the registered number of Designated Areas from the enactment date of the act to August 31st 2006 are shown in the following table.

	As of August 31 st 2007 (preliminary figures)	< for reference > As of the end of fiscal 2004
The reported number of soil contamination investigations (Article 3 and Article 4)	515 cases	196 cases
The registered number of Designated Areas	141 cases	64 cases
The number of delisted Designated Areas (excluding partial removal cases)	59 cases	26 cases

Soil Contamination Countermeasures Act

○Purpose The purpose of this act is to provide for the investigation of soil contamination and the prevention of harm to public health caused by soil contamination, and thereby to address soil contamination so as to protect public health.

○System

