

CHAPTER 4

FUTURE PLAN TO PROMOTE POPs MONITORING

Monitoring of the substances covered by the Stockholm Convention has been addressed as described so far. Ministry of the Environment is now drawing up a plan to start a new POPs monitoring in F.Y. 2002 based on the recommendations made by an POPs Monitoring Expert Group.

4-1 POPs Monitoring Expert Group

The POPs Monitoring Expert Group started discussions in 2001 on methods for conducting environmental monitoring targeting the 12 POPs, except dioxins and furans for which the results of other surveys (e.g. the dioxins survey) are used, in order to grasp the levels of POPs in the environment and the effectiveness of the existing measures to

reduce them.

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4-2 Recommendations

(1) Analytical sensitivity

Basic analytical methods should be selected by setting a target lower limit for analysis for each medium as follows:

- Air 1 pg/m³ or less in principle;
- Water 1-10 pg/ℓ for inland water, and one tenth or lower for coastal seawater;
- Sediment 1 pg/g or less in principle; and
- Wildlife 0.1 ng/g or less in principle.

Any of the above should be based on GC/MS (primarily, high-resolution MS), and if a stable isotope labeled compound is available, highly precise analysis incorporating precision control should be aimed at, by using it as an internal standard substance.

(2) Analytical and collection methods

Existing analytical methods should be utilized, and if any of them lack required analytical sensitivity, new analytical methods should be developed:

- For PCBs, the analytical method that is being used in the General Inspection Survey of Chemical Substances on Environmental Safety and the tentative manual method in the endocrine disruptor substances survey are primary

methods;

- For HCB, DDTs, dieldrin and chlordanes, the organochlorine pesticide general analytical method that is being considered in the General Inspection Survey of Chemical Substances on Environmental Safety is a primary method;
- For heptachlor, aldrin, endrin, mirex and toxaphene, their pretreatment methods and analytical methods should be established;

and

- Regarding sample collecting methods, an air collecting method should be established, and the necessary volume of water as a sample should also be identified.

(3) Test samples and sites of survey

On the basis of the domestic and overseas situation of consumption, persistence, bioaccumulation and potential for long-range environmental transport of POPs, test media subject to monitoring, as well as the sites and timing of sampling, should be selected and determined. The new POPs monitoring should be designed as follows:

- Regarding test media, air (in the state of particles and gas), sediment, water (rivers and coastal seawater) and wildlife (bivalves and long-life wildlife ranked high up the food chain) should be monitored;

- For air, sampling sites should be set at an interval of 100 km, and one-week sampling should be carried out twice or more in each summer and winter.
- For water, river water sampling should be carried out at the major rivers in the whole country and coastal seawater sampling at around several sites per year (which should be changed every year, returning to the original sites in five years). At coastal points, samples of bottom sediment should also be taken.
- For wildlife, bivalves should be taken at several dozen points across the country, and additional samples of high-ranked wildlife should be secured in combination with the dioxins survey and other surveys.

(4)Others

Manuals for sampling and operations that cover pretreatment to analysis should be developed. Methods for analyzing monitoring results should also be considered.