The Implementation of SAICM QSP in Thailand

Pornpimon Chareonsong
Pollution Control Department
Ministry of Natural Resources and Environment, Thailand

Introduction

The SAICM QSP project entitled "Capacity building on the POPs analysis in core media"

PCD in cooperation with MOEJ and IGES has started the project from Jan.09 - March 10.

Project Objectives

-to support Thailand through the QSP in meeting its obligations of the Stockholm Convention and SAICM objectives;

-to build sustainable capacity on POP analysis in core media;

-to enable Thailand to undertake initial capacity building for the sound management of chemicals.

Project Activities

Activity 1 Training for two Thai officials on capacity building on POPs analysis in core media (air samples)

Activity 2 Disseminating information related to gathering data and POPs analysis in core media

Activity 3 Organizing a 2-days workshop for 50 Thai officials, academia and relevant stakeholders on capacity building on POPs analysis in core media.

Project Evaluation

The project has been successfully implemented. The initial implementation was slightly delayed due to the internal approval process, however, most activities have been completed within the timeframe of the original project work plan.

Stakeholders involvement

- PCD, DEQP

- MOEJ, NIES, JESC

- 55 representatives from over 18 departments including academia and private sectors

Contribution of the project to the national chemicals management framework

This Project activities has contributed to strengthen the technical capacity and network of national laboratories as well as networking with international institutions, which play an important roles in the sound management of chemicals in the country.

Contribution of the project to the national chemicals management framework (cont')

The project activities strengthens technical capacity and availability of technology including technology transfer with regard to POPs analysis. It supports the development and strengthening of national chemicals management institutions, plans, programmes, and activities to implement the SAICM, building upon work conducted to implementation international chemicals-related agreement and initiatives (QSP objectives, priority b).

Contribution of the project to the national chemicals management framework (cont')

In addition, this project activities support the implementation of the Stockholm Convention and the management of POPs chemicals which are considered one of priority pollutants in Thailand.

Links with QSP objective and strategic priorities

-The objectives and strategic priorities of the SAICM Quick Start Program (QSP), priority b)

"development and strengthening of national chemicals management institutions, plans, programmes, and activities to implement the Strategic Approach, building upon work conducted to implementation international chemicals-related agreement and initiatives"

Links with QSP objective and strategic priorities (cont')

-Dubai Declaration on International Chemicals Management, paragraph 15 and 17.

-The Overarching Policy Strategy (QPS) paragraphs 17 (b), (d), as well as paragraph 20 (b)(iv),

-The Global Plan of Action (GPA) paragraph 7(a), (b), paragraph 12, activities 212 and 226. These activities aim at coordinating assistance programmes at the bilateral and multilateral levels that support capacity building activities and strategies by developed countries and strengthening technical capacity and availability of technology including technology transfer with regard to POPs analysis

-Article 16 of the Stockholm Convention

-The decision SC-3/19 effectiveness evaluation item 9.

Main conclusion

-Thai officials and academia are capable of preparing and analyzing POPs in core media (air samples), that can support the effort of the Thai government in establishing laboratory infrastructure for POPs analysis.

- Thai officials and stakeholders are made aware of the Stockholm Convention obligations and its monitoring programme.

- The information and outcome of the project are made publicly available through the internet website and will be shared with relevant stakeholders including in the regional and sub-regional level.

Main conclusion (cont')

-The implementation of this project has contributed to strengthen the network of POPs laboratories and personnel, as well as enhancing the good cooperation and information sharing between different ministries related to POPs monitoring analysis.

Lesson learned from the Project

-Further capacity building is needed in order for Thailand to be able to meet its reporting obligation under the Stockholm Convention and effectiveness evaluation, and to periodically monitor the progress in the longer term.

-Thailand needs to conduct a detailed situation analysis regarding laboratory capacity to assess further capacity building needs.


IGES
JESC
NIES JAPAN
National Workshop on
Capacity Building on POPs Analysis in Core Media
under Japan SAICM Quick Start Program (QSP)
28-29 January 2010
At Maruay Garden Hotel
28 9:27PM


28 9:15PM

"Capacity Building on POPs Analysis in Core Media" under Japan SAICM Quick Start Program (QSP)

POPs Sampling and Analysis in Ambient Air : PCBs, PCDDs and PCDFs

Cleanup Spike:
Add Internal Standard Solution 200 pg
(Conc. 20 ng/ml, Volume 10 µl)

Ambient Air Sampling
by High Volume Sampler

Preparation and Cleaning of Materials and Apparatus
(HV, QFF and PUF)

Sampling Spike:
Add Internal Standard Solution 200 pg
(Conc. 10 ng/ml , Volume 20 µl)

QFF

PUF

Soxhlet Extraction

Toluene 300 ml for 16-24 hr

Acetone 300 ml for 16-24 hr

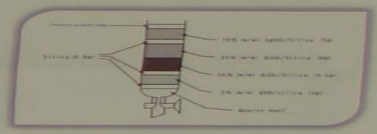
Concentration by Rotary Evaporator (10 ml)

Concentration by Rotary Evaporator (1-2 ml in Hex)

Dehydration by Sodium Sulfate Anhydrous and Adjust Volume to 100 ml

Extracted Solution 50 ml

Cleanup by Multilayer Silica Gel Column
Add the Extracted Solution and Hex 200 ml in Column
Flow Rate of Elution of 1 drop per second



Concentration by Rotary Evaporator (2 ml)

Cleanup by Activated Carbon Dispersed Silica Gel column
Add the Solution 2 ml and Hex 40 ml in Column
Flow Rate of Elution of 1 drop per second

Add 25% DCM/Hex 60 ml in Column → Fraction 1 : Mono-ortho PCBs

Add Toluene 60 ml in Column → Fraction 2 : Non-ortho PCBs, PCDDs and PCDFs

Concentration by Rotary Evaporator (1-2 ml)

Concentration by N_2 Gas to 50 µl

Syringe Spike (200 pg) with 10 pg/µl in Final Solution

Concentration by N_2 Gas to 50 µl

HRGC/HRMS with SP-2331, 60m, 0.32mm, 0.2µm
(TeCDD, TeCDF, PeCDD, PeCDF, HxCDD, HxCDF)

HRGC/HRMS with HT-8PCB 60m, 0.25mm , 0.2µm
(HpCDD, HpCDF, OCDD, OCDF, coplanar-PCBs)

"Capacity Building on POPs Analysis in Core Media" under Japan SAICM Quick Start Program (QSP)

POPs Sampling and Analysis in Ambient Air : *Pesticides*

Ambient Air Sampling
by High Volume Sampler

Preparation and Cleaning of Materials and Apparatus
(HV, QFF, PUF, and ACF)



Sampling Spike:
Add Internal Standard Solution 10 ηg
(Conc. 50 ηg/ml , Volume 200μl)

QFF | PUF | ACF

Soxhlet Extraction

Acetone 2-3 hr + Toluene 24 hr | Acetone 24 hr | Acetone 2-3 hr + Toluene 24 hr


Mix for POPs Analysis

Add Surrogate (2 ηg) in Operation Blank

Concentration with Hex 100 ml by Rotary Evaporator x 2

Adjust Volume to 10 ml and Separate to 2 Fractions

Concentration by N_2 Gas to 2 ml

Florisil Column

Florisil 10g, 250°C, 18 hr
Conditioning by 2% DEE/Hex 150 ml then Hex 100 ml
Inject Sample 2 ml , Washing by Hex 0.5 ml x 2

Fraction 1: 2%DEE/Hex 90 ml | Fraction 2: 20%DEE/Hex 40 ml | Fraction 3: 20%DEE/Hex 80 ml

Concentration by Rotary Evaporator to 2 ml

Silicagel Column (5g, 200°C, 18 hr)

Fraction 1.1: Hex 30 ml | Fraction 1.2: 15%DEE/Hex 60 ml

Concentration by Rotary Evaporator

Concentration by N_2 Gas to 0.5 ml

Syringe Spike (1 ηg) with 10 pg/μl in Final Solution

Concentration by N_2 Gas to 100 μl

HRGC/HRMS with ENV-8MS 30m, 0.25mm, 0.25μm
HRGC/HRMS with ET-8PCB 60m, 0.25mm

Fraction 1.1 : HCB, Aldrin, Mirex

Fraction 1.2 : DDTs, DDEs, DDDs, Chlordanes, Nonachlors, Oxychlordane, Heptachlor, trans-Heptachlor-Epoxide, α-HCH, β-HCH, γ -HCH, Toxaphene

Fraction 2: Cis-Heptachlor-Epoxide, δ-HCH

Fraction 3: Dieldrin, Endrin


Mrs.Nichapa Arunin
28 9:26PM


National Workshop on
Capacity Building on POPs Analysis in Core Media
under Japan SAICM Quick Start Program (QSP)
28 9:36PM


National Workshop on
Capacity Building on POPs Analysis in Core Media
under Japan SAICM Quick Start Program (QSP)
28-29 January 2010
At Maruay Garden Hotel
Dr. Takuya Shibata
28 10:21PM


National Workshop on
Capacity Building on POPs Analysis in Core Media
under Japan SAICM Quick Start Program (QSP)
28-29 January 2010
At Maruay Garden Hotel
NIES JAPAN
29 1:08AM


Capacity Building on POPs Analysis in Core Media
SAICM Quick Start Program
January 2010
Garden Hotel
SIBATA
29 1:22AM


IGES
JISC
NIES JAPAN
National Workshop on
Capacity Building on POPs Analysis in Core Media
under Japan SAICM Quick Start Program (QSP)
28-29 January 2010
At Maruay Garden Hotel
TOSHIBA
29 9:08PM


30 1:36AM

Thank you very much.

ขอบคุณมากค่ะ