Inventory / Assessment proceedings a **GLIMPSE** of Practical-related issues

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Identification of Stakeholders

- Stakeholders must often be (re-)identified
  - Utilities and Industries
  - To be also considered:
    - Army, Navy and Air Forces
    - Municipalities
    - Sanitation & Touristic Infrastructures
    - Shipbuilding industries
    - Mining Industries
    - Small industries and consumers
    - Contractors (workshops, Scrap dealers)
    - Airports, Ports and Railways
    - Residential and commercial buildings etc.

Open applications are **NOT** related to the 2025/2028 deadlines but still need to be sufficiently considered => 25% of world PCB production!

Input: Be pro-active - Involve Media with POSITIVE News

- Involve journalists & media to become players on your side
- Offer training/workshop breaking complex issue into understandable inputs for the public
- Sell good News we do have POPs problems, but are working on solutions, seeking for assistance
- Launch campaigns feed media with periodic information/updates/contacts
- Offer platforms to people e.g. PCB contest: which company find PCB-suspicious equipment?

Are we aware of the importance ?

- The understanding of needs towards ES PCB Management in the industry, private and community sectors is still often not available

  → *Fear of costs and work implications*

  → *Need to reach those who are really working with PCB suspected equipment*

- Workers and the public are either not aware of the (PCB) problems, not prepared to change own behavior; or due to other priorities they are not interested in the topic

  → *Need to continue with AR/CP => basis for any future POPs activities*
  AIM: achieving voluntary participation!

- We cannot expect a soon change of behavior but we ~~may~~ **must** constantly motivate and further initiate the process which goes far further than just the PCB topic!

  → *because even more complex challenges are waiting, such as PCB in open applications, SCCP, MCCP, PFASs, Asbestos etc.*

Priority in all Regions: ESM Maintenance

→ check incoming equipment for repair / oil recovery - Pumps, tanks, drums etc.

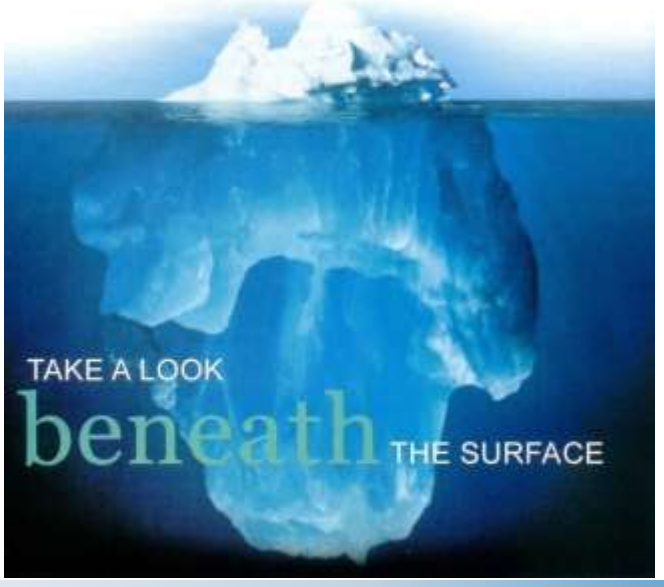
→ consequently involve all associated industries / service providers in the inventory

→ appropriate communication on (all) levels, incl. decision-makers AND workers

SC, Annex A, Part II (PCBs) Extract

Annex A requires all Parties to cease production of new PCBs <u>immediately</u> … **and**

- make determined efforts to identify, label and remove from use equipment with (…) > 0.05 % PCB and > 5 litres content




VYSOKÉ NAPĚTÍ
ŽIVOTU NEBEZPEČNO!
PCB-containing
power capacitor
pure PCB cooling fluid

… priorities may vary …

Equipment > 5 l oil

2000 kVA Transformer

- Content 1’000 litre Oil
- 100 mg/kg PCB (0.1g Oil)
- Specific weight: 1.00 kg/l

➔ 100 g PCB

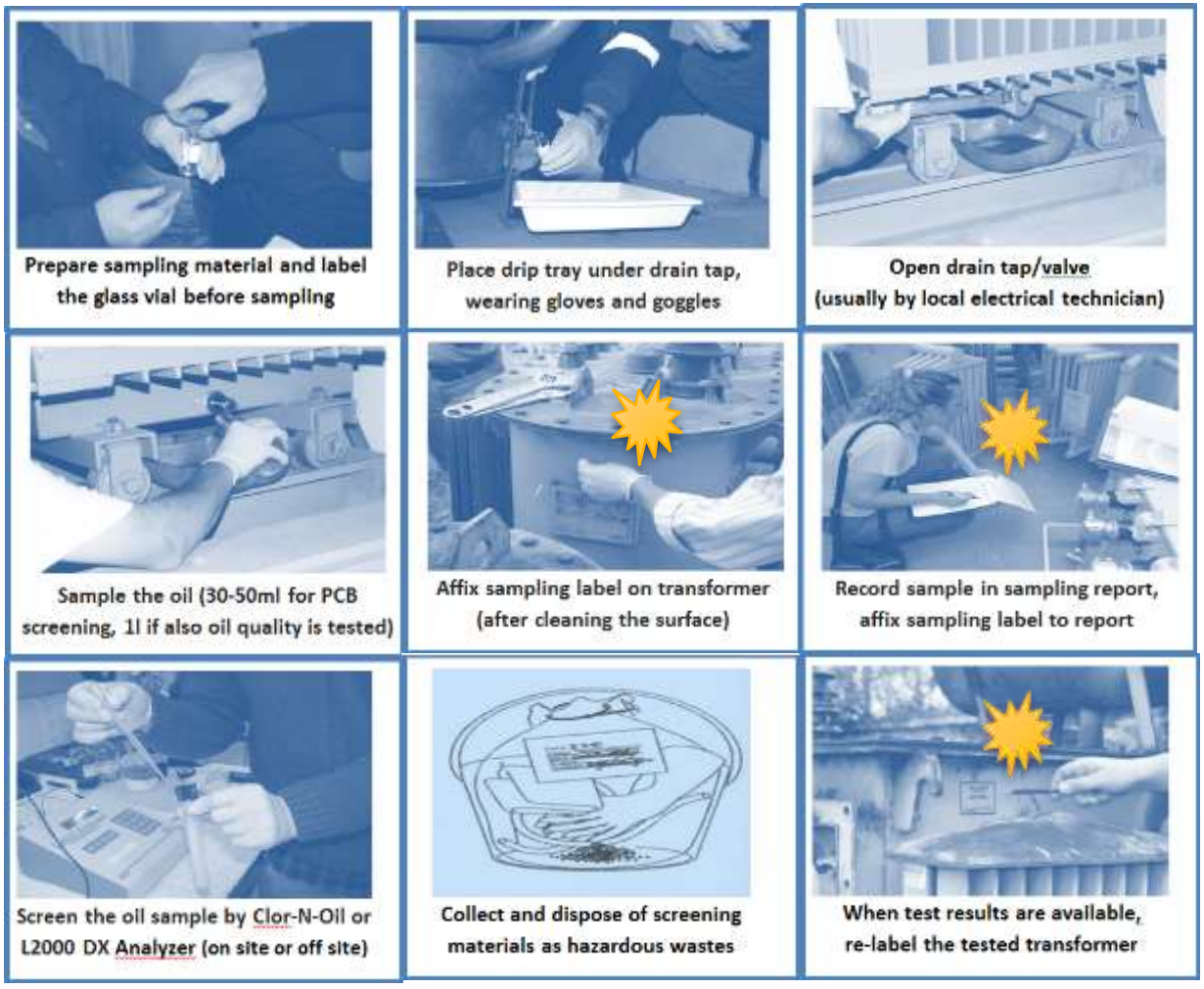
Equipment < 5 l oil

Capacitor with pure PCB

- Content 1 litre Oil
- Specific weight: 1.350 kg/l

➔ 1350 g PCB

Step-by-Step Sampling/Labelling of a Transformer




Factsheet

Identification of PCB Transformers

Sampling - Input labels with ID-No. system

Data & Quality Management!

Sample Vial

Training for PCB Inventory and Verification

Customer:

Site/Location:

Sample ID: *Mun XY 2023-01-0000*

Date:

Sampling Report

Training for PCB Inventory and Verification

Customer:

Site/Location:

Sample ID: *Mun XY 2023-01-0000*

Date:

Device

Training for PCB Inventory and Verification

Customer:

Site/Location:

Sample ID: *Mun XY 2023-01-0000*

Date:

L2000 or LAB Vial

Training for PCB Inventory and Verification

Customer:

Site/Location:

Sample ID: *Mun XY 2023-01-0000*

Date:

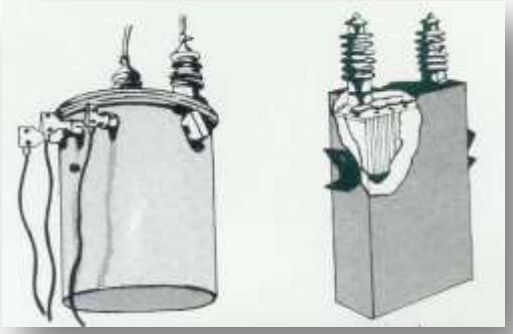
Input: For tracking Reasons: consecutive numbering


NYNÄS
NYNÄS


20228


20227

Capacitors different Approach …



Step 1 - Year of Manufacture:	Check nameplate for year of manufacture. If capacitor was manufactured in or after 19…? → **"PCB free"**	
Step 2 - Declaration:	Check nameplate for declaration "PCB" or "PCB trade name", e.g. *Aroclor, Askarel, Clophen, Delor, Elaol, Fenclor, No FlamolPhenoclor, Pyralene, Pyranol, Sovol, etc.* →**"PCB containing"**	
Step 3 - Capacitor Lists:	Compare nameplate/serial number with capacitor lists. Many devices can be identified or categorised according to information in capacitor lists. →**"PCB free or PCB suspect"**	
Step 4 - Sampling/Analysis:	If capacitor cannot be identified according to Steps 1-3 above, it must be sampled and analysed according to the procedure with transformers. Alternatively, the capacitor can be regarded as PCB containing. Please see the appropriate Factsheets.	

Screening by colorimetric or potentiometric method?

Why using Screening Tools? => 1) Clor-N-Oil and Soil

Advantages

- Can be used on site - Field testing
  => no transportation of samples necessary
- No experience necessary
  => can be done by anybody according to instruction sheet
  => sustainable sampling/screening know how remains in utilities/industries
- Inexpensive
- Time-saving compared to laboratory (8-10 min. per test)
  => possibility that several teams work simultaneously (work lines)
- No false-negative results if done according instructions
- Usually substantial reduction of samples for Lab analysis
- Suitable for oil and soil

Disadvantages

- No proof of results colours may change
- No concentration / result in ppm only positive or negative response
- False-positive results due to other chlorine sources
- Kits expiry 12 months after production

Why using Screening Tools? => 2) L2000 DXT Analyser

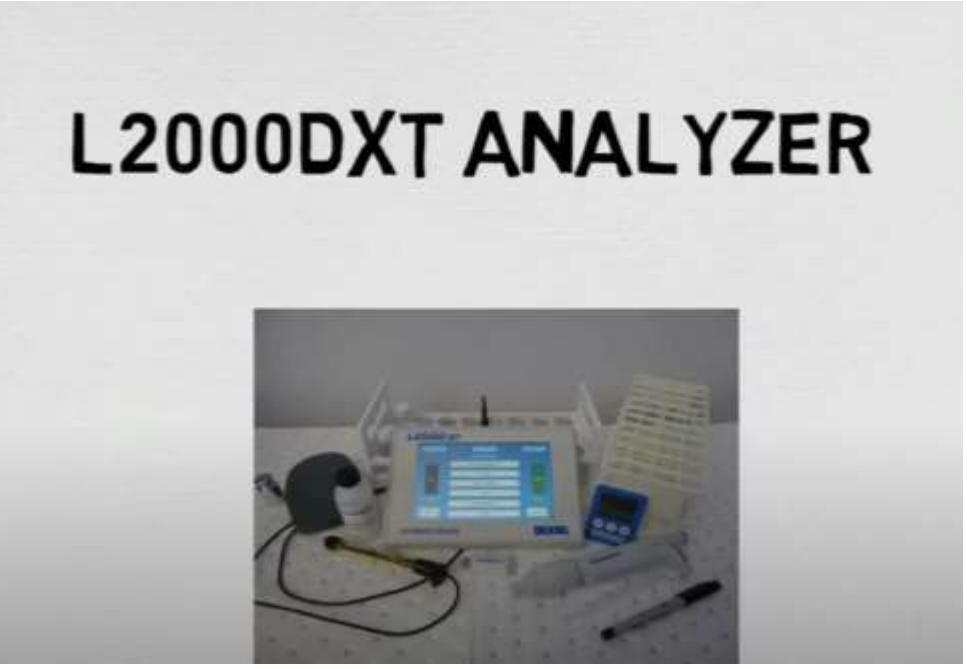
Advantages

- Can be used on site - Field testing battery driven
  => a centralised use of Analyser is however recommended (sample and data processing)
  => the Analyser remains in the country after project ending – building capacities!
- Result/data recording and transfer possible
- Shows results of potential PCB concentration in ppm (range of 3-2'000 ppm)
  => in case of e.g. dechlorination, a tracking of contamination level is possible
- Time-saving compared to laboratory (12-15 min. per test)
  => possibility that many samples are screened at once
- Cost-efficient from some 200-300 samples/year
  => Compare costs for GC analysis and L2000 screening in your coutnry
- No false-negative results if done according user manual
- Suitable for oil, soil, water or wipes
- Expiry of reagents only 24 months after production

Disadvantages

- Transportation of sample-vials/boxes need of good quality vials
- False-positive results due to other chlorine sources

Clor-N-Oil and L2000DXT Introduction on You Tube



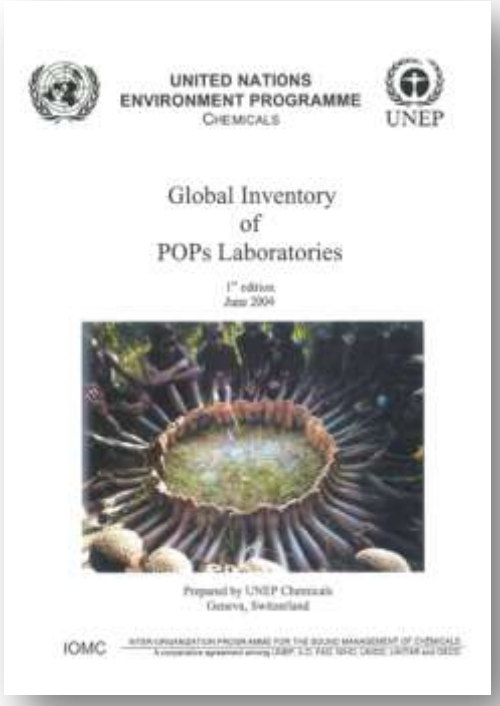
https://www.youtube.com/watch?v=mqoFYL7tr4c&t=13s

https://www.youtube.com/watch?v=pt4JsqvF2y4&t=16s

Screening does not replace Analysis!

- The Clor-N-Oil test kits and the L2000 DXT Analyzer were developed by the US EPRI and DEXSIL in the late70ties to determine quick and reliable potential PCB in cooling fluids. They are very useful but remain screening methods, not intending to replace lab analysis

- But this first stage in determining PCB content, may significantly reduce the quantity of lab analyses AND may build capacities in countries by active participation of Electricians / Technical staff



- It is essential for PCB/POPs activities to have access to accredited laboratory analysis capacities, preferably nationally or regionally.

- Overview of accredited POPs Labs only version 2004 available

Possible Standard PCB Inventory Approach

Preliminary Gathering of Information

Physical Site "Inspection" rather visit!

Emergency Actions

(if necessary)

Sampling

Screening

on site (e.g. CNO) or centralized (L2000)

… Approach

Lab

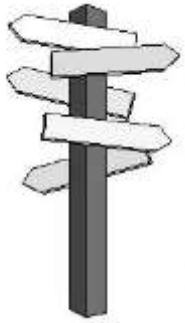
(verification analysis)

Database

Priority Setting

1. …
2. …
3. …
4. …

PCB Management Options



… Approach

Phase Out

Transport

Tracking System

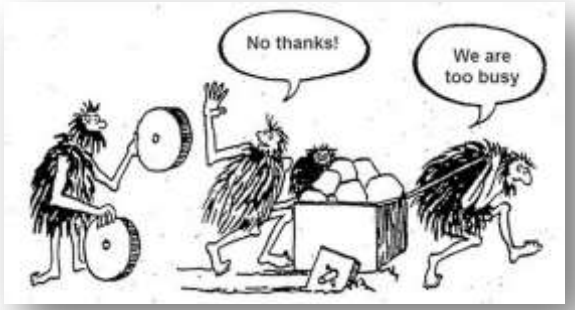
Interim Storage

Periodic Update Database

Treatment / Disposal

Please …

do not re-invent the wheel - rather use known and already approved technologies and proceedings AND consider lessons learnt



- ✓ do not underestimate PLANNING and timeframes / delays
  - => take your time to identify / reach stakeholders
  - => involve experienced IC from the inventory Kick off, they may/must provide substantial inputs
  - => start the purchase of equipment only at the time all is set (inventory teams, dates workshops etc.)
  - => Training of visual inspections and sampling proceedings CANNOT be part of Webinars or Theory Workshops, it MUST be trained on sites with hands on *=> preferably by those who will do the job*
- ✓ consider PCB inventories as incomplete as long as not **all sectors, all regions and all types of equipment,** have been considered and included
- ✓ regard missing laboratory, DG transportation, interim storage platforms as chances:
  - → Consider socio-economic opportunities, there are many
  - → enable and push capacity and infrastructure building for HazWaste in general

… and please act prudent and appropriate…

End of Presentation «From an expert point of view»

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