General US Comments on POPs ESM Draft Guidance Documents and Issues

15 June 2004

1. "Low" POPs Content Values for Wastes:

At the close of the OEWG3 meeting, the following values remained under consideration as possible guidance on the meaning of "Low POPs Content" wastes:

PCBs: 50 mg/kg
PCDD/PCDF: 1 or 10 or 50 ug TEQ/kg
All others: 5 mg/kg or 50 mg/kg

Of these suggested values, the US supports adoption of the following values guidance on the meaning of "low POPs content" wastes under the Stockholm Convention:

PCBs: 50 mg/kg
Pesticides: 50 mg/kg
PCDD/PCDF: 50 ug TEQ/kg

The US supports values at the higher end of the range considered because of the function of the "low" POPs content values in the Stockholm Convention: to indicate which wastes should, if environmentally preferable, undergo destruction/irreversible transformation treatment, with the overall focus of the Stockholm Convention on addressing obsolete pesticide and PCB products. The US believes that setting the higher values from the range considered will best support the primary goals of the Stockholm Convention by focusing limited destruction treatment capacity on chemical products declared waste or more highly contaminated debris.

Establishing the "low POPs content" levels at these values also recognizes the fact that most of the problems the Stockholm Convention is intended to address are in developing countries. These nations generally have limited resources, and may have widespread problems due to past carelessness in handling products containing POPs chemicals.

Establishing the "low" POPs content levels at the values urged by the US in no way undermines the established programs of developed countries for addressing POPs chemicals. Many developed programs may have more stringent goals and requirements, but these programs have been implemented for years and have already addressed the more serious problems of POPs chemicals (e.g., unused pesticides stored in insecure warehouses). Setting the Stockholm Convention "low" POPs content level at a more moderate value does not require or imply that these programs should change their requirements in any way.

However, establishing the Stockholm Convention "low" POPs content at the very low values used by developed countries could, if adopted by the Stockholm Convention, revise its priorities. It would send the message that treating very low level POPs wastes is as important as treating obsolete chemical products. The US believes this could result

in a serious misallocation of resources. Further, all POPs wastes, regardless of POPs concentration, are to be managed in an environmentally sound manner, as described in the draft ESM documents. Therefore, more mobile waste forms would require immobilization treatment before landfilling, and the less mobile forms could be safely landfilled in secure landfills. The US believes these are appropriate priorities and disposal policies that will result in the most effective use of resources and result in environmentally sound management of POPs wastes, and urges adoption of the following values for "low POPs content" wastes:

PCBs: 50 mg/kg
Pesticides: 50 mg/kg
PCDD/PCDF: 50 ug TEQ/kg

2. Destruction Treatment Levels:

At the end of OEWG3 discussions of the destruction/irreversible transformation treatment for POPs wastes, the following recommendations were made:

a. "The Technologies applied should be capable of achieving a destruction efficiency of 99.9999% when they are operating with waste consisting of or containing persistent organic pollutants with a persistent organic pollutant content above 1%; this does not, however, apply for technologies disposing of waste arising from remediation of contaminated sites; and…"

b. For solid residues of waste treatment:

For PCBs: 1 or 10 mg/kg

For HCB and the eight pesticides: 5 mg/kg; and

For releases to air and water: pertinent national and international rules and standards would be applied; and

c. Treatment technologies are to be operated in accordance with the best available techniques established in guidance to be developed under the Stockholm Convention, in pertinent national legislation and international rules and standards.

The US has the following concerns and further recommendations about the draft treatment recommendations:

1. Regarding part "a." of the guidance, the US urges the addition of the phrase "…and waste treatment units used for treating POPs wastes…" after the word "applied" in the first line, to make the treatment guidance more specific to the individual waste treatment units employed for treatment. The revised sentence would read "The technologies applied and waste treatment units used for treating POPs wastes should be capable of achieving….".

2. The US recognizes the preference of many Parties and others for use of "destruction efficiency" (DE) as the measure of treatment effectiveness, rather than destruction and removal efficiency (DRE). However, use of DE

requires that all releases from the treatment process (i.e., to air and in solid and wastewater residuals of treatment) be calculated. While possible, this is a more complex set of calculations in the US experience, at least when applied to combustion treatment (it may be simpler for other treatments, particularly those operating in a batch mode). Implementation of a DE-based standard could also require more testing of treatment residuals for POPs chemicals which can become very costly (POPs analysis can cost up to US$1000. per sample). Further, some US data indicate that treatment of HCB (which has a thermal stability similar to TCDD) to a 99.9999 standard may be challenging under the best of circumstances (see data in Appendix 2).

The US has addressed this issue domestically by relying on a combination of requirements for ensuring optimal treatment of difficult-to-destroy materials such as POPs wastes. DRE considers release to the air and is calculated on a mass feedrate basis. The US regulations set a minimum DRE efficiency for combustion, and also maximum allowed air emissions rates for key constituents (the treated chemicals and PCDD/PCDFs). Separate release rates for target constituents (i.e., the POPs chemical being treated) are established for treatment wastewater and solid treatment residuals, expressed as total maximum allowable concentration in each of these wastestreams. Wastewaters that are lower in total concentration than the regulatory value may be discharged to surface water (under the authority of a water discharge permit). Solid residuals of treatment must be landfilled (in a permitted landfill) unless there is some legitimate reuse for the residual material.

Details of the US regulations are in an appendix to these comments. The US believes these could be appropriately adopted for use in establishing treatment requirement levels for POPs wastes.

3. The US agrees that all treatment methods for destroying POPs chemicals should be operated in an optimal manner to minimize creation of PCDDs and PCDFs. The US supports development of the BAT/BEP guidance currently under development by the SC Expert Group, and believes US regulatory requirements for operation of thermal units for waste treatment represent optimal operation.

3. Approach to ESM for PCDDs and PCDFs:

At the close of the OEWG3 meeting the small working group considered that a different approach to ESM than used for the other POPs may be needed for addressing PCDDs and PCDFs. This was because PCDD/PCDFs may be formed in any thermal process, and so may appear in waste treatment residues and emissions from treating POPs wastes that did not initially contained PCDD/PCDFs.

The US agrees that a somewhat different approach may be warranted. We would assume that all destruction/irreversible transformation treatments will be performed in accord with the Stockholm Convention BAT/BEP guidelines, which are being designed to minimize formation of PCDD/PCDFs. PCDD/PCDFs can be formed in

any thermal process and formation of these compounds depends more on combustion conditions than input chemicals (as long as chlorine is present). Therefore air emissions of these compounds must be controlled regardless of what chemicals are being treated, and the US regulations specify maximum PCDD/PCDF emissions levels for all hazardous waste treatment units. Similarly, air pollution control residues from these units will contain some PCDD/PCDFs regardless of what is burned in the unit. However, bottom ashes are likely to have PCDD/PCDFs only if these compounds were in the wastes being treated. Therefore a different treatment guideline for PCDD/PCDFs in incineration bottom ash appears to be warranted.

4. Environmentally Sound and Commercially Available Waste Treatment Technologies

OEWG3 identified the following list of treatment technologies as environmentally sound and commercially available:

Hazardous waste incineration
Cement kiln co-incineration
Gas phase chemical reduction
Base catalyzed decomposition
Sodium reduction
Mediated electrochemical oxidation
[Molten salt oxidation]
Super critical water oxidation
Plasma arc decomposition

The US supports this list of technologies as being environmentally sound (when operated optimally) and commercially available. The US also recalls discussion of the OEWG3 working group that discussed these issues regarding incineration technologies, in which the US requested that two additional incineration unit types, high efficiency boilers and light weight aggregate kilns, be added to the list. Both of these types of thermal units may be permitted for hazardous waste incineration under US regulations. When permitted for hazardous waste treatment, these units are required to meet the same treatment efficiency and air emissions requirements (for the treated chemicals, as well as PCDD/PCDFs) as dedicated hazardous waste incinerators. Maximum allowed levels of POPS in solid and wastewater treatment residuals are also the same as for dedicated hazardous waste incineration units.

The discussion following the US request to add these units to the list was to the effect that the “hazardous waste incineration” listing could and should be read broadly to include these other waste treatment unit types, and their specific addition to the list was therefore not necessary. With this understanding that the “hazardous waste incineration” listing is to be read to be inclusive of high efficiency boilers and light weight aggregate kilns that are specifically permitted for hazardous waste treatment, the US withdraws its request for their specific addition to the list.

5. ESM When Destruction/Irreversible Transformation Treatment is Not Environmentally Preferable

Article 6.1(d)(ii) of the Stockholm Convention identifies disposal options for POPs wastes. POPs wastes are to be:

> (ii) Disposed of in such a way that the persistent organic pollutant content is destroyed or irreversibly transformed so that they do not exhibit the characteristics of persistent organic pollutants or otherwise disposed of in an environmentally sound manner when destruction or irreversible transformation does not represent the environmentally preferable option or the persistent organic pollutant content is low, taking into account international rules, standards, and guidelines, including those that may be developed pursuant to paragraph 2, and relevant global and regional regimes governing the management of hazardous wastes;

Disposal provisions to apply when destruction or irreversible transformation does not represent the environmentally preferable option are elaborated in Section 4.7.3 of the general ESM guidance being prepared in support of Stockholm Convention implementation. The OEWG3 recommended revising this discussion to take account of pertinent national legislation or other relevant information. One possible source of pertinent national legislation is the recently enacted EU regulation on persistent organic pollutants (Regulation (EC) No. 850/2004). In the OEWG3 discussions, it was suggested that Article 7(4)(b) should be incorporated into the discussion at Section 4.7.3 of the General ESM and PCBs documents.

The US is concerned that the EU Regulation Article 7(4)(b) language is substantially more restrictive than the text of the Stockholm Convention, and more restrictive than necessary regarding management of POPs wastes for which destruction/irreversible transformation treatment is not environmentally preferable. Among the Article 7(4)(b) requirements the US views as unduly restrictive are:

1) the restriction of this provision to “exceptional cases”;
2) the requirement that decontamination of the wastes must be “not feasible”; and
3) the requirement for a demonstration and approval of these requirements.

Clearly, the EU is entitled to enact and implement POPs wastes regulations of any stringency within its member countries. However, the US believes that the EU regulations may be viewed as unduly restrictive by some parties to the Stockholm Convention, and may hamper the efforts of those countries to set appropriate priorities and implement their programs. We strongly urge that the Article 7(4)(b) language not be included.

6. A number of other issues were also discussed by the OEWG3 in reviewing the draft documents:

Site remediation: The US previously urged deletion of this section as outside the scope of the Article 6.2 cooperation, and because it is too large a topic to adequately address in these documents. At the OEWG3 meeting, concern was expressed about potentially high levels of contamination at POPs chemical stockpile sites due to damaged containers, etc. The US agreed to retain this topic in the documents, with reduced and revised text to identify possible contamination of stockpile sites/facilities as the key concern, and with links to guidance and other information on site remediation. The US recommends that POPs chemical storage facilities having high levels of contamination due to poor storage or other practices rely on the information provided at the following

websites in evaluating site contamination and risk posed, and in developing remediation plans:

http://www.epa.gov/superfund/action/guidance/remedy/index.htm
http://www.epa.gov/superfund/programs/risk/index.htm
http://clu-in.org/
http://www-apps.niehs.nih.gov/sbrp/

Conflicting definitions between the SC and BC for some POPs with mixed congeners: The representative from UNEP Chemicals, who was representing the Stockholm Convention at the OEWG 3 meeting, raised the issue that the two conventions are not completely harmonized in identifying the different POPs chemical congeners. The US urges UNEP Chemicals to prepare a brief paper outlining the concern in more detail, so that others may understand it more fully, and so that it can be addressed.

Analytical methods: There was general discussion of analytical methods at OEWG 3, but none of the participants provided specific references. The US has developed and recommends for possible use the following analytical methods for POPs chemicals found in US EPA's guidance on analytical methods for wastes:

General Analytical Chemistry Guidance Document:

http://www.epa.gov/epaoswer/hazwaste/test/main.htm

PCBs:

http://www.epa.gov/epaoswer/hazwaste/test/pdfs/8082.pdf
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/9078.pdf
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/9079.pdf
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/4020.pdf

Specific US Comments on the 15 May 2004 Draft General ESM Guideline Document

Paragraph 2: Suggest retaining the word "wastes" since the scope of this document is POPs wastes. Also, suggest retaining the word "hexachlorobenzene", fully spelled-out.

Paragraph 3: PCTs and PBBs are included in the document because they are subject to the Basel Convention; this document serves Parties to both Conventions. Suggest deleting the phrase, "similarities in the physico-chemical and toxicological properties of these substances." Also, the terms "Party" and "Parties" should be capitalized throughout the document.

Paragraph 8: The first line should read: The majority of POPs chemicals are…"

Paragraph 12: In the definition of "waste" add the word "are" between the words "or intended". Also, suggest modifying the last sentence to read, "Paragraph 8 of Article 2 (delete "of the Basel Convention") defines environmentally sound management…"
Paragraph 13: Suggest deleting the second sentence as it is redundant. In the third sentence, suggest modifying as follows: "Subparagraph (a) of paragraph 1 (delete "4.1") states that…" Suggest the same modification in the third sentence to read, "Subparagraph (b) of paragraph 1 (delete "4.1") states that…" Suggest deleting the final sentence – its meaning is unclear and it doesn't seem to add anything.

Title of Section 2.1.2: Suggest modifying to read, "POPs related provision of the Basel Convention"

Paragraph 18: In the last sentence, add the word "be" between the words "to formed".

Paragraphs 11-31; Section 2: Discussion of the Basel Convention should come after discussing the Stockholm Convention, as in the November 2003 outline. For those Stockholm Convention Parties managing all their POPs wastes domestically, much of the BC structure and listings may be irrelevant as Basel addresses ESM of imported or exported waste, not ESM of domestically-generated and managed waste. The Stockholm Convention structure and technical information should be the focus here. The Basel Convention hazardous waste listings should be put in an appendix, for reference.

Paragraphs 29 and 31: It is unclear how the Stockholm Convention articles discussed in these two paragraphs (Article 5 and Annex C, Part II) relate to POPs wastes. These two paragraphs should show the relationships of these SC Articles to waste, or the paragraphs should be deleted.

Paragraph 33: the bullet "i" should read "disposal of wastes…."

Paragraph 33: the list of bullets for consideration of the "low" pops content level in wastes should include: "availability of treatment capacity for POPs wastes"

Paragraph 34: See general comment # 1 above.

Paragraph 37: In the second sentence, suggest deleting the word "generally".

Paragraph 38: The first line in the paragraph should read "…the Basel Convention defines…"

Paragraph 44: Suggest changing the word "quantifying" to "quantification" for parallel structure.

Paragraph 48: Because this guidance is directed to supporting Stockholm Convention implementation, the reference to the Basel Convention in this paragraph should be deleted. Further, all of Section 4.2 needs to be more tailored to the needs of Stockholm Convention Parties. Again, some Stockholm Convention Parties may manage all POPs wastes domestically, and need not reference Basel Convention requirements.

Paragraph 54: Suggest deleting the final sentence; it doesn't make sense and doesn't really add anything.

Paragraph 56: This paragraph should be moved up and incorporated into paragraph 48.

Paragraph 57: This paragraph needs to cite Stockholm Convention Article 3.1(a) as well as Annex A, and clarify that it is not the existence of the chemicals that is to be eliminated immediately, but rather the production and use of these chemicals, as specified in the Annex.

Paragraph 66: The first sentence of the paragraph should be deleted and replaced with: "Many different sampling and analytical methods have been developed for a variety of purposes. Reliable and useful data can be generated only when sampling and analytic methods appropriate to the waste are used. " Also, the last sentence should be deleted and the topic raised under the discussion of waste inventories.

Paragraph 67: The parenthetical in the second-to-last (penultimate) sentence should read "…at or above which destruction/irreversible transformation is generally required). This to account for the case where destruction treatment is not the environmentally preferred option, even though the POPs chemical concentrating is above the "low" level.

Paragraph 68: In the last sentence, suggest changing the words, "in a binding" to "other binding", and suggest deleting the final phrase that reads, "such as a Statement of Rights" as the phrase is not a Basel or Stockholm term of art and doesn't really add any meaning to the sentence.

Paragraph 69: The paragraph should begin: "Sites at which POPs chemicals have been improperly stored may become highly contaminated. Therefore, provisions…"

Paragraph 71: The second sentence in this paragraph should be deleted. The entire section 4.3 should focus more narrowly on ensuring that POPs chemicals in-use and POPs waste handling, storage and pretreatment practices do not unduly or inappropriately increase the volume of waste material that needs to be managed and disposed.

Paragraph 72: This paragraph should be deleted. Waste characterization and inventories are discussed in a later section.

Paragraph 77: the phrase "…and otherwise created…" should be deleted from the first sentence.

Paragraph 78: "Government regulators" should be added to the list of those who would benefit from lists of unintentional POPs source categories in the last sentence of the paragraph.

Paragraph 79: The paragraph should be revised to read "Under Stockholm Convention Article 6.1, parties are obligated to develop and implement strategies for identifying stockpiles, products and articles in-use, and wastes consisting of or containing POPs chemicals. Inventories are a necessary tool in identifying, quantifying and characterizing wastes, and for development of waste management strategies. A national inventory is necessary to establish baseline quantities of POPs wastes and chemicals, and to set up a database registry to track use and disposal of POPs chemicals and wastes." This revised paragraph should be combined with paragraph 80.

Paragraph 80: The first sentence should be broken into two sentences. The reference to "…progress of minimization and phase-out…" should be deleted and replaced with a reference to use of POPs products and disposal of POPs wastes

Paragraph 85: The first sentence should be revised to read "…own a large amount of POPs products or wastes, …"

Paragraph 87 The first sentence should read: "Government staff responsible for the inventory should be trained…"

Paragraph 94: After the first sentence add: "Many wastes, including POPS wastes, can be heterogeneous. Obtaining a waste sample that adequately represents the whole waste can therefore be challenging. However, obtaining representative samples is a critical goal of waste sampling."

Paragraph 95: Bullet point "vii" should read: " placing the sample in the sample container and sealing it with an appropriate seal;"

Paragraph 97: Replace the url in FN 14 with:
"http://www.epa.gov/epaoswer/hazwaste/test/samp_guid.htm "

Paragraph 98: The second sentence is redundant with the first and should be deleted. Also, in the third sentence add "U.S." before "National Institute for Occupational Safety and Health" to be clear about where NIOSH resides.

Paragraph 100: The second sentence should read: "Absent such specifications, samples submitted to a laboratory could be analyzed using the most convenient or cheapest method, resulting in poor or useless data." Also, bullet point "v" should read: "calibration of equipment using reference standards;". A bullet point ix should be added, to read: "use of laboratory and field blanks for quality assurance."

Paragraph 103: the second sentence should read: "This can be done through reliance on guidelines by laboratory associations…"

Paragraph 106: The note just above this paragraph is unclear. What "effects associated with hazardous waste management." are to be monitored? Also, the second sentence is incomplete – after the parenthetical phrase ("Research, development and monitoring"), there is no text.

Paragraph 109: This paragraph needs a broader introductory sentence to put it into context. Suggest adding the following: "While large industries may be responsible for proper management of the POPs wastes they generate or own, many smaller entities can also be expected to possess POPs chemicals or articles, and to generate POPS wastes."

Paragraph 110: POPs wastes collection depots would seem an ideal place to provide literature to the general public on identifying and proper handling of POPS wastes. Please include a bullet to this effect in this paragraph.

Paragraphs 112, 115, 118, and footnote 17: The commonly-used acronym for the UN Economic and Social Council is "ECOSOC". Suggest changing "UNESC" to "ECOSOC" wherever it appears because "UNESC" could be easily confused with "UNESCO", the UN Educational, Scientific, and Cultural Organization.

Paragraph 116: The second sentence of the paragraph should be revised to read: "… POPs wastes should be identified, packaged and transported in accord with the United Nations Transportation of Dangerous Goods Code."

Paragraph 120: Bullet point "xiii" should specify that containers should be covered and sealed.

Paragraph 130: the first sentence should be revised to read: "…solvent washing can successfully remove POPS wastes from these devices."

Section 4.7.3: See general comment #5 above.

Section 4.8: See general comment # 6 above for websites providing information on site assessment and remediation.

Paragraph 172(i): Suggest modifying the phrase, "gas/leachate" to "gas and leachate" to be clear that they are two separate and distinct media.

Paragraph 179: Insert the following as the first sentence: "Poor storage and handling practices may lead to spills of POPs chemicals at sites used to store chemicals, resulting in high levels of POPs contamination at the site. Such highly contaminated sites may pose serious public health concerns, and identifying and creating an inventory of such sites is a necessary first step in ensuring their remediation before sites are used for another purpose. "

Paragraph 197: Suggest using the exact text from the Rotterdam Convention so that the paragraph would read, "The Rotterdam Convention Article 14 paragraph 1(b) states that each Party shall, as appropriate and in accordance with the objective of this Convention, facilitate, 'The provision of publicly available information on domestic regulatory actions relevant to the objectives of this Convention'. This ensures that the public has

appropriate information on…." Suggest quoting directly from the other Conventions cited in section 4.11 of the document.

Appendix 1: Under the section entitled "National Legislation" all the text has been deleted. Suggest deleting the title as well.

Appendix 2 Section 4.2: Change "UNESC" to "ECOSOC"

Appendix 2 Section 4.5 Sampling, Analysis and monitoring: add the following citations:

Guidance documents on data quality, developed by the US EPA, can be found at: http://www.epa.gov/quality1/qa_docs.html

US EPA 2004. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846; http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm

Update the url cited for US EPA 2002 as described in the comment on paragraph 97.

Appendix 2 Section 4.6: Change "UNESC" to "ECOSOC"

Specific US Comments on Technical Guideline for ESM of PCB, PCT, and PBB Wastes, May 15, 2004 Draft.

Paragraph 3: Suggest modifying the first sentence as follows: "Along with PCB, this Technical Guideline addresses PCT and PBB, as a class or category of substances, owing to the fact that they are subject to the Basel Convention; this document is intended to serve the Parties of both Conventions." Suggest deleting the phrase, "similarities in the physico-chemical and toxicological properties of these substances." Also, the terms "Party" and "Parties" should be capitalized throughout the document.

Paragraph 35: The presentation of Annex A, Part II of the Stockholm Convention excludes paragraphs (b) and (h) without noting that they have been excluded. Add a string of asterisks (*******) between the end of paragraph (a)(iii) and (c) to denote that paragraph (b) has been excluded, and after paragraph (g) to denote that more text follows in the original. Also, in subparagraph (a), add a space between "the" and "Conference" (it currently shows as "theConference")

Paragraph 37: The list of bullets for consideration of the "low" PCB content level in wastes should include: "availability of treatment capacity for PCB wastes".

Paragraph 38: See general comment #2 above. The US supports 10 mg/kg PCB in solid waste treatment residuals, and 0.1 mg/l in treatment process wastewaters. Solid PCB waste treatment residuals meeting 10 mg/kg generally could be landfilled and treatment process wastewaters meeting 0.10 mg/l generally could be discharged to surface waters.

Paragraphs 40-43: Reverse the order of Sections 4.1.1 and 4.1.2 to put the discussion more in the context of the Stockholm Convention.

Paragraph 45: Insert the following as the first sentence of this paragraph: "National legislation of parties to the Stockholm Convention should, of course, make note of and conform with the Convention, particularly Annex A, Part II, which specifically addresses PCBs.

Paragraph 46: Insert as the last sentence of the paragraph: "Parties may need to revise existing national legislation to conform with Stockholm Convention Appendix A, Part II."

Paragraph 48: Revise the first sentence to read: "…waste avoidance and minimization, while use of PCB compounds is targeted…..". Also, the second sentence should be revised to read: "…the matrix in which the POP occurs) on the schedule outlined in Annex A, Part II, and that these wastes not be recycled or recovered for reuse except as described in paragraph (d) of Annex A, Part II."

Paragraph 49: The last sentence of the paragraph should be revised to read as follows: "…in which mixing of wastes before destruction, or as part of pre-treatment operations, may be environmentally preferable."

Paragraph 52: Delete the words "may be" from the first sentence in the paragraph. Also, revise bullet point "ii", to read "…PBB and PCB in plastic housings …"

Paragraph 55: The paragraph should be revised to read: "Under Stockholm Convention Article 6.1, parties are obligated to develop and implement strategies for identifying stockpiles, products and articles in-use, and wastes consisting of or containing POPs chemicals. Inventories are a necessary tool in identifying, quantifying and characterizing wastes, and for development of waste management strategies. A national inventory is necessary to establish baseline quantities of PCB wastes and products in-use, and to set up a database registry to track use and disposal of PCBs in use and PCB wastes." This revised paragraph should be combined with paragraph 56.

Paragraph 56: The first sentence should be broken into two sentences. The sentence should end with "…progress of use phase-out and disposal."

Paragraph 59: Note: The US regulations For PCBs provide specific sampling techniques for a number of materials and devices typically contaminated with PCBs. Citations with urls, or PDF files of these can be provided if requested.

Paragraph 65: Add a sentence referring to available PCB analytical methods in Appendix 2, References to this paragraph. Add the following web site references to Appendix 2: US EPA Analytical Methods Manual SW-846, Method 8082, PCBs by Gas Chromatography; http://www.epa.gov/epaoswer/hazwaste/test/pdfs/8082.pdf and
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/9078.pdf
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/9079.pdf
http://www.epa.gov/epaoswer/hazwaste/test/pdfs/4020.pdf

Paragraphs 67-71, Section 4.5.3: Biomonitoring for PCBs in human and wildlife populations is a complex topic that is far beyond the scope of the current document. The discussion itself notes that individual nations have not, for the most part, conducted such programs, but rather have left this work to the scientific research community. While these data are very useful, many nations will not have the resources to undertake such studies, and suggesting here that they should do so is likely to create expectations that cannot be fulfilled. The US strongly urges deletion of these paragraphs.

Paragraph 72: The first sentence should be revised to read: "Handling and transporting PCBs and PCB wastes are critically important…".

Paragraph 73: Bullet point "i" should be revised to read: "inspecting containers for leaks, holes, rust, high temperature, and bulges (which may indicate internal pressure);…"

Paragraph 75: Break the first sentence into two sentences.

Paragraph 78: In the first sentence, change "packages" to "packaged". Also, add as a last sentence to the paragraph the following: "Wastes being packaged for eventual transport should comply with the applicable requirements of the UN Recommendations on the Transport of Dangerous Goods. "

Paragraph 81: Add as a last sentence: "All waste labeling should be done in conformance with the UN Recommendations on the Transport of Dangerous Goods, and Identify the waste by any applicable DG codes."

Paragraph 82: Add as a second sentence the following: "Waste transportation should comply with all applicable UN Recommendations on the Transport of Dangerous Goods."

Paragraph 94: The first sentence in this paragraph should be revised to read: "…but solvent washing can successfully remove PCBs from this equipment."

Paragraph 96: Add as the last sentence of this paragraph: "Owners/generators of PCB/PCT/PBB wastes intending to send their wastes for destruction treatment should be sure that the receiving facility is properly permitted under applicable national laws and regulations for treatment of the wastes being sent for disposal."

Section 4.7.3: See general comment #5 above.

Paragraph 137: Insert the following as the first sentence of the paragraph: "Poor storage and handling practices may lead to spills of PCBs at storage and use sites, resulting in high levels of POPs contamination at the site. Such highly contaminated sites may pose serious public health concerns, and identifying and creating an inventory of such sites is a necessary first step in ensuring their remediation before sites are used for another purpose. "

Appendix to US comments on POPs Issues

US Air Emissions Regulations for Dioxins/Furans Emissions from Hazardous Waste Incinerators, Cement Kilns, and Light Weight Aggregate Kilns (40 CFR 63.1203, 1204, and 1205)

Air Emissions Limits: 0.20 ng TEQ/dscm, corrected to 7% oxygen, or

0.40 ng TEQ/dscm, corrected to 7% oxygen, if combustion gas temperature is 400 degrees F or lower at inlet to the initial particulate matter control device.

Treatment Efficiency Requirements: To be based on treatment of Principle Organic Hazardous Constituents (POHC). For any waste treated, POHC are selected as being the most difficult to treat constituents in the waste; adequate treatment of the POHC constituents is viewed as ensuring adequate treatment of other constituents in the waste.

For non-dioxin wastes: DRE of 99.99% for each POHC

For Dioxin/Furan Wastes: DRE of 99.9999% for POHCs; POHCs selected must be harder to treat than tetra, penta, and hexachloro dibenzo dioxins and furans.
DRE is defined as:

$$DRE = [1- (W_{out} / W_{in})] \cdot 100\%$$

Where:
W_{in} = mass feedrate of one principal organic hazardous constituent (POHC) in a waste feedstream; and
W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.
And where POHCs must be identified as the most difficult to treat constituents in the waste.

US Waste Treatment Regulations: Maximum Allowed Values in Wastewater and Solid Treatment Residuals by the Universal Treatment Standards (40 CFR 268.48):

	In Wastewater (mg/l)	Non-Wastewater (solids; mg/kg)
Aldrin	0.021	0.066
Chlordane	0.0033	0.26
DDT	0.0039	0.087
Dieldrin	0.017	0.13
Endrin	0.0028	0.13
Heptachlor	0.0012	0.066
Hexachlorobenzene	0.055	10
Toxaphene	0.0095	2.6
PCBs	0.10	10
Dioxins/furans		
Tetrachloro	0.000063	0.001
Pentachloro		

Dioxins	0.000063	0.001
Furans	0.000035	0.001
Heptachloro	0.000035	0.0025
Octachloro	0.000063	0.005
PCBs under TSCA*	<0.5 ppb or <3 ppb when sent to a wastewater treatment plant having a specified PCB limit	

* TSCA is the Toxic Substances Control Act.

Note: Mirex is not regulated under the US regulations, although a chemically similar compound, Kepone is regulated.

As noted in US comments on issue paper #2, debris must be decontaminated and the residuals further managed, contaminated soils generally require 90% reduction of contamination. Further, all UTS values are implemented based on single grab sample testing of the waste treatment residue, where a single exceedence is a violation of the requirement.