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Ms. Gail Hansen
US Environmental Protection Agency
Office of Resource Conservation and Recovery (ORCR)
1200 Pennsylvania Ave., NW (5303P)
Washington, DC 20460

Dear Ms. Hansen:

The Coalition for Responsible Waste Incineration (CRWI) appreciates the opportunity to submit comments on the "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste; a Guidance Manual (EPA 530-R-12-001, January 2013). CRWI is a trade association comprised of 23 members.

As the Agency knows, the requirements for a waste analysis plan (WAP) are defined in 40 CFR 264.13 and 265.13. It should be noted that there are four classes of interested entities (small quantity generators, large quantity generators, TSDF, and transporters), each with radically different needs and requirements. Two of these classes are required to have a WAP although the small quantity generator may choose to develop one. Waste codes are assigned by the generator at the point of generation. All the downstream entities handle/treat based on those codes, regardless of whether the underlying hazardous constituents are present. The regulations define when codes are dropped (e.g., the Clean Water Act exemption). Waste codes are assigned by multiple means, not just by the point of generation or constituents (e.g., D codes). For example, no analysis is used to assign waste codes based on the mixture and derived from rule.

We have general comments on certain issues with specific suggestions on how the document can be improved. In addition, there are a number of other specific comments that do not fit into a large theme. The issues addressed in these comments are as follows.

A. The document fails to recognize that a WAP serves a different purpose for different segments of the industry (Generators v. TSDFs).

B. There is no need for certain types of information (e.g., manifest discrepancies, process descriptions, rejection policy, etc.) in the WAP.
C. The guidance description of a representative sample is not appropriate for many circumstances.
D. The guidance does not adequately address sampling frequency.
E. The guidance does not acknowledge materials that should not be sampled.
F. The guidance does not adequately allow for acceptable knowledge.
G. The guidance seems to be oriented to large quantity process streams and does not take into consideration the concept that small quantity waste streams that are sporadically or infrequently generated need to be treated differently.
H. Issues associated with the discussion in Section 2.9.2 on hazardous waste combustors.
I. Other issues.

Thank you for the opportunity to submit comments on this draft guidance manual. If you have questions or need further information, contact Melvin Keener, Executive Director, CRWI at mel@crwi.org or 703-431-7343.

Specific issues.

A. The document fails to recognize that a WAP serves a different purpose for different segments of the industry (Generators v. TSDFs).

This document fails to recognize that the WAP for a generator is different than a WAP for a TSDF and that different TSDFs may need different levels of detail in their WAPs. In fact, generators that do not need a RCRA Part B permit do not need a WAP (see 40 CFR 264.10, 264.1(g)(3), and 264.13(a)). The document presents a process for analyzing waste as if each sampling event is an in-depth research project. In addition, certain TSDFs have additional requirements for analysis before treating the waste using a particular technology (e.g., thermal treatement).

A generator needs to do enough to properly classify waste, to properly apply the waste codes, to properly manifest the waste, and to properly notify for LDR. Since most waste codes are applied based on a written description of the waste code, the generator may not need to conduct any sample analysis to apply those codes (If you already know the material should be classified as a U- or K-code, there is no need for any analysis). Characteristic waste codes might need some degree of analysis but you can reasonably exclude some of those, and you can liberally apply those that might likely be suspect. For LDR and underlying hazardous constituents, the generator is not obligated to identify all of those on the LDR notification if the TSDF accepts responsibility for LDR compliance prior to disposal. This is particularly true of wastes being treated prior to disposal in a landfill. Also, the generator may

reasonably exclude those constituents which are not expected to be in the waste (based on process knowledge).

In addition, many hazardous wastes do not need additional analytical demonstrations to apply codes due to the hazardous codes being applied via a different mechanism such as the mixture or derived from rule.

A TSDF needs to obtain sufficient information to comply with permit prohibitions (e.g., no PCB waste, no explosives, no dioxin/furan waste codes, etc.), keep track of approved waste codes, understand how a generator applied or did not apply a waste code, comply with specific permit provisions such as feed rate limits or recipes for a treatment unit, and properly certify for LDR. Although a TSDF will likely be required to perform some analyses to assure compliance with feed rate limitations for metals and other constituents, it is unreasonable to assume the every shipment would require analyses. If a TSDF has demonstrated compliance with the Destruction Removal Efficiency (DRE) requirement by burning a Class 1 POHC, they have no need for an exhaustive organic analysis to identify compounds with a heat of combustion higher than those used in the trial burn test. That is why POHCs are carefully chosen. Even if a generator certified for LDR, a TSDF might still want to do its own verification analysis to assure proper disposal occurs in accordance with the LDR standards.

Finally, it should be pointed out that the WAP does not need to contain all of the information needed to assure proper treatment. For example, a hazardous waste combustor will not use their WAP to determine acceptable feed rates as this will be covered in their Feedstream Analysis Plan. There are additional discussions on this issue in section H.

B. There is no need for certain types of information (e.g., manifest discrepancies, process descriptions, rejection policy, etc.) in the WAP.

In general, CRWI is concerned that the draft document tries to include too much information into the WAP. We agree with the statement made in the text box on page 2-1 (second bullet) where the Agency states “Do not clutter up the WAP by repeating information that exists elsewhere in the permit (e.g., basic facility description, process descriptions).” Yet there are a number of places in the guidance that encourages the permit writers to do the opposite – that is “clutter up” the WAP. These include process information, manifest discrepancies, and rejection policies. There are two issues here. One is a duplication of effort. A WAP becomes part of the facility’s RCRA Part B permit. If the information in the WAP is found some other place in the Part B permit, this is a duplication of effort with no gain in environmental protection. For example, manifest discrepancies are already covered under 40 CFR 264.72 and usually part of a permit. Second, because the WAP becomes part of the permit, it takes a RCRA permit modification to make a change in a WAP. Thus, putting things that could potentially change over time (e.g.,

rejection procedure) in the WAP would create a circumstance where that policy cannot be revised without going through a RCRA permit modification.

Some specific suggestions are as follows.

Process descriptions

1. Page 1-10, Section 1.1.3, First bullet about providing a description of the process that generated the waste to an off-site TSDF. It is reasonable to provide information such as a SIC code and a brief description of the process. However, generators may not be willing to share details of the process primarily because detail descriptions may be proprietary, confidential, or a trade secret. Since a WAP is part of the TSDF's RCRA Part B permit, any information included in the WAP is public information. CRWI suggests modifying this provision to make it clear that such concerns are to be taken into consideration when describing the process that generated the waste.

2. Page 2-4. Section 2.2 requires summary of facility description. A description of the facility is included in their Part B permit, specifically in Part D. There is no need to include it as a part of the WAP. We suggest that this section be simplified to a reference to where this information can be found in other parts of the facility's permits.

3. Page 2-6. The majority of the information in Section 2.2.3 is already included in the facility's Part B permit. There is no need to include this in a WAP.

Manifest discrepancy and rejection policies

1. Page 2-2. Text box. There is no need for either the manifest discrepancy policy or rejection policy to be included in a WAP. Manifest discrepancies and rejections should simply be handled in compliance with the detailed regulatory provisions in 40 CFR 264.72.

2. Page 2-59, Section 2.10. Here the Agency suggests including a facility's discrepancy policy in their WAP. The same can be said for the rejection policy discussion in section 2.11 (page 2-61) and the recordkeeping discussion in Section 2.12 (page 2-61). The WAP is not the proper place for these requirements.

Recordkeeping requirements

In section 2.12 (page 2-61), the Agency states "it may be advisable for a TSDF to maintain an electronic system for keeping track of generators, waste, and analytical data." This section goes on to describe detailed information that may be confidential (e.g., basic account information). As described "the regulations give a very wide

latitude for maintaining information in your operating record." This is appropriate since different facilities may have different requirements that make different mechanisms to satisfy the operating record more appropriate than others. A system that has only a few streams or customers may not require the same system as a large multi-purpose TSDF with many streams and different customers. In addition, one member reports that their recordkeeping system has been upgraded a number of times during the past 10 years. Putting this requirement into a WAP (and thus making it a part of the facility's Part B permit) would be counterproductive. CRWI believes that the existing recordkeeping requirements are sufficiently protective of the environment and does not require additional complication and confusion by inclusion in the facility's WAP.

C. This guidance description of a representative sample is not appropriate for many circumstances.

Page 2-14, Text box. The second sentence in the second paragraph states that an enforcement official is likely to collect one targeted sample. CRWI believes this sentence is wrong. Waste characterization clearly requires a "representative sample" be used for characterization determinations. The "official" would need to provide justification that the sample is representative. We would also like to remind the Agency that the court has overturned enforcement actions that were not based on representative samples (*United States v. SDG&E*, No. 3:06-CR-0065 (S.D. Cal. Mar. 9, 2007)). Any type of sample that is collected needs to be representative of the waste and consistent with an approved WAP. Data interpretation made by either an enforcement agent or facility should be identical. Also, analysis is used not only for regulatory classification but also to determine the allowable feed rates and other requirements necessary for permit compliance which is specific to each permit. This is often a different analysis (e.g., TCLP versus total content). CRWI suggests that this sentence be clarified to make it obvious that enforcement officials are bound by the same sampling criteria as are the facility.

We would also note that a representative sample is not needed to assign many waste codes (e.g., discarded chemical products are defined not by analysis but by their point of generation and method of generation). In addition, many wastes carry codes that are placed on the waste stream by the mixture and derived from rule. This determination is not based on composition. Analytical information will not assist in the assignment of these waste streams.

D. The guidance does not adequately address sampling frequency.

Many waste streams are generated only sporadically, making periodic reanalysis difficult and unnecessary if there is no reason to believe that the process generating that waste has changed. For example, a site changing out an in-line oil filter in #2 fuel oil service once per year would not likely sample the filter at all, or would sample upon initially generating the waste in order to complete the characterization as

required by the treatment facility and would not sample again for several years unless the service or process generating the oil filters changed. In another example, one of our member companies has approximately 12,000 active waste profiles. However, they receive waste from only about 8,000 of these each year.

The Agency often focuses on the "frequency" of analysis, regarding results beyond a certain time frame to be obsolete. When dealing with small quantity, sporadically generated wastes, the Agency must be aware that a single analysis may help characterize a material upon initial generation and that over a several year period only a few containers of the material may ever be generated. The initial analysis may be sufficient to assign appropriate waste codes, especially when combined with generator knowledge. When dealing with small quantity, sporadically generated streams, the frequency of analysis becomes less of an issue than whether the process generating the waste has changed over the years (i.e., process knowledge is appropriately used by the generator to determine the "frequency" of analysis). It is not necessary to perform an annual analysis each year over a ten year period for a waste stream whose quantity is just a few pounds per year where the process generating the waste has not changed. Thus, the generator of the waste should determine the frequency of analysis for certain regulated constituents based upon their knowledge of the process generating the waste.

For example, little information of operational value stands to be gained from a detailed analysis of ten different empty pesticide product plastic containers or attempting to evaluate the remaining 25 grams of a 100 gram jar of discarded resorcinol (EPA code U201) for metals and organic halides when such constituents are not reasonably expected to be present. Even if metals or other constituents of concern were believed to be present, the quantities of materials to be combusted may be so small that the owner or operator should be allowed to feed the constituents at a rate deemed acceptable based solely upon the use of knowledge of the waste.

Specific suggestions are as follows.

1. Page 2-31. EPA suggests analyzing three separate production batches on a new waste to get a better sense of variability. What is the basis for obtaining samples from 3 batches? What is the facility to do with the first two batches while waiting for the third analysis to be completed? What if the process is continuous and not a batch process? At what frequency should continuous processes be sampled to get the three samples? Is the agency more concerned about variability in the first several weeks of production or over time? When a facility with an on-site combustion unit has over 3000 active waste streams, the sampling requirements need to be usable and practical and not just a theoretical statistical exercise. We suggest removing the **bolding** of this sentence and adding additional words to indicate that this concept is only useful in certain circumstances.

2. Page 2-52, Section 2.8. EPA again puts the sentence suggesting three initial samples in bold. Our comments in the paragraph above also apply here. There are additional concerns in this section. The Agency is correct that the requirements do not specify a frequency for sampling or re-sampling. This was done for a reason – one side does not fit all. This guidance should take this into consideration. One member uses the following process for deciding when to sample. They analyze combustion waste streams annually (non-hazardous, non-mixed), semi-annually (hazardous, non-mixed and non-hazardous, mixed) and quarterly on hazardous mixed waste streams for total combustion analysis. They then apply an average plus two standard deviations from last 15 samples. Until 15 samples, the highest of each required parameter from each data set is used. The results are the Combustion Disposal Profile under which waste is burned. The statistic is applied to the data generated not to the frequency of the sampling. Such a sampling frequency is functional and generates more than adequate data to assure proper waste characterization and management for this facility. The point is to generate adequate information for management of the waste in the units subject to the permit. Surely the agency does not expect a different sampling frequency for each waste stream based on that waste streams statistical characteristics. How does a facility design data system and interlock systems to assure compliance with such a variable complex compliance scheme? Whatever sampling frequency protocol is developed, it must be functional for the permit needs and not result in diminishing returns with more data than is needed.

   For characterization purposes, waste streams may be analyzed initially for the full TCLP (organics and metals minus pesticides and herbicides) and then a TCLP annually for metals. If total analyses are needed for feed rate determinations, total analyses data will be divided by 20 (TCLP dilution) to demonstrate adequate characterization for the toxicity characteristic. If a constituent fails using this criterion, a TCLP may be performed and the extract analyzed for the failing constituent. This is an example of how permit specific requirements and general waste characterization requirements can be merged into a functional, effective WAP for a specific facility.

   CRWI believes that when developing a WAP, the permittee and the permit writer need to take a wide view of the needs and not get bogged down with statistical sampling determinations for each waste stream to determine frequency. As such, the guidance should not be too prescriptive (or perceived as too prescriptive) when discussion frequency of sampling. This frequency will be entirely dependent upon the nature of the waste generated, received, stored, and treated, the variability of that waste, and how hazardous it may be. While the tools in the text box on page 2-53 and the re-evaluation frequency in Table 2-9 may be useful as guidance, one should be careful not to appear that these “suggestions” are taken as “recommendations.” The use of relative percent

difference can be very useful in determining frequencies for certain waste streams but not at all helpful for waste streams where process knowledge is used. As stated previously, a facility may have many thousands of waste streams. Having different frequencies for different waste streams is unworkable from a compliance perspective. In this case, the permittee and the permitting authority need to work together to produce a workable frequency based on the wastes being handled.

In addition, the third bullet point suggests that off-site combustion facilities may need to characterize all waste. This is not correct. There are several circumstances where sampling is not needed or even desirable. See the discussion below.

E. The guidance does not acknowledge materials that should not be sampled.

Certain materials are simply too dangerous to sample and their quantities so small that they pose negligible risk when combusted. Laboratory chemicals such as n-butyl lithium, sodium metal, or peroxidizable compounds are examples of small-quantity, highly-hazardous materials (e.g., pyrophoric, air or water reactivity, severe irritant) sometimes discarded. These materials are often classified with multiple EPA hazardous waste codes for characteristics of ignitability (D001), reactivity (D003), and corrosivity (D002), thus sometimes triggering a mandatory incineration requirement under the 40 CPR Part 268 Land Disposal Restrictions.

For example, waste pyrophoric liquid, NOS, (butyl lithium), flammable liquid, waste pyrophoric liquid, NOS, (lithium diisopropylamide), or waste pyrophoric liquid, NOS, (methyl lithium in diethyl ether) are received at an incinerator. Typically such materials are packed in approximately one pound quantities in DOT wooden or cardboard boxes with compatible packaging materials. The total package may approach 10 pounds in weight, mostly due to packaging materials. Due to the hazards of handling such materials, these packages are often directly incinerated without opening. Generator and process knowledge (e.g., safety data sheets) are generally used to fully characterize the constituents in these small quantity discarded products. There is no reason to sample such materials since this would expose employees to unnecessary hazards.

Combustion facilities may have a number of gaseous waste streams vented to a combustion device. They should be able to use process knowledge to show there are no metals or organic halides in the process chemistry. These vents are difficult to sample and it has already been proven that hazardous waste combustors can destroy a Class 1 POHC. Since the process gas cannot be more difficult to destroy, there is no real need to test these materials. Another example would be hydrogen cyanide off-gases from processes that are piped directly to the combustion chamber of an incinerator or boiler. It should be noted that gaseous stream are not defined as solid waste unless contained.

Certain materials are so aesthetically unpleasing and quantities so small that process knowledge should be sufficient to properly characterize the materials for combustion. Medical and infectious wastes, pathological wastes, bedding and feed material from pharmaceutical research using laboratory animals as well as laboratory quantities of materials such as mercaptans (i.e., stench) are difficult and unpleasing to sample. It is also difficult to find a laboratory that will accept such samples.

Certain materials are simply unacceptable at most laboratories. It is difficult to find laboratories willing to accept materials which are explosive, infectious (even if rendered noninfectious), sharps (part of the medical waste universe), materials which create a stench, or are highly hazardous to handle. The generation of such waste materials is, as a matter of course, minimized by the generator due to the difficulty of management and high cost of treatment. Such materials should be characterized adequately through process or generator knowledge in order to minimize hazards to samplers and receiving lab employees.

Another example is aerosol cans. Member companies incinerate small quantities of both RCRA empty and non-empty aerosol cans. Such materials are often under pressure or nozzles plugged and are therefore unable to be safely sampled. Safety data sheets and product labeling are generally used to characterize aerosol cans.

Public service incineration of confiscated narcotics and expired pharmaceuticals is undertaken at some member company incinerators. Such burns are carefully scheduled so that state or federal enforcement officers in charge of the destruction enter and exit the facility as quickly as feasible. No sampling of such materials takes place. The facilities rely entirely upon the descriptions provided by the coordinating agency. Since the quantities of such materials are small and the composition of confiscated pharmaceuticals is generally well documented, process or generator knowledge should be acceptable (e.g., SDS, product label information). In addition, EPA and many states have determined that the Household Hazardous Waste exemption found at 40 CFR261.4(b)(1) can apply to law enforcement programs to collect unused or out of date pharmaceuticals to assure proper disposal and prevent them from being abused or flushed. See the September 26, 2012, memorandum from Suzanne Rudzinski to RCRA Division Directors (http://www.epa.gov/osw/hazard/generation/pharmaceuticals/pharms-take-back-disposal.pdf). Most of our members wish to continue to provide this valuable service to the law enforcement community on a periodic basis and encourages the Agency to clearly allow the use of generator or process knowledge in these situations.

Some TSDFs provide a public service household hazardous waste day for the local community or employees of a facility where an incinerator is operating. This is often an annual event that benefits the local community and the environment by removing certain hazardous chemical products that would otherwise end up in the local or

county landfill. A typical household hazardous waste day will yield scores of different paints, lacquers and thinners along with pesticides and other materials that are good candidates for incineration. The immediate management of such wastes is quite a task. When confronted with 200-500 different liquid and solid products for management, with weights varying from 0.1 pounds to 5 pounds, it is important to have the option to conduct a "first screen" of the wastes by a technically qualified individual. This technical screening person quickly "screens out" the products that are in his/her estimation acceptable for immediate incineration based upon their experience with the same or similar materials, information on the product label indicating the composition, or information contained on the safety data sheet. Process and product knowledge combined with the knowledge of technically qualified individuals is important to the continuation of public services such as household hazardous waste day and should be recognized as a reliable means of determining feed rates.

As a part of at least one member's (a hazardous waste incinerator) operating permit, the following wastes are exempted from sampling.

- Waste contained in a Lab-Pack or combination packaging. Combination packaging is defined in 49 CFR §171.8 as "...one or more inner packagings secured in a non-bulk outer packaging." The generator will provide a detailed shipping list of chemicals in the Lab Pack which will be used for determining RCRA and MACT feed rate compliance.
- Unopened/unused commercial products or chemicals. This also includes products voluntarily removed from the market place by a manufacturer or distributor.
- "Empty" containers of waste materials, commercial products or chemicals. This applies to portable containers which have been emptied, but which may hold residues of the product, chemical, or containers containing other empty containers. Examples of containers are: tanks not exceeding 4'x4', totes, drums, barrels, cans, bags, liners, etc. A container shall be determined "empty" according to the criteria specified in the state regulations. Specifically, a container can be considered empty if it did not contain a waste that is a compressed gas or that is identified as an acute hazardous waste, and:

    - All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container such as pouring, pumping, and aspirating; and
    - No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner; or
    - No more than three percent by weight of the total capacity of the container remains in the container or inner liner if the container or inner liner is less than or equal to 119 gallons in size; or

- No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container or inner liner is greater than 119 gallons in size.

For containers that held acute waste, a container can be considered empty if:

- The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;
- The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or
- In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

For containers that held compressed gases, a container can be considered empty when the pressure approaches atmospheric pressure.

- Wastes which are visually identifiable through an inspection process. Examples may include filters and filter cartridges, wire or tubing, paper products, metal sheeting and parts, crushed glass, piping, and other debris.
- Incinerator generated waste, including hazardous and non-hazardous waste.
- Controlled substances regulated by government agencies including drugs and/or materials.
- Residue and debris from the cleanup of spills or releases of a waste which would otherwise qualify as an exception in Section 6.8. This does not include spills that contain a mixture of exempted waste and environmental media such as soils and sump sludges except where listed below.
- Materials designated for storage and trans-shipment off-site. These materials are received for storage and subsequent trans-shipment only and are not otherwise actively managed on-site. If it is determined that the company will process a waste previously designated for storage and subsequent trans-shipment, the waste will be reviewed utilizing the normal approval process prior to on-site processing.
- Aerosol cans.
- Pressurized or liquefied gases. The containers will be weighed prior to processing but no additional analysis will be performed.
- Vitrified, cemented, and other materials exhibiting high structural integrity. Certain materials are not conducive to sampling. Structural steel, tanks, pipe, cement, glass, empty drums, machinery, equipment, manufactured items, monolithic/cemented materials, and several other materials are managed which do not allow for normal sampling protocols. By necessity, these materials must be managed on a case-by-case basis.

- In addition, the company may waive incoming waste load sampling and analysis where the pre-acceptance documentation supplies sufficient information to assure compliance with permit conditions and operational constraints, and any of the following conditions exist:

    - Obtaining a representative sample poses a substantial and unnecessary exposure hazard to facility employees. This includes sharps, isocyanates, strong oxidizers, and similar compounds;
    - The material may react violently with air or moisture (examples include isocyanates, and hydrogen fluoride);
    - The material's odor poses a public nuisance when sampled; or
    - Biological wastes, including infectious substances, tissue samples, etc.

As one can see, there are many examples of where waste should not be sampled. At least one hazardous waste incinerator has a list of materials that do not need to be sampled as a part of their current WAP. Hazardous waste combustors have been developing and following WAPs for a number of years and have developed considerable experience on how to properly use them. The revised guidance needs to allow for that experience and not get overly restrictive in their "recommendations."

Specific suggestions are as follows.

1. Page 2-25. Sampling safety is under-emphasized throughout the entire guidance and the text on the top half of the page is just one example. Any robust sampling strategy needs to consider the safety issues associated with collecting the sample, not only from a PPE perspective, but also from an access perspective. Unless you have constructed an OSHA compliant scaffold system over a 40 yard roll-off box, it may be impractical to obtain a sample from the center bottom of the container without putting someone in harm's way.

2. Page 2-28, composite sampling. The main purpose of composite sampling is to collect multiple sample aliquots from a given waste so that chemical variations, including hot spots can be measured and also to assure that the analyses represents the properties of the waste. However, the idea of "dividing the action level" is again a theoretical concept that is not applicable. A facility simply does the best job it can do in collecting representative samples and the data from those samples is compared to the applicable standards. For feed rates, a statistic may be applied to "reasonably" account for such situations but a WAP must be functional as we have stated several times previously.

F. The guidance does not adequately allow for acceptable knowledge.

There are many ways in which process knowledge can be conservatively used to avoid expensive testing. For example, process knowledge might be used to supplement lab results that do not come from an accredited lab. A lab might analyze

the waste, but not follow all the QA/QC. Process knowledge might be used to downplay the use of statistics for determining how many samples are taken and how often. In another example, if a plant manufactures benzene, you may apply the U-code or the D-code because they cannot be 100% sure that the code never applies to a waste. Said another way, based on generator knowledge, waste codes may be conservatively applied due to the suspected presence of a constituent. A plant might classify something as D001 ignitable simply because it contains a constituent that has a flash point <140 °F or may have free liquids from time to time, whereas the entire mixture may not be ignitable. However, they don't want to be mistaken and under-classify.

Certain materials are simply too difficult to obtain a representative sample. Thus processor generator knowledge should be allowable. Examples would be debris or difficult to sample items such as PCB or non-PCB lamp ballasts destined for incineration. It is highly unlikely that the Agency would support generators cracking into PCB lamp ballasts in order to obtain a representative sample of the material for a chloride determination when one can likely determine the range of chlorine content of PCBs based upon the specific PCB present (e.g., "Aroclor" 1260 is typically 60% chlorinated, while "Aroclor" 1252 is 52% chlorinated). Additionally, once a PCB lamp ballast is cracked open, the full burden of 40 CFR Part 761 regulations is brought to bear upon the waste.

Identical products manufactured at more than one facility within a company are usually under the control of the same business unit and generate wastes that are often identical to those present at their sister plant. As a result, process knowledge or analytical data developed at one facility should be transferable to the other facility for the purposes of waste characterization. Within companies, the technical process experts housed within the business units are thoroughly familiar with the processes at all facilities where their products are manufactured and can verify the integrity of any data generated from these processes that is used to support waste characterization. For the purposes of quality and cost control, it is common for businesses to negotiate corporate contracts for their product line raw materials, thus all facilities would utilize the same vendor for starting materials. Additionally, many raw materials and intermediates consumed by company facilities are manufactured specifically to support those processes. Close attention to processes and quality in order to meet international standards (e.g., ISO 9001, ISO 9002) serves to reduce process variability, as well as variability in process waste streams, thus enhancing the reliability of process or generator knowledge.

Within a company, there are situations where the same products are manufactured at more than one facility and a combustion unit designed to manage all waste streams from the various locations is regionally located at a single plant. In much the same way as the Agency has allowed data to be submitted in lieu of conducting performance tests where identical combustion units are involved (see the October 20, 2000, letter for Bob Holloway to David Novello), there should be recognition that

process knowledge would largely suffice where identical processes at different locations under the same ownership are involved, or where analytical information is produced for only one of the processes. It should be noted that this concept should be re-evaluated if there is a reason that the waste generated may be different.

The Agency approach needs to consider the acceptability of process or generator knowledge and/or analytical data for one step of a process that can be utilized to characterize other steps of a multi-step process. RCRA requires each unique waste stream generated at various steps in a process to be evaluated at their "point of waste generation" for the purposes of applying the 40 CFR Part 268 Land Disposal Restrictions (LDRs) and other RCRA requirements. In a pesticide manufacturing process it is common to have several process steps (e.g., filtrates, washes, recrystallization, coupling, etc.), with the wastes from each step being characterized as separate waste streams as required by the RCRA "point of generation" approach.

Where data or knowledge of the feedstocks is available and the chemistry of the process is well understood and controlled, then the use of process knowledge should be acceptable in determining if certain constituents are present or are reasonably expected to be present. That is to say, an analytical determination that metals are not present in the waste from one step may allow the generator to apply process knowledge with greater confidence to other steps and waste streams (e.g., no metals present in a liquid stream would indicate no metals present in the gaseous stream vented to a boiler or incinerator). Alternately, the organic halide content of streams may vary widely from step-to-step due to the introduction of a chlorinated compound at a specific point in the process, but the amount or a range of concentration may be quite predictable without analysis due to the facility knowledge of the process chemistry.

EPA has long recognized the value of knowledge other than analytical results as shown from this response: "It is important to keep in mind that EPA does not require testing to determine whether a waste is hazardous; the generator may use other information (such as knowledge of the process by which the waste was generated) in making that determination" – RCRA Online 11649.

QA/QC laboratory wastes are typically well known compositions consisting of unused portions of the original product or intermediate that is being evaluated for the manufacturing area, as well as residues and debris (e.g., latex gloves, pipettes, wipes, etc.) from the evaluations. Process knowledge applied from the lab bench level combined with knowledge of the day-to-day quality of the manufactured product should constitute an acceptable means to eliminate most constituents from the need for analysis. For example, if the process chemistry is strictly organic, then the need for metals testing would be reduced or possibly eliminated.

Many waste streams are not only sporadically generated, but their quantities are sufficiently small as to make detailed analysis unnecessary where generator or

process knowledge does not indicate the presence of constituents of concern. In the Boiler and Industrial Furnace final rule (56 FR 7,190, February 21, 1991), the Agency discussed their proposed exemption for facilities that burn small quantities of hazardous wastes that they generate on-site. The Agency stated: ".....even in the absence of regulatory controls, the health risk posed by such burning would not be significant." Although the Agency discussed such an approach specifically with boilers and industrial furnaces in mind, we believe that the Agency should be able to adopt a similar approach in order to allow the full use of process knowledge to establish the presence, absence, or estimation of the ranges of certain regulated constituents. Such a reasonable use of process knowledge to address small quantity and/or sporadically generated wastes would likely pose no greater health risk than the small quantity burner exemption provided for boilers and industrial furnaces. The purpose of a WAP is to make sure the facility can meet their permit limits. If there is a waste that cannot cause an exceedance due to the size of the shipment, we see no need to analyze what is in that shipment.

Many waste streams are discarded commercial chemical products whose safety data sheets, product label information, manufacturer's knowledge of the product or general published information on the nature of the material itself, or materials comprising product mixtures or formulations, should suffice as a legitimate form of generator knowledge, thus not requiring additional analyses. Many of these commercial chemical products are small quantities of sporadically generated materials that would qualify as "lab pack" wastes. Examples of such materials would be typical laboratory shelf reagent chemicals such as a 500 ml bottle of liquefied phenol (EPA waste code U188), a one pound plastic jar of phthalic anhydride (EPA waste code U190), or empty pesticide containers from grounds maintenance that the facility chooses to incinerate rather than discard in the local landfill.

Some discarded commercial chemical products are off-specification material or recalled or cancelled products, requiring an ongoing program of management until all materials have been collected and returned. The volumes of such materials may be significant, but a combination of manufacturer's process knowledge and other sources of information such as safety data sheets should be allowable to properly characterize such materials, thus alleviating the need for hundreds of customers returning such material and each conducting a detailed analysis of the product.

Specific suggestions are as follows.

1. Page 1-13, Section 1.2.1. There are several statements that seem to require extensive testing instead of being able to use Acceptable Knowledge. Examples are below.

   Waste streams comprising a variety of materials, such as a catchall "contaminated debris" wastes (e.g., process waste mixed with personal

> protective equipment, sample jars, etc.) may require frequent analysis to document compliance.

Suggestion: Contaminated debris is typically reserved for lightly-contaminated, high-volume materials that often widely varying in composition. The logistics of sampling this category is difficult (e.g., Tyvek suits, safety glasses, etc.) and the results are not very informative. This statement should be dropped.

> Generic profiles generally may not be acceptable if the TSDF's treatment/disposal processes must meet numerical limits.

Suggestion: In certain cases, we believe generic profiles are acceptable. Facilities often receive wastes under generic profiles and then analyze to ensure we can meet numerical limits. This statement should be dropped or modified so that a receiving facility has the option of accepting the waste under a generic profile as long as they do the proper analysis to make sure they can meet their permit limits.

2. Page 1-16, Section 1.2.2. The language in this document concerning acceptable knowledge is extremely limiting and relies too much on testing. A significant portion of the generators rely on process knowledge to make their determinations of which waste code to apply, how to manifest the waste, and to determine the proper LDR notifications. For example, one member company conducts analyses for metals and organics on the TCLP list for all waste streams except those going to the waste water treatment plant. However, they do not analyze for the herbicides and pesticides, PCB and dioxins, and carbamates as those analyses are simply not applicable to the wastes generated. These analyses are expensive and analytical turnaround can be three to four weeks. They use process knowledge based on the fact that the processes producing the waste will not produce quantities of those chlorinated compounds. CRWI would like to see additional language in this section about the ability to eliminate certain "categories" of constituents such as herbicides, pesticides, PCBs, dioxins/furans etc. based on process knowledge. Clearly the cost of such analyses is not justified when chlorine is not a component of the process. We suggest adding a bullet to allow the use of process knowledge to eliminate "classes" of compounds from analytical requirements based on knowledge of the process, raw materials etc. To require analytical testing for everything on Appendix VIII has never been a requirement and is a needless waste of resources.

   The document further qualifies the ability to use acceptable knowledge based on the "potential for changes in the wastes and its classification due to environmental factors of spontaneous changes (e.g. separation of organic solvents from a water phase over time, pH changes in contact with ambient air, etc.)." The issues exist with analytical data not just information based on

acceptable knowledge. We see no reason to single out this set of information and suggest this sentence be dropped.

Regarding the use of acceptable knowledge based on published analytical results from like processes, EPA states that these results must be based on "analytical results of published studies based on **currently acceptable sample/test method**s." In fact, the RCRA regulations do not require the use of SW-846 methods. A TSDF permit may have such requirements but even member company's permit cites certain methods but adds the caveat "or similar methods that are substantially consistent." EPA routinely tweaks SW-846 methods. Certainly it is inappropriate to suggest that volatile analyses using SW 846 Method 8260 vs. data obtained using Method 8260C invalidate the use of this data for an acceptable knowledge determination – particularly when the data are not close to the regulatory limit. This language is just too restrictive and inconsistent with the regulations. We suggest it be modified.

In addition, we suggest adding three bullet points to the situations where acceptable knowledge can be used. The first is for when the TSDF sends their trained people to the generators site to prep and/or pack the shipment. The second is when the generator and the TSDF are the same company. The third is where methods of producing waste are very specific such as research laboratories.

3. Page 1-20. The Agency makes the following statements: "If the results of non-regulatory tests are used as part of the basis for applying knowledge in making a hazardous waste determination, then the testing must be relevant to the hazardous waste characteristic being considered for the waste. While such testing may be useful in illustrating the properties of the waste, since they are not part of the RCRA regulations, they **cannot be** the sole basis for determining waste status." (Emphasis added). RCRA regulations do not require the use of current SW-846 methods so we are not sure what "part of the RCRA regulations" the Agency is referencing to in these sentences. We are also concerned with the use of the word "cannot." This appears to be inconsistent with the RCRA regulations. If the generator knows, by his process description, that benzene is present in the waste greater than 0.5 ppm, that alone is sufficient to apply D018. Additional detail does not provide useful information.

4. Page 2-17. The document contained the following statement at the end of the first full paragraph.

   "The selection of waste parameters therefore, must include measures to screen for and identify these types of waste prior to acceptance."

This statement is inappropriate and should be removed. Acceptable knowledge to support the absence of PCBs, dioxins, radioactivity, etc. in the waste is adequate. Testing for these types of parameters is not needed.

G. The guidance seems to be oriented to large quantity process streams and does not take into consideration the concept that small quantity waste streams that are sporadically or infrequently generated need to be treated differently.

The Agency has put forth a draft waste analysis plan that is largely oriented toward large quantity process waste streams and facilities with significant storage tank capabilities. Most large quantity process streams fit neatly into the batch qualification of a waste stream or a statistical approach.

However, the Agency has not dedicated sufficient effort towards assisting the regulated community in their efforts to characterize the myriad of small quantity, sporadically generated wastes which are often part of complex matrices that are difficult to both sample and analyze. A lack of acknowledgement on the part of the Agency that a generator or treater of wastes may rely upon generator or process knowledge to determine the presence of certain regulated constituents reasonably expected to be present, or use a combination of process knowledge and limited sampling to accomplish the same, would have a detrimental effect upon the regulated community.

For example, an on-site incinerator receives a poly-bag containing 150 twenty-five milliliter plastic sample jars each containing a different 5 milligram polymeric solid research sample would, according to the Agency's draft guidance, each be viewed as a separate batch of waste requiring analysis. In turn, even if the generator were able to analyze each of the 150 different polymeric samples for a regulated constituent such as chromium and found that each sample was free of the constituent of concern, the treater would still have to assume the regulated constituent to be present at its limit of detection for the purposes of calculating feed rates.

When incinerating a large number of small quantity waste streams, if it were possible to analyze every stream (e.g., absorbent, pipettes, wipes, reaction residues, packaging, latex gloves, silica gel, polyethylene container, phenolic lid, paper labels, syringes, etc.) using SW-846 methods and all regulated constituents were found to be non-detect, a treater could still exceed their feed rate limits by simply introducing a sufficient number of small quantity separate wastes simultaneously (e.g., 10 bags in a fiber drum with absorbents, each bag containing 150 plastic bottles of 25 gram samples of similar, but not identical materials, would equal 1,500 separate waste streams to calculate out at the limit of detection at the instant in time during which the material is introduced into the unit).

The Agency may characterize this view as an extreme example; not truly representative of how most incineration is undertaken (i.e., many view incineration as primarily bulk liquids in tanks being piped directly into the combustion chamber). In their comments on the 1993 revisions to the WAP guidance document, one of our members (DuPont) gathered the following data on the materials treated by their on-site incinerators.

- 95.5% of all on-site generated materials incinerated were introduced as bulk liquids (e.g., pumped from tanks) and bulk solids;
- 0.35% of all on-site generated materials incinerated were introduced as small containers (e.g., one-gallon charges ...); and
- 4.15% of all on-site generated materials incinerated were introduced as containerized materials (e.g., fiber packs) for direct charging to the unit or materials that are removed from their containers (e.g., pumped liquids, un-packaging of solids) in order to feed into the unit.

For another member company (in 2012), 10% of the weight by volume burned was solids in containers. Ninety percent was liquid waste of which 20 streams constitute approximately 80% of the liquids burned. This includes both hazardous and non-hazardous waste.

The point that CRWI would like to make is that it is likely that over 90% of the total waste incinerated at these units are larger quantity waste streams that comprise less than 10% of the total number of uniquely identifiable waste streams in the corporation. The remaining 10% of the waste incinerated is comprised of literally thousands of small quantity, sporadically generated waste streams and would constitute over 90% of the uniquely identifiable waste streams incinerated within the corporation.

While it is apparent that the Agency has properly placed their energy into developing workable options for the majority of wastes combusted (e.g., bulk liquids, drummed liquids, etc.), it is also apparent that the lack of options afforded those facilities managing small quantities of sporadically generated wastes create an ongoing potential for non-compliance. Since the sheer number and complexity of these small quantity streams is clearly an indication of an area where process knowledge is a necessity, and the potential for unnecessary analysis of no operational value is the greatest, the Agency should craft reasonable guidance that validates the use of process knowledge. Such an approach would not compromise the Agency's goals and would give some preference to the least costly regulatory alternative that accomplishes the program objectives.

H. Issues associated with the discussion in Section 2.9.2 on hazardous waste combustors.

It should be pointed out that hazardous waste combustors have little need for a complicated WAP. The majority of their compliance is based on their FAP (feedstream analysis plan). Combustor feed limits are site specific. The FAP is not part of the RCRA permit and is a living document that is routinely modified. This plan can be reviewed by the permitting authority for adequacy and addresses feed rate concerns.

Specific suggestions are as follows.

1. Page 2-57, Section 2.9.2. The Agency uses the term "trial burn" two times in this section. The air emissions from most hazardous waste combustors are now covered under Subpart EEE and not under RCRA. As such, these facilities no longer run trial burns but comprehensive performance tests. While their functionalities are essentially the same, the guidance should reflect currently used terms. In addition, for most hazardous waste combustors, the WAP no longer governs what and how they feed waste to the unit. That function is now covered under a Feedstream Analysis Plan (FAP). Again while their functions may be similar, a hazardous waste combustor may be required to have both a WAP and a FAP.

   In addition, page 2-57 includes the following "minimum requirements" for combustion facility WAPs:

   > "At a minimum, an offsite combusting facility must analyze the wastes it receives for prohibited constituents (e.g., PCBs; dioxin-containing wastes; reactive wastes; and 40 CFR Part 261, Appendix VIII constituents not represented by the POHCs selected for the trail burn) heating value, ash content, chloride, total toxic metals (e.g., antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium and zinc). And other parameters as necessary . . ."
   >
   > "Each batch of waste to be burned must be analyzed. . . .On-site facilities may use a lower frequency of analysis but the frequency must have a firm statistical basis. . . ."

   We have the following concerns about these two paragraphs.

   a. Once a "representative sample" is received, it would take 4 – 6 weeks to obtain analyses of dioxin if it were required for every batch. Generator profile sheets and process knowledge are adequate for PCBs, dioxin containing wastes, pesticides and herbicides, carbamates etc. In addition, the profile sheet can provide an acceptable range for heat of combustion based on trial

burns. Process description, SDS and other information are more than adequate as opposed to analyzing for a full scan of organics looking for trace levels of POHCs. In addition, if the facility has shown compliance with the required DRE for a Class 1 POHC, there is no need for an exhaustive organic analysis looking for something more difficult to burn.

b. Vanadium and zinc are not toxic metals, are not found on Appendix VIII, and are not necessary for either combustion or LDR short of a specific permit requirement.
c. The use of the term “must be analyzed” used exclusively in this section is undeniably too restrictive, unnecessary, requires substantial waste storage prior to treatment, and creates many undesirable wastes just from the analyses of dioxins etc.
d. It is inappropriate to insist that every batch must be analyzed. The guidance does not allow for the use of mathematical methods to calculate the amounts of certain constituents in a batch. If a facility knows the composition of each of the components of a batch, there is no need to re-analyze the mixture. It can be calculated from the composition and the quantities of each part of the mixture.
e. While it is true that most waste streams burned are analyzed, there are a small percentage of them that are not analyzed. There is a list of the types of materials that should not be sampled given in section E of these comments.

In addition, the “musts” cited in this section are inconsistent with the example WAPs in this document. They do not “require” dioxin and POHC analyses. This section is inconsistent with a reasonable WAP and requires less definitive requirements and more suggestions based on the situation.

I. Other issues.

1. On page v, the list of acronyms defines mg/L as micrograms per liter. We believe that this should be milligrams per liter.

2. There are a number of decision trees that are difficult to read. It appears that they have been copied too many times. For example, see figure 1.1 (Page 1-4). We suggest that each of these be redone so they are easy to read.

3. Page 1-13, Section 1.2. In the middle of page, the Agency uses “contaminated debris” as an example. This is not a good example as “contaminated debris” is typically reserved for very lightly-contaminated, high-volume material with often de minimis levels of hydrocarbons and is often of widely varying composition. The text suggests personal protective equipment as an example of contaminated debris and this is a good example. However, the logistics of sampling Tyvek suits, safety glasses, respirator cartridges and/or dirty gloves would require extensive sampling for wastes with very little amounts of

hydrocarbons present. Process knowledge is typically and appropriately used for this type of waste.

4. Text box, bottom of page 1-14. One of the most critical pieces of information lacking in this is the form that the waste will be shipped in (i.e., type of packaging or container and how waste is packaged within each container). For example, most incinerators have limits on specific constituents per pound of waste, but for wastes like lab packs, have limits on bottles sizes as well as the number in each pack.

5. Text box, bottom of page 1-15. Using ± 2 pH units as a reason for rejecting or re-qualifying is a bad example. A pH change from when the waste was originally tested to when it arrived doesn't make it unacceptable if TSD is already permitted for D002 waste. We suggest using different example.

   EPA underestimates the difficulties and inherent inaccuracies in sampling and analysis versus using Acceptable Knowledge of a waste. Sampling and analysis will not always give you better information than will using Acceptable Knowledge. Several examples are given in Section F of these comments.

6. Pages 1-17 and 1-18. In the suggested checklist for evaluating waste determinations using acceptable knowledge, the Agency has includes a questions that we believe does not belong in this checklist. This is whether the TSDF obtained split samples. This bullet makes no sense. If the generator took a sample, they would be using analytical data not acceptable knowledge to make the determination. We suggest this bullet be removed.

7. Page 2-4, text box, third bullet – Test methods change on a routine basis and it is not practical or necessary to require a notification to a permit writer when this happens. Very often the revisions to the test methods are minor in nature. We suggest that it might be better to include permit language that requires testing in accordance with Method XXX or its most recent revision.

8. Page 2-5, Section 2.2.2. We suggest changing the term "processes and activities" to "processes or activities" throughout this section. Doing this would allow R&D labs to be termed as an activity.

9. Page 2-6, Table 2-3. CRWI members are not aware of any pharmaceutical cream that contains that much benzene. We suggest that the Agency come up with a more realistic example.

10. Page 2-8, Section 2.3. In DQO Step 1, CRWI suggest that the last line of this paragraph be removed because it is not a regulatory requirement and should not be included in this guidance.

11. Page 2-40, Section 2.5.6 is missing a number of safety related aspects of waste sampling. It's not just PPE and HAZCOM that need to be considered. There are hazard identification/job safety analysis/job hazards analysis procedures to be followed, fall protection and working at heights considerations, hot work, line and equipment opening, and emergency response/preparedness issues (to name a few) that often need to be addressed, as well. CRWI suggests that worker safety issues are better addressed by other requirements than the waste analysis plan. Including these requirements clutters the WAP with potentially conflicting requirements. In addition, some hazardous waste does not meet the applicability requirements as stated in 29 CFR 1910.119. As such, worker safety requirements are very site and waste dependent, and cannot be adequately defined in a waste analysis plan. New information and requirements are constantly being developed as the state of the art develops. It would be burdensome to both the permittee and the agency to require revisions to a waste analysis plan each time a new entry is made in to the TSCA 8e log. We suggest that the entire section 2.5.6 be replaced by the following:

    Waste sampling should be conducted in accordance with applicable federal state and local requirements as well as hazard management tools and information.

12. Page 2-41, Figure 2-6 shows a Chain of Custody labeled for an industrial hygiene sample. A more appropriate example is suggested.

13. Page 2-46. The guidance states that the detection limit should be 1/5 to ½ of the regulatory threshold. This discussion is repeated on Page 2-47 where it is stated that the detection limit may need to be well below the regulatory levels. CRWI agrees that is would be nice to have such a wide buffer between the detection limit and the regulatory threshold but that is not always possible. This may be possible with analytes in distilled waste but the waste matrix can be extremely complex and the detection limits will vary with the matrix. Even LDR regulations recognize the difficulties in obtaining adequate detection limits and references “best good faith efforts.” (see 40 CFR 268.40(d)(3)). We suggest either adding a “good faith effort” to the bullet or dropping the bullet entirely. In addition, we suggest rewording the section on Page 2-47 to allow for circumstances where it is not possible to push the detection limits “well below” the regulatory limits.

14. Page 2-47. The text box discusses detection limit. It should be pointed out that most laboratories will use the reporting limit, not the detection limit. This text box should be expanded to define reporting limit and suggest that the reporting limit be used instead of the detection limit.

15. Page 2-49, Section 2.7. The use of 500 ppm as a threshold for halogens in a hazardous waste incineration is a poor example. Any hazardous waste combustor with a wet scrubbing system can easily handle this threshold of halogens. This is also true of all most all waste codes (with the exception of F020, F021, F022, F023, F026, F027, F028). EPA should pick a different example.

16. Page 2-50. CRWI is concerned about the statement that seems to equate a 95% confidence interval with a good faith effort to characterize your waste. This section fails to discuss a critical part of statistics – the margin of error. The margin of error depends upon the sample size. To get a margin of error (confidence interval) below 5%, you would need a sample size of 500 (http://www.sciencebuddies.org/science-fair-projects/project_ideas/Soc_participants.shtml, accessed June 6, 2013). We believe the use of confidence levels is well beyond the scope of a WAP, and involves several other questions of whether the population is normal, log-normal, biased, number of samples, etc. This discussion far exceeds the requirement to properly place waste codes on a stream. Other tools, such as feedstream analysis plans for combustion facilities and stabilization recipe plans for landfills are better tools, since these types of requirements are better determined on a case-by-case basis. We do not see how this fits into a discussion of a WAP and suggest that it be removed.

17. Page 2-51, text box. Use of statistical methods for compliance is only allowed where this has been approved by the agency in the WAP. Otherwise, waste must be below allowable limits to be managed.

18. Page 2-56, Figure 2-8. TSDF's often inspect, or even oversee packaging of load before it leaves the generator site as not all generators can receive back a rejected shipment from a TSDF. We are not sure how to incorporate this into the figure but wanted to bring it to the Agency's attention.

19. Page 2-63, Section 2.13. CRWI does not see the need for this section. SW-846 already includes criteria for corrective action if problems with analytical data are found. This section is duplicative and unnecessary. We suggest that be deleted.

20. Page 3-1, Checklist. Using a checklist is a good idea. We suggest that EPA needs to develop at least two checklists, one for large quantity generators and one for TSDFs. There may be a need for a third if enough small quantity generators chose to develop WAPs. As we have stated earlier, WAP requirements for generators and TSDFs are completely different and need to be treated as such. Below are some specific suggestions for the checklist.

    1.a – change the word "processes" to "processes or activities."

1.g – design limits for waste management units are best placed in the Part B application, not the WAP.
2b – training requirements are best placed in the training plan, not in the WAP. Section 4 seems to imply this will be done for each waste. Generally, this is done for different physical forms of waste.
4a – sampling locations may not be always able to be identified (i.e. generator knowledge).
4.c is not required and should be removed from the checklist.
4.h – number and type of sampling containers may not be known until waste arrives at the TSDF.
4.k – packing and shipping procedures are under the jurisdiction of DOT, and as such, should not be a part of the WAP.
9, 10, 11, 12 should be deleted as they should not be a part of the WAP.