

OHIO ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF HAZARDOUS WASTE MANAGEMENT
WASTE ANALYSIS PLAN GUIDANCE
RESPONSIVENESS SUMMARY

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INSTRUCTIONS

To view the comments received from each organization, with the mouse left click on the number of the comment to be viewed. The comment and Ohio EPA's response will appear. Where a change to the guidance was made as a result of the comment, the section number of the guidance where the change was made is provided. Left click on the section number to view how it appears in the final guidance. On any page, left click on [→Return to Top ←](#) to return to this page.

Ashland Chemical Comment 1:

First, Ashland believes that the value of the guidance document for both permit writers and the regulated community could be greatly enhanced if the document provided a discussion of WAP issues unique to hazardous waste storage, treatment and disposal operations individually. While the draft guidance provides a very comprehensive and detailed discussion of the regulatory requirements and DHWM expectations, many facilities are engaged in only one or two of the permitted activities (storage, treatment, or disposal). For example, a discussion of the necessary considerations for determining waste analysis parameters, fingerprinting parameters, and other requirements individually for storage only facilities, treatment facilities, and disposal facilities would allow permittees and permit writers to focus on these aspects, as opposed to applying the general discussion in the current draft guidance. A facility engaged in storage only activities, for example, should generally require less in the way of waste analysis than would a treatment or disposal facility, because the potential risk to human health and the environment from short term storage operations is far less than that associated with active treatment or disposal.

While individualized discussions of WAP requirements would not cover every conceivable facility, Ashland believes it would be beneficial to discuss general categories such as:

- ▶ Container storage facilities
- ▶ Tank storage facilities
- ▶ Bulking/blending facilities
- ▶ Incineration facilities
- ▶ Hazardous waste fuel burners
- ▶ Hazardous waste landfills

The DHWM can evaluate the types of facilities currently permitted in Ohio to determine which types are most common, and customize the list appropriately. It may be possible to develop a table or flowchart for each category of regulated facility to summarize key requirements.

Ohio EPA Response:

The type of waste management activity (treatment, storage, or disposal) occurring will determine the waste analysis necessary at each facility, however, differences between facilities performing the same management activity would make providing standard waste analysis procedures for each activity very difficult. Instead a flexible, facility specific approach is needed. The general discussion in the guidance provides points to consider when deciding what should be included in the WAP for any individual facility. Facilities can use this information to propose procedures they will use to meet their waste analysis obligations. The guidance has been revised to more clearly reflect this flexible, facility specific approach to using the information in the guidance. Changes

were made to [section 4.2](#) and [section 4.2.1](#) of the guidance.

Ashland Chemical Comment 2:

Ashland also comments on the fingerprint parameter discussion on pages 11 through 13 of the guidance. Specifically, the guidance indicates that when determining the number of fingerprint parameters to be considered for testing, the TSDf needs to “use their judgement in determining which generators are considered reliable and which are not.” It is unclear how a permit applicant can write a waste analysis plan sufficient in detail and specificity to satisfy the DHWM permit writer, while at the same time providing the permittee with flexibility to use judgement on a case-by-case basis in determining what fingerprint parameters to apply to which off-site wastes on which occasions.

Ohio EPA Response:

The number and type of fingerprint parameters selected for use when examining an incoming waste shipment is a function of both the amount, as well as reliability of that initial information obtained by a TSDf during the pre-acceptance phase of conducting waste analysis. TSDf’s should consider the following information elements, described in greater detail within Section 4.2.1 of the guidance, in determining the appropriate parameters to select when examining a generator’s waste during the acceptance phase of conducting waste analysis:

- *waste identification*
- *identification of incompatible, reactive, or ignitable waste;*
- *permit or regulatory considerations*
- *Land Disposal Restrictions*
- *special parameter selection requirements*
- *process considerations*
- *fingerprinting*

Fingerprinting is but one of the listed information elements. Typically, the quantity and quality of pre-acceptance data obtained by the TSDf determines the types of acceptance-phase information which should be collected via the selection of appropriate fingerprint parameters. No changes were made to the guidance as a result of this comment.

Ashland Chemical Comment 3:

The document also states that off-site wastes accepted from generators with a history of mis-characterization should be subject to much more fingerprinting or even complete laboratory analysis of each shipment, and that acceptance of waste which falls outside of the permittee’s ability to safely manage within permit and regulatory constraints is subject to enforcement action. Ashland has strong reservations about this portion of the guidance. Ashland’s experience during the permitting process for our container storage facility was

that a nearly complete laboratory analysis was required for fingerprinting for every shipment received. The rationale for this level of fingerprint analysis, according to the permit writer, was that there are a lot of generators who are mis-characterizing their waste (both intentionally and mistakenly). Therefore, it was Ashland's responsibility as a TSD to identify and correct these mis-characterizations. In addition, because of the high frequency of waste mis-characterization occurring among generators (according to OEPA), full waste analysis of every shipment was the only way to ensure that we did not violate the conditions of our storage permit. DHWM permitting staff were unwilling to accept any lesser level of fingerprinting for virtually any waste stream from any source, with the exception of unopened containers of off-specification commercial chemical products.

Ohio EPA Response:

Once again, the number of fingerprint parameters selected during the acceptance phase of conducting waste analysis can be considered a function of the quality of data available to the TSD during the pre-acceptance phase. Facilities which obtain comprehensive information on a waste during the pre-acceptance phase may not be required to maintain extensive acceptance phase confirmation testing programs. Conversely, those deferring to acceptance phase testing, rather than satisfying many of the information needs during the pre-acceptance phase, may be required to conduct more extensive waste analysis when the waste arrives at their facility. No changes were made to the guidance as a result of this comment.

Ashland Chemical Comment 4:

The guidance document defines fingerprinting as "abbreviated waste analysis conducted for waste parameters which may verify that a waste received from an off-site source matches the expected characteristics for that waste." (Page 3). Furthermore, near the bottom of page 11, the guidance states: "Parameters for which fingerprinting can be done quickly, cheaply, and consistently are selected from the larger set of pre-acceptance parameters." While this is consistent with Ashland's understanding of the purpose of fingerprint analysis, it directly conflicts with the statement that fingerprinting should include "complete laboratory analysis" in some circumstances. Our experience has been that complete laboratory analysis has been required by Ohio EPA in virtually all circumstances. Therefore, we are concerned that the current wording of the guidance document, coupled with the expressed opinion of DHWM's permit writers with respect to generator's ability or willingness to properly characterize their waste, will continue to result in permits with overly burdensome and costly fingerprinting requirements. This is particularly true for storage facilities such as Ashland's, where the only waste management activity is warehousing of sealed waste containers for a few weeks.

Ohio EPA Response:

Fingerprinting may involve complete laboratory analysis in situations involving generators who have a history of mis-characterizing their waste. TSDF's need to draw from their past experience with specific generators in determining the appropriate level of waste analysis to apply to each situation at various stages of the process (i.e., pre-acceptance versus acceptance phase) Facilities which obtain comprehensive information on a waste during the pre-acceptance phase of conducting waste analysis may not be required to conduct as extensive an acceptance phase fingerprinting program as those who defer to the acceptance phase for obtaining such information. The guidance has been revised to state that the level of information obtained within certain fingerprinting programs may resemble a complete laboratory analysis in situations involving a generator with a history of mis-characterizing their waste(s). Changes were made to [section 4.2.2](#) of the guidance.

Ashland Chemical Comment 5:

Ashland also comments on Section 4.4.4 of the guidance regarding the use of generator knowledge to fulfill TSDF waste analysis requirements (OAC 3745-54-13). Ashland agrees and supports OEPA's position that generator knowledge can be relied upon, either in whole or in part, to meet these requirements. In our particular circumstance, off-site generated waste from multiple generators is stored temporarily before being forwarded to an off-site recycling, treatment, or disposal facility. Since pre-acceptance of off-site waste at our facility is conditioned on pre-acceptance by the downstream TSDF that we forward the waste to, we believe that information provided by the generator (either knowledge or testing), coupled with pre-acceptance testing specified in the downstream TSDF's WAP, provides sufficient information to meet our waste analysis requirements and allow us to safely store the waste while in transit. However, as discussed above with regard to fingerprinting analysis, we have always been required to obtain specific, detailed laboratory analyses of off-site generated wastes during the pre-acceptance stage, without regard to available generator knowledge documentation or the analyses' relevance to Ashland's ability to store the waste in accordance with the hazardous waste rules. Since our experience during the permitting process differs significantly from what is stated in Section 4.4.4 of the guidance, Ashland suggests that the guidance document provide more specific circumstances under which the use of generator knowledge is acceptable to meet TSDF waste analysis requirements. This will aid those writing waste analysis plans by clarifying DHWM expectations.

Ohio EPA Response

Many of the sources of information which serve as the basis for "generator knowledge" are available to assist the TSDF during the pre-acceptance phase. Such information aids the TSDF when determining the appropriate level of detail to obtain in order to satisfy the criteria contained within Section 4.2.1 of the guidance:

**waste identification*

**identification of incompatible, reactive, or ignitable waste;*

- *permit or regulatory considerations
- *Land Disposal Restrictions
- *special parameter selection requirements
- *process considerations
- *fingerprinting

In those instances where specific information is provided by a generator, TSDFs may consider whether such information can be used to satisfy either all, or a portion, of the information needed to comply with the waste analysis requirements. No changes were made to the guidance as a result of this guidance.

Ashland Chemical Comment 6:

Regarding the Waste Analysis Plan Checklist, Ashland notes on page 7, under Item C-2b, that the off-site laboratory is to be specified (if one is used). Ashland comments that this should be made more general, and allow the permittee to use any qualified laboratory as long as it is certified to conduct the necessary analyses. As an alternative, the permittee should be allowed to specify at least two laboratories to allow a contingency in the event that difficulties are experienced with one. If only one laboratory is specified, the permittee will incur unnecessary cost and delay in modifying the permit, should they decide to change laboratories.

Ohio EPA Response

Item C-2b of the checklist has been changed such that the WAP should specify whether the analytical laboratory is on-site or off-site, as well as information which attests that the permittee is using a laboratory conducting the analyses required within waste analysis section of facility's permit application. Changes were made to [item C-2b](#) of the checklist.

Onyx Environmental Services Comment 1:

We understand that the agency desires an easy “checklist” approach to regulating Waste Analysis Plans. It would be a very simple task for the agency to audit with identical requirements for Waste Analysis Plans throughout the state. However, this “one size fits all” approach is impractical. Pharmaceutical Manufacturers, Appliance Manufacturers, Waste Disposal Facilities and Waste Storage and Treatment Facilities cannot possibly operate under the same detailed checklist for a Waste Analysis Plan. Each of these has different operational waste characterization needs. A distinction must be made within the WAP guidance for different facilities.

Ohio EPA Response:

The guidance is not taking a “one size fits all” approach to waste analysis plans. The guidance provides flexibility for facility specific waste analysis. The general discussion in the guidance provides points to consider when deciding what should be included in the WAP for any individual facility. Facilities can use this information to propose procedures they will use to meet their waste analysis obligations. Clarifying language which stresses

a facility specific approach has been incorporated into the guidance. Changes were made to [section 4.0](#) and [section 4.2.1](#).

Onyx Environmental Services Comment 2:

Although the title page for the WAP guidance states that “This policy does not have the force of law,” there is more than one reference to enforcement as a result of the guidance not being followed. It is not clear what regulation would be cited in an enforcement case. The Waste Analysis Plan regulation (OAC 3745-54-13) does not specify most of what is in the guidance. Some agency personnel have stated that the WAP guidance would be used as a review tool during the permit renewal process, while other agency personnel have stated that it would be used during an on-site inspection by the agency. The intent of the guidance needs to be stated at the beginning of the document.

Ohio EPA Response:

The intent of the guidance is clearly stated on the cover: “A guide for preparing and reviewing waste analysis plans submitted with Part B of the Ohio Hazardous Waste Facility Installation and Operation permit application”. The guidance and checklist will be used by permit writers to review WAPs submitted with the Part B application, not as an inspection checklist. This purpose has been further clarified in the guidance introduction. Additionally, all language referring to enforcement has been removed from the guidance. Changes were made to [section 1.0](#), [section 4.4.2](#), and [section 4.4.4](#).

Onyx Environmental Services Comment 3:

The guidance appears to have several contradictions. For example, generator knowledge appears to be “allowed” on page 3 in the definition of Waste Analysis Plan, on page 10 in the definition of Waste Identification and in the last paragraph of page 12. However, only generator knowledge with supporting analytical seems to be permitted on page 5 under “Purpose of the Plan” and on page 6 in the discussion of preacceptance. We also note that the preacceptance section of the guidance describes a method of approving a new waste stream that requires a sample be provided by the generator. Besides being non-value added, this requirement is time consuming, expensive and so cumbersome that many customers would go to facilities outside of Ohio if this were made mandatory. Moreover, this requirement cannot be found in any regulation.

Ohio EPA Response:

The guidance clearly allows the use of generator knowledge, when properly documented, to fulfill some or all of the requirements of OAC Rule 3745-54-13. Language in the guidance where there are apparent contradictions has been clarified. Changes were made to [section 4.0](#).

Onyx Environmental Services Comment 4:

The guidance regarding off-site laboratory use is also contradictory. In section 4.4.1 on page 18, the guidance states that, when a facility uses an off-site laboratory “ the WAP

should state that the off-site laboratory will utilize the methods and QA/QC procedures specified in the WAP". However, per the checklist on page 7 of Appendix I, the actual laboratory must be named in the WAP. This means a permit modification would have to occur before changing laboratories. It is not clear what the implications would be when using a generator's laboratory analytical.

Ohio EPA Response:

Ohio EPA will only require that the WAP should state whether the facility utilizes an on-site or off-site laboratory. Item C-2b of the checklist has been changed such that the WAP should specify whether the analytical laboratory is on-site or off-site, as well as information which attests that the permittee is using a laboratory which conducts the analyses required within waste analysis section of facility's permit application. Changes were made to [item C-2b](#) of the checklist.

Onyx Environmental Services Comment 5:

Throughout the document, language such as "must" and "should" is used liberally. This language creates a new detailed and restrictive interpretation of the WAP regulation that is not found in the Federal or State Regulation or even the 1994 USEPA WAP Guidance. The placement of this language eliminates any flexibility that a facility had with regards to Waste Analysis. The original regulation was written to allow for differences in processes at different types of facilities. The Ohio EPA Draft WAP Guidance eliminates any interpretive freedom and reflects an isolated opinion of what the regulation means.

Ohio EPA Response:

The document has been revised such that the words "must", "shall", and "should" are used consistently throughout the document. Changes were made throughout the guidance.

Onyx Environmental Services Comment 6:

Section 4.4.3 in the WAP guidance states "each WAP must include ... elements described in chapter one of SW 846." The document identified in the list of references is specifically the 3rd edition. The 4th edition of SW 846 is due out in early 2000 so this should be noted. Otherwise the Guidance could be outdated soon after it is finalized. Chapter one of SW 846 is written like a superfund Quality Assurance Project Plan and has never been mandatory. Many of the methodologies and QA/QC requirements are obsolete. There is no reference in the guidance to the more applicable NELAP (National Environmental Laboratory Accreditation Program) standards.

NELAP is a product of the NELAC (National Environmental Laboratory Accreditation Conference), the association sponsored by the United States Environmental Protection Agency as a voluntary association of state and federal officials. The purpose of the organization is to foster the generation of environmental laboratory data of known and documented quality through the development of nationally accepted standards for environmental laboratory accreditation. NELAC encompasses all fields of testing

associated with compliance with EPA regulations. The program is administered by state and federal accrediting authorities in a uniform, consistent fashion nationwide.

NELAP's goal is to foster cooperation among the current accreditation activities of different States or other governmental agencies. NELAP seeks to unify the existing State and Federal agency standards. The OEPA should use these standards as they are the most current for environmental laboratories and the program is sponsored by USEPA.

Ohio EPA Response:

The reference to SW-846 will be corrected to reflect that the most recent version of this guidance should be used. Chapter Five of the NELAP standards referenced in the comment contain the necessary elements of appropriate laboratory quality assurance/quality control (QA/QC) and may also be used as guidance when preparing laboratory QA/QC documents. The guidance has been revised to clarify that use of SW-846 as guidance is one option, and that use of NELAP is another option when preparing QA/QC manuals. Changes were made to [section 3.0](#) and [section 4.4.3](#).

Onyx Environmental Services Comment 7:

Since our permit application was submitted for renewal in June of 1998, we have been struggling to understand what the Ohio EPA required for approval of a Waste Analysis Plan. Although our WAP had been modified and approved by both the district and central offices less than a year and a half before we submitted our permit application for renewal, we were asked to make substantial changes to the document. These changes were not consistent with the 1994 USEPA WAP Guidance that we had been told by the Southwest District to use as a model WAP. Nor can the inclusion of these elements be found anywhere in the regulations found at OAC 3745-54-13, General Waste Analysis.

We have had many meetings with the agency to discuss these issues and the renewal of our permit has been delayed because of our objection to the inclusion of these elements. It is clear to us that the development of this Draft WAP Guidance has also been a factor in the delay of our renewal. In our discussions with OEPA and the public meeting that OEPA held to discuss the Guidance, OEPA officials said that a facility's compliance history would be taken into account when deciding what elements would be required of the facility, suggesting that if a facility had a good compliance history, it would not have to change its manner of operation. This statement does not hold true in our case. Our facility has a very good compliance history, yet is being asked to perform burdensome tasks that will negatively affect the operation and financial viability of our facility.

Ohio EPA Response

DHWM acknowledges that a number of incremental changes to the waste analysis plan were proposed, and subsequently approved, during the initial five year period of operating as a Part B permitted facility. The permit renewal process affords DHWM with the opportunity to examine the collective impact which a number of individual changes,

resulting from the permit modification process, can have on regulated activities performed at TSDf's over time. DHWM will continue to further the concepts and principles associated with waste analysis which are discussed in the guidance in the process of negotiating with TSDf owner/operators seeking to renew their permit. No changes were made to the guidance as a result of this comment.

Onyx Environmental Services Comment 8:

Overall the OEPA Draft WAP Guidance seems to be taking the state of Ohio in a new direction. There is no regulation to support this new direction. If OEPA desires to move in this direction it should be done in the proper manner, by submitting a bill to the legislature. This draft guidance is not a legislative action. It is a guidance document that is trying to take a legislative action.

Ohio EPA Response

The goals of issuing the WAP guidance are to:

- 1) improve statewide consistency in the content and level of detail of WAP's;*
- 2) compile a training tool for DHWM staff on the waste analysis requirements;*
- 3) articulate agency expectations to regulated community as to our expectations of the content and level of detail encompassed within a WAP.*

DHWM doesn't agree with the expressed viewpoint that we are "taking the state of Ohio in a new direction". Additionally, the policies and guidance provided in this document are supported by existing regulations. In similar fashion to the approach used by our division when compiling other guidance used to relate our interpretation of the director's performance standards, DHWM has attempted to compile within the WAP guidance the collective experience of our personnel who have been involved in writing permits and conducting compliance monitoring of waste analysis requirements at the various permitted TSDf's in Ohio. A number of suggested revisions supplied by stakeholders have been incorporated into the WAP guidance.

Ross Environmental Services Comment 1:

First, RES commends the Ohio Environmental Protection Agency's Division of Hazardous Waste Management (DHWM) for undertaking the process of developing guidance documents for Waste Analysis Plans and Generator Knowledge, and for extending the comment period. However, the process for developing such guidance should be improved. Specifically, consistent with true stakeholder involvement processes, affected parties should be involved before such documents are set to paper.

DHWM worked for months preparing the draft guidance. To our knowledge, no stakeholders other than DHWM staff were involved in the process prior to the October 22, 1999 interested parties letter and concurrent release of the draft guidance document. This is inconsistent with the fundamental tenet of stakeholder involvement, which is to identify and bring stakeholders to the table from the very beginning of the process. Stakeholders

should be involved in identifying issues and defining the scope of such undertakings.

In the future, Ohio EPA should hold information sessions or roundtables with affected and interested parties prior to committing such documents to writing. Such sessions would help frame the process and set the appropriate scope for development of guidance. As well, it would provide stakeholders the opportunity to suggest specific areas and issues that need to be addressed in guidance. It would also facilitate Ohio EPA's understanding of how stakeholders' facilities, businesses, and markets work, thereby putting the guidance development in an appropriate context.

Ohio EPA Response:

Given the resources available to the program, DHWM believes the process used in development of this guidance was effective, and exceeded the requirements of House Bill 106. DHWM cannot commit to holding roundtables with stakeholders for every guidance document that it develops or revises but continues to be interested in providing opportunities for and receiving input before new or revised guidances are implemented by DHWM. No changes were made to the guidance as a result of this comment.

Ross Environmental Services Comment 2:

Second, Ohio EPA must more clearly state in the guidance, and in training for permit writers and inspectors, that the guidance is not a one-size-fits-all menu or enforcement checklist for the perfect waste analysis plan. Waste analysis plans must be crafted with specific facilities and processes in mind. As well, while waste analysis plans must be facility-specific, they must be sufficiently flexible to facilitate efficient, cost effective, management of waste streams. Waste analysis plans must reflect and accommodate the variable nature of waste materials, and differences in facilities.

Ohio EPA Response:

Language in the guidance has been revised to stress that it is a permit application review tool, not an inspection tool, and that waste analysis plans are prepared and reviewed on a facility specific basis. Changes were made to [section 1.0](#), [section 4.0](#), and [section 4.2.1](#).

Ross Environmental Services Comment 3:

Much of the draft guidance seems to imply a need for greater and greater levels or analytical and laboratory data. While, at times, such data is necessary, the associated costs are prohibitive for use of such practices in all cases. Ohio EPA must make certain that the guidance and its implementation allow an appropriate balance in this regard at the informed discretion of the generator and TSDF.

Ohio EPA Response:

As written, the guidance clearly provides flexibility for TSDFs to accept generator knowledge, when it is properly documented, in lieu of or in addition to, analytical data. No changes were made to the guidance as a result of this comment.

Ross Environmental Services Comment 4:

Section 3.2 defines Fingerprint Analysis as an "abbreviated waste analysis conducted for waste parameters which may verify that a waste received from an off-site source matches the expected characteristics for that waste." This is the appropriate level of analysis for determining whether a waste as received is within the profiled specification. Any "pre-acceptance analysis" is only appropriately used for purposes of preparing waste profiles which include parameter tolerance limits that adequately accommodate the variable nature of waste materials.

Ohio EPA Response:

Ohio EPA agrees with this statement. No changes were made to the guidance as a result of this comment.

Ross Environmental Services Comment 5:

Section 3.2 also defines Pre-Acceptance as "the information collection process where a complete physical and chemical analysis (sufficient to treat, store, or dispose of the waste) of a representative sample of waste is obtained before the waste is accepted for management," and continues that "the purpose is to determine if a waste can be accepted for management by the facility within permit, process, or regulatory constraints. Ohio EPA and permit writers must consider that the level of information that is "sufficient" will vary with the type of waste stream, and the treatment, storage, or disposal method to be applied.

Ohio EPA Response:

The level of information which is "sufficient" will vary based on facility specific circumstances. The guidance provides the flexibility for facilities to propose what is believed to be sufficient for their facility. Language in the guidance has been revised to clarify this. Changes were made to [section 4.2](#) and [section 4.2.1](#).

Ross Environmental Services Comment 6:

In Section 4.0, the draft guidance states that the waste analysis requirements of OAC 3745-51-13(A) "...can be viewed as much broader than the required items in OAC Rule 3745-54-13(B)(1) through (7), and is the basis for much of this guidance." Does Ohio EPA intend to use the guidance as a means to broaden the scope of the regulation? To do so would be in conflict with the administrative procedure for promulgating regulations. RES reiterates that Ohio EPA must use guidance as guidance alone, and not as a one-size-fits-all checklist that becomes, in effect, a de facto regulation. While it may be appropriate to consider some or all of the practices and conditions specified in the guidance in preparing and reviewing facilities' WAPs, Ohio EPA must recognize that every facility is unique and that all of the mentioned criteria may not be appropriate or feasible at a given facility. This should be more explicitly stated in the guidance, and emphasized in training of permit writers and inspectors.

Ohio EPA Response:

The guidance will not be used as a “one-size fits all checklist” or a de facto regulation. The information in the guidance should be considered for each facility, but only the portions which apply need to be included in the WAP. Revisions to language in the guidance have clarified the use of a flexible facility specific approach to preparing WAPs. Changes were made to [section 4.0](#).

Ross Environmental Services Comment 7:

In section 4.0, the second paragraph on p. 6 of the draft guidance, Ohio EPA discusses pre-acceptance. Ohio EPA implies in this discussion that it is typical practice to collect a sample of a waste for purposes of generating laboratory analytical data. This is neither a typical practice, nor is it always necessary. Generator knowledge and related documentation of a waste stream’s physical and chemical properties is generally sufficient to obtain “...all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of Chapters 3745-54 to 3745-57 and 3745-59 of the Administrative Code or with the terms and conditions of an Ohio hazardous waste permit” [OAC 3745-51-13(A)].

In order to be a valuable tool, pre-acceptance analysis would require that waste composition have very low variation from shipment to shipment. While this may be possible with certain large-volume remediation wastes, it is much less likely to be true of production wastes. Generator direct wastes exhibit considerable variation, and wastes from intermediaries which consolidate waste streams and shipments from a large and varying set of generators under a single waste profile exhibit still wider variation. This variation is generally well within the tolerances of treatment, storage, and disposal operations and the specificity of laboratory analysis is usually an unwarranted, unnecessary expense.

Further, certain waste materials pose more risk to laboratory workers during handling and testing than is offset by the information gained. Any sampling requirement, whether pre- or post-acceptance, must accommodate exceptions for such materials. As well, some materials, such as hazardous debris, concrete and metal scrap, are prohibitively difficult to sample and analyze, and yield little useful information. Again, any sampling requirement must accommodate exceptions for such materials

Ohio EPA Response:

The guidance recognizes that sampling may not always be the best option for collecting information about the wastes to be managed. Accordingly, the use of generator knowledge is clearly allowed in the guidance. During pre-acceptance, many facilities choose to supplement generator knowledge with collection of a sample and generating analytical data. The discussion of pre-acceptance has been revised to clarify that pre-acceptance

samples may be collected as part of the pre-acceptance process. Changes were made to [section 4.0](#).

Ross Environmental Services Comment 8:

Section 4.1.1 would seem to require descriptions of waste generating processes and activities within the waste analysis plan itself. Given that commercial off-site facilities can and do receive a thousand or more waste profiles in a calendar year, and that these change from year to year, such a requirement is unreasonable. These descriptions appropriately belong on waste profile sheets or in the facility's customer files. The WAP should not include these descriptions but, rather, should specify an appropriate repository for them.

Ohio EPA Response:

Ohio EPA agrees that detailed process descriptions for each individual generator will prove burdensome to contain in the WAP. Instead, the WAP should describe the general waste streams which will be managed. For example, paint waste of various composition may be a waste stream. The WAP would describe the paint waste category, and individual generator files would contain information for their specific paint waste.

An exception to this would be on-site facilities which manage only a few, well defined waste streams. These should be described in detail in the WAP. The WAP guidance has been revised to allow the facility to specify that the information will be contained in an appropriate repository. Changes were made to [section 4.1.1](#).

Ross Environmental Services Comment 9:

Section 4.1.2, like Section 4.1.1, appears to require a great level of detail in the waste analysis plan. Again, the WAP should specify how the facility manages the appropriate detailed information, while maintaining an appropriate level of detail in the WAP itself.

Ohio EPA Response:

The WAP has been revised such that the WAP should specify how the facility manages the appropriate information. Changes were made to [section 4.1.2](#).

Ross Environmental Services Comment 10:

Section 4.2 discusses waste analysis parameters. The first paragraph of this section states that the rationale for each parameter of each waste stream should be listed. In most cases, for off-site facilities it is appropriate to list parameters for more general waste stream types than for individual wastes, as substantially similar wastes from a variety of generators may fit the same general waste stream type and, accordingly, suggest the same parameters.

Ohio EPA Response:

Where waste streams are described on a waste stream type basis it is appropriate to specify parameters and rationale for the waste stream types. Language in the guidance has been revised to clarify this. Changes were made to [section 4.2.1](#).

Ross Environmental Services Comment 11:

Section 4.4.4 states that "...If a TSDf uses acceptable generator knowledge to accomplish any part of its requirement to perform waste analysis, the TSDf needs to list, in its WAP, all the types and sources of information and documentation it will obtain from the generator for evaluation." The guidance should require the TSDf to list types and sources of information and documentation that it **may** obtain, as the types and sources may vary from generator to generator, and waste to waste.

Ohio EPA Response:

It is appropriate to list the types of information the TSDf may obtain from generators to document generator knowledge. Changes were made to [section 4.4.4](#).

Ross Environmental Services Comment 12:

In discussing the types and sources of information which should be used by a TSDf to substantiate generator knowledge, the guidance states that item 5 - facility specific process flow diagram, and item 6 - Chemical makeup of all ingredients should be used in all cases. This is an unrealistic requirement. Generator processes and chemical formulations are often confidential, proprietary information. A more general process description and chemical description as provided on the waste profile sheet should suffice in most cases. Items 5 and 6 should only be mandatory in cases where safety concerns preclude collection of samples for analytical purposes, or where other generator knowledge is insufficient to properly characterize and process the waste. The same change should be made to Ohio EPA's policy concerning use of generator knowledge in complying with OAC 3745-52-11.

Ohio EPA Response:

Ohio EPA agrees that certain items may not always be available from generators. The guidance has been changed to reflect that any combinations of the suggested documentation can be used to demonstrate a detailed knowledge of the waste. Changes were made to [section 4.4.4](#).

Ross Environmental Services Comment 13:

The requirement in Section 4.4.4 that the TSDf should require generators' records of waste analyses as a condition of pre-acceptance is also unrealistic. Such analytical data, like process flow diagrams and chemical formulations, may be considered confidential or proprietary by the generator.

Ohio EPA Response:

Analytical data may not be available from generators in every instance. The guidance has been revised to reflect that analytical may be supplied by generators. Changes were made to [section 4.4.4](#).

Ross Environmental Services Comment 14:

The last paragraph of Section 4.4.4 seems to shift the responsibility, and regulatory liability, of proper waste characterization from the generator to the TSDF. In essence, Ohio EPA suggests that TSDFs be infallible in their waste analyses. At the very least, this responsibility and accountability must be shared with the generator. Ohio EPA must also assure that generators are held appropriately liable and subject to enforcement action in cases of improper waste characterization.

Ohio EPA Response:

Ohio EPA disagrees that the guidance attempts to shift the responsibility for waste characterization from the generator to the TSDF. Generators and TSDFs have distinct requirements regarding waste analysis. Additionally, the information collected by a generator may not include all the information required for the TSDF to manage the waste. This paragraph has been removed from the guidance based on other comments received. Changes were made to [section 4.4.4](#).

Ross Environmental Services Comment 15:

Section 4.6.1 has the same requirement concerning generators' analytical data as found in Section 4.4.4. Again, this requirement is unrealistic as such analytical data, like process flow diagrams and chemical formulations, may be considered confidential or proprietary by the generator.

Ohio EPA Response:

The LDR rules require that analytical data is submitted to the TSDF, when it is available. No changes were made to the guidance as a result of this comment.

Chemtron Corporation Comment 1:

The document in the current state is placing a financial burden on the TSD's in Ohio by suggesting that the TSD's provide detailed analysis, flow charts, process diagrams, etc. for the generator. The law states the generator is responsible for their waste from the "cradle to the grave". If the TSDs must perform detailed analysis for the wastes received they will not remain competitive with our state TSDs. The additional fees that would have to be charged would discourage the generator from using an Ohio facility and cause a loss of revenues. This would cause Ohio TSDs to review their current staffing and make cuts accordingly to try to remain competitive. I would expect the Ohio EPA to increase their generator inspection or draft a guidance document for generators on the proper

procedures and methods they should use when identifying their waste. TSDs already have a waste analysis plan, including their permit.

Ohio EPA Response:

The guidance does not suggest that the TSDFs provide flow charts, process descriptions, etc. for generators; the generators should be providing this information to the TSDF to support the use of generator knowledge. The requirement of OAC Rule 3745-54-13 is that TSDFs obtain a detailed analysis of the wastes they choose to manage. The guidance clearly allows the use of information supplied by the generator to meet this requirement, but it must be detailed information. Documenting this information by the methods in section 4.4.4 of the guidance provides this detailed information. No changes were made to the guidance as a result of this comment.

Chemtron Corporation Comment 2:

The verbiage used in the draft is confusing, misleading and represents a conflicting message to the inspectors which may be harmful to TSDs and their compliance status at the time of an inspection. Words such as, “must do” should be viewed as much broader than the required items in Ohio rule 3745-54-13(B)(1) through (7)”, “Would prefer”, and “full laboratory analysis”. These statements are unclear and potentially harmful to the TSD if an inspector would interpret these words in a negative manner. The improper interpretation could be very negative and harmful to the TSD.

Ohio EPA Response:

One purpose of issuing a guidance in draft form is to receive input from stakeholders, including identification of confusing, misleading, or conflicting language. Before final issuance, guidance is reviewed and language identified as needing some editing is changed. Changes were made throughout the guidance.

Chemtron Corporation Comment 3:

This document may become an inspection tool for the inspector and their interpretation of the document would cause NOV's unnecessarily and would be harmful to the facilities compliance history, their relationships with their communities and their customers.

Ohio EPA Response:

The cover of the guidance clearly states the purpose of the guidance document. Additionally, section 1.0 of the guidance has been revised to clearly reflect that it is to be used only for the review or preparation of WAPs submitted with the Part B permit application. Changes were made to [section 1.0](#) of the guidance.

Chemtron Corporation Comment 4:

Please explain the intent of the statement found on page 5, paragraph 3, “Facilities should note that this requirement can be viewed as much broader than the required items in OAC Rule 3845-54-13(B)(1) through (7), and is the basis of much of this guidance”.

Ohio EPA Response:

This statement is included to clarify that simply addressing the items required in OAC Rule 3745-54-13(B)(1) through (7) would not be sufficient to meet the requirements of OAC Rule 3745-54-13(A)(1). Because of the confusion this statement creates, it has been removed from the guidance. Changes were made to [section 4.0](#).

Chemtron Corporation Comment 5:

Please advise or guide on how a “Finger print analysis can be done quickly, cheaply, and consistently” (page 11). The draft does not support this statement!

Ohio EPA Response:

Fingerprint analysis techniques that meet the “quick, cheap, and consistently” criteria are typically chosen for obvious reasons. However, meeting these criteria is not mandatory. This statement has been revised to reflect that fingerprint parameters are selected from the larger set of pre-acceptance parameters. Changes were made to [section 4.2.1](#).

Chemtron Corporation Comment 6:

Page 13, “Mandatory” and “Supplemental” Parameters, this guidance suggests that the TSDF do full analysis on a sample, this is an excessive expense and potentially economically not possible. This requirement would absolutely put an Ohio TSDF in a very vulnerable and unfavorable competitive position.

Ohio EPA Response:

This section is not meant to suggest that laboratory analysis is required in all cases. The information provided is an example. The language of the example has been clarified. Changes were made to [section 4.2.3](#).

Chemtron Corporation Comment 7:

Page 17, 4.3.6, is it the intent of the OEPA for the TSDFs to incorporate OSHA standards within the waste analysis plan?

Ohio EPA Response:

It is not intended that OSHA standards are incorporated into the WAP. However, safety issues related with sampling methods are an important consideration and may be described in the sampling procedures. This is especially relevant when SOPs for sampling are included in the WAP and those SOPs have safety precautions contained within them. Changes were made to [section 4.3.6](#).

Chemtron Corporation Comment 8:

Page 9 - Table - “Hazardous Waste Management Unit” this information is already provided in a section of the Hazardous waste permit application. Why should this information be repeated or any other table existing within the permit application?

Ohio EPA Response:

It is suggested that units be briefly describe in the plan such that it is very clear which units manage each waste stream, and identify unit capabilities. This information helps to identify any incompatibilities between wastes and the units or between wastes managed in the same unit. No changes were made to the guidance as a result of this comment.

Chemtron Corporation Comment 9:

Page 19 - "Operating procedures" the word preferably, does that mean that TSDf should or should not have SOPs? Could this potentially allow an inspector the discretion to become part of the public record. This can potentially harm the reputation and the compliance status of a facility. Does this guidance document allow for this type of discretion?

Ohio EPA Response:

The guidance suggests that SOPs are provided for sampling, laboratory, or other waste analysis procedures used at the facility. In many cases, providing and modifying a SOP is less burdensome than writing out procedures in the WAP. No changes were made to the guidance as a result of this comment.

Chemtron Corporation Comment 10:

Page 20 - Section 4.4.4 - The word prefer appears again. Is it required or not?

Ohio EPA Response:

It is suggested, but not necessarily required under the WAP rules. Including preferred information may facilitate the WAP review process. No changes to the guidance are necessary.

Chemtron Corporation Comment 11:

Page 20 - Section 4.4.4 - paragraph 4 - does this paragraph imply that a TSDf should analyze the waste the waste for constituents and/or characteristics that could be present? To what detail, at who's expense, and to what detection limits?

Ohio EPA Response:

TSDf's have an obligation to collect all the information necessary to manage the waste in accordance with applicable rules and their permit. If knowledge about constituents/characteristics suspected for the waste in question is necessary to meet these obligations, and this information is not provided through agreement with the generator, then the TSDf must analyze the waste or otherwise obtain this information. No changes were made to the guidance as a result of this comment.

Chemtron Corporation Comment 12:

Page 22 - paragraph 2 - "The bottom line etc." again it seems that this document puts the burden of proper waste identification on the TSDf and not the generators. This paragraph

is intimidating and gives an inspector the latitude to make decisions during their inspections that could be detrimental to a TSDf. Is this a guidance document or a tool for the agency to have TSDf's do their job of educating and monitoring the generators at the expense of the TSDf's? If this is a guidance document for the inspector when reviewing the waste analysis plan of a permit application, what is the relevancy of this statement to the document?

Ohio EPA Response:

The guidance document will be used to review WAPs submitted with part B of the permit application. This has been clarified in the guidance document. Also, the cited paragraph will be removed from the guidance. Changes were made to [section 4.4.4](#).

Environmental Enterprise Incorporated Comment 1:

The guidance document shifts the burden of waste characterization from the generator to the TSDf to properly identify the waste. Facilities should not be subject to enforcement action for making incorrect waste management decisions about a generator's waste because the generator provided incorrect or incomplete information. The generator should bear the responsibility in these cases. There have been instances of generators deliberately mis-characterizing their wastes.

Ohio EPA Response:

The guidance does not attempt to shift the responsibility of proper waste characterization from the generator to the TSDf. Generators are responsible to properly characterize their waste in accordance with OAC Rule 3745-51-11. TSDfs have an obligation to obtain a detailed chemical and physical analysis of the waste before it is managed at the facility, in accordance with OAC Rule 3745-54-13. TSDfs may choose to obtain this analysis from generators (as analytical data or documentation supporting knowledge of the waste), or they may choose to perform the analysis themselves. Waste shipment inspection procedures at the TSDf, such as fingerprinting, must be designed such that waste mis-characterized by the generator is discovered before management at the facility. No changes were made to the guidance as a result of this comment.

Environmental Enterprise Incorporated Comment 2:

The statute and regulations developed by U.S. EPA specify that it is the generator's responsibility to properly characterize their waste for disposal. Shifting the burden from the generator to the TSDf is contrary to the regulations and should not be included in a guidance document.

Ohio EPA Response:

Both U.S. EPA's and Ohio EPA's regulations require generators to properly characterize their waste. However, both U.S. EPA's and Ohio EPA's regulations also require that TSDfs obtain a detailed chemical and physical analysis of the waste before acceptance for management. The guidance does not specify that TSDfs must perform the

characterization, but they must obtain it, along with other information necessary to manage the waste. No changes were made to the guidance as a result of this guidance.

Environmental Enterprise Incorporated Comment 3:

The requirement on Page 22 that the facilities obtain copies of the generator's waste analysis records as a condition of pre-acceptance of the waste, and then maintain the records in the facility's file should be removed. All facilities require generators to submit a profile before acceptance of the waste. The profile describes the waste including the process generating the waste, the composition, and the characteristics of the waste. This should be adequate for the facility to make decisions on how to handle the waste. It is redundant to require that the facilities obtain the actual copies of the information and maintain it on file and makes it seem like the agency is requiring the facilities to act as regulators. Also, a pre-sample should not be required for all waste streams prior to acceptance. This constitutes a waste of resources without an environmental benefit.

Ohio EPA Response

As stated within the guidance, DHWM maintains that waste profile sheets contain only a summary of information compiled from referencing various sources of waste analysis related data which is available to TSDf's. Maintaining information which serves as a basis for making appropriate decisions on how to properly manage a generator's waste is fundamental to the waste analysis requirements for TSDf's.

In addressing the comment regarding waste samples prior to acceptance, the guidance does not require that a pre-sample for each waste stream be submitted to TSDf's. However, the regulations (OAC 3745-54-13(A)(1)) require TSDf's to obtain a detailed chemical and physical analysis of a representative sample. This detailed chemical and physical analysis may be provided by the generator in the form of analytical data or documented generator knowledge, or the chemical and physical analysis may be determined by the TSDf through analytical testing. DHWM's stated position on waste profile sheets and the need to maintain other referenced waste analysis data within the operating record stands. No changes associated with this concern will be proposed within the revised guidance. No changes were made to the guidance as a result of this comment.

Environmental Enterprise Incorporated Comment 4:

Complying with the QA/QC requirements in the guidance will present an economic burden on facilities and is unrealistic. The guidance requires that facilities develop a detailed QA/QC program. It will require that our facility hire one or more additional personnel just to handle the QC of the lab. The agency is requiring that the lab follow a detailed QA/QC protocol including duplicates, replicates, spikes and data validation even when just doing fingerprint analysis of waste. This is inappropriate for fingerprint characterization and represents an inappropriate burden. A high level of accuracy on analytical methods is not needed to determine consistency with the profile.

Ohio EPA Response:

Ohio EPA agrees that at times detailed QA/QC is not appropriate for all analyses. The facility should propose appropriate QA/QC in the WAP. The guidance has been revised to clarify that facilities must use QA/QC procedures appropriate for the sampling and analysis to be performed. Changes were made to [section 4.4.3](#) and [section 4.3.5](#).

Environmental Enterprise Incorporated Comment 5:

The QA/QC protocol goes into too much detail. The guidance states that if the facilities use an off site lab they should perform an audit of the lab and that the offsite lab must use the methods and QA/QC procedures specified in the facility's WAP. The offsite lab should be allowed to use any EPA approved methods or equivalent methods in the facility's WAP.

Ohio EPA Response:

Ohio EPA disagrees that the guidance requires too much detail for laboratory QA/QC. The general facility standards require that proper QA/QC procedures be followed. The guidance does not state that off-site labs must be audited. Ohio EPA will require that the methods specified in the WAP be used, regardless if the laboratory is an on-site or off-site laboratory. The guidance has been revised to allow the use of appropriate QA/QC procedures, not necessarily limited to SW-846. Other standards, such as the NELAP standards, may also be used to ensure appropriate QA/QC procedures are followed. Changes were made to [section 4.4.3](#).

Environmental Enterprise Incorporated Comment 6:

The guidance states that the quality assurance plan will be an enforceable part of the permit and will be subject to the permit modification requirements in OAC Rule 3745-50-51. There should be a way of making minor changes to the QA plan besides a permit change. For example, if the facility's QA plan specifies a particular outside lab and they change vendors does the permit have to be modified?

Ohio EPA Response:

The permit modification process of OAC Rule 3745-50-51 provides processes for making changes to the permit. The modification process to be followed is determined by how significant the change is, and allows for only notifying Ohio EPA after implementation of the change for minor class 1 modifications. No changes were made to the guidance as a result of this comment.

Environmental Enterprise Incorporated Comment 7:

The introduction to the WAP guidance states that the purpose of the guidance is to assist permit writers in review of each facility's Waste Analysis Plan. The guidance should take this into account and have guidance on the specific requirements for each type of facility.

Ohio EPA Response:

Because each facility is unique, it is not practicable to create guidance for each type of facility (i.e., container storage, fuel blending, etc.) WAPs are facility specific and should be prepared as such. Clarification that WAPs are facility specific has been provided. Changes were made to [section 4.0](#) and [section 4.2](#).

Environmental Enterprise Incorporated Comment 8:

We are concerned that some of these changes may increase the burden on a facility without resulting in improved management of the waste or other environmental benefit.

Ohio EPA Response:

The regulatory requirements for proper waste analysis have not changed. This guidance document was created to increase the uniformity of the application of waste analysis requirements. No changes were made to the guidance as a result of this comment.

Systech Environmental Corporation Comment 1:

As this document is written, it could lead a permit writer to take a very narrow interpretation of the WAP rules. Some language should be added to ensure the permit writer understands he has the ability and the responsibility to use his/her own judgement. For example, "Although the primary purpose of this guidance is to assist State of Ohio hazardous waste facility permit writers, it is not intended that the permit writer use this guidance as the only interpretation of OEPA WAP rules. It is the responsibility of the writer to use his or her own judgement in ensuring both specific facility compliance and to be protective of human health and the environment."

Ohio EPA Response:

This guidance provides permit writers assistance by specifying the information that should be found in any WAP. The guidance provides the flexibility to use judgement in determining which parts apply on a site-specific approach. However, to provide statewide consistency in applying the WAP rules, the guidance must serve as the only interpretation of the rules. Language in the guidance has been revised to clarify use of a facility specific approach. Changes were made to [section 4.0](#) and [section 4.2](#).

Systech Environmental Corporation Comment 2:

It appears the agency is creating a definition/interpretation for 3745-54-13 whereby the term "generator knowledge" is given a limited definition. This term can be interpreted much broader than what this guidance document provides.

Ohio EPA Response:

The discussion of acceptable generator knowledge in the guidance is the agency's interpretation of how generator knowledge may be used to meet the requirements of OAC Rule 3745-54-13. No changes were made to the guidance as a result of this comment.

Systech Environmental Corporation Comment 3:

References to the agency's preference for facilities using SW-846 analytical methods could lead a permit writer to require these methods. SW-846 does not, in many cases, pertain to hazardous waste samples in an organic matrix but to water samples. Also, in many cases, SW-846 methods cannot work directly on organic hazardous wastes and must be modified. "Preferring," and thereby requiring the SW-846 methods, can increase analytical costs while not providing any additional protection of the environment or safer handling of the waste received at many facilities. In many instances, a reasonable approximation of a parameter is all that is necessary and this can be performed inexpensively where an SW-846 method can be quite costly and not necessary to be protective of human health and the environment.

Ohio EPA Response:

Ohio EPA disagrees that preferring the use of standard analytical methods is equivalent to requiring use of SW-846. The guidance has been revised to clarify that many methods may be appropriate, and will not require use of SW-846 methods. Where an approximation of a parameter is appropriate, such as fingerprint analysis, methods which can provide the analysis are acceptable. Changes were made to [section 4.4.2](#) and [section 4.4.3](#).

Systech Environmental Corporation Comment 4:

There appears to be a significant difference in the viewpoint of the agency and industry in the degree this document will impact WAPs. Industry believes this guidance document will be used by permit writers as the only way to interpret the WAP rule in the future years after the initial intent of the agency is forgotten. One way to ensure the agency's intent will not be forgotten would be to add a preamble to the document. This "preamble" tool is extremely useful in rulemaking that allows subsequent readers understand the writer's intent.

Ohio EPA Response:

Ohio EPA agrees that language which clearly states the purpose and use of this document can be incorporated. The introduction has been revised to incorporate this clarifying language. Changes were made to [section 1.0](#).

Systech Environmental Corporation Comment 5:

There are several instances in the guidance document where the agency seems to be holding the TSDF accountable for the generators compliance with waste identification. Here are some instances where the document holds the TSDF responsible:

- ▶ Section 4.2.2, third paragraph, page 13; "TSDF's need to use their judgement in determining which generators are considered reliable and which are not." TSDFs do not have the authority to impose their views and interpretations on generators.

- ▶ Section 4.4.4, fifth paragraph, page 20; the TSDf must objectively review the information provided by the generator.” Although a TSDf should point out to the generator any blatant errors, the terms “must objectively review” places the burden upon the TSDf to ensure the legal correctness of the generators information.
- ▶ Section 4.4.4, last paragraph, page 22; “Ohio EPA takes the position that TSDf decisions about the hazardous nature of the waste that are made in error or are made without proper basis are subject to enforcement action.” This statement seems to say that if the TSDf operates on the basis that the generator is following the OEPA rules and the generator is wrong, the TSDf is accountable. This makes it the TSDf’s job to ensure the generator is in compliance with OEPA rules and that is clearly the responsibility of OEPA. Again, this puts the burden of the generator being in compliance on the shoulders of the TSDf.

Ohio EPA Response:

The first and third cited instances have been removed from the guidance. The second cited instance will remain to ensure that TSDFs thoroughly review the information provided by generators to determine if it contains all the information necessary for the TSDf to manage the waste. Changes were made to [section 4.2.2](#) and [section 4.4.4](#).

Systech Environmental Corporation Comment 6:

The generator knowledge and analytical tests required to be performed for waste identification of the generator’s waste streams are not tools the TSDf necessarily has at its disposal. This type of rule interpretation would require many tens of thousands of dollars to be spent on double checking the generators word through very costly analytical tests.

An example of this would be if a generator sends a D001 and F001 waste to a TSDf that utilizes the material as fuel in a cement kiln. The TSDf does not need to know if the waste is a characteristic for metal (i.e. D005) in order to safely handle the material and therefore does not perform TCLP at their facility. If a TSDf is required to ensure the generator correctly identified the waste, it must then perform TCLP at a very high cost or risk enforcement action from OEPA. This example could hold true for virtually every waste code because it is impracticable for a TSDf to know the generator’s process well enough to exclude waste codes.

Ohio EPA Response:

The guidance does not suggest that TSDFs routinely re-perform the waste analysis obtained from the generator. TSDFs must obtain a chemical and physical analysis of the waste before management. This analysis can be provided by the generator of the waste (in the form of analytical data or documentation supporting knowledge of the waste) or the TSDf can analyze the waste. When the generator provides waste analysis information of sufficient quality during pre-acceptance, then re-analyzing the waste shouldn’t be

necessary. Inspection procedures at the TSDf should identify any waste inconsistent with the profile established during pre-acceptance. No changes were made to the guidance as a result of this comment.

Ohio Chemical Council Comment 1:

In the past, it has appeared to the Ohio Chemical Council that Ohio EPA has used guidance documents as if they were enforceable rules. As a general comment, Ohio EPA should make it clear to its staff and the regulated community that (i) guidance documents are just guidance; (ii) they do not have the force of law or regulations, and (iii) they should not be referred to in conversation or correspondence as if they were law or regulation.

Ohio EPA Response:

The purpose of this guidance document is clearly stated on the front cover, as is the statement “This Policy Does Not Have the Force of Law”. Additionally training which may be provided to agency staff on the use of this guidance should address concerns in this comment. No changes were made to the guidance as a result of this comment.

Ohio Chemical Council Comment 2:

The information contained in the draft Waste Analysis Plan (WAP) guidance document seems to be focused entirely on off-site TSDf’s. However, these facilities only represent approximately 40% of the permitted TDF’s in this state. The majority of facilities are on-site TSDf’s that manage the wastes they generate in containers and/or tanks. On-site facilities have an enhanced understanding of the properties of their waste, which allows them to manage their wastes in a safer and more effective manner. For this reason, the content requirements of the WAP for an on-site TSDf should be considerably different than for an off-site TSDf. However, the draft WAP document fails to provide the necessary guidance that clearly differentiates between these two categories of TSDf’s. Ohio EPA should take into consideration the necessity to provide additional WAP guidance that differentiates between on-site and off-site TSDf’s. In doing so, each facility’s WAP will be able to provide for a more meaningful analysis of its wastes, thereby enhancing protection of human health and the environment.

Ohio EPA Response:

Ohio EPA agrees that WAPs for on-site and off-site TSDfs will be somewhat different, however they must address certain common elements which are discussed in the guidance. The guidance document provides sufficient flexibility for use with either on-site or off-site facilities. The guidance has been revised to clarify and stress flexibility available for both on- and off-site facilities using the guidance. Changes were made to [section 4.0](#) and [section 4.2](#).

Lubrizol Corporation Comment 1:

In the past, it has appeared to Lubrizol that Ohio EPA has used guidance documents as if they were enforceable rules. As a general comment, Ohio EPA should make it clear to

its staff and the regulated community that (i) guidance documents are just guidance; (ii) they do not have the force of law or regulations, and (iii) they should not be referred to in conversation or correspondence as if they were law or regulation.

Ohio EPA Response:

The purpose of this guidance document is clearly stated on the front cover, as is the statement “This Policy Does Not Have the Force of Law”. Additionally training provided to agency staff on the use of this guidance should address concerns in this comment. No changes were made to the guidance as a result of this comment.

Lubrizol Corporation Comment 2:

The information contained in the draft Waste Analysis Plan (WAP) guidance document seems to be focused entirely on off-site TSDFs. However, these facilities only represent approximately 40% of the permitted TDFs in this state. The majority of facilities are on-site TSDFs that manage the wastes they generate in containers and/or tanks. On-site facilities have an enhanced understanding of the properties of their waste, which allows them to manage their wastes in a safer and more effective manner. For this reason, the content requirements of the WAP for an on-site TSDF should be considerably different than for an off-site TSDF. However, the draft WAP document fails to provide the necessary guidance that clearly differentiates between these two categories of TSDFs. Ohio EPA should take into consideration the necessity to provide additional WAP guidance that differentiates between on-site and off-site TSDFs. In doing so, each facility’s WAP will be able to provide for a more meaningful analysis of its wastes, thereby enhancing protection of human health and the environment.

Ohio EPA Response:

Ohio EPA agrees that WAPs for on-site and off-site TSDFs will be somewhat different, however they must address certain common elements which are discussed in the guidance. The guidance document provides sufficient flexibility for use with either on-site or off-site facilities. The guidance has been revised to clarify and stress flexibility available for both on- and off-site facilities using the guidance. Changes were made to [section 4.0](#) and [section 4.2](#).

Waste Management of Ohio Comment 1:

The words “must” and “should be used in all cases” should be removed from the draft guidance document unless the requirement has a regulatory basis.

Ohio EPA Response:

The guidance will be revised to ensure consistent use of the words “must”, “shall”, and “should”. Changes were made throughout the guidance.

Waste Management of Ohio Comment 2:

What value does the Agency place on the certification provided by the generator to TSDFs that the profile information is accurate?

Ohio EPA Response:

OAC Rule 3745-54-13 requires that the TSDF obtain a detailed chemical and physical analysis of the waste they choose to manage; as expressed in the guidance, this requirement can be met by collecting information from the generator of the waste. When TSDFs choose to accept generator knowledge in lieu of testing waste themselves, Ohio EPA will primarily consider the quality of the information collected, not the presence or absence of a certification. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 3:

Does the TSDF have to prove what we do not need to know, even if the information does not matter in the proper and safe management of the wastes? This question stems from the position the Agency is taking as noted on page 22 of the draft guidance, that TSDF decisions about the hazardous nature of the waste that are made in error or are made without proper basis are subject to enforcement action. Does this relate to say for example waste codes, if the facility is permitted to manage that waste code, but the generator did not include it in its initial paperwork, but later determines it should apply to a certain waste shipment?

Why is the statement on the position of the Agency included in this guidance?

Recommended Change: Remove language.

Ohio EPA Response:

TSDFs have an obligation under OAC Rule 3745-54-13 to obtain information needed to manage waste they choose to accept. Forgotten waste codes should be discovered during the inspection procedures for incoming waste shipments at the facility. For clarification, the language on page 22 has been removed. Changes were made to [section 4.4.4](#).

Waste Management of Ohio Comment 4:

Cover Page/1.0 - Introduction. The cover and the introduction clearly state that the primary purpose of this guidance is to assist the State of Ohio hazardous waste facility permit writers in the review of WAP submitted with the Part B Permit Application. Vickery reiterates that this is a very important. There is some concern in the regulated community that a guidance document may be utilized as an enforcement tool. Since this is a guidance, it does not have the force of law and should not be utilized as an inspection tool. Once approved as part of the permitting process, the WAP should be utilized as the inspection tool.

Ohio EPA Response:

The purpose of this guidance is clearly stated on the cover and in the introduction section. WMO's concern that the guidance will be used as an enforcement tool has been addressed by revisions to the introduction to further clarify the use of this guidance as a review tool. Changes were made to [section 1.0](#).

Waste Management of Ohio Comment 5:

1.0 - Introduction. Information should be added to the first paragraph explaining WHY the waste analysis is performed. It is performed to gain knowledge needed to properly manage the waste.

Ohio EPA Response:

The introduction section of the guidance discusses the organization, content, and use of the guidance. The explanation for why waste analysis is performed is more appropriately included in section 4.0 of the guidance, under the heading "purpose of the plan". A description of the purpose of the WAP is already provided in this section. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 6:

1.0 - Introduction What is the reason for the statement "as such become an enforceable part of the permit." Are there parts of the permit that are not enforceable?

Recommend Change: Remove language.

Ohio EPA Response:

All parts of the permit are enforceable. This statement clarifies that the WAP is a part of the permit and subject to all of the associated permitting rules, such as the permit modification rules. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 7:

1.0 - Introduction The second paragraph starts with "The PRIMARY...". Is there a secondary purpose?

Recommended Change: Utilize a different word than "primary" or discuss any other purpose of the guidance.

Ohio EPA Response:

There is a secondary purpose for the WAP guidance: to assist TSDFs in preparing waste analysis plans. This secondary purpose has been added to section 1.0. Changes were made to [section 1.0](#).

Waste Management of Ohio Comment 8:

3.0 - Definitions The definition for Waste Analysis Plan is too narrow.

Recommended Change: Broaden the definition, based on OAC 3745-54-13.

Ohio EPA Response:

The definition has been broadened to more closely reflect the definition provided in federal guidance. Changes were made to [section 3.0](#).

Waste Management of Ohio Comment 9:

3.0 - Definitions Pre-acceptance is performed before the waste is accepted, but even further for Vickery, the pre-acceptance process is the process in which Vickery determines whether the waste has the potential to be accepted at the facility. Even if the waste stream passes the pre-acceptance step, every load after that is analyzed on an individual basis to assure it is acceptable at the facility.

Ohio EPA Response:

The guidance provides concepts and definitions applicable to the majority of facilities; because WAPs are facility specific, individual facilities may have unique practices and definitions different from what's presented in the guidance. These differences should be discussed in the facility's WAP and with the permit writer. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 10:

4.0 WAP Req. In the first paragraph, it states that this information is meant to be sufficient for most of the facilities in Ohio; however, there may be facilities where additional information required in the WAP is not discussed in the draft guidance. There are some facilities where less information may be acceptable, but this fact is not entertained in the guidance.

Recommended Change: Because each facility is unique, the guidance document should also state that there may be facilities where less information may be acceptable

Ohio EPA Response:

The amount of information needed will vary because each facility is unique, however the information in the guidance should be considered for all facilities. Where the information is not applicable to a facility, then it does not need to be included in the WAP. This section has been revised to reflect a flexible approach to including information in the WAP. Changes were made to [section 4.0](#).

Waste Management of Ohio Comment 11:

4.0 WAP Req. In the top paragraph on this page, the draft guidance states: "The most important consideration when organizing the WAP is that information is presented in a logical manner." The most important consideration when organizing the WAP is that the information is presented in a usable format for the facility. The facility must be able to read it and utilize it's operational plan.

The draft guidance then states: ...”the most effective communication of waste analysis information.... The Agency should not dictate how the site’s communicate.

Ohio EPA Response:

When the WAP is used as an operational manual at the facility, the plan should be organized such that it is easily utilized by the facility. However, not every facility uses the WAP in this way. Some TSDFs only prepare the WAP with purpose of providing information to the agency. When information is provided to the agency, typically the use of tables and figures adds clarity to the information and can be considered more effective. This paragraph has been revised to clarify there is no required format for the WAP, however certain formats may facilitate the WAP’s review. Changes were made to [section 4.0](#).

Waste Management of Ohio Comment 12:

4.0 WAP Req. In the second paragraph, fourth sentence, the word “potentially” should be added prior to the word “acceptable.”

Ohio EPA Response:

The language in question could not be found in this section of the guidance. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 13:

4.0 WAP Req. In the last paragraph of this section, the draft guidance appears to say that a pre-acceptance sample is required in all cases. This may not be required or necessary in all cases. The draft guidance document should more clearly state the fact that there are some instances where a pre-acceptance sample would not be required.

Recommended Change: Incorporate clarifying language.

Ohio EPA Response:

A pre-acceptance sample may not be necessary in all cases. Clarifying language has been incorporated to reflect that there are some instances where pre-acceptance samples are not required. Changes were made to [section 4.0](#).

Waste Management of Ohio Comment 14:

4.1.2 - Identification and Classification of Hazardous Wastes Managed. This section is confusing. Is the Agency requiring this information be in the WAP or part of the profile sheet? For the fourth bullet, this information will be in the operating record, not in the WAP.

Ohio EPA Response:

This section of the WAP should describe the wastes to be managed at the facility. This description should be general in nature for off-site facilities but more specific for on-site

facilities which typically manage fewer wastes with less variation. The information for the fourth bullet, chemical and physical characteristics, should be general in nature. Values for each generator will be kept in the generator's customer file. Actual values for each waste shipment will be kept in the operating record. The guidance has been revised to clarify this. Changes were made to [section 4.1.2](#).

Waste Management of Ohio Comment 15:

4.2.1 - Selection of Waste Analysis Parameters. In the first paragraph, the draft guidance states "Parameters should be chosen to quantify the characteristics vital to safe and effective waste management." Not all results are quantifiable and need not be to provide adequate information to safely manage. Some analyses are screens and are set up for a "pass" or "fail."

Recommended Change: Clarify language.

Ohio EPA Response:

Ohio EPA agrees with this comment and has incorporated language to clarify that not all parameters are quantifiable. Changes were made to [section 4.2.1](#).

Waste Management of Ohio Comment 16:

4.2.1 - Selection of Waste Analysis Parameters. Under the bullet entitled, "Process Considerations," the descriptive words "effectively and efficiently" should be removed. These considerations are out of the scope of the Ohio EPA.

Ohio EPA Response:

Ohio EPA disagrees that effective waste management is beyond it's regulatory scope. Waste characteristics which may impact the ability of a permitted waste management unit to effectively manage the waste must be considered when selecting parameters for waste analysis. For example, a facility treating in tanks to meet LDR requirements must ensure treatment is effective in meeting LDR requirements. The word efficiently, however, has been removed. Changes were made to [section 4.2.1](#).

Waste Management of Ohio Comment 17:

4.2.2 - Additional Information Regarding Selection of Fingerprint Parameters. Second paragraph - For Vickery, the specific parameters chosen for fingerprinting are generally not waste stream specific, they are specific to our acceptance conditions.

Second paragraph - The words "typical or" should be added prior to the word "atypical" in the last sentence.

Ohio EPA Response:

The guidance provides flexibility to specify inspection procedures based on acceptance

conditions. This is a facility specific issue and should be discussed in the WAP for this facility. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 18:

4.2.2 - Additional Information Regarding Selection of Fingerprint Parameters. Please see general comment #5 which pertains to the third paragraph of this section.

Ohio EPA Response:

See response to WMO comment #5. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 19:

4.3 - Sampling Procedures. The laboratories standard operating procedures for sampling should not be required to be included in the WAP. This is not required by OAC 3745-54-13 and should not be required by the guidance.

Recommended Change: Remove requirements in draft guidance for the laboratory to include it's SOPs in the WAP.

Ohio EPA Response:

Sampling procedures are required to be included in the WAP in accordance with OAC Rule 3745-54-13(B)(3). Also, when fingerprint analysis involves sampling, these procedures must be included in accordance with OAC Rule 3745-54-13. When standard sampling methods are used (e.g. ASTM, SW-846) they may be referenced. Where methods are not exactly as provided in the reference, the WAP must include detailed standard procedures for collecting samples. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 20:

4.4.2 - Testing and Analytical Methods. Deviations from standard methods should be documented in the facility's operating record, but not be required to be incorporated in the WAP.

Recommended Change: Remove requirements in draft guidance for the laboratory to include it's SOPs in the WAP.

Ohio EPA Response:

Deviation from methods in the WAP can be noted in the facility operating record, not the WAP. Laboratory SOPs must appear in the WAP or be incorporated by reference. Changes were made to [section 4.4.2](#).

Waste Management of Ohio Comment 21:

4.4.3 - Laboratory QA/QC. Vickery is not aware of the regulatory basis for requiring that

the facility's QA/QC procedures be included in the WAP.

Recommended Change: Remove requirements in draft guidance for the laboratory to include it's SOPs in the WAP.

Ohio EPA Response:

The general facilities standards and permit terms and conditions require that TSDFs employ appropriate QA/QC procedures for their waste analysis. Because the WAP rules incorporate all the information necessary to comply with applicable rules and the permit, QA/QC information for analytical data collected to meet the requirements of OAC Rule 3745-54-13 is appropriate to include in the WAP. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 22:

4.4.3 - Laboratory QA/QC. Second bullet - "equipment and instrumentation:" The list of equipment and method capabilities should not be required to be in the WAP. There is no regulatory basis for this requirement. Laboratory instrumentation changes periodically and this should not require a permit modification.

Recommended Change: Remove this language.

Ohio EPA Response:

Providing a list of equipment within a laboratory is a common component of laboratory QA/QC plans. Both SW-846 and the NELAC standards contain sections on laboratory facilities. Because this is a common component of appropriate laboratory QA/QC, it should be included in the laboratory's QA/QC plan. The guidance will be revised to reflect that appropriate laboratory QA/QC procedures, not necessarily those of SW-846, must be provided. Changes were made to [section 4.4.3](#).

Waste Management of Ohio Comment 23:

4.4.4 - Use of Acceptable Generator Knowledge in TSDF Waste Analysis. In the fifth paragraph, the draft guidance states that the TSDF should explain how it will ensure the generator's information is valid. The TSDF confirms the generator's information to the extent required by OAC 3745-54-13, by fingerprinting. We are not the police of the generator. As discussed in detail under general comment #5, Vickery relies upon the process of information gathering established in it's approved WAP and the generator's certification.

Recommended Change: Remove this language.

Ohio EPA Response:

Fingerprint sampling and collection of documented generator knowledge are two ways to ensure the generator's information is valid. Including a discussion of this in the WAP may

be sufficient to meet the intent of section 4.4.4. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 24:

4.4.4 - Types and Sources of Information. Items 5 and 6 state “should be used in all cases.” Since this is a guidance document, there should not be any statements such as “must” or “should be used in all cases.”

Recommended Change: Remove the following text from all sections of the draft guidance: “must” and “should be used in all cases.”

Ohio EPA Response:

There are many parts of the guidance document where the words “must” or “shall” are used appropriately (i.e. in reference to rule citations), therefore they will not all be removed as suggested in this comment. However, the guidance has been revised to ensure consistent use of these terms. Changes were made throughout the guidance.

Waste Management of Ohio Comment 25:

4.4.4 - Types and Sources of Information. The second paragraph places added burden on the TSDf by stating that the TSDf should make it a condition of pre-acceptance that when a generator performs laboratory analysis or uses knowledge of the waste to comply with OAC Chapter 3745-59, the analysis or documentation of generator knowledge should be supplied to the TSDf. We are not the regulators of the generators. We must make sure we have adequate information IAW OAC 3745-54-13 to properly and safely manage the generator’s waste.

OAC 3745-59-07(A) and (B) are generator requirements for waste analysis and record keeping. The regulation for the TSDf is OAC 3745-59-07(C). The TSDf shall have copies of the notice and certifications specified in paragraph(A) and (B).

The Ohio EPA is taking liberty in applying generator requirements to the TSDf. Again, it is making the TSDf the regulating body of the generator. This is not the intent of the rules.

Recommended Change: Review the draft guidance and remove the text referring to the statement that the TSDf should make submitting of analysis under OAC 3745-59 a requirement of pre-acceptance.

Ohio EPA Response:

The suggestion in the guidance that TSDFs should collect this information from generators simply advises TSDFs that generators are required to supply this information when it is available. If the TSDf does not require this information from the generator but chooses to accept the waste, then it must collect the information by sampling and laboratory

analysis. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 26:

4.4.4 - Types and Sources of Information. Vickery does not concur with the draft guidance's "bottom line." The bottom line is before an owner or operator treats, stores, or disposes of any hazardous waste, the facility should assure that it has gathered all the information which must be known to treat, store or dispose of the waste IAW OAC 3745-54 to 57 and 3745-59 and with the terms and conditions of it's operating permit.

Recommended Change: The last paragraph should be revised as noted above.

Ohio EPA Response:

This paragraph has been removed from the guidance. Changes were made to [section 4.4.4](#).

Waste Management of Ohio Comment 27:

4.6.1 - Procedures for Off-Site Facilities. As in Section 4.4.4, the second paragraph places added burden on the TSDf by stating that the TSDf should make it a condition of pre-acceptance that when a generator performs laboratory analysis or uses knowledge of the waste to comply with OAC Chapter 3745-59, the analysis or documentation of generator knowledge should be supplied to the TSDf. We are not the regulators of the generators. We must make sure we have adequate information IAW OAC 3745-54-13 to properly and safely manage the generator's waste.

OAC 3745-59-07(A) and (B) are generator requirements for waste analysis and record keeping. The regulation for the TSDf is OAC 3745-59-07(C). The TSDf shall have copies of the notice and certifications specified in paragraph(A) and (B).

The Ohio EPA is taking liberty in applying generator requirements to the TSDf. Again, it is making the TSDf the regulating body of the generator. This is not the intent of the rules.

Recommended Change: Review the draft guidance and remove the text referring to the statement that the TSDf should make submitol of analysis under OAC 3745-59 a requirement of pre-acceptance.

Ohio EPA Response:

See response to WMO comment #25. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 28:

4.6.1 - Procedures for Off-Site Facilities. The next to last paragraph states "Where a waste profile sheet is used, an example copy must be provided in the waste analysis plan."

Vickery does not agree with this statement for the following reasons:

- ❑ The word “must” should not be used in a draft guidance, unless it is based on a regulatory requirement.
- ❑ Vickery did in the past have a copy of it’s waste profile sheet in it’s WAP. Our waste profile sheet is actually several pages long, not just one “sheet” of paper. See Attachment 4 for a copy of Vickery’s Waste Profile Sheet.

Under the permit modification process, the forms were removed from the WAP and detailed text describing the form was left in and enhanced where necessary. This was done because Vickery was informed that we could not make changes to that form without a permit modification. This is burdensome and does not allow for continuous improvement of the process. If Vickery decided to move the information in a more logical format, add additional questions related to other rules such as new rules promulgated under OSHA, DOT or SARA for example, this could not be done without a permit modification. As long as the required information is there, it should be acceptable to add information or revise the format. Vickery strongly objects to requiring “example forms” because there is basically no such thing as an “example” under the permitting rules.

Ohio EPA Response:

When waste profile sheets are used to collect information from generators, the TSDF may either provide a blank waste profile sheet in the WAP showing all the information collected, or may list in the WAP all the information collected. When a blank waste profile sheet is included in the WAP, all changes (format and content) will be considered permit modifications. When the information is listed in the WAP, only changes to the content will be permit modifications. Completed waste profile sheets for each waste managed from each generator must be kept in the facility’s operating record. This has been clarified in the guidance. Changes were made to [section 4.6.1](#).

Waste Management of Ohio Comment 29:

4.6.2 - Procedures for Ignitable, Reactive, and Incompatible Wastes. Vickery is not aware of the regulatory basis for requiring that the facility’s QA/QC procedures be included in the WAP.

Recommended Change: Remove requirements in draft guidance for the laboratory to include it’s SOPs in the WAP.

Ohio EPA Response:

See response to WMO comment number 21. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 30:

Each of the questions should be numbered for easier reference.

Ohio EPA Response:

Final formatting of the checklist will be performed separate from revisions to the WAP guidance. Numbering of the questions will be considered at that time. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 31:

C-2a - Parameters and Rationale. The request for “rational” is included twice in this section. (Q#1 and Q#5)

Ohio EPA Response:

The duplicative requirements have been removed from the checklist. Changes were made to [item C-2a](#).

Waste Management of Ohio Comment 32:

C-2a - Parameters and Rationale. Q#2 - The generator determines whether the waste is hazardous under the profile review process and also at the time of shipment. It is not the responsibility to test the waste upon receipt to determine if it is hazardous or not, we must test the waste in accordance with OAC 3745-54-13. In the universe of waste codes, there are many tests for determining if a waste is hazardous and there are many waste codes for which testing does not exist and generator knowledge must be used.

At Vickery, the basis for testing to determine if it is flammable is not to determine if the waste is hazardous, it is to assure we do not accept wastes that are flammable, because our permit does not allow us to accept and manage flammable wastes. We test for pH to determine if the waste matches the profile, and to determine what additional tests are necessary (ex. cyanide or sulfide), not to determine if it is hazardous or not. If we do determine, based on this analysis, that a waste has been classified as non-hazardous, and based on our fingerprint, we find that it should carry waste code D002, we take the applicable action under OAC 3745-54-72 and OAC 3745-54-76.

Recommended Change: Replace these questions with questions applicable to the fingerprinting performed to determine if the waste is acceptable at the facility and if the waste received matches the profile.

Ohio EPA Response:

The parameters and rationale specified in the WAP apply to all sampling to be performed, not only fingerprinting. If a TSDF is not sampling to determine if a waste meets the definition of a hazardous waste, then this question does not apply and would be marked “NA” . No changes to the checklist were made as a result of this comment.

Waste Management of Ohio Comment 33:

C-2a - Parameters and Rationale. Q#9 - Again, the question implies that the facility is to determine what waste codes apply to the shipment. See response to Q#2.

Ohio EPA Response:

See response to WMO comment #32. No changes to the checklist were made as a result of this comment.

Waste Management of Ohio Comment 34:

C-2b - Test Methods. Q#3 - OAC 3745-54-13(B)(2) requires that the WAP include the test methods which will be utilized. It should be sufficient that the references to the methods be included along with references to site specific test methods. The facility's Standard Operating Procedures should not have to be included in the WAP. It has long been understood that SW-846 and other referenced methods are guidance and not regulation. Recommended Change: Remove requirements in draft guidance for the laboratory to include it's SOPs in the WAP.

Ohio EPA Response:

Ohio EPA agrees that it is sufficient to provide references to standard methods when they are used. When the standard methods are not used, or are modified in some way, then a detailed description of the method, usually provided as an standard operating procedure, must be provided. No changes to the checklist were made as a result of this comment.

Waste Management of Ohio Comment 35:

C-2b - Test Methods. Q#4 - OAC 3745-54-13(B)(2) does not require that the offsite laboratory utilized be listed in the WAP. This requirement is not based on a regulatory requirement.

Recommended Change: This question should be removed from the checklist.

Ohio EPA Response:

This question has been revised to reflect that the WAP should specify if the laboratory is an on-site or off-site laboratory. Changes were made to [item C-2b](#).

Waste Management of Ohio Comment 36:

C-2b - Test Methods. Q#6 - OAC 3745-54-13 does not require that the facility's QA/QC plan be included in the WAP. This is requirement is not based on regulations and is excessive.

Recommended Change: These questions should be removed from the checklist.

Ohio EPA Response:

The general facilities standards and permit terms and conditions require that TSDFs employ appropriate QA/QC procedures for their waste analysis. Because the WAP rules

incorporate all the information necessary to comply with applicable rules and the permit, QA/QC information for analytical data collected to meet the requirements of OAC Rule 3745-54-13 is appropriate to include in the WAP. The checklist question has been revised to reflect that the QA/QC plan can be incorporated by reference, and that guidance other than SW-846 may be used to prepare the plan. Changes were made to checklist [item C-2b](#).

Waste Management of Ohio Comment 37:

C-2f - Add't Requirements for IRI Wastes. Q#3 - OAC 3745-54-13 does not require that the laboratory SOPs be included in the WAP.

Recommended Change: The question should be changed to: "Are procedures in place to identify ignitable, reactive, or incompatible wastes?"

Ohio EPA Response:

OAC Rule 3745-54-13(B)(6) states "... the methods which will be used to meet the additional waste analysis requirements ...as specified in rules 3745-54-17...". OAC Rule 3745-54-17(A) states "The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste." OAC Rule 3745-54-17 states "...the owner or operator of a facility that treats, stores, or disposes of ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reaction which...". The methods must be provided, not only a statement that methods are in place. No changes were made to the guidance as a result of this comment.

Waste Management of Ohio Comment 38:

It is not necessary to include the regulations in the draft guidance.

Ohio EPA Response:

It is not necessary to remove the regulations from the guidance. Additionally, providing regulations as an appendix serves as an convenient reference. No changes were made to the guidance as a result of this comment.

END OF COMMENTS

“THIS POLICY DOES NOT HAVE THE FORCE OF LAW”

Waste Analysis Plan Guidance

A guide for preparing and reviewing waste analysis plans submitted with Part B of the Ohio Hazardous Waste Facility Installation and Operation permit application

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Section 1.0 Introduction

Waste analysis involves identifying or verifying the chemical and physical properties of waste, either by testing or, in certain situations, by applying knowledge of the waste. Waste Analysis Plans (WAPs) are written plans which document the procedures used to perform analysis of waste generated, treated, stored, or disposed at hazardous waste management facilities. WAPs are submitted as a requirement of Part B of the Ohio Hazardous Waste Facility Installation and Operation Permit application, and as such become an enforceable part of the permit. A WAP is required of every permitted Treatment, Storage, or Disposal Facility (TSDF) in the State of Ohio.

The primary purpose of this guidance is to assist State of Ohio hazardous waste facility permit writers in the review of WAPs submitted with Part B of the permit application. It may also be used by the regulated community in the preparation of WAPs.

This guidance has two parts: a narrative portion and a checklist. The narrative portion of this guidance describes the level of detail expected and provides technical support for key elements of WAPs. It provides the Ohio Administrative Code (OAC) regulatory citation, and specific requirements permit writers should look for when reviewing WAPs. The checklist should also be used in the actual review of WAPs. Using the checklist, the permit reviewer will be able to determine if the plan is complete and technically adequate. Included here as Appendix I, this checklist may also be found in the review tool for Part B applications.

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Section 2.0 Applicability

This guidance is applicable to all facilities subject to the permitting requirements of OAC Chapter 3745-50. The specific requirement for submittal of a waste analysis plan is detailed in OAC Rule 3745-50-44 (A)(3), "Contents of the Part B Permit Application".

Facilities accumulating hazardous waste under OAC Rule 3745-52-34 that also treat hazardous wastes in tanks or containers to meet applicable treatment standards under OAC Rule 3745-59-40 to OAC Rule 3745-59-44 are required to develop and maintain a written WAP in accordance with OAC Rule 3745-59-07(A)(4). While not specifically focused on this portion of the regulated community, certain parts of this guidance may apply to facilities preparing these plans.

Additionally, non-permitted facilities that do not conduct treatment of hazardous waste in tanks or containers may opt to use this guidance to develop a WAP. WAPs, though not required of these facilities, offer many advantages, including promotion of waste management consistency, demonstration of compliance, and reduction of potential liabilities associated with mis-characterization of wastes.

Section 3.0 Definitions and Acronyms

1. Acronyms

SW-846	<i>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.</i> SW-846, EPA SW-846.3.3 (most recent revision)
DQO	Data Quality Objective
IRI	Ignitable, Reactive, or Incompatible
QA/QC	Quality Assurance / Quality Control
OSHA	Occupational Safety and Health Act / Administration
LDR	Land Disposal Restriction
TSDf	Treatment, Storage, or Disposal Facility

2. Fingerprint Analysis - abbreviated waste analysis conducted for waste parameters which may verify that a waste received from an off-site source matches the expected characteristics for that waste.
3. Off-site Facility - a facility that receives and manages hazardous waste from another facility that is not geographically on site.
4. On-site Facility - a facility that manages only those hazardous wastes which are generated on its geographically contiguous property.
5. Waste Analysis Plan - a written plan which documents the procedures used to perform waste analysis requirements.
6. Waste Profile Sheet - a written form completed by the generator as a waste pre-acceptance condition with the TSDf. The waste profile sheet contains detailed information on the physical and chemical characteristics of the waste.
7. Boundary Conditions - the expected high and low values of a characteristic based on historical average analysis.
8. Tolerance Limits - the high and low values of a characteristic between which a waste management unit can manage waste and still meet permit, process, or regulatory criteria.

9. Representative Sample - a sample of a universe or whole (e.g. waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole.

10. Pre-acceptance - the information collection process where a complete physical and chemical analysis (sufficient to treat, store, or dispose of the waste) of a representative sample of waste is obtained before the waste is accepted for management. The purpose is to determine if a waste can be accepted for management by the facility within permit, process, or regulatory constraints.

Section 4.0 Waste Analysis Plan Requirements

The following is a discussion of information to be included in waste analysis plans submitted with the Part B permit application. It is important to note that WAPs are facility specific, and as such, there is flexibility in the content and level of detail required.

The information presented in the guidance is meant to be sufficient for most of the facilities in Ohio; however, there may be facilities where additional information requirements are not addressed. Also, there may be situations where not all of the guidance is applicable. All WAPs must be carefully prepared and reviewed to determine facility-specific waste analysis requirements are met.

Purpose of the Plan

The purpose of a WAP is to describe how a TSDF will collect the information necessary to manage waste. The WAP documents the procedures used to obtain information on the chemical and physical properties needed to effectively treat, store, or dispose of the waste in accordance with permit, process, or regulatory considerations. For example, storage facilities must know waste properties to ensure proper storage container selection. Treatment facilities will have information needs to ensure safe and effective waste treatment. All forms of waste management at a TSDF require accurate waste analysis.

Content and Organization of the Plan

Required content of the WAP can be found in OAC Rule 3745-54-13 "General Waste Analysis". Paragraph (A) requires that TSDFs obtain a detailed chemical and physical analysis of a representative sample of a waste, before managing the waste, which includes all the information necessary to comply with OAC Chapters 3745-54 to 57 and 59, and with permit terms and conditions. Paragraph (B) of this rule requires a written plan that *"describes the procedures to be implemented in order to comply with paragraph (A) of this rule"*. Paragraph (B) also specifies certain other minimum requirements for the plan.

Ohio EPA believes that there are six major elements of an effective WAP. These six elements are the facility description, waste analysis parameters, sampling procedures, testing and analytical methods, re-evaluation frequencies, and special procedural requirements. Each of these elements are described in detail throughout this guidance.

There is no required format for the WAP. An important consideration when organizing the WAP is that information is presented in a logical fashion. While narrative is necessary to describe waste analysis procedures at the facility, the most effective

means of communicating this information to Ohio EPA is through the use of tables and flow charts to summarize and highlight key information. Where it is believed that a table and/or flowchart would aid in clarifying the information presented, that is noted in this text, and an example is provided

For off-site facilities, waste analysis can generally be seen as a three phase process: pre-acceptance, acceptance, and post-acceptance/management. Pre-acceptance is the collection of waste information before it is accepted by the facility. Typically, this happens prior to waste ever being shipped to the TSDF, and may include such activities as completing the waste profile sheet, collection of a representative sample to generate laboratory analytical data, and compiling documentation of generator knowledge, or some combination thereof. The purpose of this phase is to determine if the waste is acceptable by the facility based on comparison of the waste characteristics to permit, process, and regulatory constraints. The acceptance phase of waste analysis includes making the determination that wastes arriving at the facility are the same as those characterized during pre-acceptance. Typically this is done through fingerprint sampling, as described later in this document. The post-acceptance/management phase should include any necessary waste analysis that occurs after wastes have been accepted into the facility. This phase may include such items as testing treatment residues to determine if land disposal restriction (LDR) treatment standards have been met. Off-site TSDFs may find it helpful to organize the WAP into the phases of waste analysis as described above. Each phase could be described in terms of the waste analysis parameters, sampling procedures, testing and analytical methods, etc., as those elements are described in this document. Such an organization may clearly describe the waste analysis occurring during each phase at the facility.

4.1 Facility Description

The facility description portion of the WAP describes the wastes managed, the waste generating processes, and the hazardous waste management units. This section of the WAP should answer the questions: What are the wastes to be managed in each unit at the facility? What are the characteristics of that waste? What are the characteristic of the unit that control the ability to safely store or manage the waste? The information in this section is used throughout the remainder of the WAP to select and evaluate waste analysis parameters, sampling and analytical methods, and re-evaluation frequencies.

The requirements for a description of the facility, waste management units, and wastes to be managed are not explicitly stated in the waste analysis regulations, however, this information is considered vital to ensuring the remainder of the WAP is technically adequate. Where this information is provided for in another section of the Part B

application this information need not be duplicated in the WAP; however, it should be referenced and relevant points summarized to justify waste analysis decisions. This summarization may take the form of a list or a table, and should contain the information upon which the remaining waste analysis decisions were made. Consider for example a large facility with multiple waste streams and hazardous waste management units. The facility description must be of sufficient detail and clarity to discern which waste streams are managed in which units. Based on that information, the facility can select relevant acceptance and rejection criteria for each parameter of each waste stream.

4.1.1 Description of Waste Generating Processes and Activities

Knowledge of the waste generating process is essential to waste analysis. This knowledge is used to help develop and evaluate the list of parameters specified in the WAP. It may also help to determine waste re-evaluation frequencies. For on-site generated waste the information is easy to collect and document. All on-site process and activities which generate hazardous waste to be managed in permitted units should be described in the WAP. Additional waste streams generated on-site but treated, stored, or disposed off-site could optionally be included in the WAP.

For waste generated off-site, waste generating process information can be collected as part of the pre-acceptance process. These off-site waste generating processes should be briefly described, and procedures should be in place for the facility to obtain updated waste generating process information for wastes to be managed on-site (*collection and documentation of this information is vital where TSDFs rely in part or in whole on generator knowledge. Refer to section 4.4.4 for proper documentation where generator knowledge is used and section 4.5 regarding waste analysis re-evaluation*). Detailed descriptions of each generator's process should be included in the generator's customer file at the facility. These descriptions should include generating process information to the degree that it is relevant to waste analysis. For example, use of degreasing solvents for parts washing could be a generating process description. However, enough detail about the process should be provided to evaluate the potential of additional constituents to be present in the waste, for example metals. This information will of course affect the selection of parameters.

4.1.2 Identification and Classification of Hazardous Wastes Managed

A detailed description of the wastes managed should be provided. For on-site facilities, very specific descriptions of the waste managed can be provided because these

facilities will manage waste with little variation. For off-site facilities which accept waste from numerous generators, where appropriate waste stream types can be described instead of individual waste streams. The descriptions of waste stream types should account for the variation in waste between generators. For example, an on-site storage facility may generate paint waste containing only cadmium pigments, and may describe that waste with the D006 waste code. An off-site facility may be permitted to accept paint waste containing cadmium or chromium pigments from several generators, and may describe that waste stream type as D006 and D007 even though an individual generator's waste would likely only carry one of the codes. Detailed descriptions of each waste stream must be included in each generator's customer file. This description of the wastes will give valuable information on what parameters to select, sampling methods, and selection of sampling equipment. The waste description should include, at a minimum, the following:

- identity of the waste** this is the common name of the waste as it is called at the facility. It may be a brief description (*e.g., parts washer solvent*) a waste profile number (*e.g., Q99-0612*) or the chemical name or abbreviation (*e.g., trichloroethylene (TCE)*). The name must be unique for each waste stream or waste stream type at the facility.
- the waste generating process** this would be the name of the process (*as described in the above section 4.1.1*) generating the waste stream
- rationale for designating the waste hazardous** is the waste listed or does it exhibit a characteristic?
- chemical and physical characteristics** this should include information necessary to sample, treat, store, or dispose of the waste. It also should indicate the source of the information for (*i.e. generator supplied knowledge or laboratory analysis*)
- appropriate OEPA hazardous waste classifications** such as OEPA hazardous waste codes and LDR treatment standards

4.1.3 Description of Hazardous Waste Management Units

The description of the hazardous waste management units (HWMUs) aids in the selection of parameters by identifying any possible waste-unit incompatibilities, and permit, regulatory, or process constraints of the unit. An example is storage of strong corrosives in steel tanks. The HWMU description would tell us that the tanks are constructed of steel

and therefore we would add corrosivity as a characteristic of concern in the WAP for wastes managed in that HWMU. A brief description of all hazardous waste management units at the facility should be provided to justify or identify unit limitations. This description may be provided in other sections of the Part B application and referenced and summarized in the WAP. The description should include the following information regarding the units:

- a physical description of the units;
- a list of wastes managed in each unit;
- waste management methods in the units (*such as mixing, etc.*);
- permit, regulatory, or process constraints of the unit (*permitted waste codes, etc.*);
- and any additional limitations to be considered when conducting waste analysis.

An efficient way to communicate these limitations is through use of a table, such as the example below:

	Hazardous Waste Management Unit			
Characteristic	Tanks 01 - 09	Tanks 10 - 99	Container Storage	Waste Pile
Corrosive	pH > 3	No limitations	Bay 1 only	No corrosives
Flammable	No limitations	No limitations	Bay 3 only	No flammables
Reactive	No Reactives	No Reactives	Bay 2 only	No reactives
Toxic	No limitations	No limitations	Bay 4 only	No toxics
Waste Codes	F002, F003 only	D008, D010 only	all listed on part A application	D008 only
Capacity	<10,000 gal at any one time	<25,000 gal at any one time	195 55-gal drums at any one time	100 cu. yds.
Other	S.G. < 1.3	S.G. <1.3	No limitations	no liquids

For additional clarity, the entire facility description information contained in Section 4.1 may be summarized in a table, such as in the example below:

Waste Identity	Waste Code	HWMU ¹	Generating Process ²	Rationale	Chemical /Physical Characteristics
Drycleaning solvent (PERC) Q99-022374	F002 F003	Tanks 01-09	off-site drycleaning equipment clean-out	Toxic	1. Miscible with alcohol, oils 2. Liquid 3. Colorless 4. No flash point
Lead Water Q99-070274	D008	Tanks 10-99	off-site lead abatement	Toxic	1. Liquid 2. 1<s.g.<1.2 3. Colorless to turbid 4. No flash point 5. 6<pH<8 6. Typ. 100 - 200 ppm

1 HWMU limitations are provided in Table 4.1.3

2 Generating process descriptions are provided in Section 4.1.1

4.2 Waste Analysis Parameters OAC Rule 3745-54-13(B)(1)

The waste analysis parameters portion of the WAP specifies the parameters used to represent physical and chemical characteristics of the waste to be managed. Facilities must specify waste parameters which ensure compliance with regulatory requirements (e.g. LDR), permit conditions (e.g. permitted waste codes), and safe and effective waste management operations (e.g. incompatible wastes).

The parameters section must include information on the rationale (how the parameters ensure compliance with OAC Rule 3745-54-13(A)(1)) for parameter selection, and should include acceptance and rejection criteria for each parameter.

Parameters for all phases of waste management for each waste stream may be discussed in this section. For example, treatment and disposal facilities which must test waste for compliance with LDR regulations may specify those parameters in this section. The permit reviewer must ensure that the applicant lists the rationale for each parameter of each waste stream during all phases of management (pre-acceptance, acceptance, and post-acceptance/management) if applicable.

4.2.1 Selection of Waste Analysis Parameters

Facilities should consider several data needs when selecting parameters to define waste which is capable of being managed at the facility. Selection of these parameters is facility specific. Facilities must propose which parameters they will use, and provide the rationale for selection of those parameters in the WAP. The permit writer must review the proposed parameters to determine their sufficiency in meeting the intent of OAC Rule 3745-54-13(A)(1). Generally, TSDFs will need information regarding the following :

- waste identification** - all generators must evaluate (*through testing or knowledge*) waste for parameters which establish the waste identification under OAC Chapter 3745-51. When a TSDF generates and manages waste on-site, parameters relating to waste identification may be included in the WAP.
- identification of incompatible, reactive, or ignitable (IRI) waste** - as discussed in section 4.6.2, OAC Rules 3745-54-13 and 3745-54-17 require that IRI wastes are identified and methods to make that determination must be presented in the WAP. Facilities may include parameters to meet these requirements.
- permit or regulatory considerations** - permit or regulatory acceptance limits, such as PCB content of incoming waste streams, may warrant additional parameters which must be monitored. These parameters should be selected based on permit conditions or regulatory restrictions.
- Land Disposal Restrictions (LDR)** - under OAC Chapter 3745-59 generators and TSDFs have various responsibilities for characterizing restricted waste. This includes treatment facilities which must test treatment residues to demonstrate that LDR standards have been achieved. A TSDF combining wastes in tank storage will need to obtain information regarding concentrations of hazardous constituents to avoiding dilution as a form of treatment, as specified in OAC Rule 3745-59-03. As a result of compliance with LDR Rules, several parameters may be specified to meet these requirements.
- Special Parameter Selection Requirements** - these may include special waste analysis required by regulations for specific hazardous waste management units, including incinerators, landfills, surface impoundments, and miscellaneous units.
- Process considerations** - the facility description should specify the range of waste characteristics a process can accept and still operate safely, effectively, and in

accordance with applicable regulations. These limits are called Tolerance Limits, and may or may not exist for various waste characteristics. These tolerance limits are then used to select parameters which can monitor the characteristics with tolerance limits. For example, a waste oil stream may have to be of such viscosity that it can be pumped through process lines. A tolerance limit for that waste stream would then be set at the required range of viscosities. Additionally, special considerations should be given to pre-process, in-process, or post-process changes in the waste which may require that additional parameters be specified at intermediate points of treatment processes.

- ❑ **Fingerprinting** - fingerprint sampling is used to determine if a waste is inconsistent with the data collected during pre-acceptance. Fingerprint parameters are selected from the larger set of pre-acceptance parameters. Generally, the rationale presented for selection of fingerprint parameters will be to determine if the waste arriving on-site is the same as the waste agreed to during pre-acceptance. However, some facilities may elect to perform additional analysis, such as PCB screening, on each shipment although the waste characterization data (*pre-acceptance data*) indicates PCBs are not present.

At a minimum, facilities should consider these above criteria when selecting parameters. Not all of the above criteria may apply to any individual facility; likewise, there may be other facility specific considerations that are not addressed above. The parameters which have been selected must be listed in the WAP for each waste stream (or waste stream type), along with the rationale for each parameter. The rationale must describe why the parameter was chosen and how it will ensure waste management is within permit, process, and regulatory limits or otherwise meets the intent of OAC Rule 3745-54-13(A).

4.2.2 Additional Information Regarding Selection of Fingerprint Parameters

Selection of fingerprint parameters should focus on a specific subset of the pre-acceptance parameters. Boundary conditions, or expected range of a characteristic, for fingerprint parameters should be established and included in the WAP. These are established through knowledge of the average characteristics of the waste stream. When boundary conditions are exceeded, that is an indication to the TSDf that the waste is atypical, and a more detailed analysis or shipment rejection may be warranted.

Specific parameters chosen for fingerprinting are waste stream specific, and should be based upon the fingerprint parameter selection criteria described in section 4.2.1. In general, several parameters should be chosen, both quantitative and qualitative. Usually

they are taken from the larger set of pre-acceptance parameters, so that fingerprint results can be compared to the expected characteristic ranges indicated in the pre-acceptance characterization. The focus should be on fingerprint parameters which can give reliable indications that an incoming shipment is or is not the waste expected.

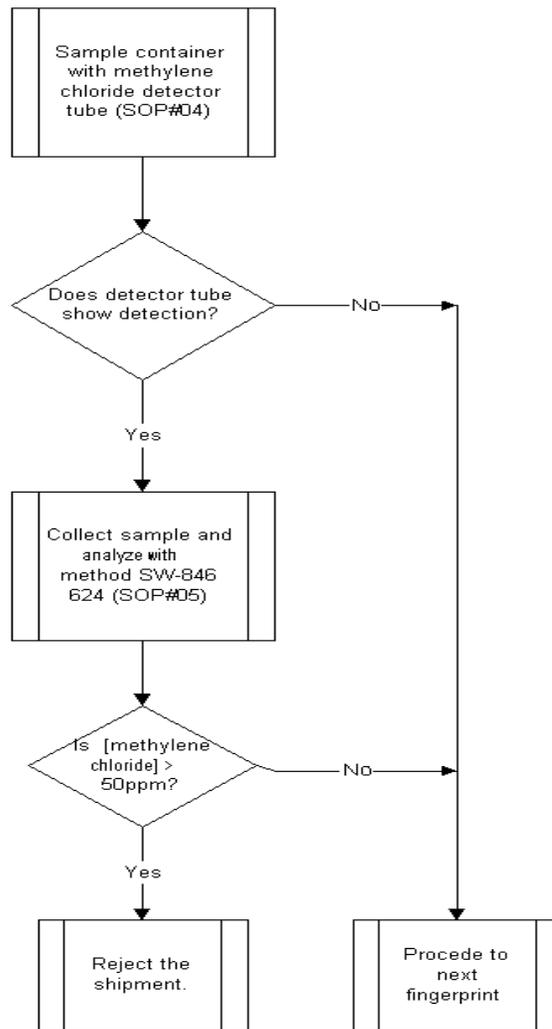
The number of fingerprint parameters specified in the WAP can be considered a function of the quality of the pre-acceptance data acquired. When the TSDf collects analytical data or thoroughly documented generator knowledge for a waste stream, a less rigorous fingerprinting program may be acceptable. The level of information obtained within certain fingerprinting programs may resemble a complete laboratory analysis in situations involving a generator with a history of mis-characterizing their waste.

4.2.3 “Mandatory” and “Supplemental” Parameters

In some instances, TSDFs have listed “mandatory” and “supplemental” parameters for their waste streams in the WAP. This may be especially useful when the mandatory analysis is used as a screen to determine the need for more accurate supplemental analysis. An example of this is the use of detector tubes to screen incoming waste shipments for methylene chloride. If the detector-tubes indicates the presence of methylene chloride above a pre-determined action level, then the supplemental analysis is performed, consisting of a traditional analytical laboratory technique. The use of these “mandatory” and “supplemental” analysis can save time and money when compared to straight laboratory analysis.

Where a facility elects to specify “Mandatory” and “Supplemental” analyses, the specific circumstances when each analysis will be performed must be included in the WAP in an “If X then Y” format. Using the above detector tube example, the WAP could state *“Wastes containing methylene chloride greater than 50 ppm cannot be accepted at this facility, therefore, all incoming waste streams will be screened using a detector tube capable of detecting methylene chloride in concentrations from 5 to 100 ppm. If the detector tube indicates a methylene chloride concentration above the action level of 25 ppm, then a full laboratory analysis of the sample using SW-846 method 624 will be performed. If the detector -tube does not exceed the action level of 25 ppm, then no further methylene chloride analysis is necessary”*. Note how the rationale, action level, and the next steps in the process are clearly stated. Also, note that the action level must be below the tolerance limit for that characteristic / parameter, and be conservative enough to account for sampling and instrument error. For additional clarity, it is suggested that the decision logic be presented in a flow chart format, such as the example in Figure 4.1.

Figure 4.1. Example Flowchart Showing Mandatory and Supplemental Analysis.



4.3 Sampling Procedures OAC Rule 3745-54-13(B)(3)

When sampling and laboratory analysis is used to determine the physical and chemical characteristics of a waste, the methods to obtain a representative sample must be provided. A representative sample is defined as a sample of a universe or whole (e.g. *waste pile, lagoon, groundwater*) which can be expected to exhibit the average properties of the universe or whole. Two options available for collecting a representative sample include use of the methods listed in the Appendix I to OAC Rule 3745-51-20, or use of an equivalent method. Methods listed in the Appendix I to OAC Rule 3745-51-20 include:

Material Type	Method
extremely viscous liquid	ASTM D140-70 (revised to D140-88)
crushed or powdered material	ASTM D346-75 (revised to D346-90)
soil or rock-like material	ASTM D420-69 (revised to D420-93)
soil-like material	ASTM D1452-65 (revised to D1452-80)
fly-ash like material	ASTM D2234-76 (revised to D2234-89)
containerized liquid waste	SW-846 "COLIWASA"
liquid waste in pits, ponds, lagoons, or similar reservoirs	SW-846 "Pond Sampler"

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed above, for sampling waste with properties similar to the indicated materials, will be considered by Ohio EPA to be representative of the waste.

When using the above methods, modifications to the method may be required to meet other sampling requirements. For example, changes to allow use of proper container type, size, and preservative for the selected laboratory analysis may be required. These changes must be reflected in the WAP, preferably by documentation in a standard operating procedure (SOP). Also, additional standard methods may be available for use from organizations such as ASTM. These methods may be appropriate and should be referenced in the plan when used.

Whether or not standard sampling methods are used, important aspects of the sampling to be performed by the TSDf should be described in the WAP. The purpose of including this information is to describe how representative samples are collected. This description should include a discussion of sampling strategies, sampling equipment, maintenance and decontamination of sampling equipment, sample preservation and storage, quality assurance and quality control, and health and safety considerations. Off-site TSDfs which accept sampling and laboratory analysis data from generators should encourage generators to use sound sampling and analysis procedures. Specific technical adequacy for each of these areas is currently beyond the scope of this document. For additional information on sampling, ASTM offers several sampling related guides which may be appropriate, SW-846 contains RCRA sampling guidance, or consult the DHWM sampling manual.

When specifying sampling procedures for off-site facilities, the WAP must include information for both pre-acceptance sampling and fingerprint sampling, when used. On-site facilities must describe how they collect samples, when sampling is used.

4.3.1 Sampling Strategies

A description of the sampling approach, i.e. random or judgmental, and sample type, i.e. grab or composite, should be provided in the plan. The sampling objective, sample location, and number of samples should also be provided. For example, a description of fingerprint sampling may read: "For waste shipments which arrive in lots of X drums or less, Y drums will be selected at random and grab samples will be collected for fingerprint analysis".

The evaluation of the appropriateness of various sampling strategies is beyond the scope of this document. Further guidance may be found in the DHWM sampling manual or various texts on sampling. Facilities may also consider using the Data Quality Objective (DQO) process in design of a sampling strategy to comply with the requirements of this rule.

4.3.2 Sampling Equipment

The WAP should clearly list all sampling equipment to be used for collection of each sample. The equipment chosen should be appropriate based on physical and chemical characteristics of the waste, the sampling method, and any additional waste-specific or site-specific factors. Descriptions of sampling equipment and their applicability are provided in chapter nine of SW-846.

4.3.3 Maintaining and Decontaminating Sampling Equipment

Maintenance and decontamination procedures for all sampling equipment should be described. Decontamination must be such that sample cross-contamination from equipment re-use is eliminated. Facilities should specify a standard method (*e.g.*, *ASTM*) and/or provide a standard operating procedure for decontamination of sampling equipment between samples. Equipment maintenance should generally follow the equipment manufacturer's specifications. Additionally, field equipment calibration procedures should be discussed, if applicable.

4.3.4 Sample Preservation, Holding Times, and Containers

All sample preservation methods and holding times should be provided, as well as type of sample containers used. Typically sample preservation and holding times will not be necessary for samples which will be analyzed immediately, for example, fingerprint samples. Preservation methods, holding times, and sample containers must be consistent with the analytical method requirements. Table 7-1 from chapter seven of the DHWM sampling manual has been included as Appendix II to this document for use in determining proper containers, holding times, and preservation methods for samples to be analyzed with SW-846 methods. Commercial laboratories may also provide information regarding container selection, and sample preservation and holding times.

4.3.5 Sampling Quality Assurance and Quality Control Procedures

Quality assurance and quality control procedures for each sample collected should be specified. The WAP portion dealing with QA of sampling should include information on chain of custody procedures, personnel training, and use of standardized sampling procedures.

QC during the sampling process includes the collection of blank, duplicate, and split samples to measure the effectiveness of the QA program. The WAP should specify QC sample number, location, objective, and frequency, when applicable. Typically, blank, duplicate, or split samples will not be collected for fingerprint samples. They also may not be necessary for all pre-acceptance samples. Procedures for documenting deviations from the sampling QA/QC procedures should also be specified. More information about sampling QA/QC can be found in chapter one of SW-846 or other sampling guidance.

4.3.6 Health and Safety Protocols

While not trying to integrate health and safety requirements into the WAP, it should be recognized that these are important considerations when developing sampling procedures. When the WAP is used as an operational manual at the facility, it makes sense that sampling SOPs provided in the WAP include health and safety protocols. This may include use of personal protective equipment, lock-out tag-out procedures, or confined space entry procedures. These provisions will not be reviewed for compliance with applicable laws or regulations by Ohio EPA, however, permit writers should not require their removal if the facility chooses to incorporate health and safety protocols into the sampling SOPs. The Occupational Safety and Health Administration (OSHA) regulates worker health and safety and should be consulted for specific requirements.

4.4 Testing and Analytical Methods OAC Rule 3745-54-13(B)(2)

4.4.1 Laboratory

The WAP should specify if the laboratory chosen to perform analytical services is on-site or a commercial environmental testing laboratory. If the facility elects to utilize an off-site commercial laboratory, laboratory selection should be based on the following:

- laboratory's comprehensive QA/QC program, including chain-of-custody procedures and treatment of blanks, spikes, and duplicate samples used to measure precision and accuracy;
- the laboratory's technical analytical expertise in achieving required detection limits and using quality technicians and equipment;
- and effective information management providing clear, concise, and accurate data reports and QA/QC documentation for data validation.

When using an off-site laboratory, the WAP should state that the off-site laboratory will utilize the analytical methods specified in the WAP and appropriate QA/QC procedures.

4.4.2 Testing and Analytical Methods

Testing and analytical methods for each parameter must be specified. Analytical methods should be chosen by considering the physical state of the waste, analyses of interest, and required detection limits. Sample preparation and clean-up methods should also be specified, if required.

Generally, all testing and analytical methods should be standard methods, such as ASTM or U.S. EPA SW-846 methods. When this is the case, it is sufficient to only reference the method by name, number, and source. However, any changes to the standard methods, or other methods used (*e.g., facility specific methods*), must be accompanied with a standard operating procedure for the method in the waste analysis plan or the laboratory quality document. Deviations from the methods presented in the WAP should be documented in the operating record. Table 7-1 included in Appendix II to this document contains analytical method numbers of some common SW-846 analytical methods.

4.4.3 Laboratory Quality Assurance and Quality Control Procedures OAC Rule 3745-50-58(E)

To ensure that waste analysis decisions are based on data of known quality, and to document that appropriate laboratory quality assurance/quality control (QA/QC) procedures are used, each WAP must include or incorporate by reference a laboratory quality assurance plan which contains the elements of appropriate laboratory QA/QC procedures. Where QA/QC for sampling operations are provided elsewhere (*e.g., in the sampling procedures section of the WAP*) only the elements relating to laboratory QA/QC need to be presented here. Additionally, analytical method-specific QA/QC should be discussed, either in the laboratory quality assurance plan or included in standard operating procedures (SOPs) for each method. General elements relating to appropriate laboratory operations include at least the following:

- facilities** - a general description of the laboratory facility should be provided, and should address any items which may affect analytical data quality
- equipment and instrumentation** - a list of available equipment and the method capabilities for the equipment
- operating procedures** - all activities in the laboratory should be described,

preferably in the form of SOPs. SOPs to be documented might include sample management, preparation of reagents or standards, general lab techniques, test methods, equipment and calibration, QC samples, corrective action, data validation, reporting, records management, and laboratory waste disposal.

- ❑ **laboratory QA/QC procedures** a description of how laboratory QA/QC procedures are implemented should be provided, including method proficiency, control limits, lab control procedures, deviations, corrective action, and data handling.
- ❑ **quality assurance review** - provide a description of internal and external review of laboratory QA/QC procedures. This includes a complete description of responsibility for data quality assurance review conducted by the laboratory.
- ❑ **laboratory records**- a description of the management system in place for the storage and handling of sampling and analysis records should be provided. This should include custody procedures for shipping samples to an off-site laboratory. Also, in accordance with OAC Rule 3745-50-58(J)(2), a statement should be included which provides for a minimum three year retention of these records in the operating record.

Addressing only the six elements listed above may not be sufficient detail to meet the requirements for use of appropriate laboratory QA/QC. TSDFs are strongly urged to consult appropriate guidance when preparing a quality assurance plan to determine the complete scope required for their facility. Such guidance may include chapter one of SW-846, or Chapter five "Quality Systems" of the National Environmental Laboratory Accreditation Conference guidance document.

4.4.4 Use of Acceptable Generator Knowledge in TSDF Waste Analysis

TSDFs must obtain a detailed chemical and physical analysis of a representative sample of a waste. The analysis must contain all the information necessary for the TSDF to treat, store, or dispose of the waste in accordance with the hazardous waste rules, OAC chapters 3745-54 to 57 and 3745-59, and the conditions of the facility permit. Such an analysis can consist of representative waste sampling and laboratory analysis, and/or detailed waste specific information provided to the TSDF by the waste generator. This latter waste analysis method is commonly known as "acceptable generator knowledge".

DHWM prefers that a TSDF use representative sampling and laboratory analysis to meet waste analysis requirements. This is because analytical data provides the most definitive information regarding the concentration levels of hazardous constituents in a

waste and other characteristics of a waste when waste sampling and laboratory analysis are done appropriately.

However, a TSDF's waste analysis to comply with OAC Rule 3745-54-13 can be based, in whole or in part, on detailed waste specific information the TSDF obtains from the generator of the waste. If a TSDF uses acceptable generator knowledge to accomplish any part of its requirement to perform waste analysis, the TSDF needs to list, in its WAP, all the types and sources of information and documentation it may obtain from a generator for evaluation.

A TSDF's waste analysis can consist of a combined use of acceptable generator knowledge and waste sampling/laboratory analysis by the facility. The TSDF can use the information obtained from the generator to determine what hazardous constituents and characteristics could not be present or exhibited by the waste, and then sample and analyze the waste for the hazardous constituents and/or characteristic(s) that could be present.

In addition, the information and documentation comprising the acceptable generator knowledge needs to be accurate and complete in order to correctly identify the waste. The TSDF must objectively review the information provided by the generator. Therefore, it is recommended that the TSDF explain in its WAP how it will ensure the generator's information is valid.

Types and Sources of Information

The types and sources of information listed below can be obtained from a generator and used by a TSDF to substantiate and document a waste analysis that is based in part or in whole on acceptable generator knowledge. Generally, a combination of the following types of information to make a waste analysis should be used. The information that can be used for waste analysis is not limited to this list; but these are the more common forms of information that should be collected from generators.

- Laboratory analysis data of a representative sample of the waste;
- Description of the process that generated the waste;
- Applicable waste identification codes and waste codes for the purposes of complying with LDR requirements;
- Applicable LDR treatment standards;
- Facility specific process flow diagram of the process generating the waste;

- Chemical makeup of all ingredients or materials used in the process that generates the waste;
- List of constituents which the generator knows or has reason to believe are byproducts or side reactions to the process that produces the waste;
- MSDS sheet and/or product label of substances used in a process that generates the waste;
- Data obtained from properly performed representative sampling and laboratory analysis of wastes generated from same process using same ingredients/materials;
- Data obtained from literature regarding waste produced from same process using same ingredients or materials; and
- Documentation of product specifications of input materials and output products.

OAC Rules 3745-52-40 and 3745-59-07 require generators to retain records and documentation of waste analyses for a period of three years from the last date that the waste was sent to an on-site or off-site treatment, storage, or disposal facility. Furthermore, the generator is required to submit waste analysis data, where available, to the TSDF. This submittal is in addition to completing a TSDF's waste profile sheet. DHWM takes the position that a profile sheet is only summary of a waste analysis. In order to complete a profile sheet, specific information regarding the waste must be developed. It is this information that is the waste analysis data. Therefore, a TSDF should require generators' records of waste analyses (when available) as a condition of pre-acceptance. The evaluations should be kept in the facility's file for each generator and updated in accordance with the frequency specified in the waste analysis plan.

4.5 Waste Re-evaluation Frequencies OAC Rule 3745-54-13(B)(4)

The frequency with which the initial waste analysis will be reviewed or repeated to ensure accuracy must be specified in the WAP for each waste stream. At a minimum, the waste analysis must be reviewed or repeated when the generating process changes, or when the waste arriving at the TSDF does not match the pre-approved waste characterization information supplied by the generator.

For off site facilities which accept generator knowledge as waste analysis, the waste

analysis plan must specify the mechanism to ensure that updated information (*process information, etc.*) is received from the generator each time the waste must be re-evaluated. This includes regular re-evaluations to ensure that the waste analysis is accurate and up to date.

When initial shipments of a waste stream include laboratory analysis, each subsequent re-evaluation does not necessarily require a new laboratory analysis. The generator and/or TSDf must re-evaluate the waste stream as necessary, which may only include a review of the generating process for changes. Significant changes that may impact waste stream characteristics could be further evaluated through sampling and laboratory analysis.

4.6 Special Procedural Requirements

Facilities may have special procedural requirements which must be discussed in the WAP. These may include procedures for wastes generated off-site, waste incineration facilities, ignitable, reactive, and incompatible wastes, and provisions for complying with LDR requirements.

4.6.1 Procedures for Off-Site Facilities OAC Rule 3745-54-13(C); OAC Rule 3745-54-13(B)(5)

Off-site facilities have additional waste analysis requirements which must be addressed in the WAP. The WAP must specify what waste analysis information the generator has agreed to supply, and also must specify the procedures used to confirm the identity of waste arriving on-site.

When collecting waste analysis information from generators, TSDf's should remember that the information collected must include a detailed chemical and physical analysis of a representative sample of the waste, including all the information required to treat, store, or dispose of the waste in accordance with OAC Chapters 3745-54 to 57 and 3745-59. TSDf's should require generators to submit, at a minimum, the following information: description of the waste generating process, a chemical and physical description of the waste, laboratory analytical procedures and results (or acceptable generator knowledge) used to characterize the waste, OEPA hazardous waste codes, and all LDR information required under OAC Chapter 3745-59. When a generator uses sampling and laboratory analysis to meet the requirements of OAC Chapter 3745-59, the generator is required to submit the results of the analysis to the TSDf, in accordance with

OAC Rule 3745-59-07(A)(1)(d) . When a generator bases the analysis on knowledge of the waste, all supporting information must be retained in the generator's file, in accordance with OAC Rule 3745-59-07(A)(5). The TSDF WAP should specify that when a generator performs laboratory analysis or uses knowledge of the waste to comply with OAC Chapter 3745-59, that analysis or documentation of generator knowledge will be supplied to the TSDF as part of pre-acceptance.

Typically, waste analysis information is provided to the TSDF by use of a waste profile sheet. A waste profile sheet is a written form summarizing detailed information on the physical and chemical characteristics of the waste. It is commonly completed by the generator as a waste pre-acceptance condition with the TSDF. It should be noted that a waste profile sheet is not a substitute for waste analysis. The waste profile sheet simply summarizes relevant information for ease of use. The underlying information, for example laboratory analysis results or documentation supporting generator knowledge, that was used to complete the form is the actual waste analysis. When waste profile sheets are used to collect information from generators, the TSDF may either provide a blank waste profile sheet in the WAP showing all the information collected, or may list in the WAP all the information collected. When a blank waste profile sheet is included in the WAP, all changes (format and content) will be considered permit modifications. When the information is listed in the WAP, only changes to the content will be permit modifications. Completed waste profile sheets for each waste managed from each generator must be kept in the facilities operating record or generator file.

The WAP must specify the procedures used to inspect, and if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the manifest and agreed to during pre-acceptance. Typically, this is done by fingerprinting as discussed in section 4.2. Fingerprint sampling, or another identification procedure, must be described in the waste analysis plan.

4.6.2 Procedures for Ignitable, Reactive, and Incompatible Wastes OAC Rule 3745-54-17

When using waste analysis to document compliance with the general requirements for ignitable, reactive, or incompatible (IRI) wastes, that waste analysis information must appear in the WAP. If a waste will be mixed with any other waste or material, a TSDF has the responsibility to obtain enough information to evaluate all such wastes and/or mixtures for potential incompatibilities. There are several sources of information for identifying IRI wastes. Ignitable wastes must be identified by one of the methods listed in OAC Rule 3745-51-21. Reactivity and compatibility have no specified testing methods, however there is guidance available. *Design and Development of a Hazardous Waste Reactivity*

Protocol may be used to aid in identifying reactive wastes. Guidance for determining hazardous waste compatibilities may be found in *A Method of Determining the Compatibility of Hazardous Waste* or *Standard Test Methods for Compatibility of Screening Analysis of Waste*. TSDFs should either reference standard test methods or supply standard operating procedures for test methods specified in the WAP.

4.6.3 Provisions for Complying with LDR waste analysis requirements OAC Rule 3745-59-07

Both Generators and TSD facilities are subject to additional waste analysis requirements to satisfy land disposal restriction rules. The WAP for any facility must include all the information required to meet land disposal restriction requirements. The specific information required will vary dependant upon the type of facility (*i.e., on-site storage facility or land disposal facility*). The discussion below is intended to briefly touch on some basic requirements of waste analysis as it pertains to the LDRs. Please note that subsequent to the last Ohio EPA LDR rule revisions (1992) the U.S. EPA has revised and promulgated additional LDR requirements. Facilities are required to follow these new/revised requirements where they are more stringent than the current state rules. Clarification on the applicability of specific portions of the LDR rules should be directed to the Ohio EPA DHWM Technical Support Unit, Central Office.

Generators of listed hazardous wastes must test their waste, or waste extract using the TCLP, or use knowledge of the waste to determine if the waste is restricted from land disposal. Generators of characteristic hazardous wastes must test their wastes using EP toxicity test, or use knowledge of the waste to determine if the waste is restricted from land disposal. If the generator determines that the waste is restricted from land disposal (a "restricted" waste) and does not meet applicable treatment standards under OAC Rule 3745-59-40 to 44 or prohibition levels under OAC Rule 3745-59-32, then they must fulfill certain notification requirements to the TSDF with each shipment of the waste (see OAC Rule 3745-59-07(A)(1)). This notification must include the treatment standard or prohibition level, or the specified treatment technology if listed in Table 1 of OAC Rule 3745-59-42, and waste analysis data, if available. If the generator determines that the waste is restricted but does meet the treatment standard or prohibition level, then they must fulfill certain notification and certification requirements with each shipment of the waste (see OAC Rule 3745-59-07(A)(2)). This notification must also include the specified treatment standard, prohibition level, or specified treatment technology and any available waste analysis data. All notifications, certifications, waste analysis data, and information supporting knowledge of any waste treated, stored or disposed of on-site or off-site must be maintained in the facility file for at least five years.

There are a few additional waste analysis requirements for generators of liquid

wastes Generators must test or use knowledge of the waste to determine if the pH is less than or equal to 2. If the pH is less than or equal to 2, it is restricted from land disposal. If a generator's liquid waste contains polychlorinated biphenyls (PCBs) or is primarily water containing hazardous organic constituents (HOCs) listed in the Appendix to OAC Rule 3745-59-32, the generator must test the waste or use knowledge of the waste to determine if it equals or exceeds prohibition levels.

Treatment facilities must test their treatment residues in accordance with the frequency specified in the WAP. Pursuant to OAC Rule 3745-59-07(B), for wastes with treatment standards expressed as concentrations in the waste extract, the facility must test the treatment residue with the TCLP to determine if the treatment residue or extract meet treatment standards. For wastes with treatment standards expressed as concentrations in the waste, the facility must test treatment residues to ensure treatment standards are met. For wastes prohibited under OAC Rule 3745-59-32 but without treatment standards under OAC Rule 3745-59-40 to 44, the facility must test the treatment residue in accordance with the generator testing requirements in OAC Rule 3745-59-32 to determine if the treatment residues meet treatment standards of OAC Rule 3745-59-32. If the waste is to be further managed at another treatment or storage facility, the original treatment facility must fulfill the notification and certification requirements of the generator. If the waste is sent to a land disposal facility, the treatment facility must fulfill certain notification requirements, including applicable treatment standards and waste analysis data, if available (see OAC Rule 3745-59-07(B)(4)). The treatment facility must also certify that the waste has been treated in accordance with the treatment standards of OAC Rule 3745-59-40 to 44 and the applicable prohibitions in OAC Rule 3745-59-32.

Land disposal facilities disposing of restricted waste must retain copies of the notifications and certifications required under paragraphs A and B of OAC Rule 3745-59-07. Land disposal facilities must also test the waste, or the treatment residue, or an extract of the waste or treatment residue using the TCLP, or any methods in OAC Rule 3745-59-32, to ensure that it meets applicable treatment standards in OAC Rule 3745-59-40 to 44 or prohibition levels in OAC Rule 3745-59-32. Testing must be done in accordance with the frequency specified in the WAP.

4.6.4 Special Requirements for Bulk and Containerized Liquids OAC Rule 3745-54-13(C)(3); OAC Rule 3745-57-14

Off-site landfills must specify in the WAP the procedures in place to determine if a generator has added a biodegradable sorbent to waste liquids in containers. The methods to determine if a sorbent is biodegradable must also be specified, if testing is used. The WAP must also describe how the facility will determine, by use of SW-846 method 9095

“Paint Filter Liquids Test”, if free liquids are being placed in the landfill. Each of these determinations should be discussed in terms of the entire waste analysis plan requirements (*i.e., parameters, rationale, sampling methods, sampling frequencies, etc.*).

4.6.5 Waste Analysis for Incineration Facilities OAC Rule 3745-57-41

Incineration facilities must provide in the WAP all information on routine analysis required by the trial burn. Through the trial burn process facility specific waste analysis parameters are established which must appear in the WAP. For example, BTU or ash content of the waste feed may need to fall within an acceptable range to meet both permit and process conditions established in the trial burn plan. This information is developed on a facility-specific basis and is beyond the scope of this document.

4.6.6 Surface Impoundments OAC Rule 3745-54-13 (B)(7)

Surface impoundments which have been exempted from land disposal restrictions under paragraph (A) of OAC Rule 3745-59-04 must include the procedures and schedules required under OAC Rule 3745-54-13 (B)(7) in the waste analysis plan.

Section 5.0 List of References

Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste. EPA\530-R-94-024, U.S. EPA, Washington, DC, 1994.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. SW-846, EPA SW-846.3.3 (most recent revision)

Design and Development of a Hazardous Waste Reactivity Testing Protocol. EPA-600/52-84-057, U.S. EPA, Municipal Environmental Research Laboratory, Cincinnati, OH, 1984.

A Method for Determining the Compatibility of Hazardous Wastes. EPA-600/2-80-076, U.S. EPA, Cincinnati, OH, 1980.

Standard Practice for Sampling Bituminous Materials, D140-88, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standard practice for Collection and Preparation of Coke Samples for Laboratory Analysis, D346-90, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standard Guide to Site Characterization for Engineering Design, and Construction Purposes, D420-93, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standard Practice for Soil Investigation and Sampling by Auger Borings, D1452-80, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standard Practice for Collection of a Gross Sample of Coal, D2234-97a, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standard Test Methods for Compatibility of Screening Analysis of Waste, D5058-90, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Standards Chapter 5: Quality Systems, National Environmental Laboratory Accreditation Conference, Revision 12, July 1, 1999.

Appendix I. Waste Analysis Plan Checklist

How to Use this checklist

The WAP checklist is intended to be used in the actual review of the WAP. Checklist use is similar to other checklists developed to review portions of the Part B application. Next to each of the questions, mark either yes, no, or not applicable, depending on the content of the WAP being reviewed. Note that when information is provided, it is the responsibility of the WAP reviewer to ensure the information is technically adequate. For example, Ohio EPA waste codes must be checked to ensure they are the correct code for that waste stream.

PART B REVIEW CHECKLIST

Section C - WASTE CHARACTERISTICS

Facility/ID#		Date	
		DO	

Relevant Guidance Documents - WAP Advisory - OEPA/DHWM (draft - 4/98); Federal Waste Analysis guidance manual (4/94)

	YES	NO	NA	Page#	Notes - NOD Comment #
C-1 <u>Chemical and Physical analyses:</u> OAC 3745-50-44(A)(2), 3745-54-13					
Before hazardous waste is stored, treated or disposed at the facility, are there procedures in place to describe the waste, identify the hazard characteristics, and give the basis for hazard designation ?					
Does the WAP contain a complete description of the chemical and physical analyses of representative samples of waste that will be conducted and/or obtained by the facility, in order to treat, store, or dispose of the waste in accordance with Ohio regulations and terms and conditions of an Ohio hazardous waste permit?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Are all wastes listed in the part A permit addressed in the WAP?					
C-1a <u>Containerized Waste:</u> OAC 3745-50-44(C)(1)(b)(i)					
Do owners and operators, that store containers of wastes in storage areas without secondary containment systems, provide the test procedures and results, or other documentation or information, which show that the wastes do not contain free liquids [see D-1b(1)]? A suggested test for free liquids is the Paint Filter Liquids Test, Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 as well as visual inspection upon arrival.					
C-1b <u>Waste in Tank Systems:</u> OAC 3745-55-91(B)(2), 3745-55-92(A)(2)					
Are the wastes placed for storage or treatment in tanks compatible with the tank materials (including, gaskets, valves, welds, etc.)? If there is the potential for incompatibility what screening tests are in place (eg., pH, corrosivity, gas generation, etc.)?					
C-1d <u>Landfilled Wastes:</u> OAC 3745-57-14(B)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Does the WAP provide the results from the Paint Filter Liquids Test (Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Method," EPA Publication No. SW-846) showing that containerized or bulk wastes do not contain free liquids?					
C-1e <u>Wastes Incinerated and Wastes Used in Performance</u> <u>Tests: OAC (C)(8)(c)(i), (iii),(vii), and (viii)</u>					
If the applicant opts to not conduct a trial burn, are analyses provided for each waste or waste mixture to be burned including:					
a) heat value of the waste in the form it will be burned;					
b) viscosity of liquids or description of the physical form of non-liquids;					
c) identification of any Appendix to OAC 3745-51-11 hazardous constituents reasonably expected to be present;					
d) identification of and the basis for exclusion from analysis those constituents that are not expected to be present;					

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	YES	NO	NA	Page#	Notes - NOD Comment #
e) an approximate quantification of hazardous constituents in the waste, including those that may be POHCs based on data from other trial or operational burns?					
If data is submitted to support the claim that a trial burn is not needed, are analyses provided that compare the waste to be burned with data from wastes burned in operational or trial burns, noting POHCs identified in the waste and any differences from the POHCs in the waste for which burn data are provided?					
Is waste analysis data submitted that is sufficient to allow the specification as permit POHCs those constituents for which destruction and removal efficiencies will be required?					
C-1f <u>Wastes to be Land Treated:</u> OAC 3745-50-44(C)(5)(d)					
TBD					
C-1g <u>Waste in Miscellaneous Treatment Units:</u> OAC 3745-50-44(C)(9)(d)					
For any miscellaneous unit treating hazardous waste, does the WAP provide a report on a demonstration of the effectiveness of the treatment based on laboratory or field data?					
C-2 <u>Waste Analysis Plan:</u> OAC 3745-50-44(A)(3), 3745-54-13(A),(B) & (C)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Has the facility provided a copy of the waste analysis plan (WAP) that describes the methodologies for conducting the analyses required to properly treat, store, or dispose of hazardous wastes and to comply with the land disposal restriction program?					
It is anticipated the following facility description information would be contained in other sections of the part B application, however if the WAP is a stand alone document, it should be included:					
As part of the waste profiling process, are brief descriptions of off-site hazardous waste generating processes obtained, updated, and kept at the facility as part of the operating record?					
Are all hazardous wastes generated or managed at the facility adequately described, including identity of hazardous waste, approximate quantities managed, process generating the waste, rationale for identifying the waste as hazardous, and other appropriate Ohio EPA waste classifications?					
C-2a <u>Parameters and Rationale:</u> OAC 3745-54-13(B)(1)					
Does the WAP list parameters chosen for analysis?					
Are parameters for determining if a waste is hazardous or not (e.g. flash point at 140 degrees, pH > 12.5 < 2, etc.) listed for each waste stream managed?					

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Are there parameters used to ensure that wastes are within physical and chemical operating and permit acceptance limits of the waste management units (e.g. corrosives in steel tanks or containers)?					
Are potential changes in waste characteristics accounted for in all phases of the treatment process?					
Are rationales provided for each parameter selected?					
Are sampling, analytical, and procedural methods to identify ignitable, incompatible, and reactive wastes provided (this would include for the purposes of storage, handling, treatment and disposal)?					
Does the WAP describe the parameters and rationale for testing waste before treatment to ensure the appropriateness of that treatment?					
Does the WAP describe the parameters and rationale for testing waste after treatment to make sure it was effective?					
Some listed wastes are listed for additional hazards besides toxicity (for example U223 is listed for reactivity as well as toxicity, will the facility screen for reactivity as well). The facility may need to determine if the additional hazard codes apply. Do listed wastes have more than one waste hazard that need to be analyzed for and, therefore, are the appropriate parameters selected for these wastes?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-2b <u>Test Methods:</u> OAC 3745-54-13(B)(2)					
Does the WAP identify and reference (e.g., EPA Test No.) the test methods used to test for parameters chosen?					
Are the analytical methods approved methods, as found in SW-846 or ASTM standards?					
Are modifications to the approved methods or alternate methods fully described in the permit application and is the modified or alternate method equivalent to an approved method?					
Does the WAP specify if the laboratory used is an on-site or off-site laboratory?					
If the permittee indicates they will use an off site laboratory do they state in the WAP they will ensure that the off site laboratory will utilize the methods (SW-846 or equivalent method) in the facility WAP including all QA/QC procedures?					
Does the WAP include a quality assurance plan in accordance with SW-846 chapter one or other appropriate guidance that includes the following?					
1) A statement of project objectives?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
2) The WAP shall ensure that the detection limits are in accordance with SW-846 methods or methods approved under the WAP.					
3) A description of handling and storage of sampling and analysis records (including custody procedures for shipping to other labs). A statement must be in the WAP that these records will be part of the facility operating record.					
4) A description of organizational structure, functional responsibilities, and lines of communications for the facility's lab personnel. This should describe who is responsible for QA and how others report to him/her (this should include who is responsible for QA of off-site labs as well).					
5) Is s description of the training required for those involved in QA/QC located in the application (this may also be covered in section H of the application)?					
6) A description of performance evaluation. The WAP should define how often this will occur, and what will be done if problems are found.					

	YES	NO	NA	Page#	Notes - NOD Comment #
7) A description of how QA/QC will be ensured for field activities. The WAP must specify that this will include the checks on the completeness of field reports, validation of sampling methods, and determination of representativeness. The WAP must also specify how often these activities will occur.					
8) A description of how QA/QC will be ensured for lab activities. The WAP should specify that the following will occur at a specified time frame; a) a check for completeness of records b) evaluation of data with respect to detection and quantitation limits c) evaluation of data with respect to control limits d) review of holding time data e) correlation of lab data with related tests f) calibration of instruments.					

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	YES	NO	NA	Page#	Notes - NOD Comment #
9) A description of QA reports. The WAP must specify how often these are generated, that they will report on measurement quality indicators, QA assessments, including defined operating standards. The WAP must also specify who will be responsible and how and what corrective action will be taken.					
10) Are quality control methods presented, including analysis of method blanks, matrix spikes, surrogate spikes, and duplicate samples which are used to measure laboratory precision and accuracy?					
Are analytical methods for each parameter to be analyzed specified?					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-2c <u>Sampling Methods:</u> OAC 3745-54-13(B)(3)					
Does the WAP identify and reference (e.g., ASTM) the sampling methods used to obtain a representative sample of each waste to be analyzed and document that the chosen method is appropriate for the type and nature of the waste? Does this include selection of the appropriate type of equipment for the waste?					
Are sampling methods used from Appendix I of OAC 3745-51-20 (most recent version), or are they approved equivalent method?					
Is there a clearly defined sampling approach that includes a) the objectives of sampling, b) types of samples needed, c) sampling locations, d) number of samples, e) sampling frequency, f) collection techniques, g) and handling techniques?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Is the sampling equipment to be used to collect each sample clearly identified as well as the procedure to use that equipment?					
Is the sampling equipment chosen appropriate based on criteria of physical parameters, chemical parameters, and waste-specific or site specific factors?					
Are appropriate maintenance and decontamination procedures specified for each piece of sampling equipment?					
Are field calibration procedures for sampling equipment specified (as applicable)?					
Are samples properly preserved and stored in accordance with SW-846?					
Are holding times specified for each sample?					
Are appropriate sample containers used?					
Does the WAP describe a method for documenting and justifying deviations from the WAP?					
Are QC measures to be taken clearly identified?					
Are QC procedures identified adequate to measure attainment of QA objectives, including use of field blanks, trip blanks, equipment blanks, split samples, and field duplicates?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Are proper chain of custody procedures to be followed identified?					
Is adequate sample information collected and recorded, including type of waste collected, names and signatures of samplers, sample number, site map (if needed), date and time of collection, designation as grab or composite, names and signatures of any persons handling the samples, and the shipping number if sample are sent to an off-site laboratory (does the facility include the form in the WAP)?					
Are health and safety protocols clearly identified?					
Does section H include training requirements for personnel collecting samples specified?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-2d <u>Frequency of Analyses:</u> OAC 3745-54-13(A)(3) & (B)(4)					
Does the WAP describe the frequency at which the analyses will be repeated for each waste stream?					
Are wastes re-evaluated when waste generating processes are changed?					
Are wastes re-evaluated when wastes characterized by the TSDF do not match the pre-approved waste analysis or manifest?					
Are waste re-evaluation frequencies adequate to ensure compliance with permit conditions and other regulatory requirements?					
For incineration facilities, is waste analyzed prior to burning each batch to verify that the permit conditions will be met and that prohibited constituents (e.g. PCBS, dioxins, reactive wastes) and other specific constituents are not present (see page 2-48, 4/94 federal WAP guidance)?					
C-2e <u>Additional Requirements for Wastes Generated Off-Site:</u> OAC 3745-54-13(B)(5) & (C)					
Does the WAP describe the procedures used to inspect and/or analyze a representative portion of wastes generated off-site when they arrive at the facility?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Are statistical methods used to determine a representative sample of the incoming wastes (e.g., number of drums to be sampled) described?					
Is there a statement in the WAP that describes the minimum amount of waste to be sampled (eg. no less than 10 percent of containers for an incoming waste stream)?					
Is the waste analysis data that the generator agrees to provide specified?					
Are procedures to determine how well the generators data represents the waste to be managed provided?					
Are procedures to handle wastes which are significantly different than waste characterized previously specified?					
Is the method used to identify each movement of hazardous waste at the facility specified (examples include bar code tracking, inventory sheets, etc.)?					
If fingerprint analysis is used, are methods used for obtaining a representative sample provided?					
If fingerprint analysis is used, are parameters each waste will be analyzed for, rationale for parameters selected, and acceptance and rejection criteria for each parameter specified?					
Are there procedures in place to determine if a biodegradable sorbent has been added to the waste in containers?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-2f <u>Additional Requirements for Ignitable, Reactive or Incompatible Wastes:</u> OAC 3745-54-13(B)(6), 3745-54-17					
Does the facility define what is incompatible (e.g. storing acids and organic ignitables, etc)?					
Does the WAP describe the methods used to meet additional waste analysis requirements necessary for treating, storing, or disposing of ignitable, reactive or incompatible wastes?					
Are procedures in place to identify ignitable, reactive, or incompatible wastes and are those SOPs included in the WAP?					
If testing is used, are testing or analytical methods provided for ignitable, reactive or incompatible wastes?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-3 <u>Waste Analysis Requirements Pertaining to Land Disposal Restrictions:</u>					
C-3a <u>Waste Characterization:</u> OAC 3745-54-13(A)					
For each hazardous waste stored, treated, or disposed at the facility, does the facility obtain analytical data necessary to determine if the waste is a restricted waste in accordance with OAC Chapter 3745-59? Alternatively, is information provided from knowledge of the waste to determine if the waste is restricted?					
Where generator knowledge is used to make this determination, does the WAP specify that all supporting data will be maintained in the operating record?					
C-3a(1) <u>Waste Characteristics: Solvent Wastes and Dioxin-Containing Wastes:</u> OAC 3745-59-30&31					

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	YES	NO	NA	Page#	Notes - NOD Comment #
<p>Does the facility document or state that F001-F005 spent solvent wastes and F020-F023 and F026-F028 dioxin-containing wastes are prohibited from land disposal unless:</p> <p>1) the wastes meet the treatment standards in OAC 3745-59-41 to 44, or</p> <p>2) an exemption has been granted pursuant to OAC 3745-59-06, or</p> <p>3) a case-by-case extension has been granted pursuant to OAC 3745-59-05?</p>					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-3a(2) <u>Waste Characteristics: California List Waste:</u> OAC 3745-59-32					
Does the facility document or state that the following wastes are California list wastes and are prohibited from land disposal:					
1) liquid hazardous wastes with a pH less than or equal to 2.0;					
2) liquid hazardous wastes containing PCBs at concentrations greater than or equal to 50 ppm;					
3) liquid hazardous wastes that are primarily water and contain HOCs in total concentrations greater than or equal to 1,000 mg/l and less than 10,00 mg/l;					
4) non-liquid hazardous wastes containing HOCs in total concentrations greater than or equal to 1,000 mg/kg;					
5) liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides in concentrations greater than or equal to 1,000 mg/l?					
Does the facility specify any applicable exceptions to the prohibitions in OAC 3745-59-32(F)?					
C-3a(3) <u>Waste Characteristics: First Third Wastes with Treatment Standards:</u> OAC 3745-59-33, 3745-59-40 through 3745-59-43					

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	YES	NO	NA	Page#	Notes - NOD Comment #
The First Third wastes for which treatment standards have been promulgated are listed in OAC 3745-59-33. Does the facility document or state that wastes which do not meet the treatment standards in OAC 3745-59-41 through OAC 3745-59-43 are prohibited from land disposal unless (1) an exemption has been granted pursuant to OAC 3745-59-06; or (2) a case-by-case extension has been granted pursuant to OAC 3745-59-05?					
To determine whether a First Third waste exceeds the applicable treatment standards in OAC 3745-59-41 through OAC 3745-59-43, the initial generator must test a representative sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste. Alternatively, the generator may use knowledge of the physical and chemical characteristics of the waste to determine whether it is restricted. Does the facility document this?					
C-3a(4) <u>Waste Characteristics: Second Third Wastes with Treatment Standards: OAC 3745-59-34</u>					
The Second Third wastes for which treatment standards have been promulgated are listed in OAC 3745-59-34. Does the facility document or state that wastes which do not meet the treatment standards in OAC 3745-59-41 through OAC 3745-59-43 are prohibited from land disposal unless (1) an exemption has been granted pursuant to OAC 3745-59-06; or (2) a case-by-case extension has been granted pursuant to OAC 3745-59-05?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
To determine whether a Second Third waste exceeds the applicable treatment standards in OAC 3745-59-41 through OAC 3745-59-43, the initial generator must test a representative sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste. Alternatively, the generator may use knowledge of the physical and chemical characteristics of the waste to determine whether it is restricted. Does the facility obtain the supporting documentation to determine that the waste exceeds the applicable treatment standards?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-3a(5) <u>Waste Characteristics: Third Third Wastes with Treatment Standards: OAC 3745-59-35</u>					
The Third Third wastes for which treatment standards have been promulgated are listed in OAC 3745-59-35. Wastes which do not meet the treatment standards in OAC 3745-59-41 through OAC 3745-59-43 are prohibited from land disposal unless (1) an exemption has been granted pursuant to OAC 3745-59-06; (2) the waste meets alternative treatment standards in OAC 3745-59-44; or (3) a case-by-case extension has been granted pursuant to OAC 3745-59-05.					
To determine whether a Third Third waste exceeds the applicable treatment standards in OAC 3745-59-41 through 3745-59-43, the initial generator must test a representative sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste. Alternatively, the generator may use knowledge of the physical and chemical characteristics of the waste to determine whether it is restricted. Does the facility obtain the supporting documentation to determine that the waste exceeds the applicable treatment standards?					
C-3a(6) <u>Other Sampling and Analytical Requirements: OAC 3745-59-30 to 35</u>					
Does the WAP specify the sampling and analytical procedures to be followed in characterizing wastes to determine if they are restricted from land disposal?					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Does the WAP indicate that the Toxicity Characteristic Leaching Procedure (TCLP) described in Appendix to OAC 3745-59-07 must be used to develop extract of solvent or dioxin wastes?					
Does the WAP specify that the actual liquid waste, not an extract or a filtrate, must be tested when measuring pH, PCB, and HOC concentrations in making California list restriction determinations?					
Does the WAP specify that the Paint Filter Test, as described in SW-846, must be used to determine if wastes are liquids?					
C-3a(7) <u>Sampling and Analytical Requirements for Treatment Residues:</u> OAC 3745-59-07(B)					
C-3a(7)(a) <u>Wastes with Treatment Standards Expressed as Concentrations in the Waste:</u> OAC 3745-59-07(B)(3)					
For wastes with treatment standards expressed as concentrations in the waste [OAC 3745-59-07(B)(3)] does the WAP for the treatment facility provide procedures for testing the treatment residues (not an extract of such residues) to assure that the treatment residues meet the applicable treatment standards?					
C-3a(7)(b) <u>Analysis of treatment Residues:</u> OAC 3745-59-07(B)(1)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Does the WAP specify procedures for analyzing treatment residues to determine if treatment has achieved the required levels? Note that this requirement does not include those wastes for which treatment technologies have been specified (liquid wastes with PCB concentrations greater than or equal to 50 ppm; liquid and non-liquid wastes with HOC concentrations greater than or equal to 1000 mg/kg).					
Does the WAP provide procedures for testing treatment residues of solvent and dioxin-containing wastes, or an extract of such residues developed using the TCLP, to determine if it meets applicable treatment standards in OAC 3745-59-41.					
Does the WAP provide procedures for testing the waste residue (not a filtrate or an extract) of California list restricted waste to determine if the pH is less than or equal to 2.0 or if the concentration of California list constituents is at or below levels specified in Section 3004(d).					
C-3a(7)(c) <u>Wastes with Treatment Standards Expressed as Concentrations in the Waste Extract</u> : OAC 3745-59-07(B)(1)					
For wastes with treatment standards expressed as concentrations in the waste extract, does the WAP specify that the treatment facilities will provide procedures for testing the treatment residues or an extract of such residues developed using the TCLP, to assure that the treatment residues meet the applicable treatment standards?					

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C-3a(7)(d) <u>Sampling and Analytical Procedures:</u> Appendix to OAC 3745-59-07(B)					
Does the WAP specify the sampling and analytical procedures to be followed in testing the treatment residues?					
C-3a(7)(e) <u>California List Wastes Not Subject to Treatment Standards:</u> OAC 3745-59-07(B)(2)					
For California List Wastes not subject to treatment standards, does the WAP for the treatment facility provide procedures for testing the treatment residues according to the generator testing requirements in OAC 3745-59-32 (see C-3a(2)) to assure that the treatment residues comply with the applicable prohibitions?					
C-3a(7)(f) <u>Frequency of Analysis:</u> OAC 3745-54-13(A)(3), OAC 3745-59-07(B)					
Does the WAP describe the frequency at which analysis of treatment residues will be repeated? Does the frequency chosen take into account the variability of the waste(s) and treatment process? Analysis must be performed if there is any reason to believe that the composition of the waste or the treatment process has changed.					

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C-3b <u>Notification and Certification Requirements:</u> OAC 3745-59-07					
C-3b(1) <u>Retention of Generator Notices and Certifications:</u> OAC 3745-59-07(A)					
Does the WAP specify that the owner/operator of a treatment, storage, or disposal facility managing any waste subject to restrictions will review and maintain notices and certifications submitted by the initial generator of the waste (where applicable)?					
C-3b(2) <u>Notification and Certification for Wastes to be Further Managed:</u> OAC 3745-59-07(B)(6)					
Does the WAP specify that for treatment residues of restricted wastes that will be further managed at a different treatment, storage, or disposal facility, the owner/operator of the facility sending the waste off-site will submit a notice and certification in compliance with the notice and certification requirements applicable to generators under OAC 3745-59-07?					
C-3b(3) <u>Additional Notification and Certification Requirements for Treatment Facilities:</u> OAC 3745-59-07(B)					
C-3b(3)(a) <u>Wastes with Treatment Standards Expressed as Concentrations:</u> OAC 3745-59-07(B)(5)(a)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
For wastes with treatment standards expressed as concentrations in the waste extract or in the waste (OAC 3745-59-41 and 43), does the treatment facility state that it will submit a certification to the land disposal facility in accordance with OAC 3745-59-07(B)(5)(a)?					

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C-3b(3)(b) <u>Waste with Treatment Standards Expressed as Technologies:</u> OAC 3745-59-07(B)(5)(b)					
For wastes with treatment standards expressed as technologies (OAC 3745-59-42), does the treatment facility state it will submit a certification to the land disposal facility in accordance with OAC 3745-59-07(B)(5)(b)?					
C-3b(3)(c) <u>California List Wastes Not Subject to Treatment standards:</u> OAC 3745-59-07(B)(5)(a)					
For California list wastes which are not subject to treatment standards, does the treatment facility state it will submit a certification to the land disposal facility in accordance with OAC 3745-59-07(B)(5)(a)?					
C-3b(3)(d) <u>Recyclable Materials used in a Manner Constituting Disposal:</u> OAC 3745-59-07(B)(7)					
For wastes which are recyclable materials used in a manner constituting disposal, in accordance with OAC 3745-58-30, does the owner/operator of a treatment facility state it will submit a notice and certification to the Director in accordance with OAC 3745-59-07(B)(7)?					
C-3b(4) <u>Additional Notification and Certification Requirements for Disposal facilities:</u> OAC 3745-59-07(C)(1)					

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Does the owner/operator of a land disposal facility disposing any waste subject to restrictions state that it will maintain copies of the notice and certifications submitted by the generator and the treatment or storage facilities, if applicable?					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-3c <u>Additional Requirements Pertaining to Storage of Restricted Wastes:</u> OAC 3745-59-50(A), (D), & (F)					
<p>Do owner/operators of treatment, storage, or disposal facilities storing hazardous wastes that are restricted from land disposal demonstrate that (1) they are storing such wastes in tanks or containers and (2) such storage is solely for the purpose of accumulating sufficient quantities of waste to facilitate proper treatment, recovery, or disposal?</p> <p>NOTE. These requirements do not apply to wastes that:</p> <ol style="list-style-type: none"> 1) meet the applicable treatment standards or prohibition levels, or 2) are the subject of an approved petition under OAC 3745-59-06, or 3) have received a nationwide variance under OAC 3745-59-44, or 4) have received a case-by-case extension under OAC 3745-59-05. 					
C-3c(1) <u>Restricted Wastes Stored in Containers:</u> OAC 3745-59-50(A)(2)(a)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
If wastes are stored in containers, does the owner/operator demonstrate that each container will be clearly marked to identify its contents and the date each period of accumulation begins?.					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-3c(2) <u>Restricted Wastes Stored in Tanks:</u> OAC 3745-59-50(A)(2)(b)					
If wastes are stored in tanks, does the owner/operator demonstrate that each tank will be clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins?. Alternatively, does the owner/operator may demonstrate that such information for each tank will be recorded and maintained in the operating record at the facility?.					
C-3c(3) <u>Storage of liquid PCB Wastes:</u> OAC 3745-59-50(F)					
If liquid hazardous wastes containing concentrations of PCBs greater than or equal to 50 ppm will be stored at the facility, does the owner/operator demonstrate that the facility meets the requirements of 40 CFR 761.65(b)?. The owner/operator must describe procedures for removal of these wastes from storage within one year and treatment or disposal of the wastes in compliance with land disposal restrictions.					
C-3d <u>Additional Requirements for Land Disposal Facilities:</u> ____ OAC 3745-54-13(A)(1) and OAC 3745-59-07(C)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
Does the owner/operator of a land disposal facility provide procedures for testing the waste or an extract of the waste or treatment residue or using any methods required for generators under OAC 3745-59-32 to ensure that the wastes or treatment residues comply with applicable treatment standards and California list prohibitions?					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-3d(1) <u>Off-site Facilities:</u> OAC 3745-59-07(C)(1) & (2)					
If wastes or treatment residues are received from an off-site generator or treatment facility, does the WAP specify procedures which assure that wastes will not be disposed without receipt of proper notice and certification as specified in OAC 3745-59-07(A) and (B)? If the treatment standard for the waste is a specified treatment method (liquid and non-liquid HOC wastes and liquid PCB wastes), certification must be received to ensure that the waste has been treated using the specified technology.					
C-3e <u>Additional Requirements for Surface Impoundments Exempted from Land Disposal Restrictions:</u>					
For surface impoundments exempted from land disposal restrictions under OAC 3745-59-04(A), does the owner/operator demonstrate the following?:					
C-3e(1) <u>Case-by-Case Extensions to an Effective Date:</u> OAC 3745-59-05					

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	YES	NO	NA	Page#	Notes - NOD Comment #
That the treatment, storage, or disposal facility has requested an extension to the effective date of any restriction in Subpart C of 40 CFR 268, has submitted an application to the Regional Administrator, U.S. EPA, containing the information and certification described in 40 CFR 268.5(a) and (b), and has received U.S. EPA approval of the extension. The Director will recognize a denial by the U.S. EPA or an approval by the U.S. EPA.					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-3e(2) <u>Exemption from a Prohibition:</u> OAC 3745-59-04					
That the treatment, storage, or disposal facility requesting an exemption from a prohibition for the disposal of a particular restricted waste in a particular unit or units has submitted a petition to the Director demonstrating that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous. The petition must include the demonstration and certification specified in 40 CFR 268.6(a) through (d).					
If a petition has been approved under 40 CFR 268.6, has the owner/operator must provide a copy of the Notice of Approval?					
C-3e(3) <u>Variance from a Treatment Standard:</u> OAC 3745-59-44					
That the treatment facility has petitioned the Regional Administrator, U.S. EPA, for a site-specific variance from the treatment standard if a waste cannot be treated to the specified level or where the treatment technology is not appropriate to the waste. Has the applicant demonstrated that, because the physical or chemical properties of the waste differ significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods?					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-3e(4) <u>Additional Requirements for Surface Impoundments Exempted from Land Disposal Restrictions:</u> OAC 3745-59-04(A)					
For treatment surface impoundments exempted from land disposal restrictions under OAC 3745-59-04(A), the owner/operator must meet the following requirements:					

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	YES	NO	NA	Page#	Notes - NOD Comment #
C-3e(4)(a) <u>Treatment of Wastes:</u> OAC 3745-59-04(A)(1)					
Does the owner/operator demonstrate that treatment of wastes otherwise prohibited from land disposal occurs in the surface impoundment?					
C-3e(4)(b) <u>Sampling and Testing:</u> OAC 3745-59-04(A)(2)(a)					
Does the facility's waste analysis plan include the procedures and schedules for sampling and analysis of treatment residues and the analysis of test data to determine if the residues meet the applicable treatment standards or prohibitions?					
C-3e(4)(c) <u>Annual Removal of Residues:</u> OAC 3745-59-04(A)(2)(b)					

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	YES	NO	NA	Page#	Notes - NOD Comment #
<p>Does the owner/operator provide procedures and schedules for annual removal from the surface impoundment of treatment residues (including any liquid waste) that:</p> <ol style="list-style-type: none"> 1) do not meet treatment standards or prohibition levels, or 2) are residues of wastes prohibited from land disposal where no treatment standards or prohibitions apply, or 3) are residues from listed wastes that are not delisted under OAC 3745-50-221, or 4) are wastes that exhibit a characteristic of hazardous waste. 					

	YES	NO	NA	Page#	Notes - NOD Comment #
C-3e(4)(d) <u>Recordkeeping Requirements:</u> OAC 3745-59-04(A)(2)(c)					
Does the owner/operator provide procedures and schedules for sampling impoundment contents, analyzing test data, and annually removing any treatment residues that do not meet treatment standards or prohibition levels or are from the treatment of wastes prohibited from land disposal in OAC 3745-59-30 to 35?					
C-3e(4)(e) <u>Design Requirements:</u> _____ OAC 3745-59-04(A)(3) & OAC 3745-56-21					
Does the owner or operator of the facility must demonstrate that the design requirements of OAC 3745-56-21(C) have been met or that an exemption, waiver, or modification has been granted under OAC 3745-59-04(A)(3)?					
C-3f <u>Requirements for Land Disposal Facilities with an approved Exemption or Extension:</u> OAC 3745-59-05, 3745-59-06					
If a case by case extension has been approved under OAC 3745-59-05 or a petition has been approved under OAC 3745-59-06, has the facility provided a copy of the Notice of Approval?					



Appendix II. Table 7-1 from DHWM Sampling Manual

The attached table is taken from the DHWM Sampling Manual. It is provided here as a reference only and should not be relied upon as a sole information source for determining sample containers, preservation techniques, or holding times. Users of this table are encouraged to contact the laboratory for help in identifying sample requirements.

**Table 7-1
Parameters, Method, Preservation, Holding Times
Sample Volume, and Containers**

PARAMETERS	METHOD	MINIMUM SAMPLE VOLUME	HOLDING TIME	CONTAINER	CLEANED TO EPA PROTOCOL	PRESERVATIVE	SAMPLE TYPE
Acid Only	8270	*30 grams **1 liter	7 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	Cool 4°C Dark	
Antimony	6010	*2 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Arsenic	7000	*2 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Arsenic	6010	*2 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Barium	6010	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Base Neutral Acid	8270	*30 grams **1 liter	7 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	.008% Na ₂ S ₂ O ₃ Cool 4°C pH = 4 Dark	
Base Neutrals Only	8080	*30 grams **1 liter	7 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	.008% Na ₂ S ₂ O ₃ Cool 4°C pH = 4 Dark	
Beryllium	6010	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Chromium VI	*7196/7197 **218.4 218.5	*10 grams **200 ml	24 Hours	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G

Table 7.1 (cont'd)
Parameters, Method, Preservation, Holding Times
Sample Volume, and Containers

PARAMETERS	METHOD	MINIMUM SAMPLE VOLUME	HOLDING TIME	CONTAINER	CLEANED TO EPA PROTOCOL	PRESERVATIVE	SAMPLE TYPE
Dissolved Mercury	*7470/7471 **245	*10 grams **100 ml	38 Days in glass 13 Days in plastic	38 Days in glass 13 Days in plastic	*A **C	Filter pH < 2 HNO ₃ Cool 4°C	
Hazardous Waste Corrosivity	*1110	* **2 liter	7 Days	* **2.5 liter A.J.	**A	None	G/C
Hazardous Waste Ignitability	*1010/1020	* **100 ml	7 Days	* **500 ml B.R.	*A **C	None	G/C
Hazardous Waste Toxicity	*1311	*100 grams	7 Days to ext 40 Days aft ext	*2.5 liter CWM	*A	None	G/C
Hazardous Waste Reactivity	*7.3.3.2 7.3.4.2	*20 grams **500 ml	7 Days	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C Dark	G/C
Hexavalent Chromium	*7196/7197 **218.4 218.5	*10 grams **200 ml	24 Hours	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G
Hydrogen Ion	*9040/9045 **150	*20 grams **25 ml	Immediately	*4 oz CWM **60 ml HDPE	*A **C	None	G
Lead	7000	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Lead	6010	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Mercury, Dissolved	*7470/7471 **245	*10 grams **100 ml	38 Days in glass 13 Days in plastic	38 Days in glass 13 Days in plastic	*A **C	Filter pH<2 HNO ₃ Cool 4°C	

Table 7.1 (cont'd)
Parameters, Method, Preservation, Holding Times
Sample Volume, and Containers

PARAMETERS	METHOD	MINIMUM SAMPLE VOLUME	HOLDING TIME	CONTAINER	CLEANED TO EPA PROTOCOL	PRESERVATIVE	SAMPLE TYPE
Mercury, Total	*7470/7471 **245	*10 grams **100 ml	38 Days in glass 13 Days in plastic	38 Days in glass 13 Days in plastic	*A **C	pH<2 HNO ₃ Cool 4°C	
Total Recoverable Metals (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	pH<2 HNO ₃ Cool 4°C	
Metals, Total Recoverable (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	pH<2 HNO ₃ Cool 4°C	
Dissolved Metals (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Filter on site pH<2 HNO ₃ Cool 4°C	
Metals, Dissolved (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Filter on site pH<2 HNO ₃ Cool 4°C	
Suspended Metals (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Filter on site pH<2 HNO ₃ Cool 4°C	
Metals, Suspended (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Filter on site pH<2 HNO ₃ Cool 4°C	

Table 7.1 (cont'd)
Parameters, Method, Preservation, Holding Times
Sample Volume, and Containers

PARAMETERS	METHOD	MINIMUM SAMPLE VOLUME	HOLDING TIME	CONTAINER	CLEANED TO EPA PROTOCOL	PRESERVATIVE	SAMPLE TYPE
Total Metals (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	pH<2 HNO ₃ Cool 4°C	
Metals Total (except chromium and mercury)	*7000 series 6010 **200 series 200.7	*10 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	pH<2 HNO ₃ Cool 4°C	G
Metals - TAL (23)	6010/7000	*2 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Metals - RCRA (8)	6010/7000	*2 grams **200 ml	6 Months	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Organochlorine Pesticides	8080	*30 grams **1 liter	14 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	Cool 4°C	
Paint Filter Liquid Test	9095	100 grams 100 ml		8 oz CWM	A	Cool 4°C	
PCB's	*8080 **608	*30 grams **1 liter	7 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	Cool 4°C	G/C
pH	*9040/9045 **150	*20 grams **25 ml	Immediately	*4 oz CWM **60 ml HDPE	*A **C	None	G
Reactive Sulfide	*7.3.3.2 7.3.4.2	*10 grams **250 ml	7 Days	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C Dark	G
Reactive Cyanide	*7.3.3.2 7.3.4.2	*10 grams **250 ml	7 Days	*4 oz CWM **500 ml HDPE	*A **C	Cool 4°C Dark	G

Table 7.1 (cont'd)
Parameters, Method, Preservation, Holding Times
Sample Volume, and Containers

PARAMETERS	METHOD	MINIMUM SAMPLE VOLUME	HOLDING TIME	CONTAINER	CLEANED TO EPA PROTOCOL	PRESERVATIVE	SAMPLE TYPE
Selenium	7000	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Selenium	6010	*2 grams ** 200 ml	6 Months	*3 oz CWM **500 ml HDPE	*A **C	Cool 4°C	G/C
Semi-Volatile Organic	*8270 **625,1625	*30 grams **1 liter	7 Days to ext 40 Days aft ext	*8 oz CWM **2.5 liter A.J.	*A **A	.008% Na ₂ S ₂ O ₃ Cool 4°C	
TCLP Extraction	*1311	*100 grams	7 Days to ext 40 Days aft ext	*2.5 liter CWM	*A	None	
TCLP Sample		*100 grams	7 Days to ext 40 Days aft ext	*16 oz CWM	*A	None	
Total Mercury	*7470/7471 **245	*10 grams **100 ml	38 Days in glass 13 Days in plastic	38 Days in glass 13 Days in plastic	*A **C	pH<2 HNO ₃ Cool 4°C	
Volatile Organics	*8260 **624/1624	*5 grams **5 ml	14 Days	*4 oz CWM **40 ml Vial	*A **B	4 Drops HCl .008% Na ₂ S ₂ O ₃ Cool 4°C	G

Environmental Sampling Guide, Eagle Picher, Environmental Services Department, 1993

- * = Solid Waste Method (SW-846)
- ** = Water/Wastewater Method (EPA-600)

Sample Type
 G - Grab
 C - Composite

HDPE = High-Density Polyethylene Bottle
B.R. = Boston Round
CWM = Clear Wide Mouth
A.J. = Amber Jug
Vial = Teflon-lined Septum

A = Cleaned to Protocol A
B = Cleaned to Protocol B
C = Cleaned to Protocol C

Preservations listed are for liquid samples.
Solid samples are preserved by placing on ice.

HCL	=	Hydrochloric Acid	-	dilute 1:1
HNO ₃	=	Nitric Acid	-	dilute 1:1
H ₂ SO ₄	=	Sulfuric Acid	-	dilute 1:1
NaOH	=	Sodium Hydroxide	-	dilute 1:1
Na ₂ S ₂ O ₃	=	Sodium Thiosulfate	-	for dechlorination

Refer to SOP -105 for a complete list of parameters.



Appendix III. Waste Analysis Regulations

The following regulations are provided for your convenience.

OAC rule 3745-54-13 General waste analysis.

(A)(1) Before an owner or operator treats, stores, or disposes of any hazardous waste, or nonhazardous waste if applicable under paragraph (D) of rule 3745-55-13 of the Administrative Code, he shall obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis shall contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of Chapters 3745-54 to 3745-57 and 3745-59 of the Administrative Code or with the terms and conditions of an Ohio hazardous waste permit.

(2) The analysis may include data developed under Chapter 3745-51 of the Administrative Code and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

[Comment: For example, the facility's records of analyses performed on the waste before the effective date of this rule, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with paragraph (A)(1) of this rule. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the information required by paragraph (A)(1) of this rule, except as otherwise specified in paragraphs (B) and (C) of rule 3745-59-07 of the Administrative Code. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this rule.]

(3) The analysis shall be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis shall be repeated:

(a) When the owner or operator is notified, or has reason to believe, that the process or

operation generating the hazardous waste, or nonhazardous waste if applicable under paragraph (D) of rule 3745-55-13 of the Administrative Code, has changed; and

(b) For off-site facilities, when the results of the inspection required in paragraph (A)(4) of this rule indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(4) The owner or operator of an off-site facility shall inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

(B) The owner or operator shall develop and follow a written waste analysis plan which describes the procedures to be implemented in order to comply with paragraph (A) of this rule. He shall keep this plan at the facility. At a minimum, the plan shall specify:

(1) The parameters for which each hazardous waste, or nonhazardous waste if applicable under paragraph (D) of rule 3745-55-13 of the Administrative Code, will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (A) of this rule);

(2) The test methods which will be used to test for these parameters;

(3) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(a) One of the sampling methods described in appendix I of rule 3745-51-20 of the Administrative Code; or

(b) An equivalent sampling method.

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

(5) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply.

(6) Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in rules 3745-54-17, 3745-57-14, 3745-57-41, and 3745-59-07 of the Administrative Code.

(7) For surface impoundments exempted from land disposal restrictions under paragraph (A) of rule 3745-59-04 of the Administrative Code, the procedures and schedules for:

(a) The sampling of impoundment contents;

(b) The analysis of test data; and

(c) The annual removal of residues which are not delisted under rule 3745-50-221 of the Administrative Code or which exhibit a characteristic of hazardous waste and either:

(i) Do not meet the applicable treatment standards of rules 3745-59-40 to 3745-59-44 of the Administrative Code; or

(ii) Where no treatment standards have been established;

(a) Such residues are prohibited from land disposal under rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA; or

(b) Such residues are prohibited from land disposal under paragraph (F) of rule 3745-59-33 of the Administrative Code.

(C) For off-site facilities, the waste analysis plan required in paragraph (B) of this rule shall also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan shall describe:

(1) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and

(2) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

[Comment: The waste analysis plan shall be submitted with "Part B" of the permit application.]

(3) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

[Note: See rule 3745-57-14 of the Administrative Code.]

Effective: 9/2/97

Prior effective dates: 4/15/81, 1/7/83, 5/29/85 (Emer.), 8/29/85, 1/30/86, 12/30/89, 4/1/90, 2/11/92

119.032 review date: 4/30/98

OAC rule 3745-54-17 General requirements for ignitable, reactive, or incompatible

wastes.

(A) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(B) Where specifically required by the hazardous waste facility standards chapters, the owner or operator of a facility that treats, stores or disposes of ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactions which:

(1) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(4) Damage the structural integrity of the device or facility;

(5) Through other like means threaten human health or the environment.

(C) When required to comply with paragraph (A) or (B) of this rule the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in rule 3745-54-14 of the Administrative Code), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

Effective: 1/7/83

Prior effective dates: None

OAC rule 3745-57-14 Special requirements for bulk and containerized liquids.

(A) The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(B) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test shall be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, (incorporated by reference, see rule 3745-50-11 of the Administrative Code).

(C) Containers holding free liquids must not be placed in a landfill unless:

(1) All free-standing liquid:

(a) Has been removed by decanting or other methods; or

(b) Has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

(c) Has been otherwise eliminated; or

(2) The container is very small, such as an ampule; or

(3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(4) The container is a lab pack as defined in rule 3745-57-16 of the Administrative Code and is disposed of in accordance with rule 3745-57-16 of the Administrative Code.

(D) Sorbents used to treat free liquids to be disposed of in landfills shall be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in paragraph (D)(1) of this rule; materials that pass one of the tests in (D)(2) of this rule; or materials that are determined by U.S.EPA to be nonbiodegradable through the petition process in 40 CFR Part 260.

(1) Nonbiodegradable sorbents.

(a) Inorganic minerals, other inorganic materials, and elemental carbon [e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina lime silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement

kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon]; or

(b) High molecular weight synthetic polymers [e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers]. This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(c) Mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents.

(a) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70(1984a)- Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(b) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76(1984b)- Standard Practice for Determining Resistance of Plastics to Bacteria; or

(c) The sorbent material is determined to be nonbiodegradable under the Organization for Economic Cooperation and Development (OECD) test 301B- CO2 Evolution (Modified Sturm Test).

(E) The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the director, or the director determines, that:

(1) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under authority or paragraph (C) of rule 3745-50-40 of the Administrative Code which contains, or may reasonably be anticipated to contain, hazardous waste; and

(2) Placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in rule 3745-34-01 of the Administrative Code).

Effective: 9/2/97

Prior effective dates: 8/30/84, 5/29/85 (Emer.), 8/29/85, 1/30/86, 12/30/89

119.032 review date: Exempt

OAC rule 3745-57-41 Waste analysis (Incinerators).

(A) As a portion of a trial burn plan required by the trial burn rules or with "Part B" of the permit application, the owner or operator must have included an analysis of his waste feed

sufficient to provide all information required by the trial burn rules. Owners or operators of new hazardous waste incinerators must provide the information required by the trial burn rules to the greatest extent possible.

(B) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit (under paragraph (B) of rule 3745-57-45 of the Administrative Code.

Effective: 11/29/83 Prior effective dates: 1/7/83

OAC rule 3745-59-07 Waste analysis and recordkeeping (LDR).

(A) Except as specified in rule 3745-59-32 of the Administrative Code, if a generator's waste is listed in rules 3745-51-30 to 3745-51-35 of the Administrative Code, the generator shall test his waste, or test an extract using the Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference, see rule 3745-50-11 of the Administrative Code), or use knowledge of the waste, to determine if the waste is restricted from land disposal under Chapter 3745-59 of the Administrative Code. Except as specified in rule 3745-59-32 of the Administrative Code, if a generator's waste exhibits one or more of the characteristics set forth in rules 3745-51-20 to 3745-51-24 of the Administrative Code, the generator shall test an extract using the Extraction Procedure Toxicity Test, Method 1310 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (incorporated by reference, see rule 3745-50-11 of the Administrative Code), or use knowledge of the waste, to determine if the waste is restricted from land disposal under Chapter 3745-59 of the Administrative Code.

(1) If a generator determines that he is managing a restricted waste under Chapter 3745-59 of the Administrative Code and the waste does not meet the applicable treatment standards set forth in rules 3745-59-40 to 3745-59-44 of the Administrative Code or exceeds the applicable prohibition levels set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA, with each shipment of waste the generator shall notify the treatment or storage facility in writing of the appropriate treatment standards set forth in rules 3745-59-40 to 3745-59-44 of the Administrative Code and any applicable prohibition levels set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. The notice shall include the following information:

(a) U.S. EPA Hazardous Waste Number;

(b) The corresponding treatment standards for wastes F001 to F005, F039, and wastes prohibited pursuant to rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. Treatment standards for all other restricted wastes must either be included, or be

referenced by including on the notification the applicable wastewater or nonwastewater (both terms as defined in rule 3745-59-02 of the Administrative Code) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the rules in the Administrative Code where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in rule 3745-59-42 of the Administrative Code, the applicable five-letter treatment code found in Table 1 of rule 3745-59-42 of the Administrative Code (e.g., INCIN, WETOX) also must be listed on the notification;

(c) The manifest number associated with the shipment of waste; and

(d) Waste analysis data, where available.

(2) If a generator determines that he is managing a restricted waste under Chapter 3745-59 of the Administrative Code, and determines that the waste can be land disposed without further treatment, with each shipment of waste he shall submit, to the treatment, storage, or land disposal facility, a notice and a certification stating that the waste meets the applicable treatment standards set forth in rules 3745-59-40 to 3745-59-44 of the Administrative Code and the applicable prohibition levels set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA.

(a) The notice must include the following information:

(i) U.S. EPA Hazardous Waste Number;

(ii) The corresponding treatment standards for wastes F001 to F005, F039, and wastes prohibited pursuant to rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater or nonwastewater (both terms as defined in rule 3745-59-02 of the Administrative Code) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the rules in the Administrative Code where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in rule 3745-59-42 of the Administrative Code, the applicable five-letter treatment code found in Table 1 of rule 3745-59-42 of the Administrative Code (e.g., INCIN, WETOX) also must be listed on the notification.

(iii) The manifest number associated with the shipment of waste;

(iv) Waste analysis data, where available.

(b) The certification shall be signed by an authorized representative and shall state the following:

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in rules 3745-59-40 to 3745-59-44 of the Administrative Code and all applicable prohibitions set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

(3) If a generator's waste is subject to an exemption from a prohibition on the type of land disposal method utilized for the waste (such as, but not limited to, a case-by-case extension under rule 3745-59-05 of the Administrative Code, an exemption under 3745-59-06 of the Administrative Code, or a nationwide capacity variance under rules 3745-59-30 to 3745-59-35 of the Administrative Code), with each shipment of waste he shall submit a notice to the facility receiving his waste stating that the waste is not prohibited from land disposal. The notice shall include the following information:

(a) U.S. EPA Hazardous Waste Number;

(b) The corresponding treatment standards for wastes F001 to F005, F039, and wastes prohibited pursuant to rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater or nonwastewater (both terms as defined in rule 3745-59-02 of the Administrative Code) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the rules in the Administrative Code where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in rule 3745-59-42 of the Administrative Code, the applicable five-letter treatment code found in Table 1 of rule 3745-59-42 of the Administrative Code (e.g., INCIN, WETOX) also must be listed on the notification.

(c) The manifest number associated with the shipment of waste;

(d) Waste analysis data, where available; and

(e) The date the waste is subject to the prohibitions.

(4) If a generator within the iron and steel industry, SIC codes 331X and 332X, is managing prohibited waste resulting from the production of iron, steel, or coke, specified in paragraph (G)(9) of rule 3745-54-01 or paragraph (C)(12) of rule 3745-65-01 of the Administrative Code, in tanks or containers regulated under rule 3745-52-34 of the Administrative Code, and is treating such waste in such tanks or containers to meet applicable treatment standards under rules 3745-59-40 to 3745-59-44 of the Administrative Code, the generator must develop and follow a written waste analysis plan which

describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1 of 40 CFR section 268.45, However, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(a) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and must contain all information necessary to treat the waste(s) in accordance with the requirements of Chapter 3745-59 of the Administrative Code, including the selected testing frequency.

(b) Such plan must be filed with the director, or his designated representative, a minimum of thirty days prior to the treatment activity, with delivery verified.

(c) Wastes shipped off-site pursuant to paragraph (A)(4) of this rule must comply with the notification requirements of paragraph (A)(2) of this rule.

(5) If a generator determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination shall be retained on-site in the generator's files. If a generator determines whether the waste is restricted based on testing this waste or an extract developed using the test method described in the appendix to rule 3745-51-24 of the Administrative Code, all waste analysis data shall be retained on-site in the generator's files.

(6) If a generator determines that he is managing a restricted waste that is excluded from the definition of waste or hazardous waste or exempt from regulation under Chapters 3745-50 to 3745-69 of the Administrative Code, under rules 3745-51-02 to 3745-51-06 of the Administrative Code subsequent to the point of generation, he must place a one-time notice stating such generation, subsequent exclusion from the definition of waste or hazardous waste or exemption from regulation under Chapters 3745-50 to 3745-69 of the Administrative Code, and the disposition of the waste, in the facility's file.

(7) Generators shall retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to this rule for at least five years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The five year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the director. The requirements of paragraphs (A) to (A)(10) of this rule apply to wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of waste or hazardous waste under rules 3745-51-02 to 3745-51-06 of the Administrative Code, or exempted from regulation under Chapters 3745-50 to 3745-69 of the Administrative Code, subsequent to the point of generation.

(8) If a generator is managing a lab pack that contains wastes identified in appendix I to rule 3745-59-42 of the Administrative Code and wishes to use the alternative treatment standard under rule 3745-59-42 of the Administrative Code, with each shipment of waste the generator shall submit a notice to the treatment facility in accordance with paragraph (A)(1) of this rule. The generator shall also comply with the requirements in paragraphs (A)(5) and (A)(6) of this rule, and shall submit the following certification, which must be signed by an authorized representative:

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only the wastes specified in appendix I to rule 3745-59-42 of the Administrative Code or wastes not subject to regulation under Chapter 3745-51 of the Administrative Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

(9) If a generator is managing a lab pack that contains wastes identified in appendix II to rule 3745-59-42 of the Administrative Code and wishes to use the alternative treatment standard under rule 3745-59-42 of the Administrative Code, with each shipment of waste the generator shall submit a notice to the treatment facility in accordance with paragraph (A)(1) of this rule. The generator shall also comply with the requirements in paragraphs (A)(5) and (A)(6) of this rule, and shall submit the following certification, which must be signed by an authorized representative:

"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only the wastes specified in appendix II to rule 3745-59-42 of the Administrative Code or wastes not subject to regulation under Chapter 3745-51 of the Administrative Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

(10) Small quantity generators with tolling agreements pursuant to paragraph (F) of rule

3745-52-20 of the Administrative Code shall comply with the applicable notification and certification requirements of paragraph (A) of this rule for the initial shipment of the waste subject to the agreement. Such generators shall retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the director.

(B) Treatment facilities shall test their wastes according to the frequency specified in their waste analysis plans as required by rule 3745-54-13 or 3745-65-13 of the Administrative Code. Such testing shall be performed as provided in paragraphs (B)(1), (B)(2) and (B)(3) of this rule.

(1) For wastes with treatment standards expressed as concentrations in the waste extract (rule 3745-59-41 of the Administrative Code), the owner or operator of the treatment facility shall test the treatment residues, or an extract of such residues developed using the test method described in the appendix to rule 3745-51-24 of the Administrative Code, to assure that the treatment residues or extract meet the applicable treatment standards.

(2) For wastes that are prohibited under rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA but not subject to any treatment standards under rules 3745-59-40 to 3745-59-44 of the Administrative Code, the owner or operator of the treatment facility shall test the treatment residues according to the generator testing requirements specified in rule 3745-59-32 of the Administrative Code to assure that the treatment residues comply with the applicable prohibitions.

(3) For wastes with treatment standards expressed as concentrations in the waste (rule 3745-59-43 of the Administrative Code), the owner or operator of the treatment facility shall test the treatment residues (not an extract of such residues) to assure that the treatment residues meet the applicable treatment standards.

(4) A notice shall be sent with each waste shipment to the land disposal facility which includes the following information:

(a) U.S. EPA Hazardous Waste Number;

(b) The corresponding treatment standards for wastes F001 to F005, F039, and wastes prohibited pursuant to rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater or nonwastewater (both terms as defined in rule 3745-59-02 of the Administrative Code) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the rules in the Administrative Code where the applicable treatment standard appears. Where the applicable treatment standards are expressed as

specified technologies in rule 3745-59-42 of the Administrative Code, the applicable five-letter treatment code found in Table 1 of rule 3745-59-42 of the Administrative Code (e.g., INCIN, WETOX) also must be included on the notification;

(c) The manifest number associated with the shipment of waste; and

(d) Waste analysis data, where available.

(5) The treatment facility shall submit a certification with each shipment of waste or treatment residue of a restricted waste to the land disposal facility stating that the waste or treatment residue has been treated in compliance with the applicable performance standards specified in rules 3745-59-40 to 3745-59-44 of the Administrative Code and the applicable prohibitions set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA.

(a) For wastes with treatment standards expressed as concentrations in the waste extract or in the waste (rule 3745-59-41 or 3745-59-43 of the Administrative Code), or for wastes prohibited under rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA which are not subject to any treatment standards under rules 3745-59-40 to 3745-59-44 of the Administrative Code, the certification shall be signed by an authorized representative and must state the following:

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information. I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in rules 3745-59-40 to 3745-59-44 of the Administrative Code, and all applicable prohibitions set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(b) For wastes with treatment standards expressed as technologies (rule 3745-59-42 of the Administrative Code), the certification shall be signed by an authorized representative and shall state the following:

"I certify under penalty of law that the waste has been treated in accordance with the requirements of rule 3745-59-42 of the Administrative Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(c) For wastes with treatment standards expressed as concentrations in the waste pursuant to rule 3745-59-43 of the Administrative Code, if compliance with the treatment

standards in rules 3745-59-40 to 3745-59-44 of the Administrative Code is based in part or in whole on the analytical detection limit alternative specified in paragraph (C) of rule 3745-59-43 of the Administrative Code, the certification also must state the following:

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with rules 3745-57-40 to 3745-57-51 of the Administrative Code, or rules 3745-68-40 to 3745-68-52 of the Administrative Code, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

(6) If the waste or treatment residue will be further managed at a different treatment or storage facility, the treatment, storage or disposal facility sending the waste or treatment residue off-site shall comply with the notice and certification requirements applicable to generators under this rule.

(7) Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions of paragraph (B) of rule 3745-58-30 of the Administrative Code regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (i.e., the recycler) is not required to notify the receiving facility, pursuant to paragraph (B)(4) of this rule. With each shipment of such wastes the owner or operator of the recycling facility shall submit a certification described in paragraph (B)(5) of this rule, and a notice which includes the information listed in paragraph (B)(4) of this rule (except the manifest number) to the director. The recycling facility also must keep records of the name and location of each entity receiving the hazardous waste-derived product.

(C) Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal pursuant to paragraph (B) of rule 3745-58-30 of the Administrative Code, the owner or operator of any land disposal facility disposing any waste subject to restrictions under Chapter 3745-59 of the Administrative Code shall:

(1) Have copies of the notice and certifications specified in paragraph (A) or (B) of this rule; and

(2) Test the waste, or an extract of the waste or treatment residue developed using the test method described in the appendix to rule 3745-51-24 of the administrative Code or using any methods required by generators under rule 3745-59-32 of the Administrative Code,

to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in rules 3745-59-40 to 3745-59-44 of the Administrative Code and all applicable prohibitions set forth in rule 3745-59-32 of the Administrative Code or section 3004(d) of RCRA. Such testing shall be performed according to the frequency specified in the facility's waste analysis plan as required by rule 3745-54-13 or 3745-65-13 of the Administrative Code.

Effective: 9/2/97

Prior effective dates: 12/30/89, 2/11/92, 9/7/92

119.032 review date: 4/30/98