Subpart K: Laboratory Management Plan Brainstorming Worksheet

- This worksheet is intended to help you get started with drafting your Laboratory Management Plan (LMP) for the Academic Laboratories Rule (Subpart K). We’d like you to brainstorm ideas for your LMP. However, the questions and answers you leave with today are not meant to be your entire LMP and should be expanded when drafting your LMP.

- The requirement to have a two-part LMP is found in 40 CFR 262.214. The LMP must address a total of 9 elements:

  Part I of the LMP must address 2 elements and the contents you develop are enforceable. This means that if you don’t follow what is written in Part I of the LMP, you are in violation of Subpart K (40 CFR 262.214(a)).

  Part II of the LMP must address 7 elements and should contain your institution’s best management practices for your laboratories. The contents you develop for Part II of the LMP are not enforceable. You must reasonably address these elements, but you can not be penalized if you do not follow the exact content that you develop for these elements. However, you can be penalized if you do not reasonably address these elements in your LMP (40 CFR 262.214(b)).

- Keep in mind that many of these elements may be practices that you already follow in your institution, but may not be written down.

- Also, the elements of the LMP may be included in another plan that you have already developed, such as a Chemical Hygiene Plan (i.e., you may not have to write a whole new plan).

- In the worksheet below, we will work through each of the nine elements of the two-part LMP. For each element:

  The regulatory language appears in red.

  The “plain language” version appears in bolded red.

  This worksheet provides ideas for getting started with each element. These ideas illustrate various ways to begin addressing the elements of a LMP, but are not meant to be exhaustive, complete, or exclusive.

  This document is for planning purposes only and does not constitute, replace, or change the regulations.
Part I of the LMP

The eligible academic entity must implement and comply with the specific provisions of Part I of its Laboratory Management Plan as required in 40 CFR 262.214(a). In Part I of its Laboratory Management Plan, an eligible academic entity must:

Element 1: Describe procedures for container labeling in accordance with § 262.206(a), including:

(i) Identifying whether the eligible academic entity will use the term “unwanted material” on the containers in the laboratory. If not, identify an equally effective term that will be used in lieu of “unwanted material” and consistently by the eligible academic entity. The equally effective term, if used, has the same meaning and is subject to the same requirements as “unwanted material.”

(ii) Identifying the manner in which information that is “associated with the container” will be imparted.

What (i) means: What are you going to call “Unwanted Materials” in your laboratories?

Ideas for getting started (circle one or fill in the blank):

A. Unwanted Materials  
B. Lab Waste  
C. Chemical Waste  
D. Lab Hazardous Waste  
E. Lab Unwanted Materials  
F. Other __________________________

What (ii) means: Are you going to use an “associated with” label rather than include all the labeling information on the label that is “affixed or attached” to the container? If so, how will you associate the information?

Ideas for getting started:

- Log Book using a container numbering/labeling system to correlate containers with the associated information in the log book.
- Bar Code and reader that correlate specific containers with the labeling information in a data base.
- Spreadsheet using a container numbering/labeling system to correlate containers with the associated information in the spreadsheet.

Write down ideas for HOW you would use an “associated with” label:

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Element 2: Identify whether the eligible academic entity will comply with § 262.208(a)(1) or (a)(2) for regularly scheduled removals of unwanted material from the laboratory.

What this means: Will you remove all containers of unwanted material from the laboratory:

- On a regular schedule not to exceed 6 months, or
- Within 6 months of each container’s accumulation start date (rolling 6-month basis)?

Circle one:

A. All containers will be removed on a regular schedule, not to exceed 6 months.

B. Containers will be removed within 6 months of each container’s accumulation start date (rolling 6-month basis).
Part II of the LMP

In Part II of its Laboratory Management Plan as required in 40 CFR 262.214(b), an eligible academic entity must:

Element 1: Describe its intended best practices for container labeling and management, including how the eligible academic entity will manage containers used for in-line collection of unwanted materials, such as with high performance liquid chromatographs and other laboratory equipment (see the required standards at § 262.206).

What this means: Describe procedures for:
- Labeling containers of unwanted material in the laboratory
- Managing containers of unwanted material in the laboratory
- Managing containers of unwanted materials attached to in-line equipment such as HPLCs

Ideas for getting started:

- For container labeling, develop a blank label for unwanted materials and procedures for using the same label in all of your laboratories.
- For container management, indicate that you will use secondary containment where containers of unwanted material are collected, including containers attached to in-line equipment

Write down ideas:

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Sketch a label for containers of unwanted material:
Element 2: Describe its intended best practices for providing training for laboratory workers and students commensurate with their duties (see the required standards at § 262.207(a)).

What this means: Describe how and to what level you will provide training to students and laboratory workers.

Ideas for getting started:

- Identify the method(s) of training that you will use. Will you provide on-line training? Classroom training? Video training? In-person training?

- Identify the content or level of training that will be provided to various types of laboratory personnel:
  - Those that work in a supervised teaching setting (e.g., undergraduate or graduate students)
  - Those that work in an unsupervised, research setting (e.g., undergraduate or graduate students, researchers, post-docs, laboratory managers, faculty, etc.)

- Identify the frequency of training and re-training that will be provided (e.g., every semester, annual).

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Element 3: Describe its intended best practices for providing training to ensure safe on-site transfers of unwanted material and hazardous waste by trained professionals (see the required standards at § 262.207(d)(1)).

What this means: Describe how you will provide training to trained professionals to ensure safe on-site transfers of unwanted materials.

Ideas for getting started:

- Identify the method(s) of training that you will use. Will you provide on-line training? Classroom training? Video training? In-person training?

- Identify the content or level of training that will be provided to trained professionals that will be transferring unwanted materials and hazardous waste from the laboratories to other parts of the campus (e.g., indicate that you will provide training that includes separating incompatibles, spill prevention and spill clean-up procedures).

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**Element 4:** Describe its intended best practices for removing unwanted material from the laboratory, including:

(i) For regularly scheduled removals—Develop a regular schedule for identifying and removing unwanted materials from its laboratories (see the required standards at § 262.208(a)(1) and (a)(2)).

(ii) For removals when maximum volumes are exceeded:

(A) Describe its intended best practices for removing unwanted materials from the laboratory within 10 calendar days when unwanted materials have exceeded their maximum volumes (see the required standards at § 262.208(d)).

(B) Describe its intended best practices for communicating that unwanted materials have exceeded their maximum volumes.

**What this means:**

- Develop a schedule for removing unwanted materials from the laboratory that will ensure you comply with your choice in Part I, element 2 of the LMP.

- Describe procedures for laboratory personnel to alert appropriate personnel (e.g., EH&S staff) when unwanted materials need to be removed from the laboratory due to reaching the volume limits of 55 gallons of unwanted materials or 1 quart of acutely reactive unwanted materials. Describe procedures to ensure that the appropriate personnel will respond within 10 calendar days.

**Ideas for getting started:**

- For (i), indicate that you will pick up unwanted materials at the end of every semester (e.g., May 15th, August 15th, and December 15th).

- For (ii), develop a form on email or the web for laboratory personnel to contact the EH&S department when maximum volumes have been exceeded. Explain that a member of the EH&S department will pick up the unwanted material within 10 calendar days and bring it to the on-site central accumulation area.

**Write down ideas:**

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Element 5: Describe its intended best practices for making hazardous waste determinations, including specifying the duties of the individuals involved in the process (see the required standards at § 262.11 and §§ 262.209 through 262.212).

What this means: Describe the process you will use to make hazardous waste determinations, including who will be involved in what part of the process.

Ideas for getting started:

- Indicate that EH&S staff will transfer unwanted materials from the laboratories to the on-site central accumulation area and then a qualified vendor will come and make the hazardous waste determination before transporting them off-site.

- Indicate that a vendor will come on-site and make the hazardous waste determinations in the laboratories and then will transport the hazardous waste off-site.

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Element 6: Describe its intended best practices for laboratory clean-outs, if the eligible academic entity plans to use the incentives for laboratory clean-outs provided in § 262.213, including:

(i) Procedures for conducting laboratory clean-outs (see the required standards at § 262.213(a)(1) through (3)); and

(ii) Procedures for documenting laboratory clean-outs (see the required standards at § 262.213(a)(4)).

What this means: Indicate whether you intend to conduct laboratory clean-outs. If so, describe how you will conduct laboratory clean-outs using the laboratory clean-out incentives under the rule and how you will document the clean-outs.

Ideas for getting started:

- For (i), Develop a schedule and identify personnel for conducting regular laboratory clean-outs. Develop standard procedures for conducting a laboratory clean-out.

- For (ii), Identify whether you will maintain the clean-out documentation electronically or on paper and where that information will be stored.

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Element 7: Describe its intended best practices for emergency prevention, including:

(i) Procedures for emergency prevention, notification, and response, appropriate to the hazards in the laboratory; and

(ii) A list of chemicals that the eligible academic entity has, or is likely to have, that become more dangerous when they exceed their expiration date and/or as they degrade; and

(iii) Procedures to safely dispose of chemicals that become more dangerous when they exceed their expiration date and/or as they degrade; and

(iv) Procedures for the timely characterization of unknown chemicals.

What this means: Describe your procedures for emergency prevention and address the four items above.

Ideas for getting started:

- For (i), indicate how laboratory personnel would alert EH&S staff about a damaged container, that you will place posters in each laboratory with emergency contact information, and that you will post evacuation routes in each laboratory.
- For (ii), identify dangerous chemicals such as picric acid, peroxide formers such as diethyl ether, 2-propanol, etc.
- For (iii), develop an electronic tracking mechanism for these dangerous chemicals that will alert you when they are nearing the end of their shelf-life.
- For (iv), describe procedures and equipment you will use to run standard screening tests to characterize unknowns or identify a qualified vendor that routinely characterizes unknowns and set up a contract to use the vendor on a short turn-around basis.

Write down ideas:

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