Basic Facts About the Labs Rule

- The Academic Labs Rule was published December 1, 2008
- Established Subpart K in 40 CFR Part 262 (generator regulations) for laboratories owned by eligible academic entities
  - Labs typically operate under the satellite accumulation area (SAA) regulations of 40 CFR 262.34(c)
  - Subpart K provides alternate RCRA generator regulations for managing hazardous waste in academic labs
How does a facility become eligible?

• Must notify using 8700-12 and be……
• Academic school or
• Teaching college or
• Non-profits with formal written affiliation agreement
• NOT – elementary or secondary schools
## Rule Benefits

<table>
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<tr>
<th>New Provision under Subpart K</th>
<th>Benefits of New Provision</th>
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| Training of Laboratory Personnel                                  | • Greater awareness in laboratory  
|                                                                  | • Safer laboratories  
|                                                                  | • Better compliance                                                                       |
| EH&S or Vendor Makes HW Determinations                            | • More accurate HW determinations  
|                                                                  | • Options of where and when to make the HW determination allows entity to tailor rule to its labs |
| Time-Driven Removal of Laboratory HW                              | • Allows for better planning  
|                                                                  | • Safer Laboratories                                                                     |
| On-site Consolidation of Laboratory HW                            | • Fewer partially full containers reduces costs  
|                                                                  | • Vendors spending less time on-site reduces costs                                       |
| Laboratory Clean-out Incentives                                   | • Reduced stockpile of legacy chemicals  
|                                                                  | • Safer laboratories                                                                     
|                                                                  | • Fewer episodic generators                                                               
|                                                                  | • Reduced costs to eligible academic entity                                               |
| Laboratory Management Plan (LMP)                                  | • Opportunity to move beyond compliance to implement best management practices            |
Subpart K Rule Provisions

- 262.200 – Definitions
- 262.201 – Applicability
- 262.202 – This Rule is Optional
- 262.203 – Notification of Participation
- 262.204 – Notification of Withdrawal
- 262.205 – Summary of Rule
- 262.206 – In-Lab Container Management and Labeling
- 262.207 – Training
- 262.208 – Removing Containers from a Laboratory
- 262.209-12 – Hazardous Waste Determinations
- 262.213 – Laboratory Clean Outs
- 262.214 – Laboratory Management Plan
- 262.215 – Unwanted Material, not solid or HW
- 262.216 – Non Laboratory Waste Management
262.200 – Definitions

- **College/University** – Post secondary, public or private, degree granting, ACCREDITED by an accrediting agency listed by the US Dept. of Education

- **Eligible academic entity** – non-profit research institute or a teaching hospital owned by or with a formal affiliation agreement with a college or university

- **Formal Written Affiliation Agreement** signed by all parties; not on a grant or project by project basis.
Definitions (cont.)

- Laboratory – area where relatively small quantities of chemicals are used for teaching or research
  - Nonproduction basis
  - Stored and used in containers easily manipulated by one person
  - Includes – photo labs, art studios, field labs, chemical stockrooms and prep rooms providing support to teaching or research, and diagnostic labs at teaching hospitals
Laboratory Worker – person who handles chemicals or unwanted material in a laboratory. May include:

- Faculty – professors, principal investigators
- Staff – technicians, supervisors, managers
- Students – post doctoral fellows
- Interns – do not have to be paid
- NOT undergraduate or graduate students in a supervised classroom setting
- Does include teaching and research assistants!
Definitions (cont.)

- **Unwanted Material** – any chemicals, mixtures or other material from a lab that is destined for a hazardous waste determination by a trained professional

- **Working Container** – 2 gallons or less, used to collect unwanted material at a lab work station

- **Laboratory Clean Out** – special removal, not part of the routine removals required under the lab management plan

- **Central Accumulation Area** – on site HW accumulation area subject to SQG or LQG rules
262.201 & 202 - Applicability

- Alternate requirements to normal hazardous waste accumulation requirements under 262.34 for large and small quantity generators
- CESQGs may also participate
- The alternate requirements are optional. Generators may still choose to comply with normal hazardous waste generator requirements.
262.203 & 204 Notification

- Must not wait for an inspection to claim the use of the alternate management rule
- Notification is required before implementing a Subpart K program and also again if a facility withdraws from a Subpart K program
262.205

- Academic entities do not have to have RCRA permits or interim status provided the labs comply with the provisions of 40 CFR 262 Subpart K and the entity has a Laboratory Management Plan in accordance with 40 CFR 262.214

- The plan shall describe how the labs owned by the entity will comply with the rule
(a) Container Labeling
- “Unwanted Material” or other similar term used consistently by the entity and identified in the Laboratory Management Plan
- Information to alert emergency responders to contents
- Can include chemical name, type of chemical
- Date the material began accumulating
- Information to allow a trained professional to make a HW determination
  - Used or unused? Chemical composition/reactions?
  - A description of the manner in which the chemical was processed
  - i.e. spent solvents, electroplating processes
(b) Container Management

- Good condition, overpacked if needed
- Compatible with contents,
- Closed except
  - When adding, removing or bulking
  - Working containers may be open until the end of the procedure or work shift, or until it is full
  - When venting a container is necessary for proper operation of the lab equipment (such as HPLC waste collection containers) or in order to prevent pressure buildup
Differences from Subpart C

- As stringent than normal satellite requirements, except for the provision allowing open containers
  - Less stringent than 90 day accumulation area rules
  - “Unwanted material” is covered under the rule until a HW determination has been performed
- Designed to get complete chemical constituent and process information to the trained professional that will perform the hazardous waste determination and arrange for disposal
  - Identification of listed hazardous wastes
  - Identification of underlying hazardous constituents
262.207 - Training

- Required for all lab workers and students
  - Except for undergraduates and graduates in classrooms
  - Instructor is responsible for behavior of class
- Commensurate with duties
- Variety of methods allowed
  - Instruction by the professor or lab manager
  - Classroom training
  - On the job
  - Electronic or written
- Large Quantity Generators must maintain all training documentation for current workers
- Three years for former workers and students
Trained Professionals

- Must accompany the transfer of unwanted material and hazardous waste when the material is removed from the laboratory.
- Must make hazardous waste determinations for unwanted material in accordance with 40 CFR 262.11:
  - Determine if the material is a listed hazardous waste.
  - Then whether or not it is characteristically hazardous.
  - Identify all applicable federal and state EPA waste numbers.
  - Identify the underlying hazardous constituents present in characteristically hazardous wastes.
- 202.200 definition – may be a contractor or vendor that meets the requisite training requirements.
262.208 – Time Limits

- (a)(1) Unwanted material must be removed from the labs on a regular basis, not to exceed once per 12 months OR
- (a)(2) within 12 months of the accumulation start date
- The entity must choose either option one or two, and the facility’s laboratory management plan must specify the frequency
- The plan must also outline how the entity will comply with the removal plan
- Removal required if limits are exceeded
262.208 – Quantity Limits

- Each laboratory is limited to:
  - 55 gallons of all unwanted material
  - 1 quart of reactive, acutely hazardous unwanted material, listed in 40 CFR 261.33(e) - followed by (R):

  Examples:
  - Aluminum phosphide (P006)
  - Ammonium picrate (P009)
  - Mercury fulminate (P065)
  - Nitroglycerine (P081)

- Reactive acutely hazardous unwanted material is defined in 40 CFR 262.200

- Does not include many items otherwise considered to be reactive such as cyanides or sodium azide
262.208(d) – Excess Material

If excess material accumulates before a scheduled removal, the lab must:

- Mark all containers with the date the excess accumulated
- Remove all containers from the lab within 10 calendar days, or the next scheduled removal day, whichever is first

  Except if the excess is one quart of reactive acutely hazardous material, only that material must be removed
262.209 - Waste Determinations

- Options – Where to make a HW determination
  - In the laboratory before the material is removed
  - Within 4 calendar days after receipt at the central accumulation area
  - Within 4 calendar days after arrival at an on site permitted or interim status storage unit

- CESQGs ONLY – 40 CFR 261.5(c)(7) states that for purposes of the waste quantity determination required, CESQGs do not have to count unused commercial chemical products generated solely as a result of a lab cleanout at an eligible academic institution conducted under 262.213
  - However they must be made in the laboratory
If unwanted material is determined to be a hazardous waste:
- The material must be labeled “Hazardous Waste” either on the container or an attached tag – do not change the date on the container.
- The applicable EPA Waste Codes must also be marked on the container or tag.
- The material is counted towards the facility’s monthly generator status at that time.
- The trained professional must accompany the waste as it is transferred out of the lab.
- LQGs and SQGs must ensure the waste is taken directly to an on-site accumulation or storage area.
262.211 – At Central Area

- Trained professional must accompany waste when it is transferred from the lab to the accumulation area – transfer must be direct
- The waste becomes subject to HW generator standards immediately, except for container labeling
- The labeling requirement is effective after the hazardous waste determination (within 4 days)
- The accumulation time limit begins when the container arrives at the central area
262.213 – Lab Clean Outs

- Section does not apply to items already determined to be “unwanted material” prior to the clean out.
- For each laboratory, one time per calendar year unused chemicals may be categorized as “unwanted material” without counting toward the facility’s generator status for on site accumulation.
- For purposes of off site management, the waste must still be manifested to a permitted TSDF.
- If more than 55 gallons of material, the lab may hold the material 30 days rather than 10 days.
Clean Out Documentation

- Maintain for three years
- Identify the laboratory
- Dates the clean out begins and ends
- The volume of hazardous waste generated during the clean out
  - Maintain copies of waste profiles, manifests, lab pack container contents sheets, and land disposal restriction notices in accordance with 40 CFR 262.40
Laboratory Clean-Out Incentives

- Academic Labs Rule (Subpart K) provides regulatory incentives to conduct laboratory clean-outs to promote removal of potentially dangerous old and expired chemicals

- Subpart K incentives include:
  - No volume limit for laboratory clean-out waste
  - Instead must remove all laboratory clean-out waste after 30 days
  - Reduced likelihood of episodic generation by not counting some waste toward generator status which reduces regulatory burden of increasing generator status

- Subpart K laboratory clean-out details:
  - Incentives can be used one time per laboratory per 12 months
  - Laboratory clean-outs are not mandatory
  - HW must still be disposed of safely and properly
Laboratory Clean-Out Incentives

- Generator regulations don’t provide incentives to conduct laboratory clean-outs:
  - Unused commercial chemicals are not solid waste until a decision is made to discard them
  - Laboratory clean-outs will often increase generator status (e.g. from SQG to LQG) increasing regulatory requirements called episodic generation
- This leads to labs holding onto chemicals that can expire and degrade over time potentially becoming dangerous
262.214 - Lab Management Plan

- Must be a site specific written document
- May cover all labs owned by the entity that have opted in, even if the lab is located at sites with different EPA facility identification numbers
- Describes how the entity will manage materials
- Must have two parts, described further below
- Must be available to all staff, students or anyone else at the entity that requests to review it
- Must be reviewed and revised as needed
Part I-Lab Management Plan

- Describe procedures for container labeling
- “Unwanted Material” or some other equally effective term to be used consistently
- Identify the manner in which the information associated with the container will be imparted
  - Label
  - Tag
  - Bar Code
  - Inventory Sheet as items are added
- Identify the removal schedule
Part II – Lab Management Plan: Required Descriptions

1) Intended best practices for container labeling and management
2) Intended best practices for training workers and students in accordance with their duties
3) Intended best practices for providing training to ensure safe on site transfers by trained staff
4) Intended best practices for lab material removals
   - Identify schedule for scheduled removals
   - Intended practices for removals within 10 days of a volume exceedance
Part II – Lab Management Plan: Required Descriptions

5) Intended best practices for making hazardous waste determinations, including individual job duties

6) Intended best practices for lab cleanouts
   - Procedures
   - Documentation

7) Intended best practices for emergency prevention
   - Procedures for notification & response
   - Chemical list for items that become more dangerous when they expire or degrade
   - Procedures for safe disposal
   - Procedures for timely characterization of unknowns
“Unwanted Material” that is not solid or hazardous waste is no longer subject to Subpart K after the waste determination has been made

- The new exemptions for recyclable secondary materials may apply to materials that would otherwise be regulated hazardous waste
- Separate notifications are required to take advantage of these exclusions
Non laboratory waste generated at an eligible academic entity is still fully regulated

- Maintenance Shops
- Physical Plant
- Grounds Maintenance
- Waste from clinical labs at student health centers not associated with teaching or research
Art Studios are Labs

Photography
Print Making
Ceramics
Sculpture
Painting
QUESTIONS??

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