

Course Outline

- Regulatory Overview & Recordkeeping Requirements
- Hazardous Waste Determination
- · Container & Tank Management
- · Shipping Requirements



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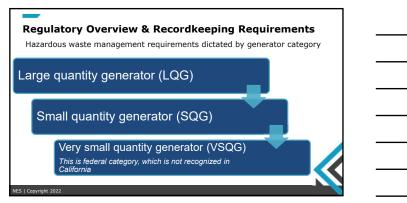


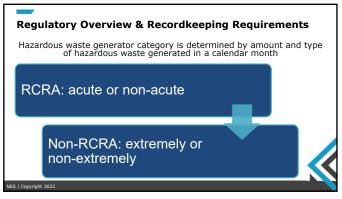
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| Generator Status | or Cated Acute / Extremely Haz Waste | Non-Acute / Non-Extremely Haz Waste | Spill Cleanup of Acute / Extremely Haz Waste |
|--------------------------------------|---------------------------------------|---|--|
| Large quantity generator (LQG) | ≥ 1 kg | ≥ 1,000 kg | ≥ 100 kg |
| Small quantity generator (SQG) | ≤ 1 kg | > 100 kg and < 1,000 kg | ≤ 100 kg |
| Very small quantity generator (VSQG) | ≤ 1 kg | ≤ 100 kg | ≤ 100 kg |

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EPA Identification Numbers

- Each site that generates hazardous waste must have an ID number
 - California ID numbers issued by DTSC
 - o CAL permanent
 - CAC temporary
 - $\bullet\,$ EPA ID numbers issued by U.S. EPA
 - ° CAR, CAD, CA, or CAT permanent
 - CAP temporary

| 22 CCR 66262.12 |
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Contingency Plans – LQGs • Spell out emergency actions involving hazardous waste • Fire • Explosions • Unplanned, sudden releases/spills

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Contingency Plans - LQGs

- Contents:
- Emergency Coordinator
- Emergency procedures
- Emergency services and arrangements to coordinate response actions
- Emergency equipment
- Evacuation Plan
- Cal OES contact
- · Copy maintained on-site
- Reviewed and updated when:
 - Regulations change;
 - Plan fails;
 - Facility changes design or response operations;
 - Emergency Coordinator changes; OR
 - Emergency equipment changes

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22 CCR 66265.52- 5

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Emergency Procedures – SQGs At all times, at least one employee must be available to respond to an emergency Information must be posted next to telephones OR in areas directly involved in the generation and accumulation of hazardous waste Name & number of Emergency Coordinator Location of fire extinguishers, spill control equipment, and fire alarm Fire Department number

40 CFR 262.16(b)(9)(i-

Hazardous Waste Tank Assessments - LQGs who accumulate hazardous waste in tanks must have a tank assessment that is certified by a PE - Assessment must be completed prior to putting tank into service - New tank systems must be reassessed every five years After July 14, 1986 RCRA HazWaste Non-RCRA HazWaste Non-RCRA HazWaste Non-RCRA HazWaste Reassess Every 5 Years by PE

Hazardous Waste Tank Assessments

Assessment of the tank must include:

- Tank configuration, material of construction, and capacity
- Design standard
- · Description of tank system piping
- Description of any internal and external pumps
- Sketch or drawing of tank including dimensions
- Documented age of the tank system
- Evaluation of leak detection, spill prevention equipment, and containment
- Evaluation of corrosion protection
- Characteristics of the waste accumulated in tank
- · Remaining service life of tank

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22 CCR 66265.1

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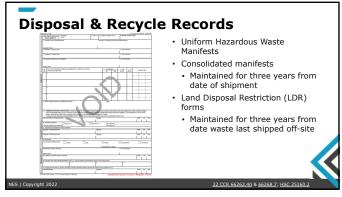
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Biennial Report

- Required & certified by <u>RCRA</u> LQGs
 Report covers odd-numbered year (2023)
- Contains amounts by waste code
- Identifies source and origin of waste
- Identifies disposal method (recycled, incinerated, etc.)
- Describes waste minimization efforts
- Due March 1st of even-numbered year (2024)
- Copy kept on-site for three years

| RCRA 84 | ⊗EPA |
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22 CCR 66262.41 & 66265.7



Record Retention

- Waste analytical test analyses
- Three years from date waste was last shipped off-site
- Container and tank inspections
 - Best management practice (BMP) three years from date of inspection
- · Tank inspections
 - Three years from date of inspection
- · Emergency equipment inspections
 - Three years from date of inspection

LQGs: Required to keep tank & emergency equipment inspection records for three years

SQGs: Not required to keep inspection records but recommended as a RMP

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Training Requirements – SQGs Employees must be familiar with proper waste handling and emergency response procedures relevant to their responsibilities Annual training is not required for SQG under hazardous waste law Annual training is not required for SQG under hazardous waste Annual training is a best management practice (BMP) NES I Copyright 2022





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Training Requirements - LQGs

Documentation

- Description for each position related to hazardous waste management including the requisite skills, education, or other qualifications and duties of has heen provided and completed employees assigned to each position
- Job title for each position related to hazardous waste management and the name of the employee filling each job
- Description of the type and length of training needed for each
 ... position
- has been provided and completed
- · Records are to be kept until facility closure for current
 - Three years for former employees



| Hazardous Was | te Determination |
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A person who generates a waste must determine if it is hazardous by determining if the waste:

- Is excluded from regulation
- Is listed
- Exhibits any hazardous waste characteristics

Determinations can be made by:

- Testing the waste
- · Generator's knowledge

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22 CCR 66262.

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Hazardous Waste Determination RCRA Hazardous Waste Non-RCRA Hazardous

- Listed
 - Unspent (U & P)
 - Spent (F & K)
- Characteristic
- Ignitable (D001)
- Corrosive (D002)
 Reactive (D003)
- Toxic (D004 D043)
- Waste

 Presumptive lists
- Presumptive lis
 Common name
- Chemical constituents
- M-listed waste
- Characteristic
- Ignitable
- Corrosive
- ReactiveToxic

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F-Listed Wastes

- Spent waste from non-specific sources:
 - Spent solvent wastes (F001 F005)
 - Electroplating & metal-finishing wastes (F006 F012 & F019)
 - Dioxin-containing wastes (F020 F023 & F026 F028)
 - Chlorinated aliphatic hydrocarbons production wastes (F024 & F025)
 - Wood-preserving wastes (F032, F034 & F035)
 - Petroleum refinery wastewater treatment sludges (F037 & F038)
 - Multi-source leachate (F039)

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K-Listed Wastes

Spent Waste from Specific Sources

- Wood preservation
- -
- Inorganic pigments
- Organic chemicals
- · Inorganic chemicals
- Pesticides
- Explosives
- Petroleum refining
- · Iron & steel
- · Primary aluminum
- · Secondary lead
- Veterinary pharmaceuticals
- Ink formulation
- Coking

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Unspent Listed Wastes

- Pure or commercial grade formulations of **unused** chemicals
 - Pure grade 100%
 - Technical grade All commercial grades of a chemical, which may be marketed in various stages of purity
 - Sole active ingredient The only chemically active component for the function of the product
- Any chemical used for its intended purpose does not meet a P or U listing

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Unspent Listed Wastes P-listed wastes Acute hazardous, include: Contaminated containers Spill cleanup U-listed wastes Toxic (unless otherwise noted) No. Acute hazardous of the container of the container

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RCRA Ignitable Characteristic - D001

- Liquid (other than < 24% alcohol by volume) with a flash point < 140°F (60°C)
- A solid that can cause fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns vigorously and persistently
- Is an ignitable compressed gas
- Is an oxidizer







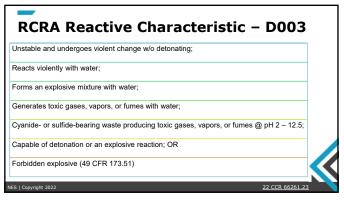


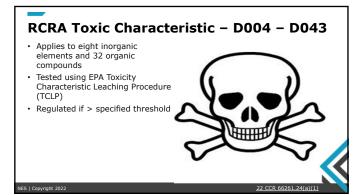
22 CCR 66261

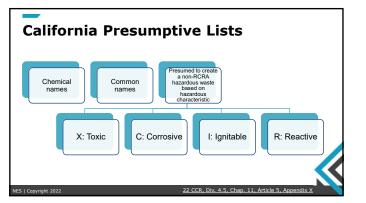
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RCRA Corrosive Characteristic – D002 • Aqueous with pH \leq 2.0 or \geq 12.5; OR • Liquid that corrodes steel at $\frac{1}{4}$ inch (6.35 mm) per year pH Scale Acid Alkaline 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 Bothey Stemach Lemon Juice Grange Acid Block Usine Pure Sea Babiling Ammonia Scapy Bleach Drain Opener

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Non-RCRA Ignitable Characteristic (Same as RCRA)

- Liquid (other than < 24% alcohol by volume) with a flash point < 140°F (60°C)
- A solid that can cause fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns vigorously and persistently
- · Is an ignitable compressed gas
- · Is an oxidizer









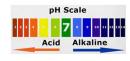
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Non-RCRA Corrosive Characteristic

- Aqueous with pH ≤ 2.0 or ≥ 12.5
- Liquid that corrodes steel at ¼ inch (6.35 mm) per year
- Non-aqueous wastes that yield pH \leq 2.0 or \geq 12.5 when mixed with an equivalent weight of water
- Non-liquids that corrode steel at ¼ inch (6.35 mm) per year when mixed with an equivalent weight of water





22 CCR 66261.2

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Non-RCRA Reactive Characteristic (Same as RCRA) Unstable and undergoes violent change w/o detonating; Reacts violently with water; Forms an explosive mixture with water; Generates toxic gases, vapors, or fumes with water; Cyanide- or sulfide-bearing waste producing toxic gases, vapors, or fumes @ pH 2 – 12.5; Capable of detonation or an explosive reaction; OR Forbidden explosive (49 CFR 173.51)

Non-RCRA Toxic

- Exceeds WET thresholds (TTLC or STLC for 20 inorganics [Table II] or 18 organics [Table III] – State's test to depict municipal landfill conditions);
- Oral $LD_{50} < 2,500 \text{ mg/kg};$
- Dermal LD_{50} < 4,300 mg/kg;
- Inhalation $LC_{50} < 10,000$ ppm;
- Aquatic 96-hour LC_{50} < 500 mg/L; OR
- Contains a listed carcinogen (16) ≥ 0.001% by weight

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22 CCD 66261 24/5//2-7

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Used Oil

<u>Used oil</u> is defined as oil that has been refined from crude oil or any synthetic oil that has been used and, as a result of use or as a consequence of extended storage or spillage, has been contaminated with physical or chemical impurities.



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HSC 25250.:

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Used Oil

Used Oil

- Crankcase oil
- Gear oil
- Vegetable or animal oil used as a lubricant
- · Hydraulic oil
- · Transformer oil
- · Transmission fluid

Not Used Oil

- Antifreeze
- Brake fluid
- Fuels
- Other automotive wastes
- · Solvents
- Oil with a flash point < 100°F
- Oil with \geq 5 ppm PCBs
- Oil with > 1,000 ppm halogens

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HSC 25250.

California Waste Codes

Restricted Wastes

700-800

 Inorganics Organics Sludges

100-199 200-300

400-499

Miscellaneous

500-600

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Exemptions

Contaminated containers [22 CCR 66261.7]

Spent lead-acid storage batteries [22 CCR 66266.80-81]

Universal wastes [22 CCR 66273]

Used oil filters & fuel filters [22 CCR 66266.130; HSC 25250.22]

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Container & Tank Management



Container

A <u>container</u> is a device that is open or closed, and portable, in which material can be stored, handled, treated, transported, recycled, or disposed of.





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Tank

A $\underline{\operatorname{tank}}$ is a $\operatorname{stationary}$ device designed to contain an accumulation of hazardous waste constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) that provide structural support.



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22 CCR 66260.1

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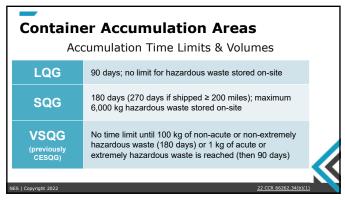
Central Accumulation Areas

- Generators must have a designated Central Accumulation Area (CAA)
 - Generators can have multiple CAAs
- LQGs CAA must be > 50 ft from property line if ignitable (D001) or reactive (D003) waste present
- Facility must be maintained & operated to minimize possibility of a fire, explosion, or release



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); 22 CCR 66265.176 & 66265



Container Accumulation Areas - Security LQGs

- · Located in secure area with access controlled
- Post warning sign: "Danger Hazardous Waste Accumulation Area - Unauthorized Personnel Keep Out"

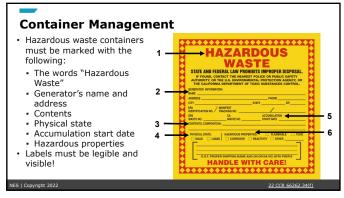


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Central Accumulation Areas

- Emergency equipment:
 - Internal communication devices
- Fire extinguishers
- Spill control equipment
- Equipment must be tested and maintained
- LQGs inspection schedule must be implemented, records maintained







Alsile space between containers must allow for unimpeded access to containers Incompatible hazardous wastes cannot be placed in the same container 40 CFR 262.16(D)(8)(V), 22 CCR 66265.35

Tank Management

- Hazardous waste tanks must be labeled with the following:
 - "Hazardous Waste"
 - · Accumulation start date
- Hazardous property(ies) of the waste



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Tank Management - LQGs



- Hazardous waste tanks must have secondary containment:
 - Designed to prevent releases from impacting soil or water
 - Capable of detecting and collecting releases and accumulated liquids

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22 CCR 66265.19

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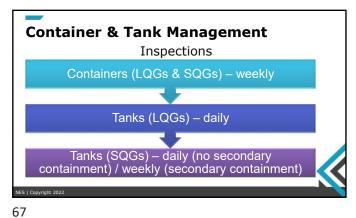
Used Oil

- Containers and tanks used to accumulate used oil must be marked with "Used Oil" (in addition to hazardous waste markings)
- Do not mark used oil containers and tanks with "Waste Oil"



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22 CCR 66279.1



Satellite Accumulation Areas

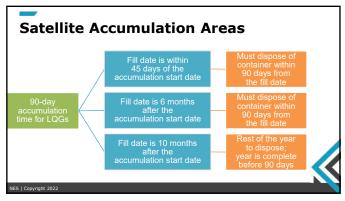
- Satellite Accumulation Area requirements:
 - At or near any point of generation
 - Under the control of operator of process generating waste
 - Only containers can be used
 - One container per waste stream
 - $^{\circ}\,$ Unless generator determines using one container is not practical or safe (subject to DTSC review and approval)
 - [Continued...]

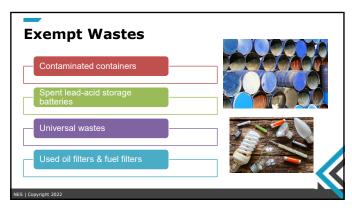
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Satellite Accumulation Areas

- Limit of 55 gallons (1 qt for acute or extremely hazardous waste) per $\,$ waste stream
- Must meet all container management standards (weekly inspections not required)
- Container can be stored on-site for no more than one year
- Container must be dated within three days of when it reaches capacity







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Contaminated Containers (> 5 gallons)

- · Containers must be:
- Empty no continuous stream for liquids
- Marked "Empty" (BMP)
- Marked with the date they became empty
- Stored on-site no more than one year (365 days)
- Recycled
- Recycle records kept for three years



22 CCR 66261.

Contaminated Containers (≤ 5 gallons) Containers that are 5 gallons or less and empty can be managed as municipal waste (trash) Do not dry containers; this may be considered treatment

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Spent Lead-Acid Storage Batteries • Management of batteries: • Stored upright on a pallet on a sealed surface • Stored to prevent the terminals from short circuiting • Stored on-site no more than one year (365 days – 180 for more than a ton) and marked with out-of-service date • Recycle records kept for three years

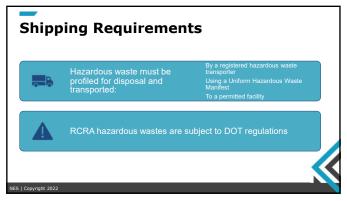
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Universal Waste • Examples of universal waste: • Spent batteries • Spent lamps • Electronic devices (e-waste) • Mercury-containing devices • Aerosol cans (non-empty) • End-of-life solar panels UNIVERSAL WASTE CONTRITS ACCUMULATION START DATE ADDRESS CITY, STATE, ZIP ADDRESS C

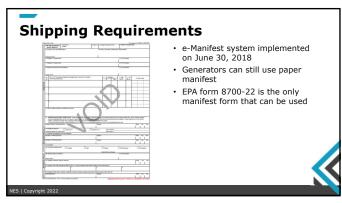












Shipping Requirements

- Generator is responsible for information in boxes 1 15
- Box 16 is for international shipments
- Box 17 is for transporter's acknowledgement of receipt
- Boxes 18 20 are to be completed by designated facility (TSDF)



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Shipping Requirements

- Manifest consists of five parts:
 - Page 1 TSDF to EPA's e-Manifest system
- Page 2 TSDF to generator
- Page 3 TSDF copy
- Page 4 Transporter copy
- Page 5 Generator initial copy (legible copy must be mailed to DTSC within 30 days of shipment)



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Shipping Requirements

- · Consolidated shipments:
- Authorized hazardous waste streams consolidated into a single shipment from multiple generators
- Transported by a consolidated transporter
- Generator and transporter section of manifest completed by transporter
- Generator provided a receipt (signed by transporter and generator) for shipment
- $\bullet\,$ Receipt retained by generated for three years from date of shipment

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HSC 25160.

Consolidated Manifest - Authorized Waste Streams

- Used oil
- · Contents of an oil/water separator
- Solids contaminated with used oil
- · Brake fluid
- Antifreeze
- · Antifreeze sludge
- Parts-cleaning solvents
- Asbestos & asbestos-containing materials
- Inks from the printing industry
- Chemicals and laboratory packs collected from K-12 schools
- Filters from dispensing pumps for diesel and gasoline fuels
- Hydroxide sludge (contaminated solely with metal from wastewater treatment process)
- Paint-related wastes, including paints, thinners, filters, and sludge
- · Spent photographic solution
- Dry cleaning solvents including perchloroethylene, naphtha, and silicone-based solvents
- Filters, lint, and sludge contaminated with dry cleaning solvent
- Retail hazardous waste collected from retailers
- Absorbents contaminated with wastes on this list

HSC 25160.

