



Comparison: Federal and California Hazardous Waste Regulations

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CA vs. Fed Haz Waste

- California's HSC and CCR Title 22, Division 4.5
- 40 *CFR* Parts 260-279



Haz Waste Determination



Federal

1. Solid waste?
2. Excluded?
3. Listed?
4. Characteristic?

California

1. Waste? Broader definition
2. Excluded? Fewer & different
3. Listed? Extra list
4. Characteristic? Broader definitions

(Solid) Wastes

Federal

1. Abandoned
2. Recycled
3. Inherently waste-like
4. Military munitions

California

1. Relinquished
2. Recycled
3. Inherently waste-like
4. Mislabeled/damaged containers

Table with the Asterisks

	Use constituting disposal [§261.2(c)(1)]	Energy recovery/fuel [§261.2(c)(2)]	Reclamation [§261.2(c)(3)] [except as provided in §§261.4(a)(17), 261.4(a)(23), 261.4(a)(24), or 261.4(a)(27)]	Speculative accumulation [§261.2(c)(4)]
	(1)	(2)	(3)	(4)
Spent materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 <i>CFR</i> 261.31 or 261.32)	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in 40 <i>CFR</i> 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products listed in 40 <i>CFR</i> 261.33	(*)	(*)	—	—
Scrap metal that is not excluded under §261.4(a)(13)	(*)	(*)	(*)	(*)

CA Table with the Asterisks

	Use constituting disposal [§66261.2(d)(1)]	Energy recovery/fuel [§66261.2(d)(2)]	Reclamation [§66261.2(d)(3)]	Speculative accumulation [§66261.2(d)(4)]
	(1)	(2)	(3)	(4)
Spent materials	*	*	*	*
Sludges (listed in §66261.31 or 66261.32)	*	*	*	*
Sludges exhibiting a characteristic of hazardous waste	*	*	**	*
By-products (listed in §66261.31 or 66261.32)	*	*	*	*
By-products exhibiting a characteristic of hazardous waste	*	*	**	*
Commercial chemical products listed in §66261.33	*	*	**	**

Recycled Materials

- Four ** instead of — non-RCRA hazardous wastes
- CCPs that become “retrograde materials” not wastes for 1 year



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Excl.: Not Wastes (similarities)

- NPDES discharges
- Nuclear materials
- Spent sulfuric acid used to produce virgin sulfuric acid
- Pulping liquors reclaimed and reused in pulping process
- 2° materials reclaimed and reused in production process
- Oil-bearing materials recycled into refineries
- Materials used/reused



Excl.: Not Wastes (CA lacks)

- Domestic sewage
- Irrigation return flows
- In situ mining materials
- Spent wood preservation solutions
- Recycled coking wastes
- Excluded scrap metal
- Recycled shredded circuit boards
- Recovered oil from chemical plant
- DSW exclusions

Excl.: Not Haz Wastes (similarities)

- Geothermal E&P wastes
- Reclaimed CFCs for reuse
- Oil re-refining distillation bottoms used in asphalt
- Mineral extraction, beneficiation, and processing wastes
- Cement kiln dust



Excl.: Not Haz Wastes (CA lacks)

- Household wastes
- Agricultural wastes returned to soil as fertilizer
- Mining overburden returned to mine site
- Trivalent chromium wastes
- Leachate/gas condensate from SW landfills
- Solvent wipes



Excl.: Not Haz Wastes (CA unique)

- Animal carcass infectious waste
- Biomass combustion residues
- Wood wastes removed from utility service
- Wastes excluded under §261.4, not M-listed, and not CA-char.



Exemptions (similarities)

- De minimis quantities into headworks
- Analytical/treatability samples
- Wastes in active MPUs
- Recycled lead-acid batteries
- RCRA-hazardous scrap metal

Exemptions (CA lacks)

- Low-level mixed wastes
- Recycled precious metal-containing wastes
- PCB-containing electrical equipment subject to TSCA
- Airbag waste

Exemptions (CA unique)

- Special wastes
- CRT panel glass
- Laundered rags and textiles

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F-Wastes

Process wastes from
non-specific sources

CA same



K-Wastes

Manufacturing process wastes
from specific sources

CA same



P- & U-Wastes

Unused acute and toxic hazardous chemicals

CA same



M-Wastes (CA unique)

Mercury-containing

Listed even if not characteristic

Can manage as UW



App. X (CA unique)

Chemicals
(* presumed EHW)

Common wastes
(e.g., acid sludge, paint thinner)

Common electronic wastes



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Characteristic Wastes

mostly same

broader

same

broader





STLC or TTLC

Acute oral LD₅₀ <2,500 mg/kg

Acute dermal LD₅₀ <4,300 mg/kg

Acute inhalation LC₅₀ <10,000 ppmv

Acute aquatic LC₅₀ (96-hr)
<500 mg/L

66261.24(a)(7) constituents
≥0.001 wt%

Otherwise carcinogenic, toxic,
bioaccumulative, or persistent

CA also has...

EHW

- Particularly toxic/
water reactive
- High TTLC of 20
bioaccumulative cmpds.
- Appx. X (a) with *

Special wastes

- Exceed STLC/TTLC but not
TCLP
- Unique disposal exemption

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Universal Wastes

	Batteries	Hg-cont. equip.	Lamps	Aerosol cans	Pesticides	CRTs/CRT glass	PV modules	Electronics
Fed	X	X	X	X	X			
CA	X	X	X	X		X	X	X

Universal Wastes

CA mostly same as fed except:

- No distinction between handlers
- No automotive lead-acid batteries
- Households and CESQG pulled in
- Handlers can do limited recycling on CA-UW

Used Oil

CA fundamentally different from fed

■ Manage as haz waste unless

- “Exempt”
- “Recycled”
- Excluded



CA Used Oil Purity Std.



Constituent/property	Allowable level
Flash Point	ASTM set minimum or $\geq 100^{\circ}\text{F}$ if burned
Lead	≤ 50 mg/kg
Arsenic	≤ 5 mg/kg
Chromium	≤ 10 mg/kg
Cadmium	≤ 2 mg/kg
Halogens	≤ 3000 mg/kg
PCBs	< 2 mg/kg

Used Oil Management

Provision	Fed	CA
Burn as fuel	✓	✗
Mix with haz waste	✓	✗
Label "Used Oil"	✓	✓
Label "Hazardous Waste"	✗	✓
Manifested shipments	✗	✓
Testing by generators	✗	✓
Notification/Recordkeeping	✗	✓



Generators

A scenic view of Half Dome in Yosemite National Park, California, with a list of generator types overlaid on the image. The background shows the iconic granite dome under a cloudy sky, with forested slopes and distant mountain ranges.

Fed has:

- LQGs
- SQGs
- VSQGs

CA has:

- LQGs
- SQGs
- CESQGs
- Residential (but exempt)

CA CESQGs don't get breaks



- Notify/ID #

- Manifest

- 180-day accum.

- Training

- Emergency procedures

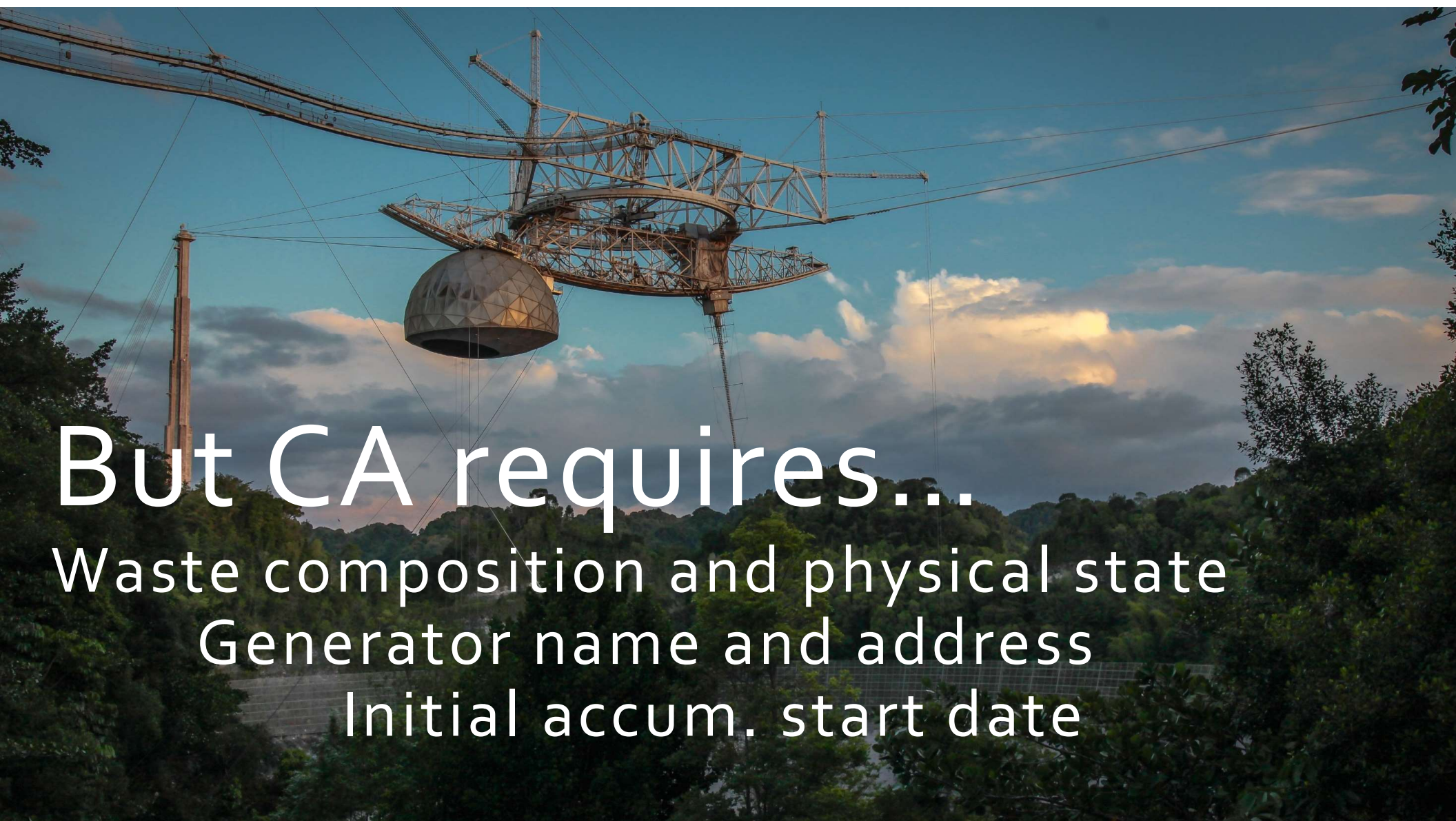
- LDR for non-RCRA HW

Satellite Accumulation (similarities)

A satellite is shown in space, oriented towards the Earth. It has two large, blue, rectangular solar panel arrays extended from its central body. A large, white, multi-faceted antenna or sensor is mounted on the front of the satellite. The Earth's surface is visible below, showing a blue and white horizon against the blackness of space.

- 55-gal/1-qt limit
- At or near POG

- Under control of operator
- "Hazardous Waste"
- Indication of the hazards



But CA requires...

- Waste composition and physical state
- Generator name and address
- Initial accum. start date

90/180/270-Day Accum.

Same between programs except:

CA has 1-year limit total,
including 90/180/270 days
Plus additional SAA labeling reqs.



Containers

Same management and “empty” standards

- Bulk: $\leq 0.3\%$ by weight
- Acute/EHW: triple rinse
- Compressed gas: atmospheric

Containers

CA differences include:

- Non-bulk:

- Pourable: nothing drains when inverted
- Non-pourable: waste removed to feasible extent, only film

- >5 gals must recycle or recondition

Tanks

A large, cylindrical industrial storage tank, likely for oil or gas, is shown from a low angle. The tank is made of metal panels and has a metal railing around the top edge. The lighting is warm, suggesting sunset or sunrise, with the sky in the background.

Most requirements are the same

- Design/Installation
- Leak detection
- Spill response
- Compatibility
- Air emission standards



CA also has...

- No weekly inspection option
- 2^o containment option 10% aggregate volume
- Tank assessment every 5 years for “non-RCRA” tanks
- Additional closure requirements

Manifesting (states can't have own program)

CA also requires:

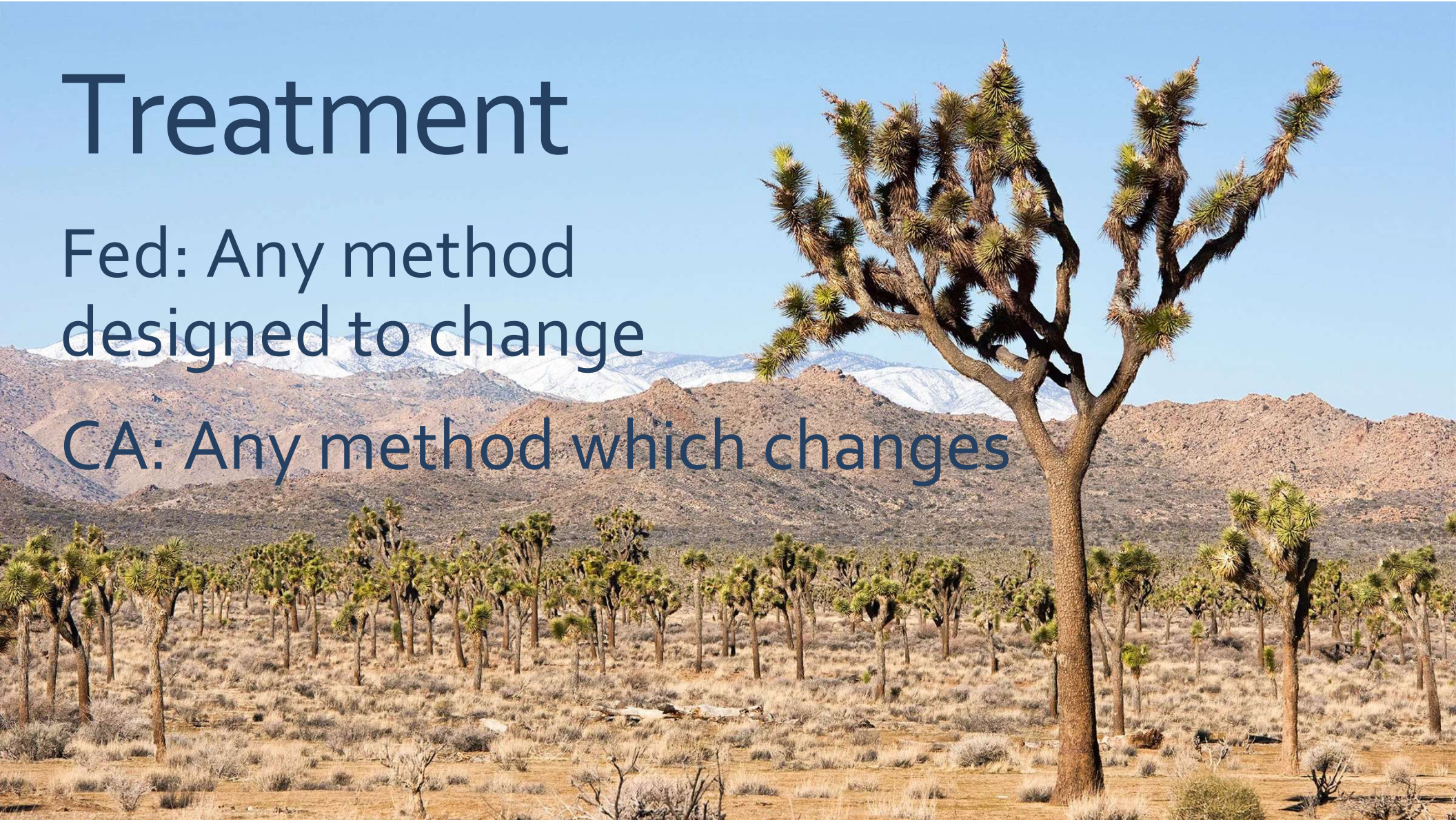
- Generators submit to DTSC
- Manifest non-RCRA HW
- Consolidated manifesting for some SQG/CESQG wastes



Treatment

Fed: Any method designed to change

CA: Any method which changes



A photograph of a terraced hillside with green grass and stone walls. A llama is standing on one of the terraces, and a small stone house is visible in the lower right. The background is a dark, forested mountain.

Permitting

Fed permitting geared toward specific functions:

“Part B”

RAPs

Incinerators

Emergency, etc.

A photograph of a terraced hillside with green grass and stone walls. A small brown goat is standing on one of the terraces. In the background, a small stone house is visible on the slope. The sky is a deep blue.

CA Tiered Permitting

Costs and burdens match risk:

Full permit

Standardized permit

Permit by rule

Conditional authorization

Conditional exemption

Land Disposal Restrictions

States can't have own program, but CA adds:

- Standards for some non-RCRA HWs
- RCRA/non-RCRA HW mixtures treat to lowest level
- No storage prohibition for non-RCRA HWs
- More stringent dilution prohibition

Air Emission Standards

Nearly identical between programs, except in CA:

- Subpart BB—1st repair attempt for leaks within 24 hours
- Subpart CC—fewer exemptions
- Doesn't apply to units only managing non-RCRA HW



Any Questions?

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