



Innovative Recycling: Electroplating/Manufacturing Wastewater Focus – RCRA Concerns

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PRESENTED TO THE PUBLIC FORUM OF THE
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL
PROTECTION'S HAZARDOUS WASTE ADVISORY COMMITTEE –
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Regulation of Manufacturing Wastewaters

- **Resource Conservation and Recovery Act**

- Hazardous Waste Determinations
- Accumulation and Other Generator Obligations
- Treatment, Storage and Disposal Facility Requirements
- Recyclable Material Notification and Management Rules, Land Disposal Restrictions, etc.

- **Clean Water Act**

- NPDES Permitting and Effluent Limits
- Pretreatment Permitting, Standards and Notifications of HW

- **Clean Air Act**

- **State and Other Environmental and Worker Safety Programs ... such as CT Regulated Waste requirements**



Reducing and Reusing Wastewaters – Trends/Factors

WW Discharge Limits Lowering

- especially NPDES WQ-Based

Diminishing Treatment Results

Pressures to Minimize Discharges and Emissions and Reduce Water and Raw Material Use

- Reduce Compliance Exposure
- Reduce Supply Costs
- Reduce Environmental Impacts

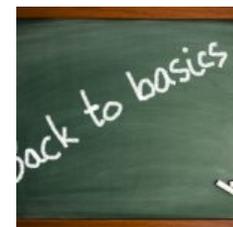
Time & Cost to Add/Use Equipment

- Design and Oversight of Water/WW Treatment and Quality Assurance
- Contingencies for WW Removal and Water Supply

Complicate and Possibly Increase Haz Waste Mgmt. Obligations

- Possible “Sham Recycling” Concerns
- Potentially Ambiguous or Restrictive Rules

Hazardous Waste 101 for Wastewaters



- To be regulated HW must be “solid waste” ... liquid and other “discarded” materials

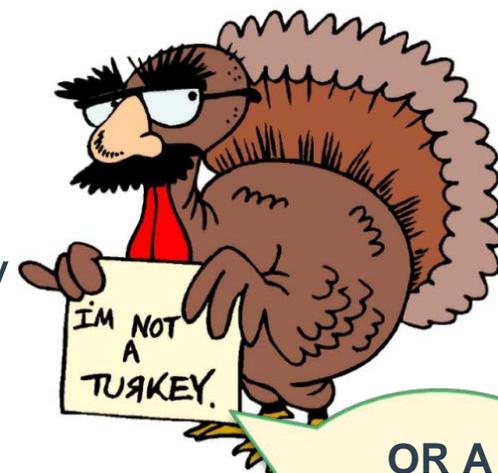
- Abandoned SW
- **Recycled SW (e.g. reclaimed, spec-accumulated)**
- Inherently waste-like, etc.



- Must also be “hazardous waste” ...

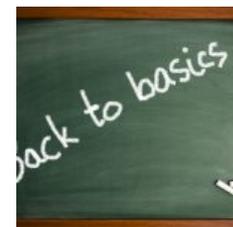
- Exhibits HW “characteristic” of ... ignitability, corrosivity, reactivity or toxicity
- “Listed” as HW in regs
- Mixture of SW and listed HW
- SW derived from treating, storing or disposing HW

- **Unless covered by SW or HW exclusion**



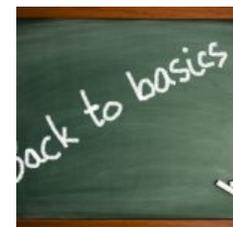
OR A
“WASTE”
UNDER
RCRA

“Recycled” SW – Table 1, 261.2(c)



	Use constituting disposal (1)	Energy recovery/fuel (2)	Reclamation (3)	Speculative accumulation (4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed 261.31 or 32)	(*)	(*)	(*)	(*)
Sludges exhibiting HW characteristic	(*)	(*)	-	(*)
By-products (listed 261.31 or 32)	(*)	(*)	(*)	(*)
By-products exhibiting HW characteristic	(*)	(*)	-	(*)
Commercial chemical products listed 261.33	(*)	(*)	-	(CT)
Scrap metal not excluded 261.4(a)(13)	(*)	(*)	(*)	(*)

HW Wastewaters and Sludges



EXAMPLES

- WWs exhibiting haz characteristic ... e.g. electroplating and other metal finishing WWs with levels of metals or other toxics above TCLP criteria
- Listed HW ... e.g. “F006” wastewater treatment sludges from electroplating operations
- Mixture Rule – SW mixed with listed HW
- Derived-From Rule – Sludges and other SW derived from treating or storing HW (listed or remaining characteristic)

HW Treatment, Storage & Disposal



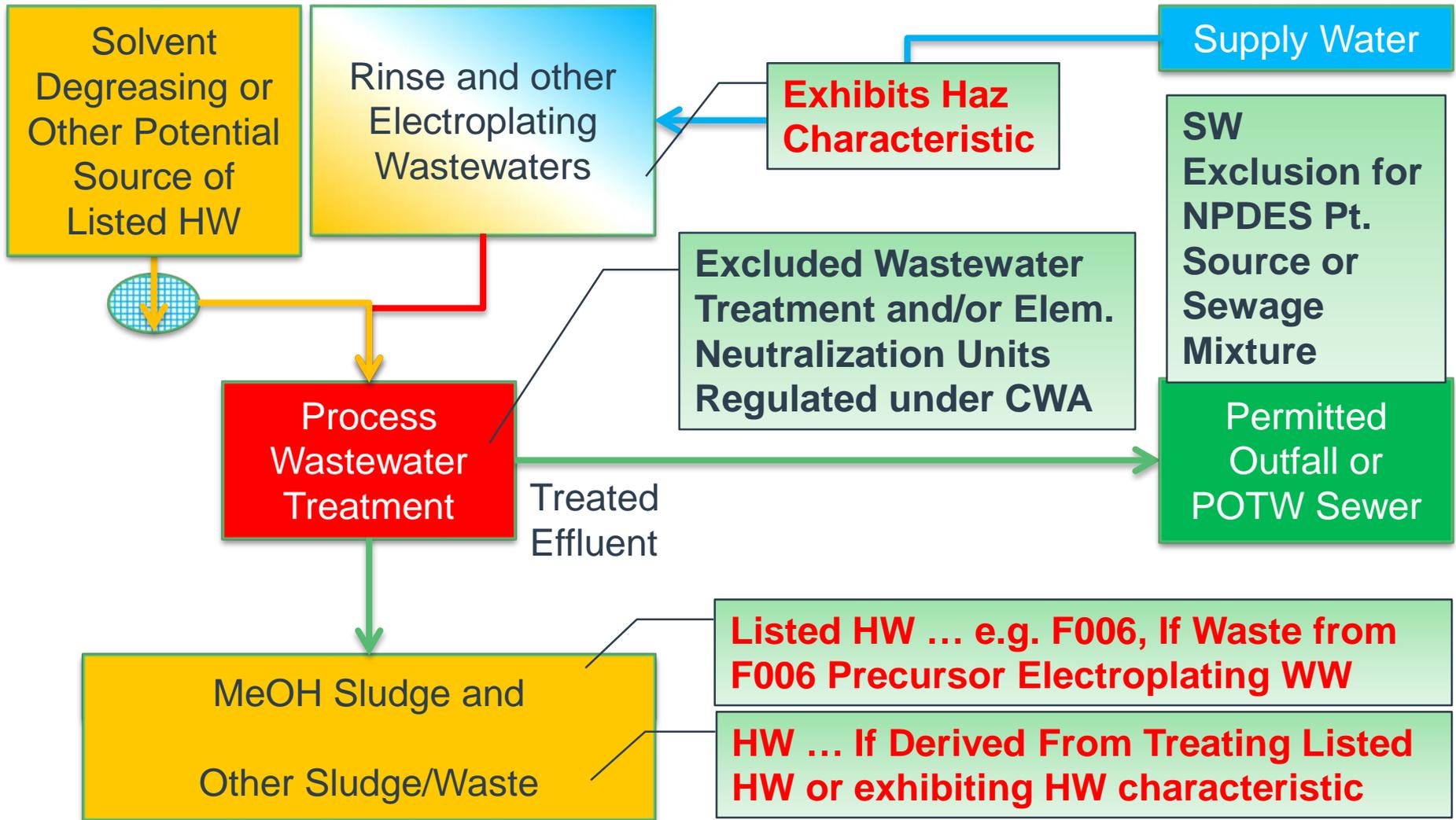
- **Treatment** ... **changing** HW's physical, chemical or biological character or composition ... **to neutralize, to recover energy/resource, or to render non/less hazardous, safer, amenable** for recovery or storage, or **reduced in volume**
- Storage (holding) ... Disposal (land, H₂O, air) ...
- **TSD HW Mgmt. Facilities**
 - Notification, Application, Fees, Insp's, Cont. Plans, C/PC, etc.
 - Fin'l Assurance
 - Corrective Action
- **Recyclable HW Fac's**
- **Excluded TSDFs**



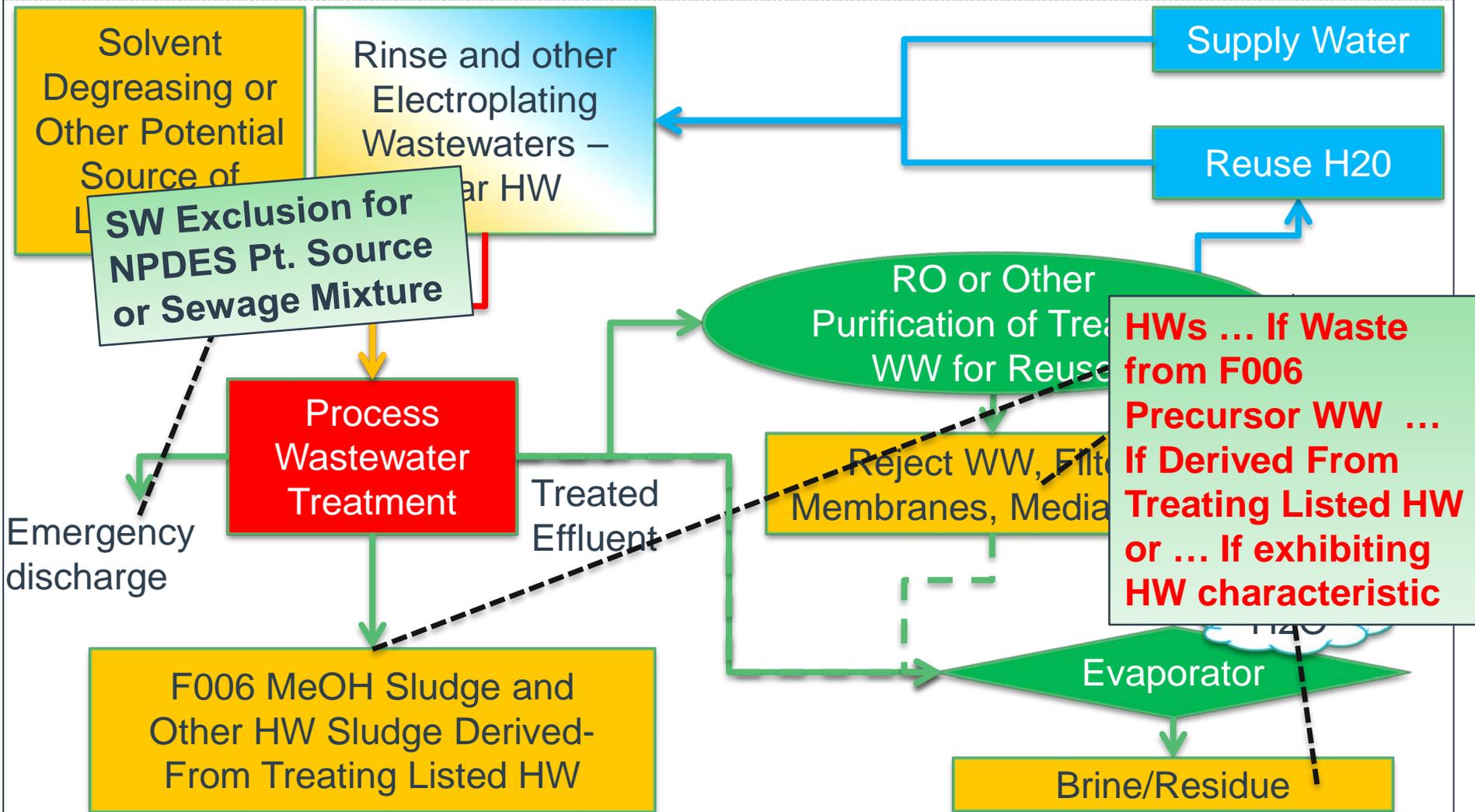
Live long and prosper



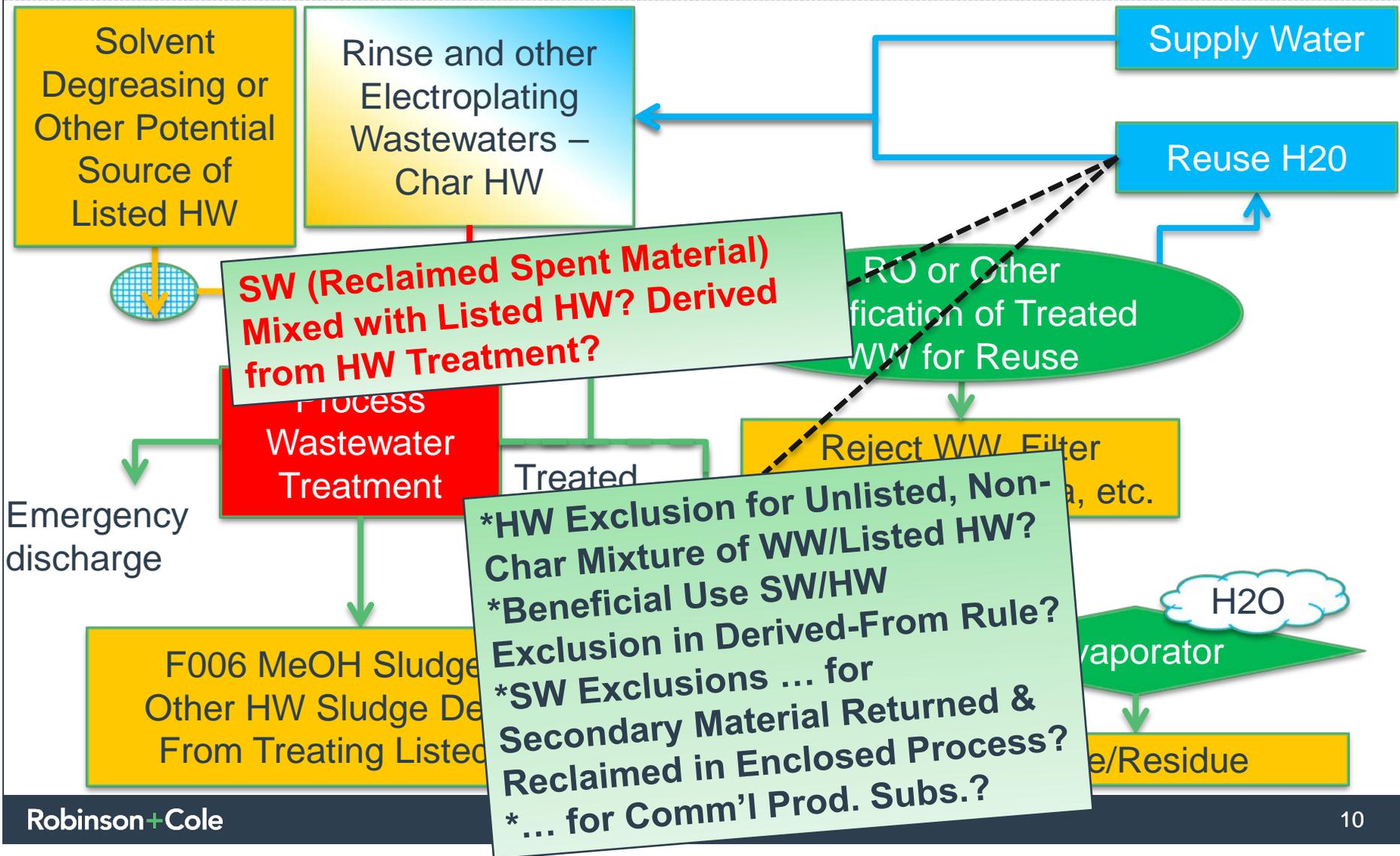
Electroplating WW Reduction/Reuse Project



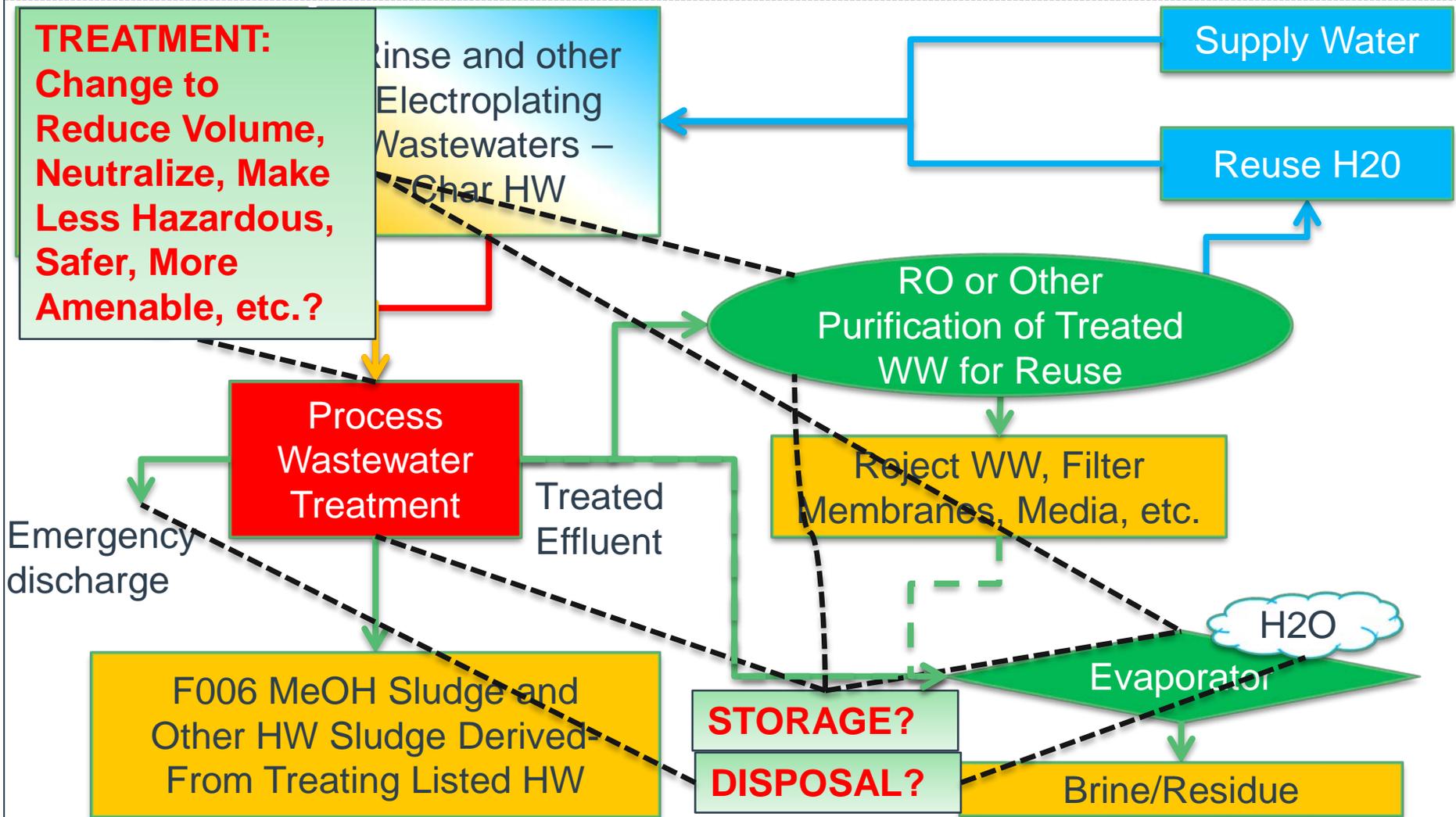
Electroplating WW Reduction/Reuse Project



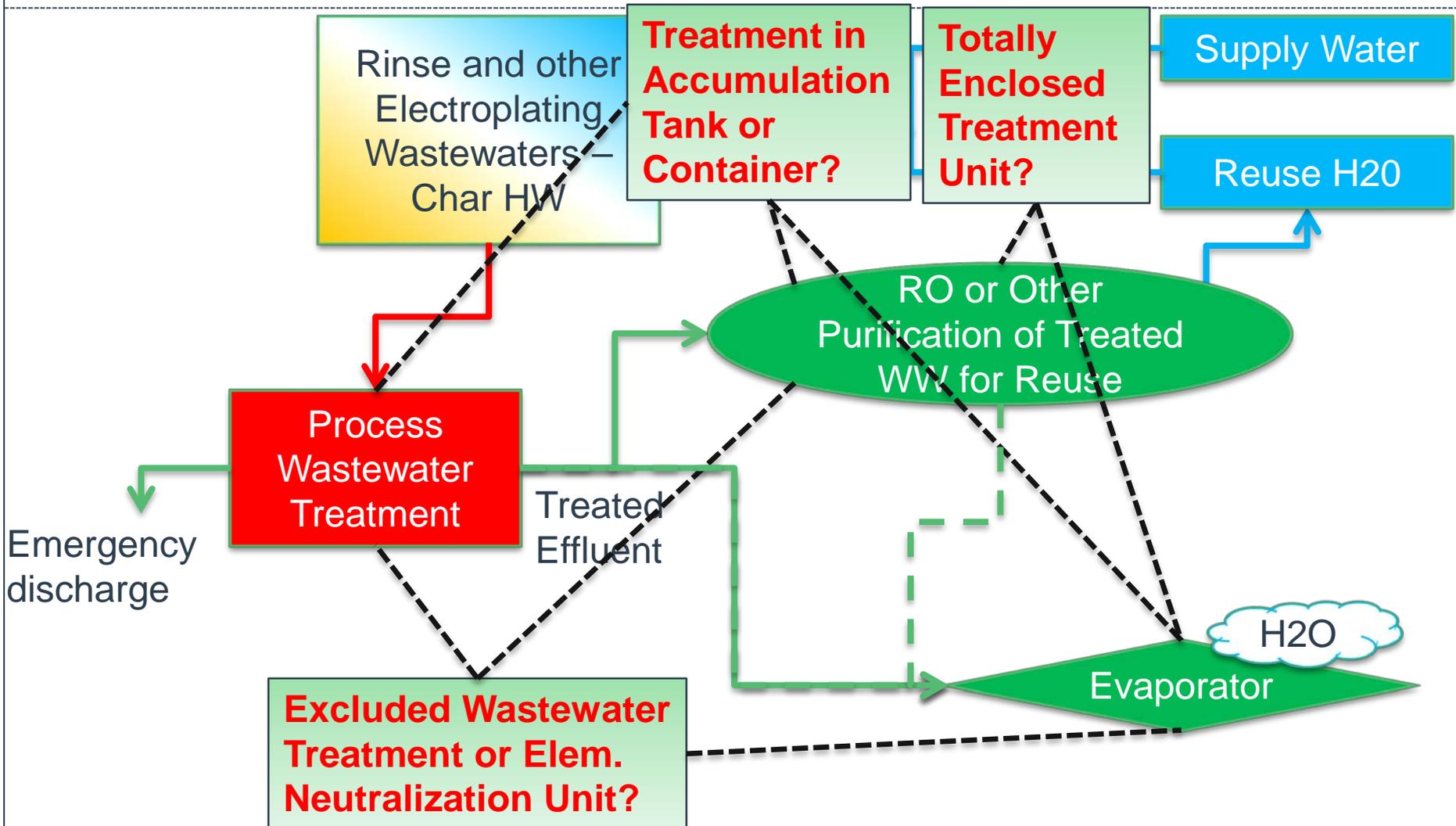
Electroplating WW Reduction/Reuse Project



Electroplating WW Reduction/Reuse Project



Electroplating WW Reduction/Reuse Project



Reducing and Reusing Wastewaters – Suggestions

- Assemble Qualified Planning Team
- Verify Baseline Conditions/Sources
- Identify/Rank Reduction Goals
 - Water Conservation
 - Wastewater Reuse
 - Zero-Discharge
- Develop/Assess Alternatives
 - Reliability / Compatibility / Durability of Technologies
 - Capital and Operating Costs
 - New and Modified Waste Streams
 - Emergency Contingencies
- Be Creative, But Wary of TGTBT
 - Get References / Full Assessment
 - Review / Document RCRA Interpretations with CTDEEP



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Resources



STATE OF CONNECTICUT
DEPARTMENT OF ENERGY & ENVIRONMENT
BUREAU OF MATERIALS MANAGEMENT &
WASTE ENGINEERING & ENFORCEMENT

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HAZARDOUS AND CONNECTICUT-REGULATED WASTE COMPENDIUM

- State CT DEEP
 - <https://www.ct.gov/deep/> ... Programs & Services, Hazardous Waste
 - [COMPASS](#) including HW/CRW Compendium
e.g. [DEEP Evaporator Guidance](#) and
[DEEP Guidance: Treatment in Accumulation Tanks & Containers](#)
- Federal USEPA
 - <https://www.epa.gov/hw> including [RCRA Online](#)
e.g. [4/26/89 memo](#) and other Fed Reg recycling comments and
e.g. Guidance on exempt units and accumulation, e.g. [7/31/81](#), [3/20/89](#),
[8/15/90](#) and [1/16/92 interpretive letters](#) and [5/1984 Hotline Summary](#)
 - Recent RCRA Rules (outside CT ... and future CT rules?)
 - 2008 Definition of SW (revised 2015 & 2018)
 - Codified USEPA policy banning “sham recycling”
 - Added SW exclusions for haz secondary materials recycled under generator control or transferred to certain third parties for recycling

Thank you ...



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Mr. Melvin counsels clients in conservation, remediation and compliance strategies and provides representation and legal support in permit and siting proceedings, transactions, including due diligence support, enforcement matters and other environmental litigation. His experience both as an environmental attorney and formerly as an environmental engineer helps him appreciate the mix of legal and technical issues affecting his clients' matters.

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