

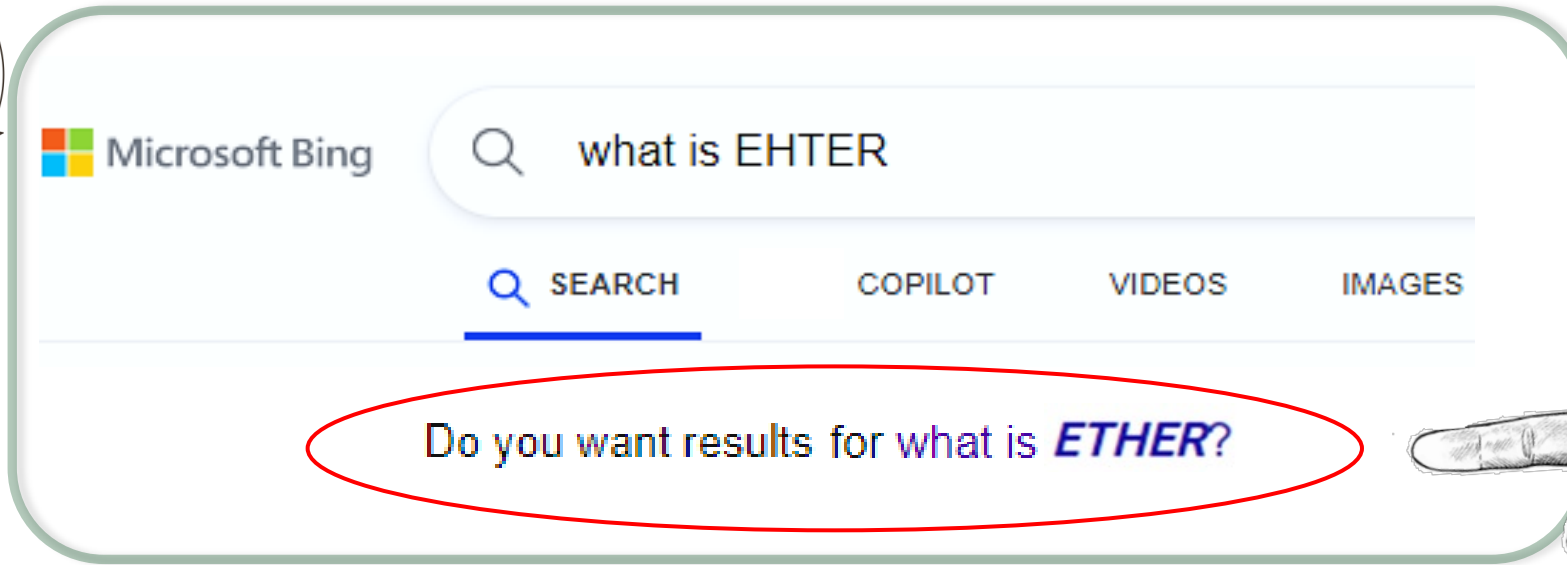


# Emergency Ready: EHTER Hands-On Crash Course

Th-I1  
March 27, 2025

CA Dept of Public Health, Center for Environmental Health EP Team:  
**Hoa Tan, Thaddeus Hunt, Natalia Deardorff, and Debbie Anderson**  
and  
**Chad San Juan**, Kern County CalARP/LEA/ER Program Supervisor





Did this happen  
to you, too?



**Environmental Health** is the branch of public health that is concerned with all aspects of the natural and built environment that may affect human health.

**Environmental Health Training in Emergency Response (EHTER)** prepares Environmental Health Professionals to respond to emergencies in multifaceted ways in addition to their specialized skillset.

# First Things First

- Emergency Exits
- Restrooms
- Cell phones: *OFF or Vibrate* please!
- Schedule/Breaks
- Course evaluation
  - Devices
- REHS contact hours



# Course Objectives



- **Learn:** Acquire resources to improve understanding of roles and responsibilities of Environmental Health in emergency preparedness, response, and recovery.
- **Connect:** Meet with colleagues and other agencies/organizations to better understand emergency roles and responsibilities. Share best practices and lessons learned.
- **Exercise:** Familiarize, think about, and practice knowledge and resources for Environmental Health emergency response.





# Introductions of Staff



# Local Environmental Health Jurisdictions



- ✓ **62 unique EHJs in CA**
  - 58 Counties and 4 Cities
- ✓ **Each EHJ is unique**
  - "Department" or "Division"
  - Under Public Health or Community Development Dept
  - Program responsibilities
- ✓ **All EHJs are overseen by the Local Public Health Officer**
- ✓ **EH is ESF 8 in Emergencies**



# The Value of EH in Equity and Emergency Management

- Facilitates whole community
- Works in the local communities every day
- Supports existing relationships
- Recognizes inequities





# Equity on the Ground



Who's not here?



# Equity Tools

- Equity Lead or Liaison
- Institutional Knowledge
  - REHS's are in the community every day and know who's there
- Existing resources
  - County Emergency Management Plans
    - Mitigation, Response, Recovery, Sheltering, Evacuation, etc.
- GeoDatabase
  - California Healthy Places Index (Public Health Alliance of Southern California)
  - Social Vulnerability index (CDC)
  - Hard To Count Index (California Census)
  - National Risk Index, Community Resilience Index (FEMA)
  - CalEnviroScreen (OEHHA)





# Announcements

## Upcoming EHTERs:

- **EHTER 101 (Conference EHTER)** - April 14-17, 2025  
CA Env. Health Assoc. (CEHA) AES at Seaside
- **EHTER Expeditionary (EHTER X)** - May 7-8, 2025  
Orange County EH at Santa Ana
- **Principles of EHTER** - Continuing Challenge at Sacramento  
(September 2-5, 2025)



# Course Completion

➤ Please complete an evaluation



Please stop by our booth (CDPH Center for Environmental Health) and say "Hi"!



# Any Questions?

CDPH Center for Environmental Health  
EP Team / "EHTER Team"  
[CEH.EP@cdph.ca.gov](mailto:CEH.EP@cdph.ca.gov)

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# Emergency Ready: EHTER Hands-On Crash Course

## Wastewater

Debbie Anderson, CDPH CEH Senior Emergency Preparedness Coordinator



27th California Unified Program  
Annual Training Conference  
March 24-27, 2025

# Learning Objectives

- Wastewater during disasters
- Environmental Health and wastewater
- Different treatment systems and their vulnerabilities
- Responding to wastewater emergencies





# Why Should We Care?

## Wastewater Contaminants

### Pathogens

- Bacteria – E. Coli, Salmonella, Typhoid fever, and Cholera
- Viruses – Hepatitis A
- Fungi – Aspergillus
- Parasites – Roundworms, Cryptosporidium, Giardia

### Chemicals

- Heavy Metals – Lead, Mercury, etc.
- Hydrocarbons – Petroleum, fuels



*Viral Hepatitis Inflammation of Liver*  
Courtesy CDC



# *Why Should We Care?*

## **Contaminant Transmission**

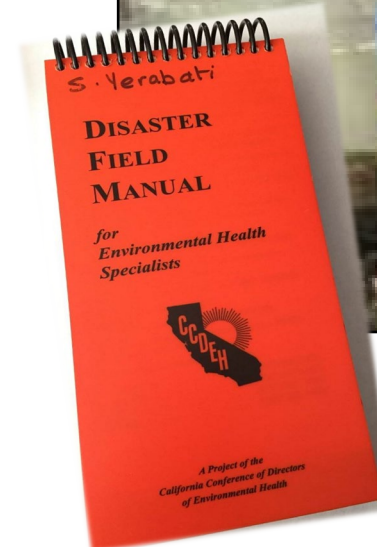
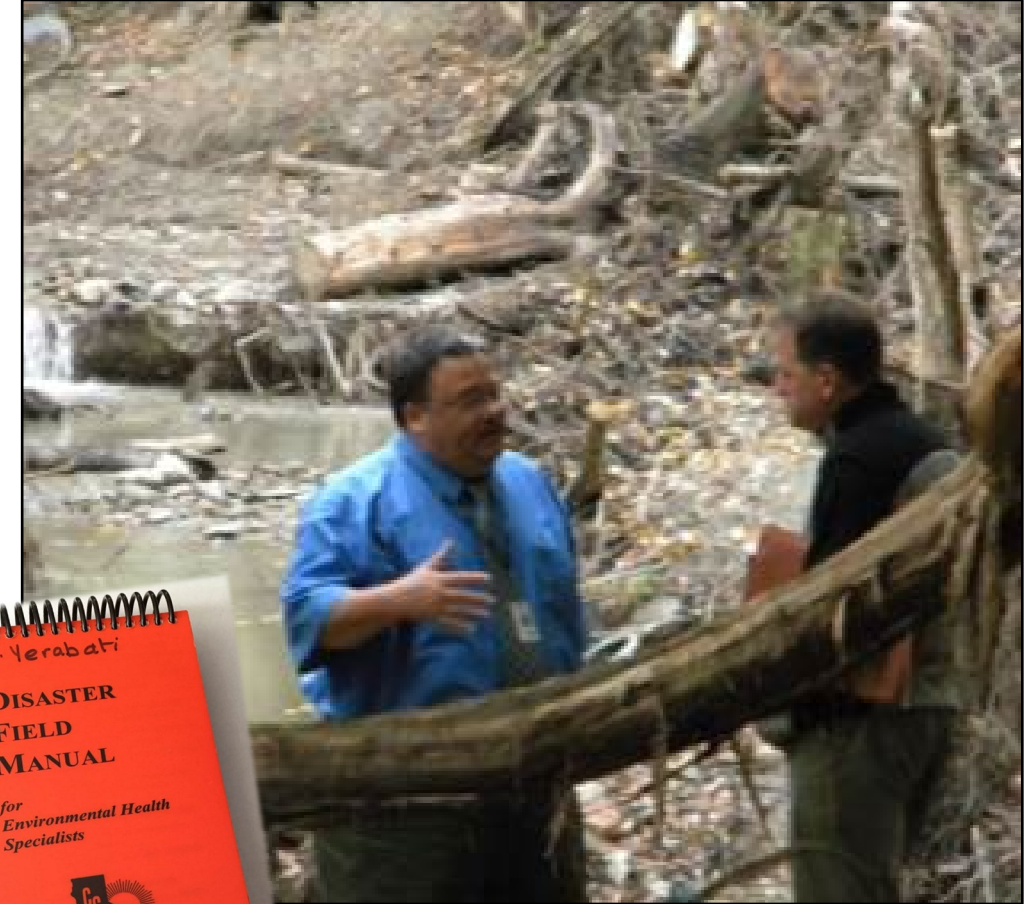


*Wastewater spill following Hurricane Katrina*  
*Courtesy FEMA*

- Sewage spills are point sources
- Contaminants are:
  - Transported from point source
  - Introduced into living and food service areas
  - Not always recognizable by odor or appearance

# Role of Environmental Health

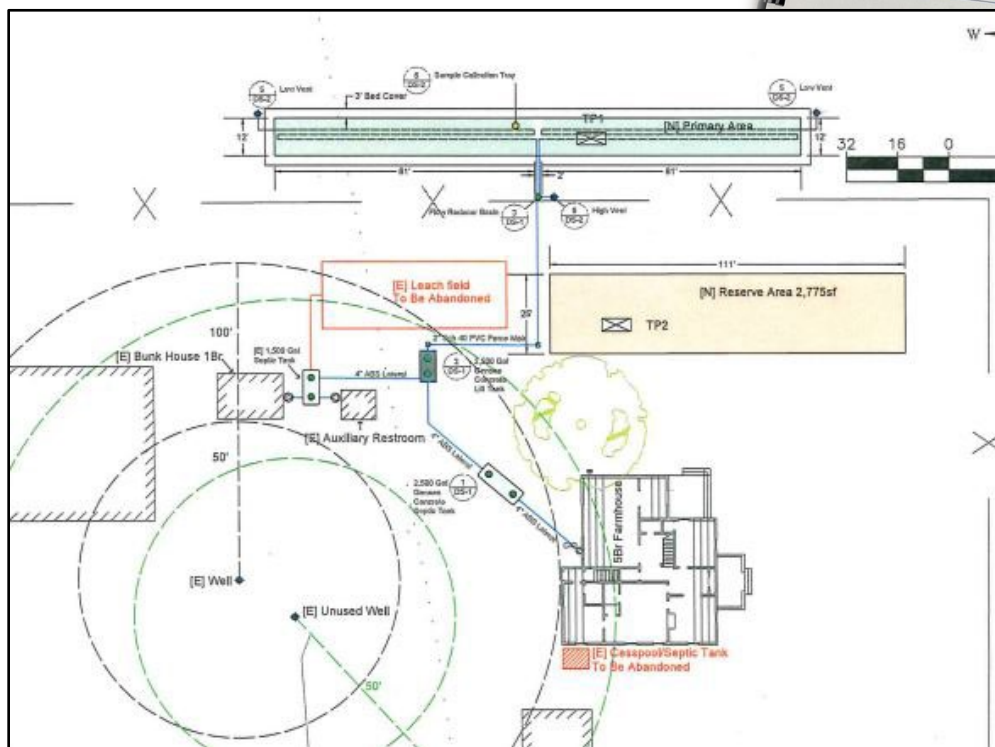
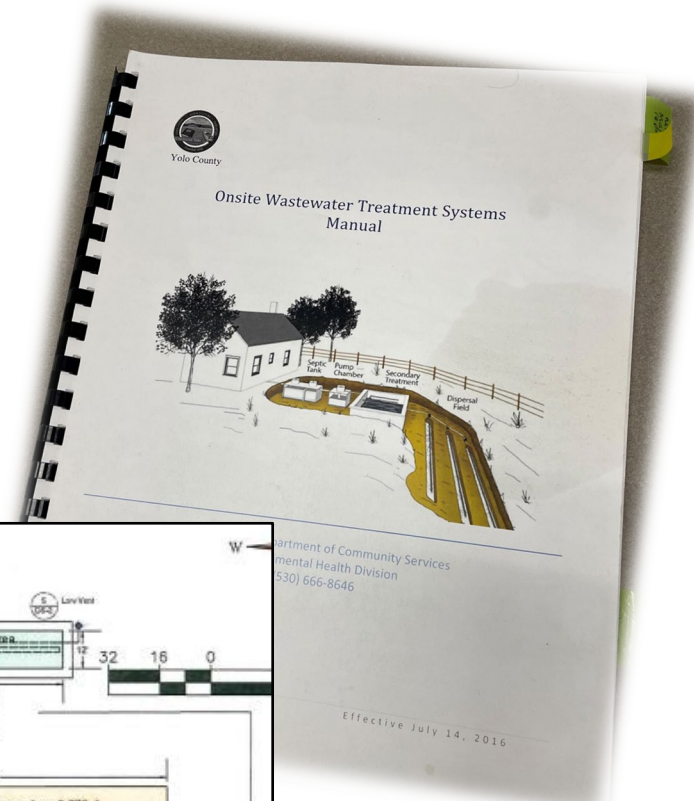
- Prevent disease and injury
- Protect against water contamination
- Ensure proper wastewater treatment and disposal
- Provide emergency information on treatment and handling
- Conduct interventions to protect the public in homes, food service and other industries



*EH Responders, New York  
Courtesy FEMA*

# Role of Environmental Health

- Maintain local records Onsite Wastewater Treatment Systems (“septic systems”)
- Provide field experience and institutional knowledge of wastewater components and issues
- Maintain partnerships with industry experts
- Identify gaps in response and recovery



LAMP and As-Built  
Courtesy Yolo County



# Wastewater System: Public Sewer System

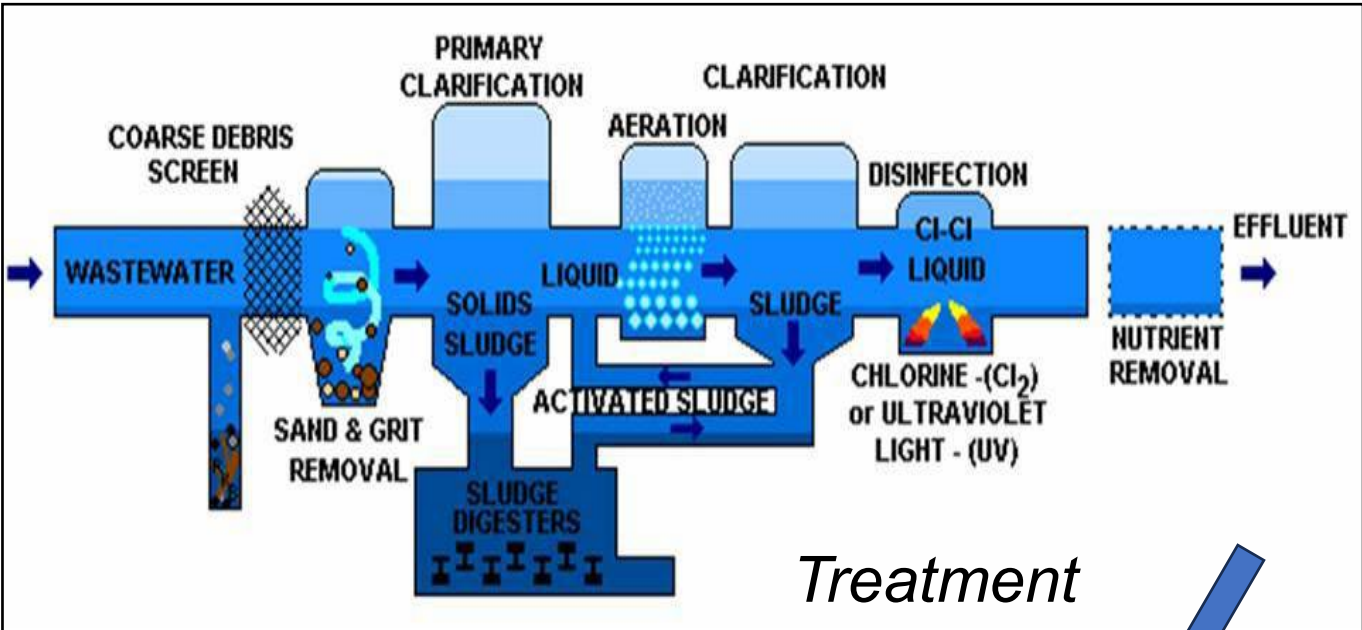
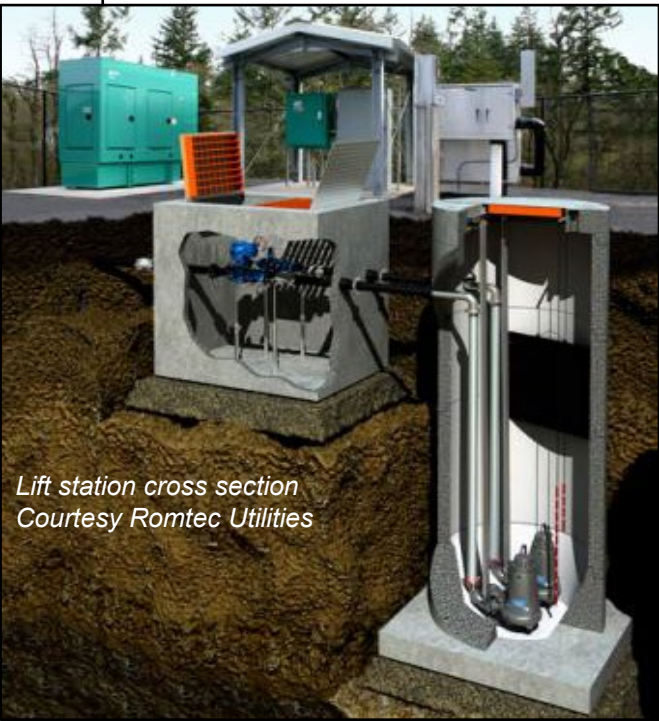
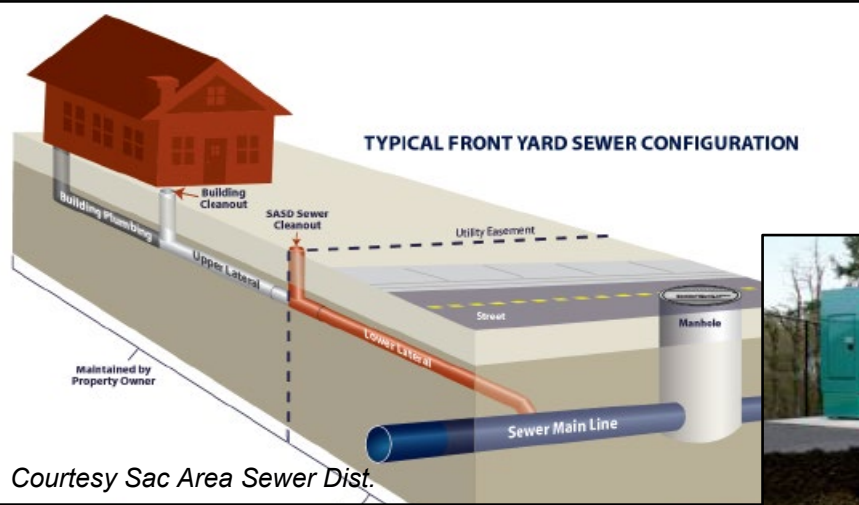
- Wastewater is:
  - Collected
  - Treated
  - Discharged
- Large-scale
- Permitted by RWQCB
- Dependent upon:  
power and operators



*Regional Wastewater Treatment Plant, Elk Grove*

# Public Sewer System Components

## Collection/Conveyance



## Treatment

## Dispersal/Dispersal







# Public Sewer System

## *Let's think ahead....*

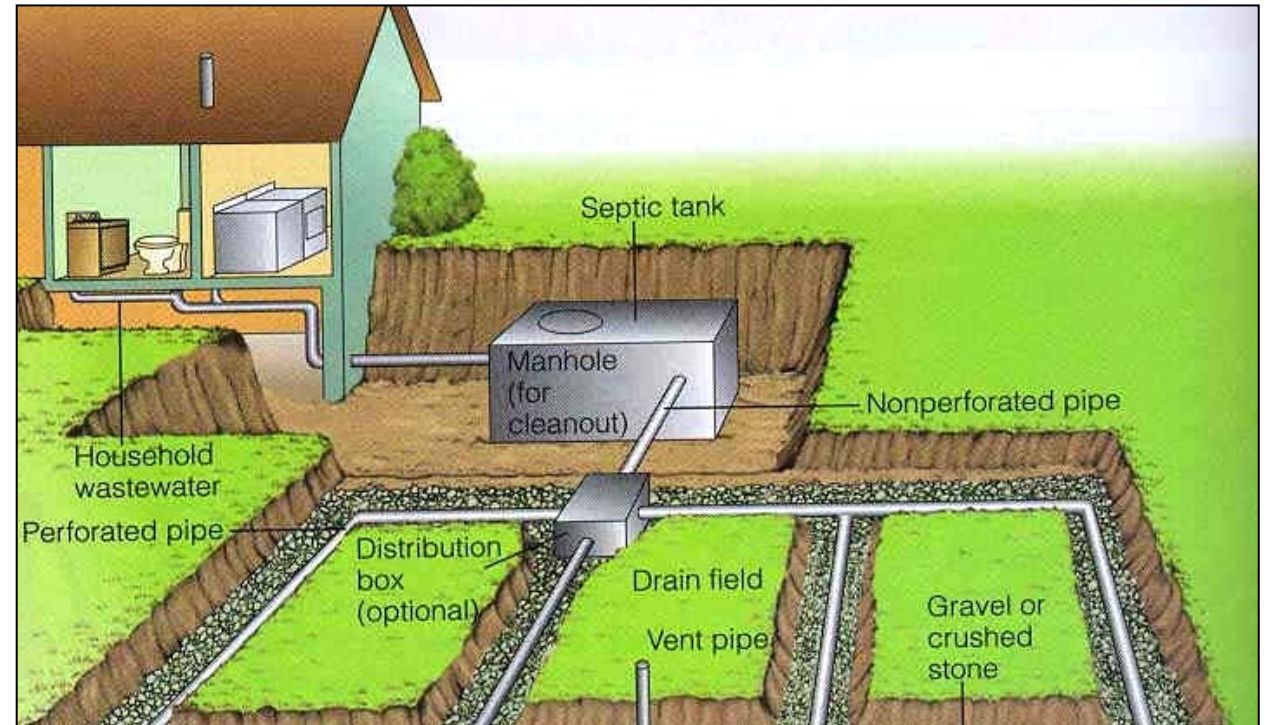
- Identify systems in your area and relevant components from utility maps
- Consider and prioritize areas of need (disadvantaged communities, hospitals, elder care, schools)
- Recognize aging infrastructure
- Understand key partner roles:
  - *CDPH, Cal EPA – RWQCB, Cal OES*  
*Utilities, Local EH, US EPA, Local pumpers/contractors*



# Wastewater System:

## Onsite Wastewater Treatment Systems (OWTS)/“Septic Systems”

- Wastewater is:
  - Collected
  - Treated
  - Discharged
- Small-scale
- Permitted by local EH
- System could be gravity, pump-to-gravity, or pressurized



# Owts Components of a Standard/Gravity System

## Collection/Treatment



## Dispersal/Treatment

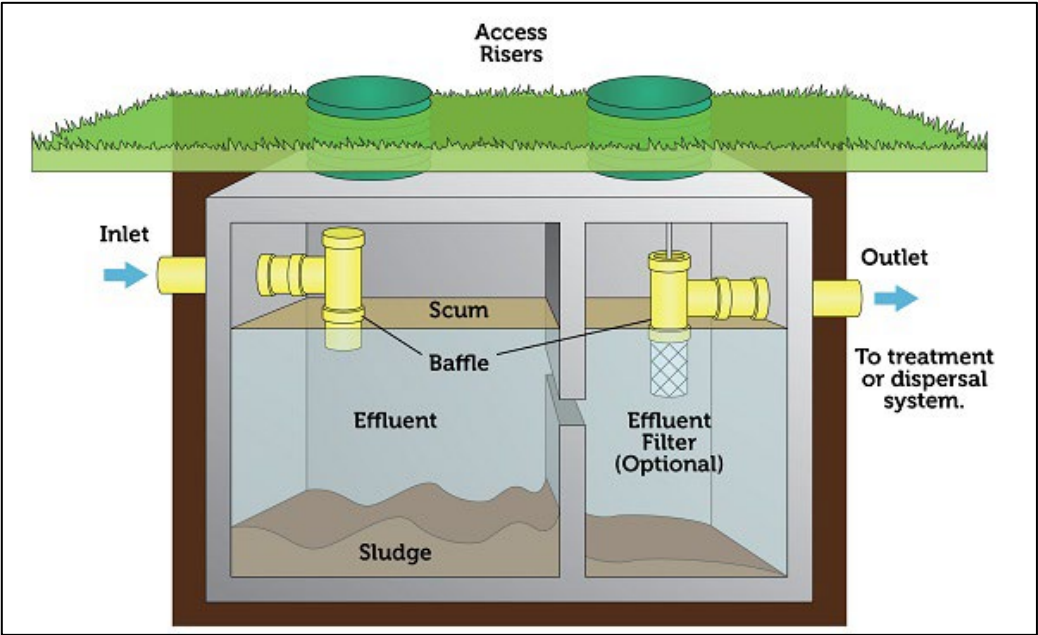


Image Courtesy of US EPA

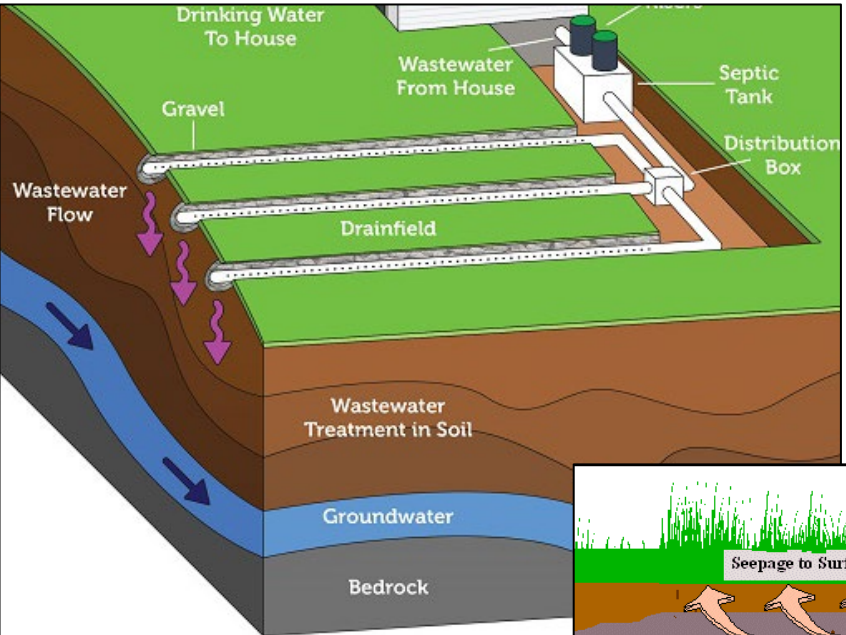
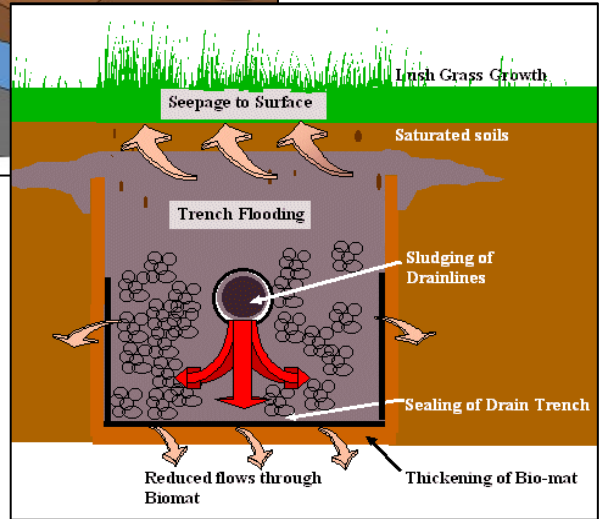


Image Courtesy of US EPA





# OWTS Components of an Advanced System

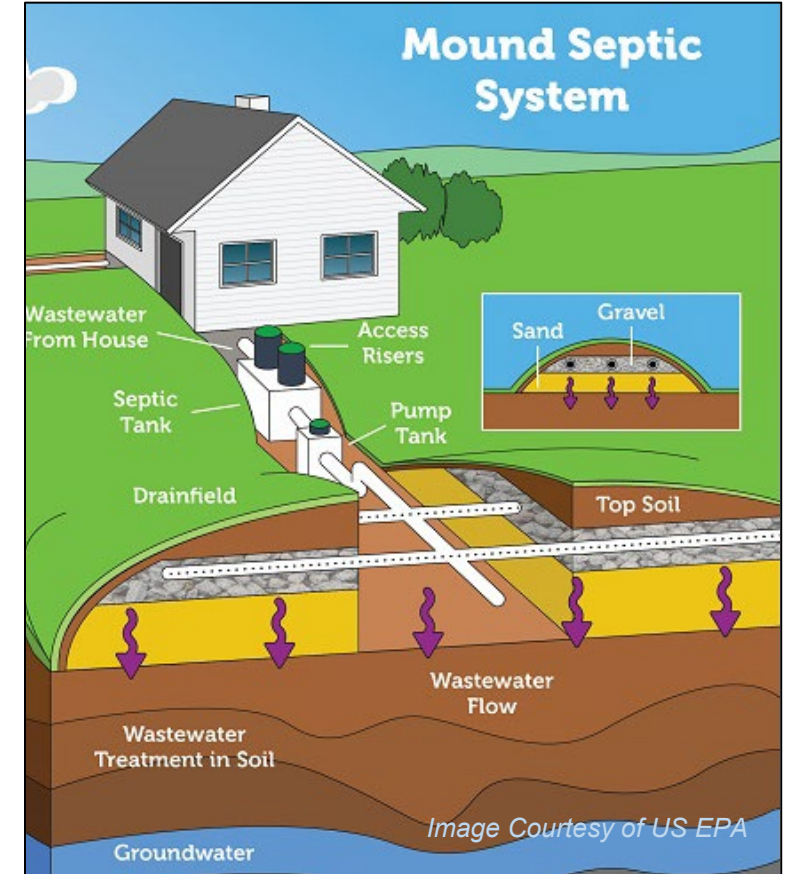
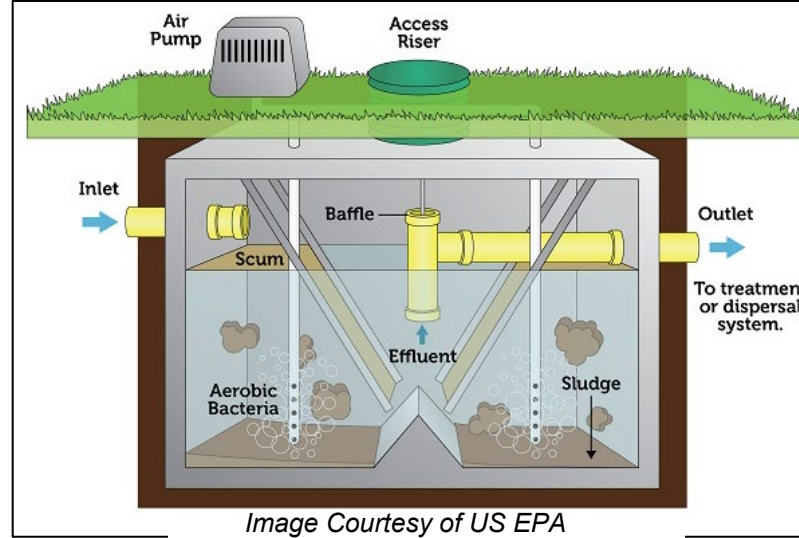
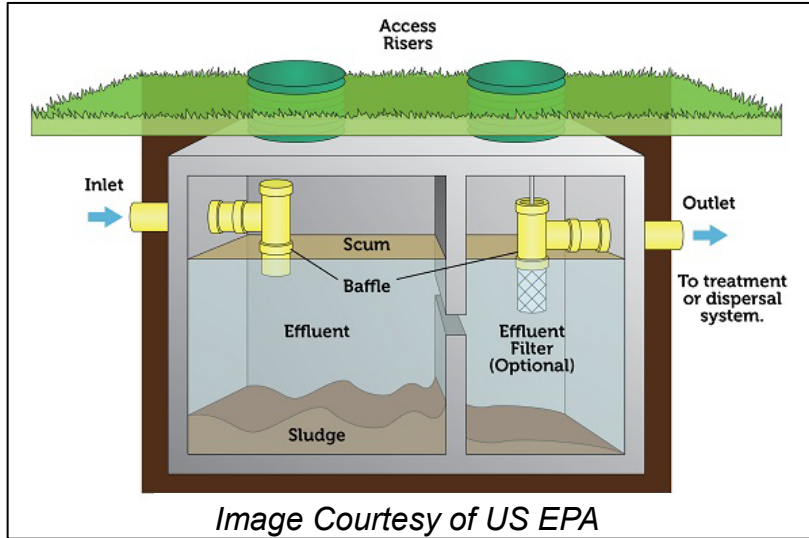
Collection/Treatment



Advanced Treatment



Dispersal/Treatment



- Alternative systems are often power dependent
- There may be more than one tank
- There are several different types



# OWTS Components of an Advanced System



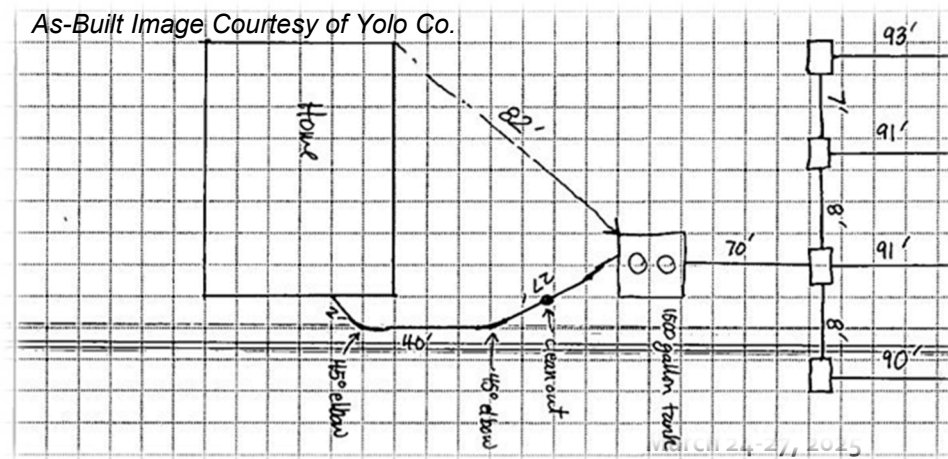
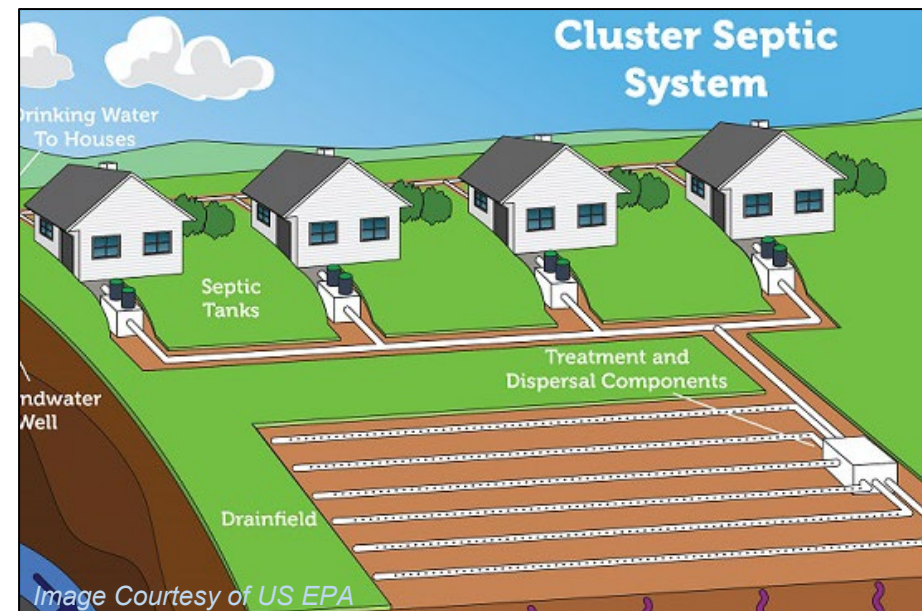
Images Courtesy of Yolo County



# OWTS / Septic Systems

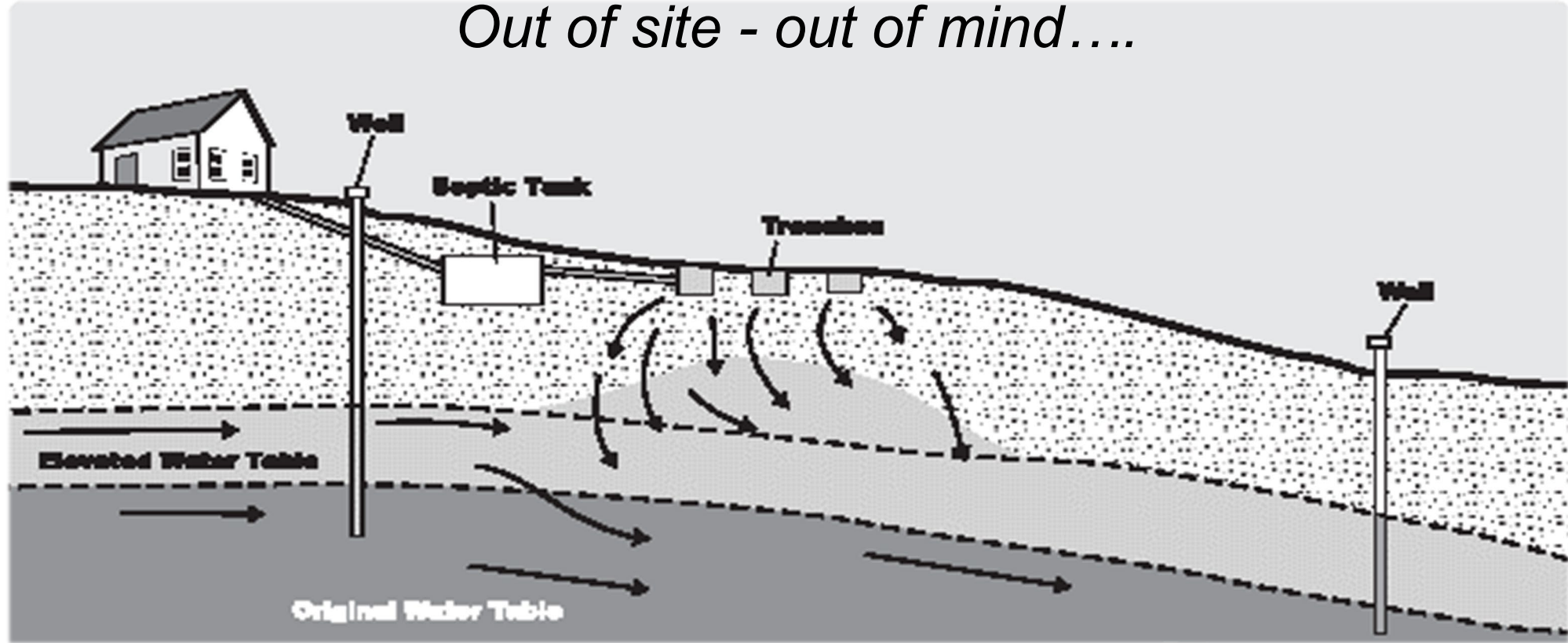
## *Let's think ahead....*

- Identify local OWTS types
- Understand key partner roles
- Prioritize disadvantaged communities, schools, etc.
- Provide messaging to the property owners and operators
- Recognize aging infrastructure and unpermitted systems



# System Vulnerabilities, Failures & Considerations

*Out of site - out of mind....*



Compromised systems = lack of treatment and contaminated water



# Public System Vulnerabilities, Failures & Considerations: *Floods*



- Collection system can be overloaded
- Flood waters could overwhelm treatment plant
- Power dependent system



*Pictures courtesy FEMA*

# Owts System Vulnerabilities, Failures & Considerations: *Floods*

- OWTSs will not work when underwater
- Septic tanks will “float” if pumped during flood conditions
- Homeowners may try to divert water away from their home



*Flooded yard, Memphis TN  
Courtesy FEMA*



*Flood water diversion, North Dakota  
Courtesy FEMA*



# Responding to Wastewater Emergencies

## Job and Public Safety



*Open unmarked  
septic tanks  
after fire  
damage*



*Marked tank lids – but was  
EH consulted?*



*Point Pleasant Area flooding 2016/17  
Courtesy of Sac County EMD*

*Flooded roadways*





# Responding to Wastewater Emergencies

## *Septic Tanks can be Deadly*

### **4 Bihar Labourers Die Of Suffocation While Cleaning Septic Tank In Surat**

Two labourers fell unconscious while cleaning the septic tank, and two others who tried to rescue them too fainted.

Surat News | Press Trust of India | Updated: November 15, 2023 8:52 am IST

### **Small Child Dies After Falling In Septic Tank In Pleasant Valley**

A small child has died after falling into a septic tank in the Hudson Valley.

6/23/2023 9:20 am -Daily Voice - Northwest Dutchess Co., NY

### **Texas hog hunters gassed to death in septic tank while attempting to rescue their dog who fell into the cistern**

- The bodies were recovered from a underground cistern in a cornfield in Texas
- The three had been hunting hogs in the area when their dog fell into the cistern
- All died due to lethal levels of hydrogen sulfide gas inside

By JOE HUTCHISON FOR DAILYMAIL.COM  
PUBLISHED: 10:04 EST, 11 August 2023 | UPDATED: 12:15 EST, 11 August 2023

- Tanks are underground voids filled with water and gases
- Risks include death from drowning and asphyxiation



# Responding to Wastewater Spills Assessment



- Prioritize imminent health hazards
- Consider vulnerable populations/communities. Identify local languages, etc.
- Recognize community-wide impact on systems for response and recovery and prioritize

# Responding to Wastewater Spills

- Messaging is important
- Know your resources
  - Proper clean-up
  - Sampling
- Flood waters pose risks
  - Infectious Diseases
  - Chemical Hazards
  - Physical Injuries



# Alternative Means of Managing Wastewater

*When normal wastewater systems are inoperable.*



Modify an existing toilet



Build a homemade Port-a-John



Use of porta-potties

*Images Courtesy of FEMA*



Use campers/motor home holding tanks





# Alternative means of managing Wastewater

## *Holding Containers – Non-discharging Units*



Pictures courtesy FEMA



# Responding to Wastewater Spills

## *Recommended disinfection procedures*

- Hydrated lime for grassy areas - alkaline compound that raises pH to greater than 12
  - Confusing public health lingo “use lime”
- Bleach for hard surface areas

### Household Bleach (5-6% Chlorine)

- Food/mouth contact 1/3 cup/gal.water (1,000 ppm)
- Nonporous surfaces 1/3 cup/gal. water (1,000 ppm)
- Porous surfaces 1.5 cup/gal. water (5,000 ppm)
- Spot cleanup 1.5 cup/gal. water (5,000 ppm)
- Mold treatment 1 cup/gal. water (3,200 ppm)



*Responders distribute lime to residents, Virginia  
Courtesy FEMA*



Partner meeting, Alabama - Courtesy FEMA



Pumping due to power loss at main lift station, Connecticut  
Courtesy FEMA

# Plan Ahead

## *BEFORE the Emergency*

- Identify key partners:
  - Environmental Health
  - Cal EPA: State Water Quality Control Board
  - Public works and utility agencies
  - Licensed contractors / sewage haulers
- Know wastewater operations
  - RV Parks
  - Treatment Plants
  - Local CSAs or CSDs
- Understand the role of other state and local departments
- Consider response needs

# Take Aways:

## How to Prepare for Wastewater Response and Recovery

- Plan for wastewater issues during disasters/emergencies
- Meet your Subject Matter Experts (SMEs) and agencies
- Identify underprivileged communities and create trusted partnerships
- Establish messaging templates
- Cross-train



*FEMA Specialist assists homeowner, New Jersey  
Courtesy FEMA*

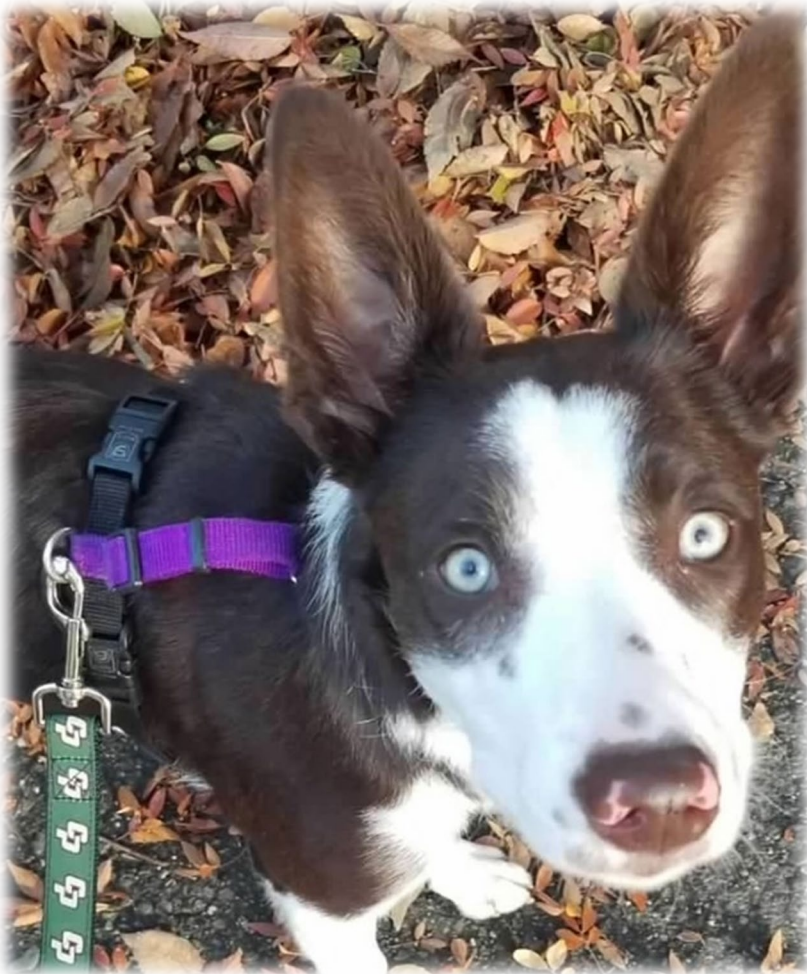


# Module Summary

- Injury and disease prevention is critical during disaster response and recovery
- Environmental Health plays a critical role in community response and recovery operations, helping to restore buildings and communities to safe and sanitary conditions.
- Think about planning now - Don't wait until the disaster occurs!



# Questions?



Debbie Anderson  
CDPH Senior EP Coordinator  
[deborah.anderson@cdph.ca.gov](mailto:deborah.anderson@cdph.ca.gov)  
530-564-2982



# Emergency Ready: EHTER Hands-On Crash Course

## Food Safety

Hoa Tan, REHS, CEMS  
CDPH CEH Emergency Preparedness Program Manager

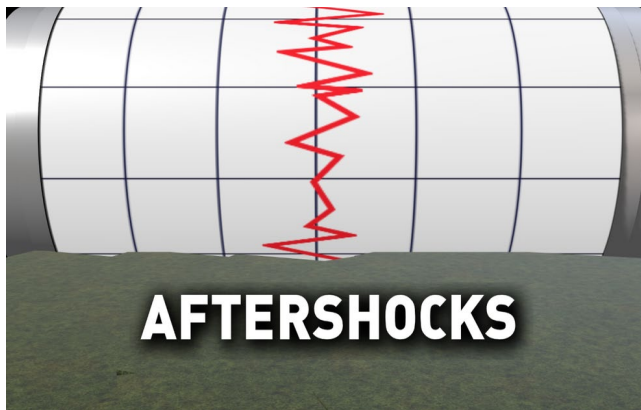
# Learning Objectives

- Recognize key EH issues related to disaster food safety
- Gain the necessary knowledge to perform food-related activities.
- Increase awareness of Food safety concerns after a disaster
- Assess food safety, sanitation & water supply of
  - Mass Feeding Operations
  - Regulated Food Facilities
  - Ad Hoc vendors





# Some Considerations



# Reasons for Concern

## Germ Farm



- **Unsafe Food Facilities/Handlers**
- **Food Contamination/ Outbreaks**
  - Microbes: bacteria, viruses, etc.
  - Chemicals, wastewater
  - Unsafe water supply
  - Ill food handlers
- **Temperature Control**
- **Hot and Cold**
- **Time**
- **Foodborne Illnesses**
  - Norovirus, Shigella, Salmonella etc.

# Reasons for Concern

- Fewer restaurants open including impacted ones
- Increased epidemiology surveillance required, but may not be possible
- Normal reporting disrupted
- Donations, volunteers and Voluntary Organizations Active in Disasters (VOADs) must be managed







# EH Priorities

- Assist shelters and mass feeding operations on food safety
- Assist permitted food establishments with recovery
- Provide public information on food safety and salvaging
- Ensure proper management of contaminated food
- Conduct interventions – Are they reopening in a safe manner?

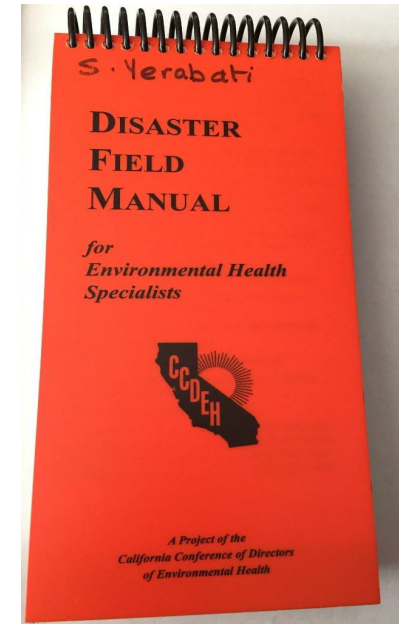
# Know Your Partners

- Federal, State, Local agencies
- Office of Emergency Services (OES)
- Volunteer/ Community Organizations (VOADs)
  - American Red Cross, Salvation Army
  - World Central Kitchen
  - Non-Profit Organizations
- Industry
- Media



# 5 Risk Factors

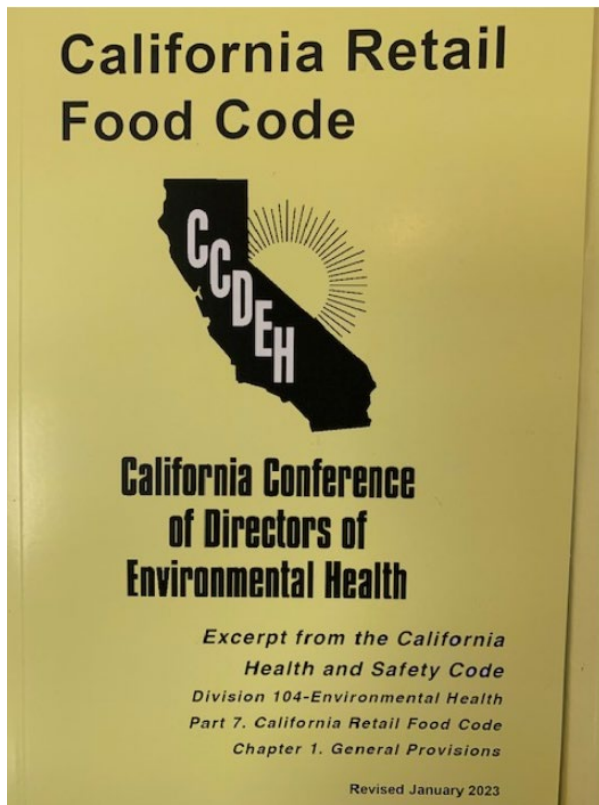
1. Improper holding temperatures
2. Improper cooking temperatures
3. Contaminated cooking utensils
4. Poor employee health and hygiene
5. Food from unsafe sources



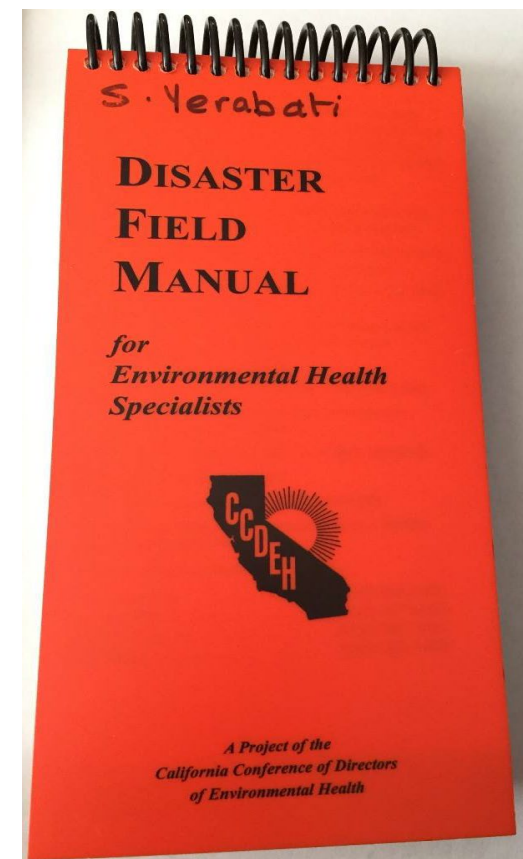




# Guidance Documents



**Disaster feeding  
may NOT  
meet your code!**

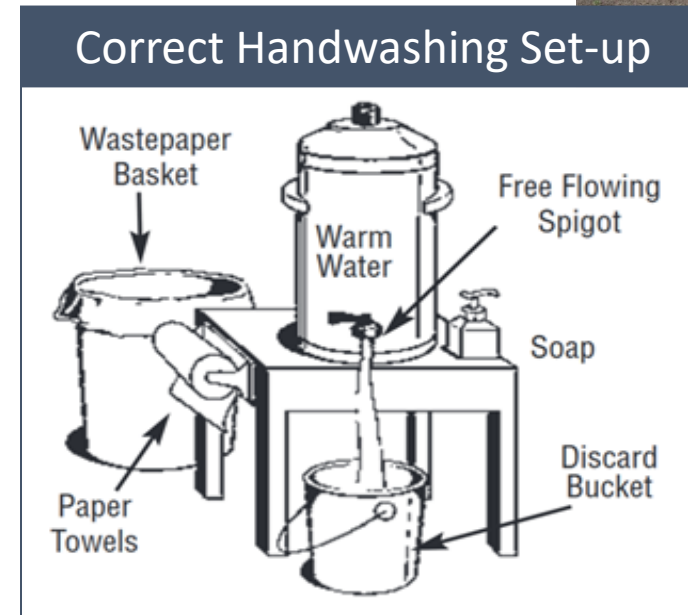


<https://www.ccdeh.com>

# Handwashing

## Improvised Hand Washing Station

- 5-gallon container with spigot
- Pump style hand soap
- Paper towels
- Waste water container
- Trash can





# Safe Food & Water Sources

- Source
- Transportation
- Storage/Holding
- Serving





# Devise an Action Plan

- Mass feeding site lists and contact info
- Partner organization contact info
- Food facility info
- Agency materials
- Staffing plans



# Examples of Mass Feeding

**Centralized  
Kitchen**



**Mobile  
Kitchen**



**Base  
Camp**



**Pop-Up  
Food  
Service**





# Something like a Temporary Event...





# Sometimes a building “doesn’t work”



# Other Safety Considerations

- Food handler training / health issues
- Toilet and handwashing facilities
- Food donations





## Field Tip:

Use professionalism, sensitivity, and flexibility while working in harsh conditions with stressed managers, workers, and clients





# Regulated Food Facilities

 County of San Diego  
Department of Environmental Health  
Food and Housing Division  
(619) 338-2222 

**CLOSED**

By Order of the Department of  
Environmental Health

☐ This Facility is found to be an Imminent Health Hazard  
(California Health & Safety Code)

☐ This Facility is Operating Without a Valid Health Permit  
(California Health & Safety Code)

Facility Name & Permit #: \_\_\_\_\_

Location of Facility: \_\_\_\_\_

The Department of Environmental Health conducted an inspection on \_\_\_\_\_  
and found the following conditions:

<input type="checkbox"/> Improper Food Temperatures	<input type="checkbox"/> Food From Unsafe Source
<input type="checkbox"/> Poor Personal Hygiene	<input type="checkbox"/> Contaminated Food or Equipment
<input type="checkbox"/> Lack of Hot Water/Water	<input type="checkbox"/> Vermin Infestation
<input type="checkbox"/> Sewage in Food Facility	<input type="checkbox"/> Other: _____

**Penalty for Unauthorized Removal of this Notice**  
San Diego County Code of Regulatory Ordinances Section 61.128

Closure may be needed due to:

- Building/electrical safety
- Utility outage
- Water supply
- Waste disposal
- Unsafe food supply
- Vector control
- Cleanup needed





# Regulated Food Facilities

- **40% of businesses do not reopen** following a disaster\*
- **25% fail within one year\***
- **Over 90% of companies fail within two years** of being hit by a disaster if they don't reopen within 5 days\*\*

\* According to Federal Emergency Management Administration (FEMA)

\*\* According to U.S. Small Business Administration

# Food Safety & Health Equity

- Provide support to low-income impacted areas
- Provide support to underserved populations
- Food Deserts / Access to Fewer Resources
- Higher vulnerabilities to disease
- Less access to healthcare



*Photo Credit: New York City Council*



# Any Questions?

Hoa Tan, REHS  
Emergency Preparedness Program Manager  
California Department of Public Health  
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(530)760-5863







# Emergency Ready: EHTER Hands-On Crash Course

## Drinking Water

Natalia Deardorff, CDPH CEH Sr. Emergency Preparedness Coordinator



PUBLIC

27th California Unified Program  
Annual Training Conference  
March 24-27, 2025

# Learning Objectives

- EH and Drinking Water
- Drinking Water during Disasters
- System Assessments
- Public Messages



# Why Care about Safe Drinking Water?

Humans need **enough** **safe** drinking water to survive

What is "**enough**"?

- 0.5-1 gallon / day *at minimum*

What is "**safe**"?

- 4 types of contaminants





# Drinking Water Contaminants

1. Physical (dirt, sand)
2. Chemical (pesticides, lead, arsenic)
3. Biological (bacteria, parasites, viruses)
4. Radiological (uranium, plutonium)





# Keeping Water Systems Safe

## *What are Water Systems?*

Water Source  $\Rightarrow$  Treatment  $\Rightarrow$  Distribution

### Public Water System (PWS)

- $\geq 15$  Connections or  
   $> 25$  people  $\geq 60$  days / yr
- Regulated

### Private Water System

- Not a PWS
- Permit during Construction
- Not Regulated  
*Homeowner is responsible*



# Environmental Health Roles

## Waterborne disease prevention through regulation

*May Include:*

- Permit water well installation and construction
- If an LPA, permit small public water systems
- Regulate recreational waters  
(i.e., possible drinking water sources)
  - ✓ Inspect systems
  - ✓ Collect and interpret samples
  - ✓ Work with different agencies

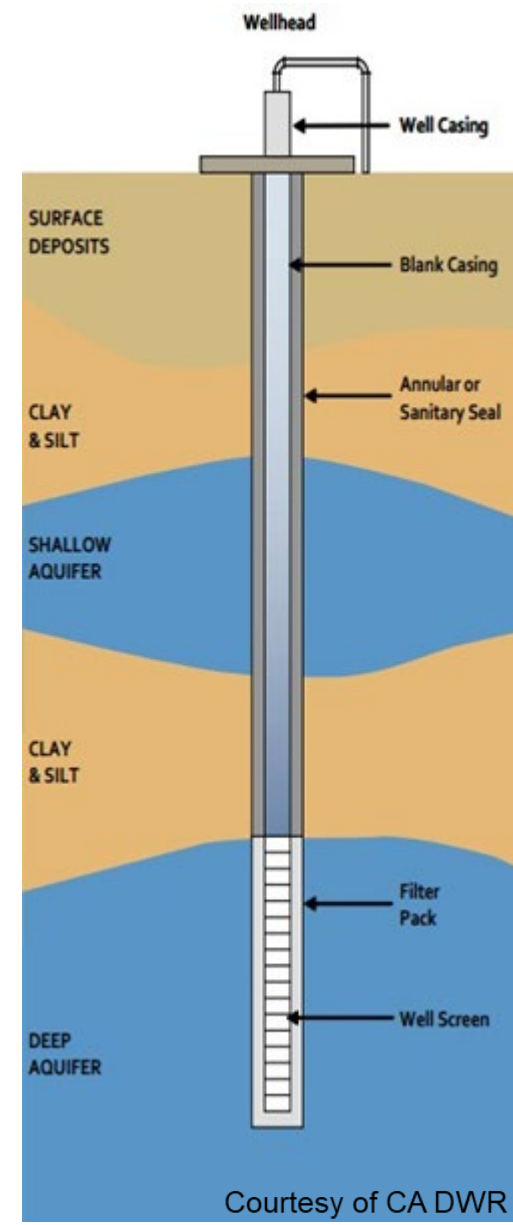




# Private Water Systems



Courtesy of CA SWRCB

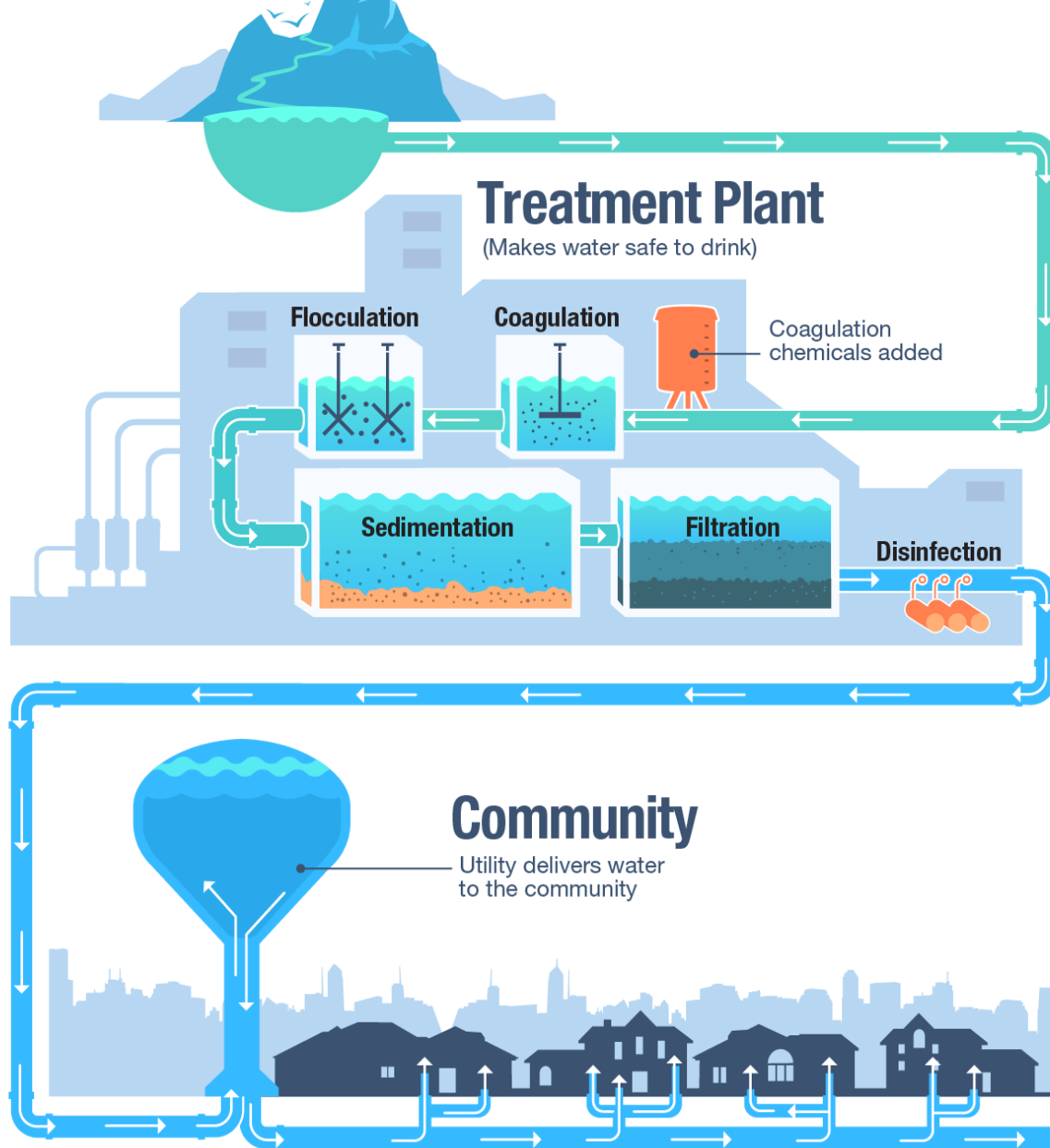


# Public Water Systems



Courtesy of CDC - [cdc.gov/naegleria/php/guidance/index.html](https://cdc.gov/naegleria/php/guidance/index.html)

Water Source

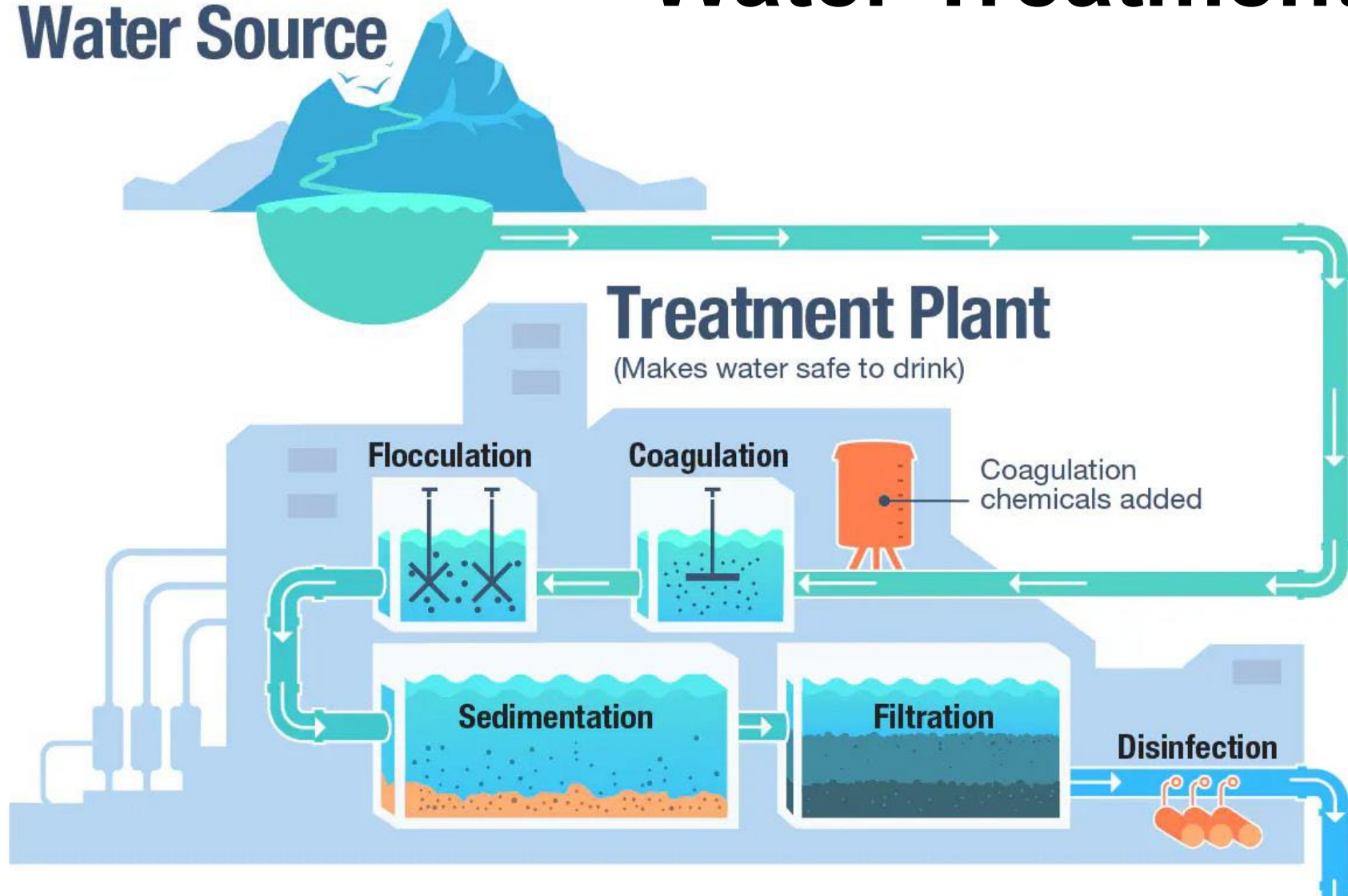


Source: CDC - [cdc.gov/drinkingwater](https://cdc.gov/drinkingwater)

Annual Training Conference  
March 24-27, 2025

# Water Treatment

Water Source





# Water Treatment Methods



## Physical

- Filtration
- Boiling
- Flocculation



## Chemical

- Chlorine (CL<sub>2</sub>)
- Chloramine (NH<sub>2</sub>CL)



## Light-Based

- UV / Ozone
- Solar

Knowing how water is treated is **vital** during emergencies

# Water Distribution



## Piped

- Cross-connection controls
- Color identification



Courtesy of Valley Water, Santa Rosa ([valleywater.org](https://valleywater.org))



# **System Vulnerabilities, Failures & Considerations**

*What Could Happen?*

## **Source Contamination**

### **Physical damage**

- Treatment plants
- Storage facilities
- Distribution pipes
- Wells

## **Power and Pressure Loss**

- Cross-connection issues
- Backflow and Back-siphonage

### **Water shortages**

### **Workforce affected**



# Drinking Water Key Partners

## Local

- Environmental Health
- Health Officer/Public Health Department
- OES
- Water Utilities / Public Works

## State

- Department of Public Health (CDPH)
- Office of Emergency Services (OES)
- Cal EPA - Regional Water Board

## Other

- Volunteer Organizations
- Industry
- Media



Courtesy of FEMA – Responders in NY





# Response Process



**Notifications made to Local Health Dept., Cal EPA, Cal OES**

# System Vulnerabilities, Failures & Considerations

## *Conducting Assessments*

- Accessibility
- Power/Electricity
- Sources
- Treatment
- Chemical storage
- Distribution
- Laboratory
- Access
- Communication
- Staffing



- Assess water systems
- Assist agencies and operators
- Collect/Interpret sample results
- Provide public messaging
- Coordinate with key partners
- Monitor needs
- Arrange for emergency water supplies



# How to Know if it is Safe?

## *Lab Tests!*

- **Total Coliforms**
  - Indicator of harmful biological contaminants
- **Fecal Coliforms**
  - E.coli
- **pH**
- **Nitrate/Nitrite**
- **VOCs**





# Emergency Water Supplies:

## Hauled Drinking Water



- Potable Water haulers regulated by [CDPH Food & Drug Branch](#)
- Tanks must be food grade
- 0.3 mg/L chlorine residual minimum

# Emergency Water Supplies:

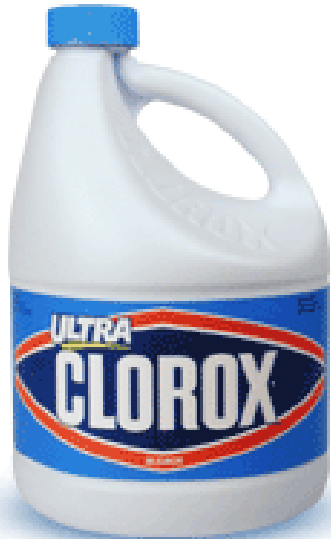
## Bottled Water & Temporary Storage Bladders



- Bottled Water regulated by [CDPH Food & Drug Branch](#)
- Bladders must be NSF 61

# Emergency Water Supplies:

## Household Emergency Disinfection

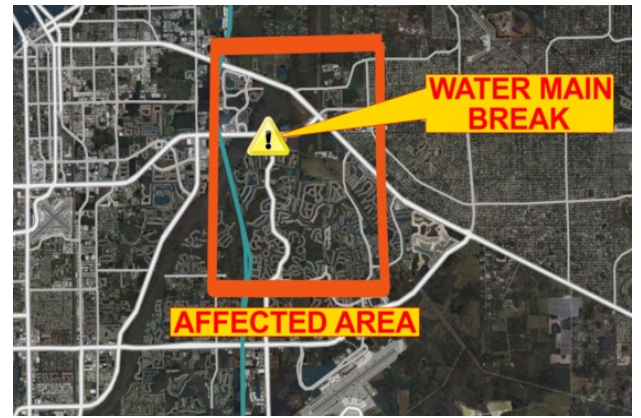
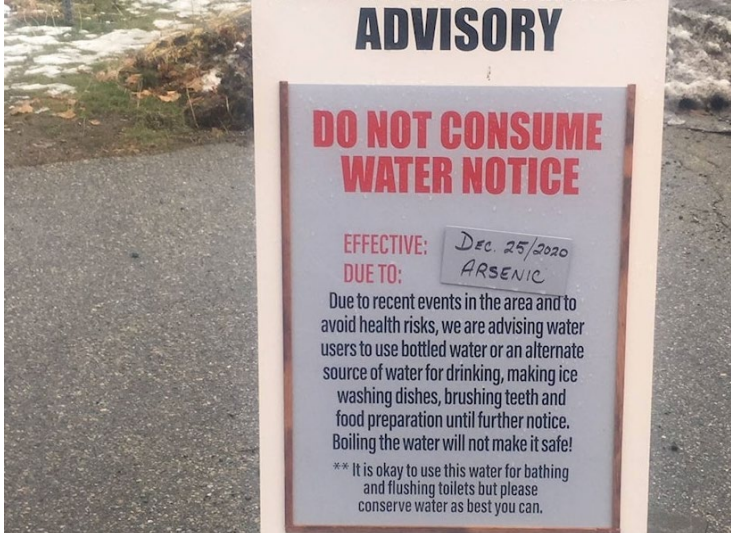


- Unscented household bleach (5 - 6% chlorine)
- When water looks clear: 8 drops to 1-gallon water
- Cloudy water: Filter through cloth first then disinfect
- 30 minutes of chlorine contact time for optimal disinfection
- Depends on Public Messaging

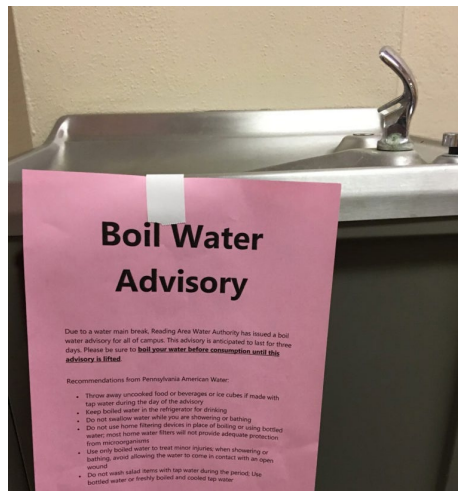




# Public Messaging & Water Advisories



CREDIT: WINK News







# Water Advisories for Unsafe Water

## 1) BOIL WATER

- Microbiological Contaminant
- Boil for 1 minute (3 mins at 5000'+)

## 2) DO NOT DRINK

- Acute Contaminant or Unapproved Source

## 3) DO NOT USE

- Unknown Contaminant or adversely impact public health

## 4) DO NOT DRINK & DO NOT BOIL

- Contaminant may adversely impact with exposure or vapors

# Getting Ready For Drinking Water Emergencies

- Identify local water systems
- Meet your local water experts and key partners
- Train during emergency exercises
- Recognize immediate water needs during response
- Understand the need for water advisories and messaging





# Any Questions?

Natalia Deardorff  
Senior Emergency Preparedness Coordinator  
CDPH Center for Environmental Health  
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# Emergency Ready: EHTER Hands-On Crash Course

## Hazardous Materials

Chad San Juan, REHS, CSP, CHMM  
CalARP/LEA/ER Program Supervisor,  
Kern County Environmental Health Division



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March 24-27, 2025



# Learning Objectives

- Disaster Hazmat concerns
- EH roles and priorities
- Key partners
- Assessment, mitigation, cleanup
- Resources
- Job Safety
- Terrorism

# Disaster HazMat Concerns

- Household hazardous waste (HHW) including Pesticides, Cleaning products
- Guns / ammo
- Universal wastes (white goods/ appliances)
- Building materials (asbestos, LEAD)
- Vehicles: Fuels
- Soil (Arsenic)
- Radioisotopes



# Disaster HazMat Concerns

- Transportation
- Trains, Trucks, Boats, Cars, etc.
- Fixed Facility chemicals
- Oil and hazardous substances
- Commercial cleaners, auto repair, paints, solvents, pools

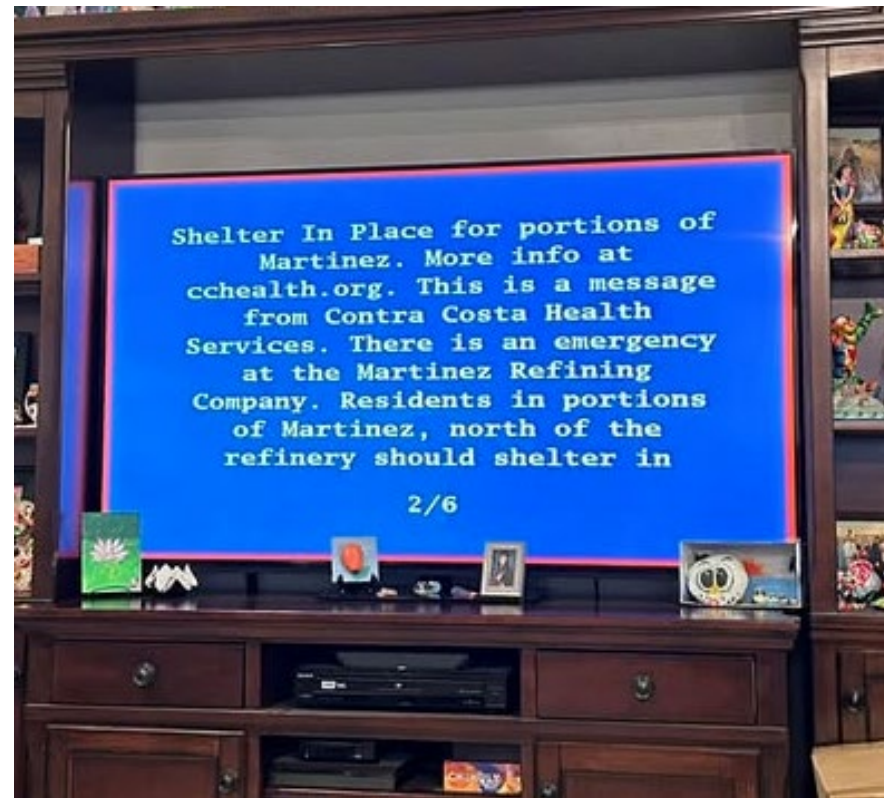




# Disaster HazMat Concerns



Feb-1-2025, Martinez Oil Refinery, San Francisco Chronicle



Feb-1-2025, Martinez Oil Refinery, Kristi Mason  
Team Rubicon



# Disaster HazMat Concerns



2023, Palestine Ohio, Gene J. Puskar, AP

# Disaster HazMat Concerns



2006, Louisiana Department of Environmental Quality



# Fire Ash/Debris is Hazardous!





# Disaster HazMat Concerns

- Chemical releases
- Biological agents
- Radiological/ nuclear
- Explosives



# NA-TECH

(Natural Hazard Triggering Technological Disasters)





# Restoration Priorities







# Reasons For Concern

**Multiple types of HazMat**

**Multiple sources**

**Exposure to people**

**Environmental contamination**



# Environmental Health Functions

- Protect public health, environment and property
- Protect yourself, coworkers
- Assess, Collect, Segregate, Clean up and Dispose
- Regulatory Oversight/ Surveillance
- Inform public of health risks
- Community / business recovery

***Work within your training and capability!***

# Priority Activities

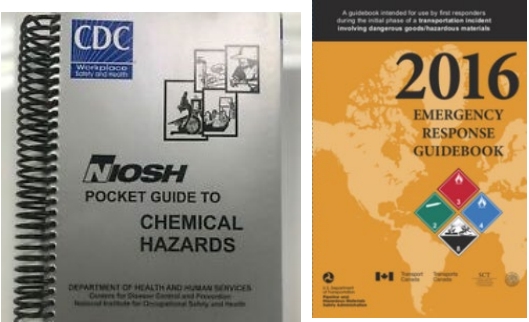
## Locate & ID Hazmat

HAZARDOUS MATERIALS LABEL IDENTIFICATION SYSTEM						
HAZARDOUS MATERIALS CLASSIFICATION		HAZARDOUS INDEX RATINGS FOR CONTAINER LABELING				
	OXIDIZER	INDEX RATING GUIDE FOR THE CORRESPONDING HAZARD FOR EACH CATEGORY	HEALTH HAZARD	FIRE HAZARD	INSTABILITY	TARGET ORGAN
	ACID	4 SEVERE HAZARD	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	1 EXTREMELY FLAMMABLE: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 NO EXPLOSION OR NORMAL CONDITIONS	0 ORGANIC LIQUIDS TO CORROSIVE: ORGANIC LIQUIDS AND FLUIDS ONLY
	ALKALI	3 SERIOUS HAZARD	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 NO EXPLOSION OR NORMAL CONDITIONS	0 ORGANIC LIQUIDS TO CORROSIVE: ORGANIC LIQUIDS AND FLUIDS ONLY
	CORROSIVE	2 MODERATE HAZARD	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 NO EXPLOSION OR NORMAL CONDITIONS	0 ORGANIC LIQUIDS TO CORROSIVE: ORGANIC LIQUIDS AND FLUIDS ONLY
	USE NO WATER	1 SLIGHT HAZARD	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 NO EXPLOSION OR NORMAL CONDITIONS	0 ORGANIC LIQUIDS TO CORROSIVE: ORGANIC LIQUIDS AND FLUIDS ONLY
	RADIATION HAZARD	0 MINIMAL HAZARD	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 HEALTH DANGEROUS: FLAMMABLE BUT SHOULD BE KEPT AWAY FROM THE BODY	0 NO EXPLOSION OR NORMAL CONDITIONS	0 ORGANIC LIQUIDS TO CORROSIVE: ORGANIC LIQUIDS AND FLUIDS ONLY

## Notify agencies & advise leadership



## Evaluate health risks & safety hazards



## Provide technical assistance



## Assessment/Mitigation



## Info to public



Used Motor Oil and Filter Drop-Off Locations





# Key Partners

- **LOCAL:** OES, Health Dept., Fire Dept., Law Enforcement
- **STATE:** Cal OES, Cal/EPA, CHP, Cal. Dept. of Fish and Wildlife (DFW), Cal. National Guard Civil Support Team (2 in CA) CBRNE-focused
- [www.nationalguard.mil](http://www.nationalguard.mil)
- **FEDERAL:** U.S. EPA, U.S. Coast Guard, FEMA Emergency Support Functions (ESF 10 – Oil and Hazmat)
- **OTHER:** Industry , Media, Volunteer and community organizations

# Suspected HazMat Release



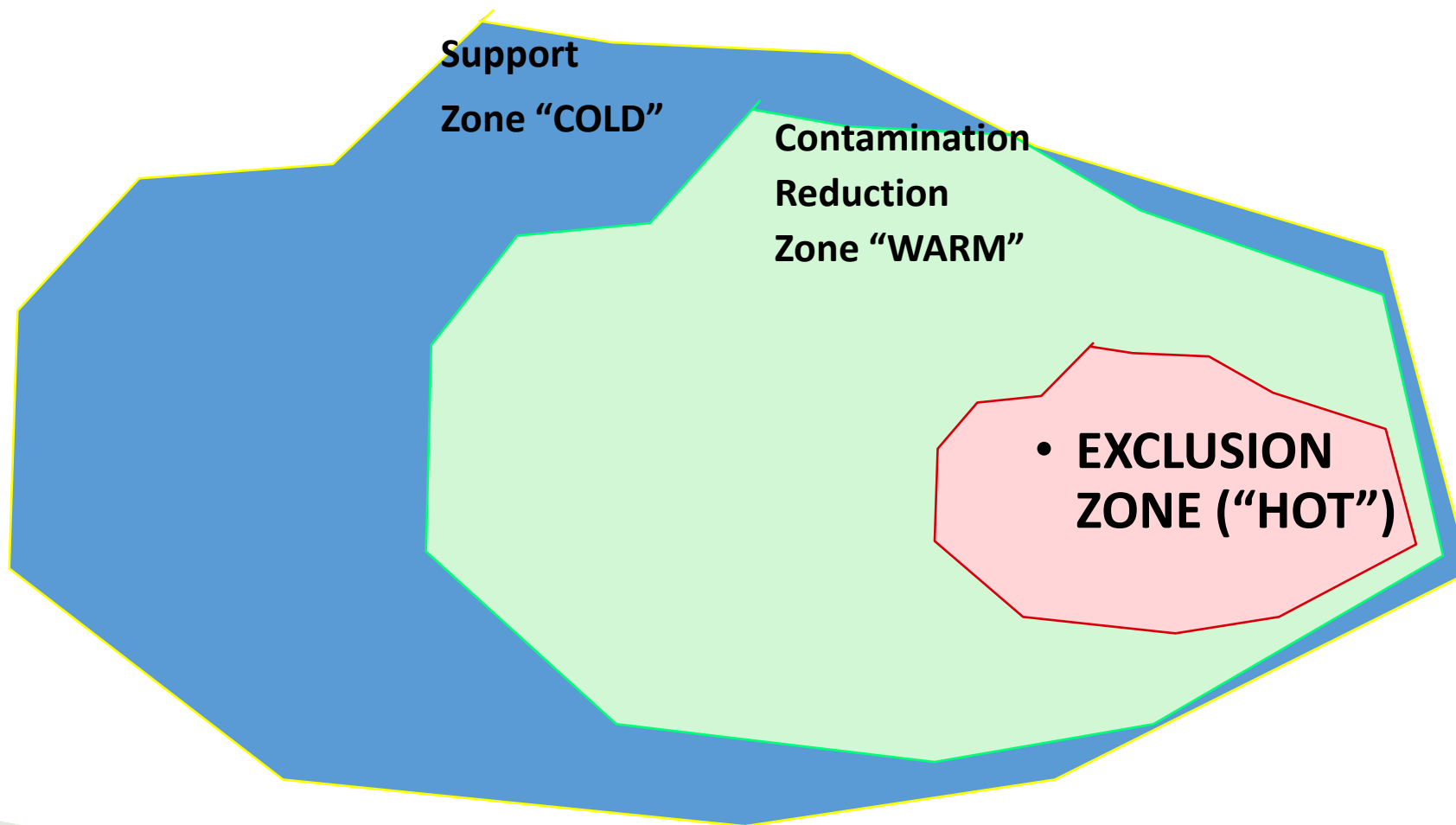
**Safe approach**

**Isolate area & deny entry**

**Notify appropriate agency**

**Establish temporary command**

# Control Zones



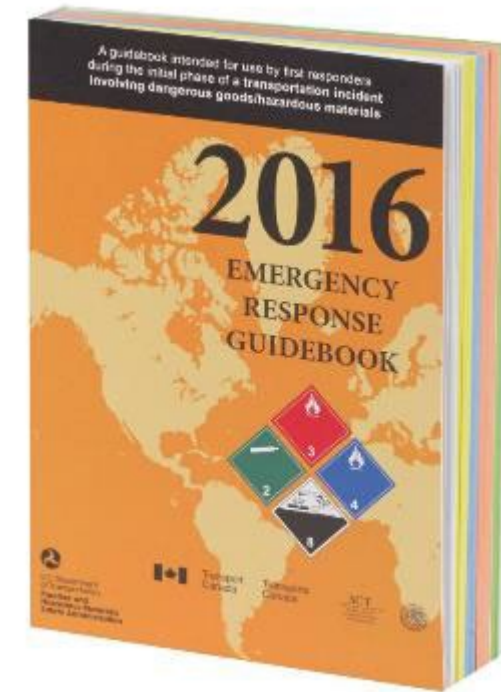
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# Chemicals in Transport

## Emergency Response Guidebook Generic Chemical Information UN Number Listing Placard Identification

- **Yellow Section – ID #**
- **Blue Section – Chemical Name**
- **Orange Section – Guide #**
- **Green Section – Isolation Distance**

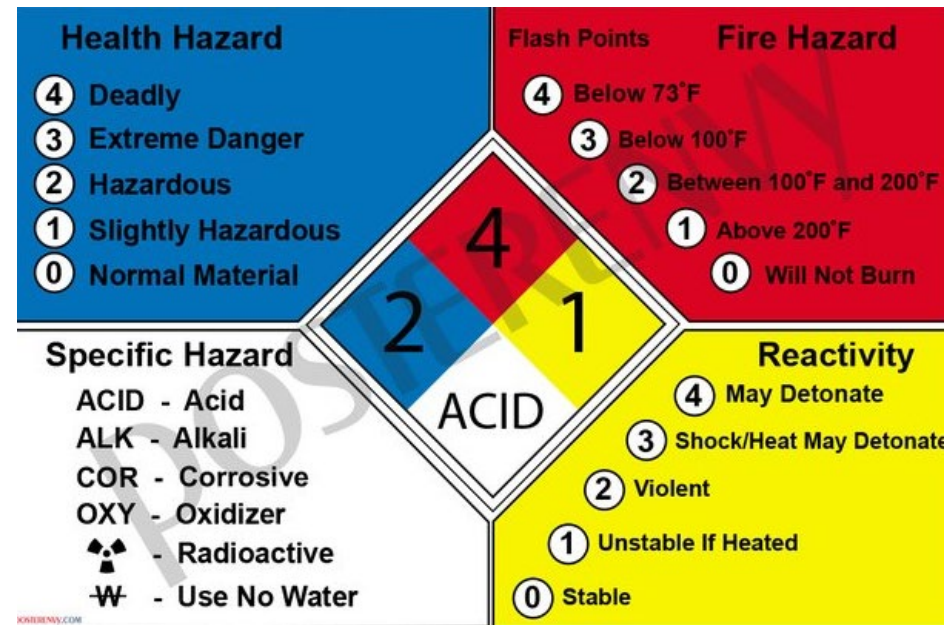


# Identifying Hazardous Materials

## Labels



## National Fire Protection Association (NFPA)



## DOT Placards





# Remember

## **Situation Not Always Recognized as Haz Mat Release!!**

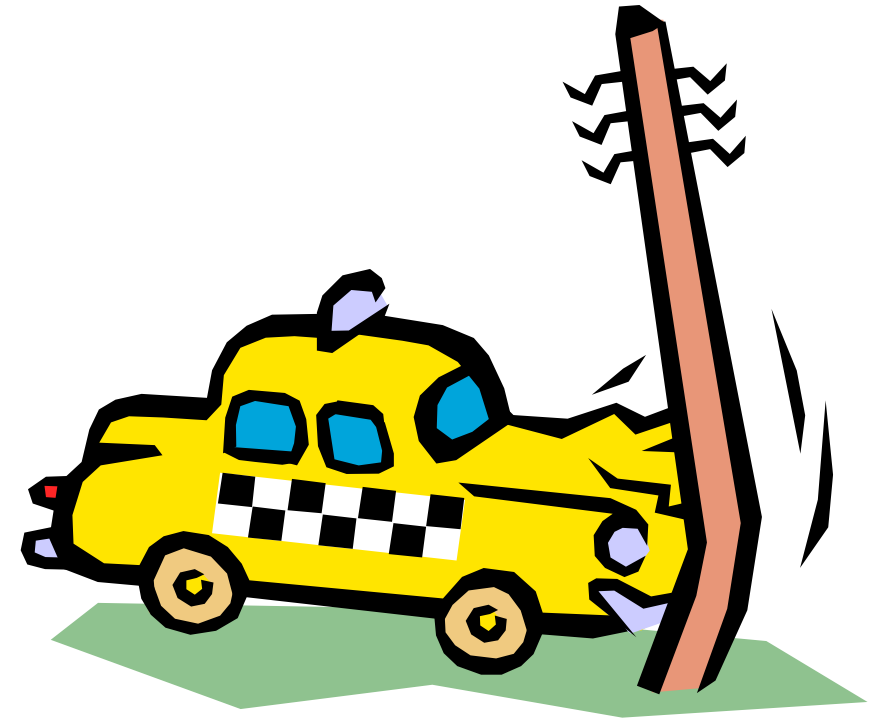
- **Some HazMat is odorless, colorless & tasteless!**
- **You may be exposed before you know it!**
- **Approach Uphill, Upwind, Upstream**
- **PPE Required by Law**

# Remember

## Situation Not Always Recognized as Haz Mat Release!!

**Many reported as:**

- Traffic accident
- Medical aid
- Fire,
- Person down, etc.





# Protective Actions

1. Evacuation
2. Shelter in Place
3. Decontamination



# Shelter-in-place VS Evacuate





# Initial Assessment

## Unknown Environment?

OSHA requires screening for:

1. Radiation
2. Hydrogen sulfide
3. Carbon monoxide
4. Flammability
5. Oxygen



# Facility Assessments

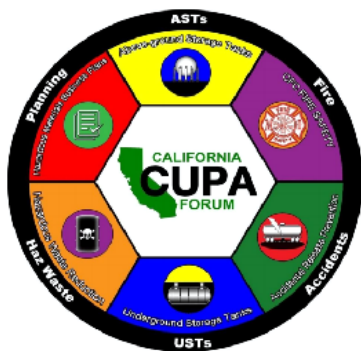
- Facility / equipment operable?
- Structural damage?
- Chemical storage secure?
- Any safety hazards?
- Any releases?
- Releases contained / cleaned?
- Power supply available / interrupted?







# Disaster Hazardous Waste Cleanup



**LOCAL  
PUBLIC HEALTH /  
ENVIRONMENTAL  
HEALTH**

**Disaster Funding available for:**

- Household Hazardous Waste Cleanup**
- Technical assistance**



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# Decontamination

- **Emergency Responders**
- **Victims/evacuees**
- **Equipment**
- **Environment**



**3-Step Process: Rinse, Wash, Rinse**  
**Capture wastewater, if you can**

# Terrorism



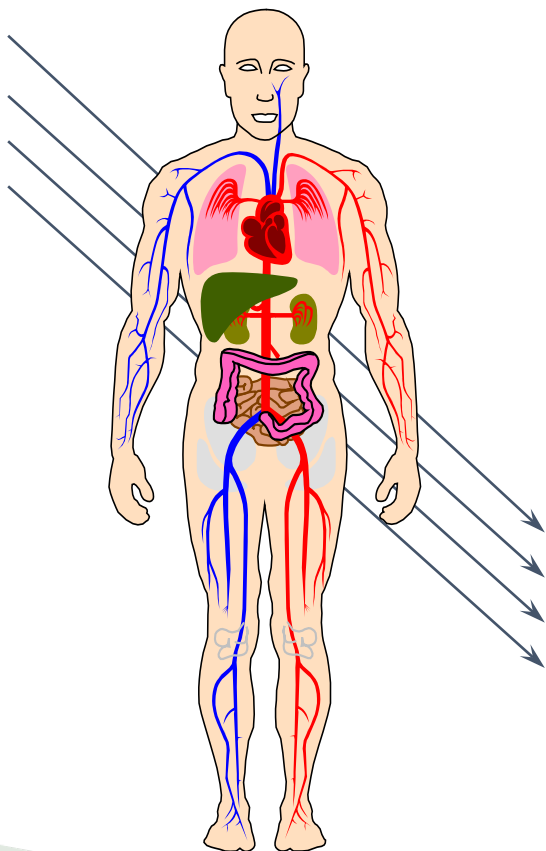
- Biological
- Chemical
- Radiological/  
Nuclear



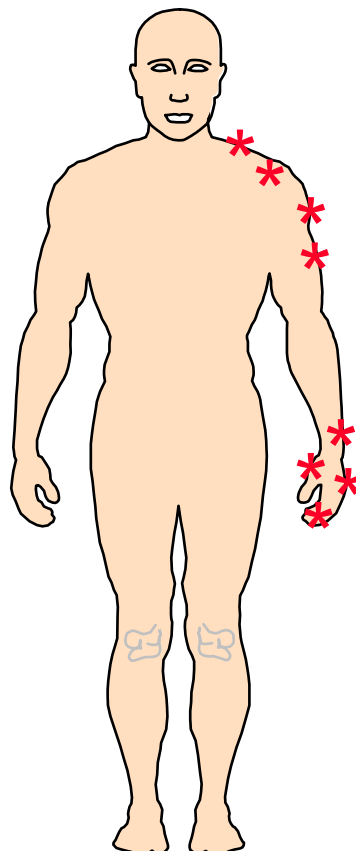


# Radiological Exposure: 3 Types

Irradiation

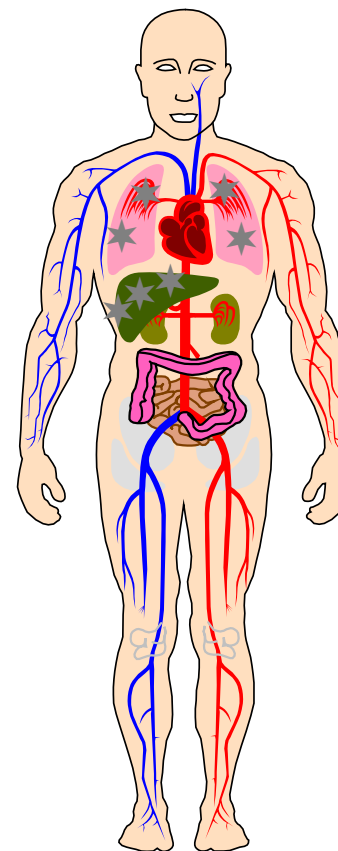


External  
Contamination



PUBLIC

Internal  
Contamination





# Rapid Epidemiologic Assessments After Chemical Releases

**The ACE Toolkit: surveys, consent forms, training materials, and Epi Info™ 7 databases**

- Customizable
- **The ACE team also provides training**  
[https://www.atsdr.cdc.gov/ntsip/ace\\_toolkit.html](https://www.atsdr.cdc.gov/ntsip/ace_toolkit.html)



# Any Questions?

Chad San Juan, REHS, CSP, CHMM  
CalARP/LEA/ER Program Supervisor,  
Kern County Environmental Health Division

[SanJuanC@KernCounty.com](mailto:SanJuanC@KernCounty.com)







# Emergency Ready: EHTER Hands-On Crash Course

Th-I1  
March 27, 2025

CA Dept of Public Health, Center for Environmental Health EP Team:  
Hoa Tan, Thaddeus Hunt, Natalia Deardorff, and Debbie Anderson  
and  
Chad San Juan, Kern County CalARP/LEA/ER Program Supervisor




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The EHTER Awareness course provides the knowledge, resources, and references necessary to enable Environmental Health Professionals to be prepared for emergency response and recovery work.

## Course Objectives

- 
- **Learn:** Acquire resources to improve understanding of roles and responsibilities of environmental health in emergency preparedness, response, and recovery.
  - **Connect:** Meet with colleagues and other agencies/organizations to better understand emergency roles and responsibilities. Share best practices and lessons learned.
  - **Exercise:** Familiarize, think about, and practice knowledge and resources for environmental health emergency response.

# The Value of EH in Equity and Emergency Management

- Facilitates whole community
- Works in the local communities every day
- Supports existing relationships
- Recognizes inequities



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# Take Aways

- Your role is of support, not of enforcement
- Learn what you need to know to help in a disaster
- Build relationships now in blue skies, before the disaster
- Understand your communities and their needs
- Practice what you've learned





**You did it!**



Course Evaluation

<https://forms.office.com/g/VKvGHdCsZZ>

Remember  
to evaluate  
us!



# Announcements

## Upcoming EHTERs:

- **EHTER 101 (Conference EHTER)** - April 14-17, 2025  
CA Env. Health Assoc. (CEHA) AES at Seaside
- **EHTER Expeditionary (EHTER X)** - May 7-8, 2025  
Orange County EH at Santa Ana
- **Principles of EHTER** - Continuing Challenge at Sacramento  
(September 2-5, 2025)



# Any Questions?

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EP Team / "EHTER Team"  
[CEH.EP@cdph.ca.gov](mailto:CEH.EP@cdph.ca.gov)

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