

METHAMPHETAMINE LABS



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[Advanced Environmental Options, Inc. aEO](#)



What is

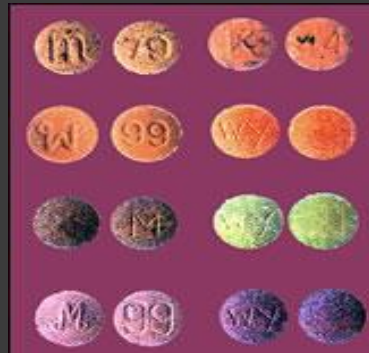
Methamphetamine?



Methamphetamine is a powerful,
highly addictive stimulant

The Forms of Meth

Powder



Tablets

Rock



Ice / Crystal Meth



Street Names for Meth

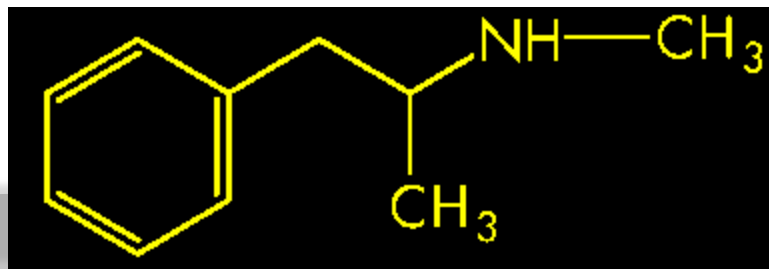
- ⦿ **Crank**
- ⦿ **Speed**
- ⦿ **Ice**
- ⦿ **Crystal**
- ⦿ **Tina**
- ⦿ **Glass**
- ⦿ **Chalk**

**Meth can be smoked, snorted,
swallowed, or injected**



What is a Meth Lab???

- A meth lab is a clandestine drug lab that is a collection of materials and ingredients used to make multiple forms of Methamphetamine and is made mostly from common household ingredients. These ingredients are mixed and cooked together to make meth and the harmful chemical mixtures can remain on household surfaces for months or years later. There may be health effects in people exposed to chemicals to make meth before, during and after the process. Therefore, each lab is a potential hazardous waste site, requiring evaluation, and possibly cleanup, by hazardous waste professionals.
- Meth labs have been discovered in hotel and motel rooms, restaurants, barns, private homes and apartments, storage facilities, fields, vacant buildings and (moving or stationary) vehicles. A minimum of 5 to 7 pounds of chemical waste are produced for each pound manufactured.
- Methamphetamine is a member of the phenethylamine family, which includes a range of substances that may be stimulants, entactogens, or hallucinogens. Thus, methamphetamine is *N*, α -dimethylphenethylamine











Blue funnel

Glass flask

Pink flask on burner

ACETONE

HYDROGEN PEROXIDE

HEET

GLAD Sandwich Bags

HYDROGEN PEROXIDE

HYDROGEN PEROXIDE

TH

Jar with white powder

Jar with yellow liquid

Jar with pink liquid

Jar with white powder

Plastic bottle

Jar with pink liquid

Yellow bottle

Box of matches

Blue bag

Matchbox

Small container

Small container

Waste container



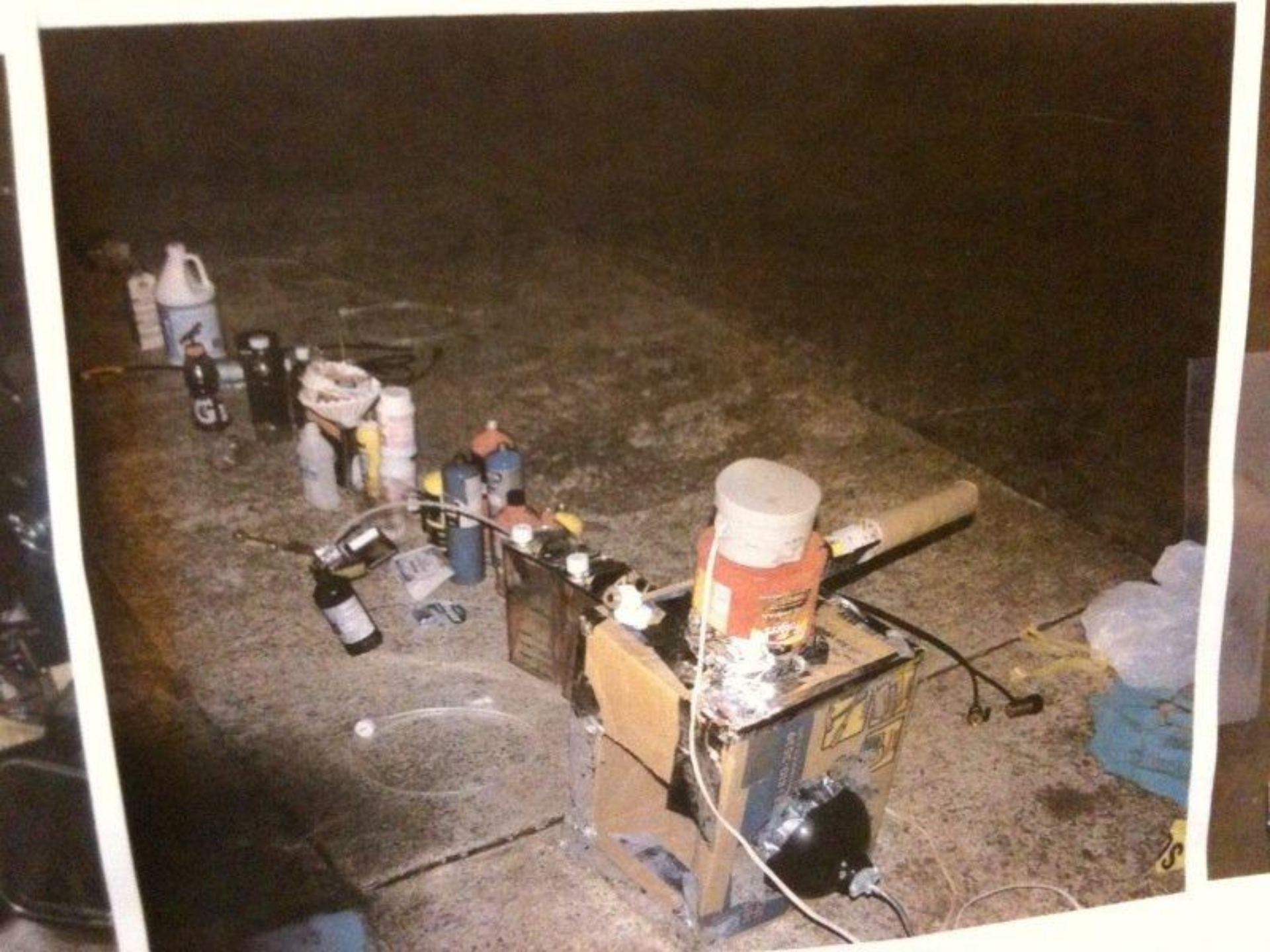


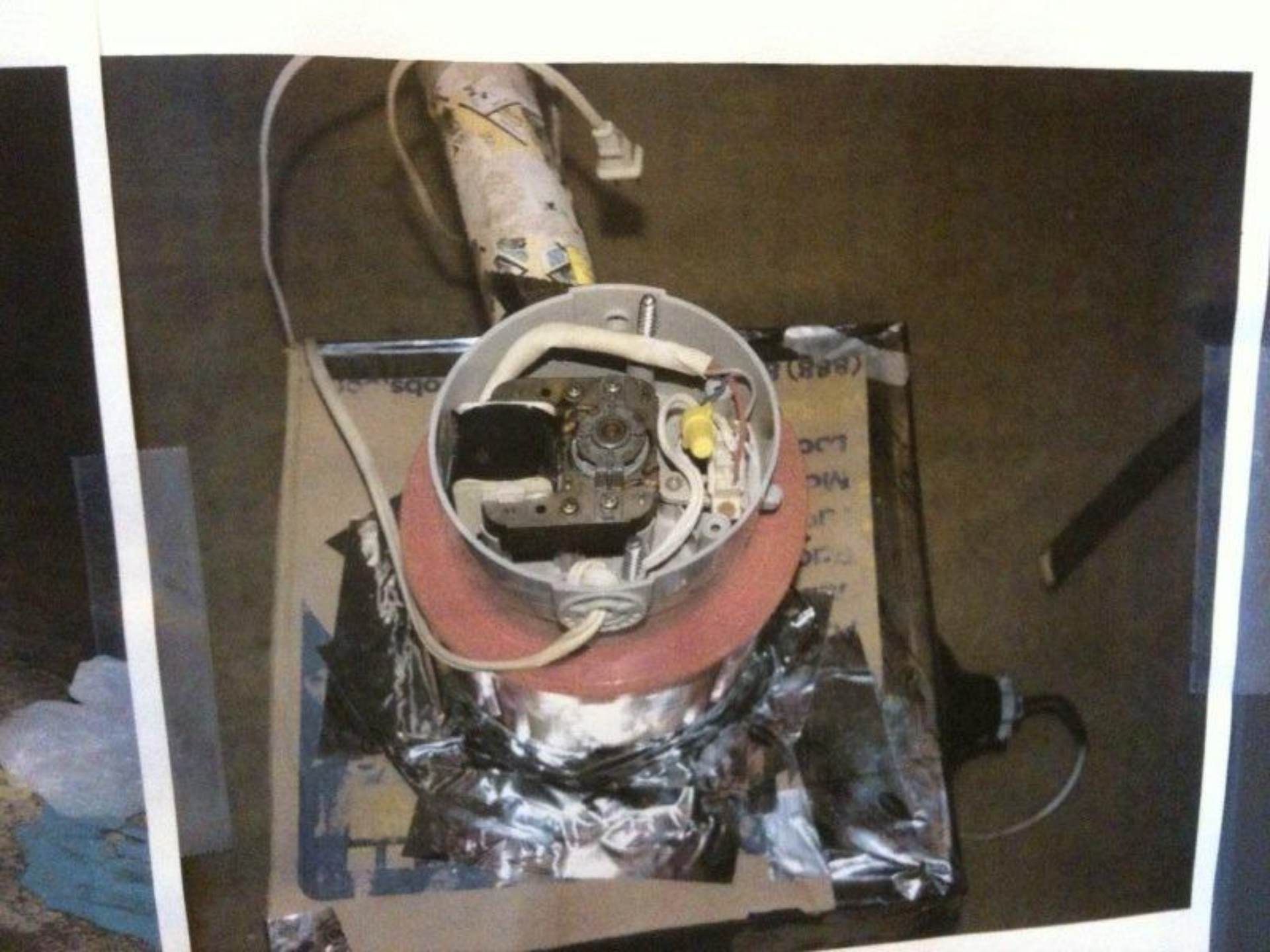


Section 2 – Red Phosphorous Labs

Red Phosphorous Labs, also known as “Red P” labs, are most known for the abundance of matches. Cooks often, if not always, use matches for the phosphorous. True Red P Labs are becoming less common in terms of cooking method due to the rise of the One Pot Method. Although true Red P cooks are becoming less of a problem, the complexity, hazards, and scope of work has not changed.

Commonly found chemicals in these labs are : Red Phosphorous, Hydrogen Peroxide, Organic Solvents (Camp Fuel, Gasoline, Acetone, Toluene, etc..), Hydrochloric Acid, Sulfuric Acid, and various forms of Iodine (crystals, tincture, and solution). Also be aware that many cooks do NOT retain many of the original containers the chemicals were purchased in. Due to the unknown factor, a lab technician must take extra precaution when testing and identifying each of these unknowns. There will be an explanation and demonstration of the standard barrage of tests you must go through for each unknown chemical.





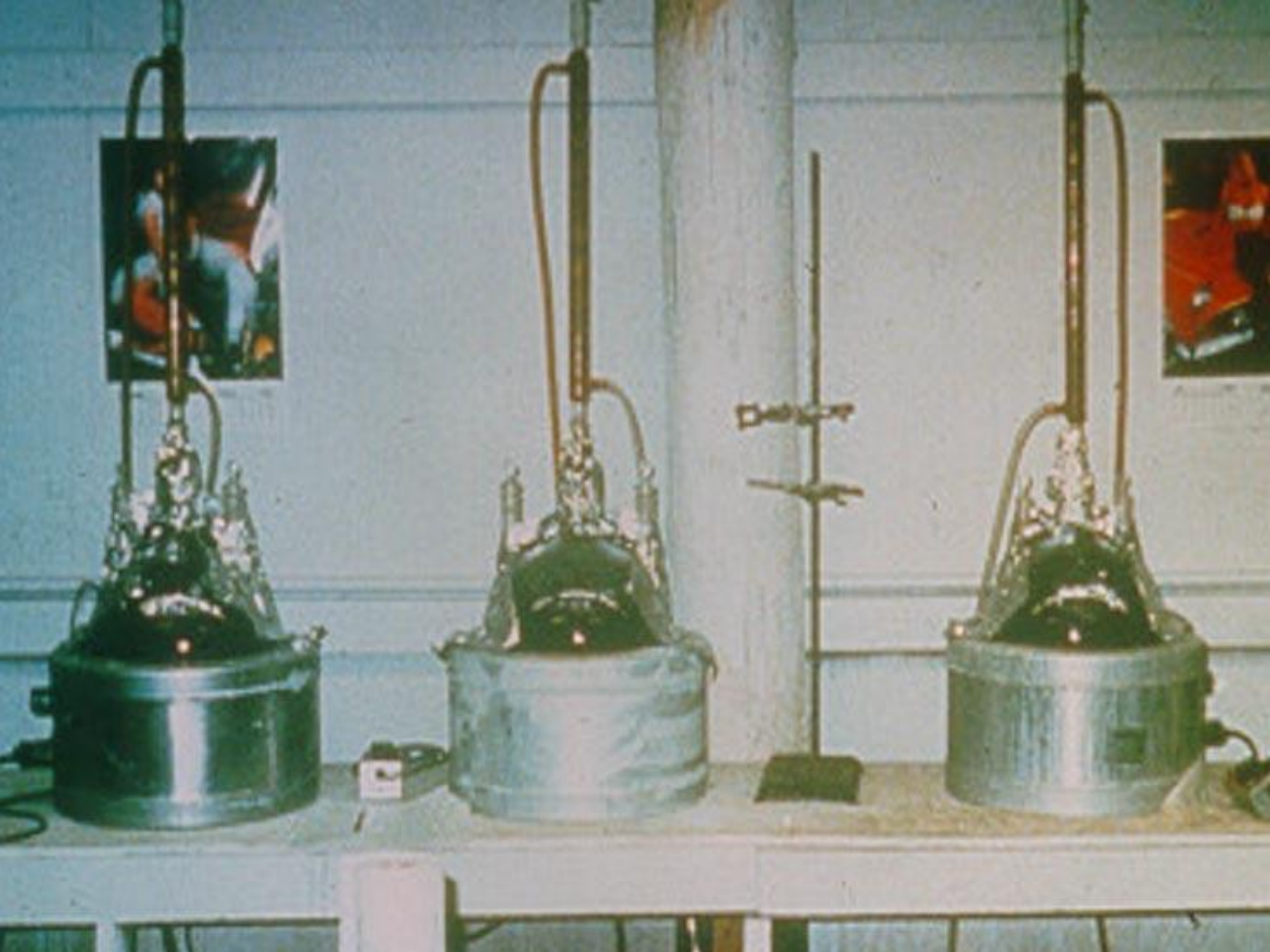


Section 3 – Anhydrous Ammonia Labs

Anhydrous ammonia labs, also known as “Nazi” labs, are particularly dangerous due to the fact that the cook is using a deadly gas called Anhydrous Ammonia. Whether it be from a local farmer or producing the gas via Ammonium Nitrate from cold-packs or fertilizer, the gas procured is deadly via inhalation therefore extra respiratory protection is required.

Commonly found chemicals associated with these types of labs are: Hydrogen Peroxide, Sodium Hydroxide, Ammonium Nitrate (from cold-packs or fertilizer), Anhydrous Ammonia, Organic Solvents, and rock salt. Anhydrous ammonia stored in improper containers, such as propane cylinders, are especially dangerous. The ammonia gas corrodes the inner lining of the cylinder resulting in severe loss of container integrity. It also corrodes the valve, also known as the head of the cylinder, making it a very dangerous item to handle. Due to this corrosion, the cylinder can either explode from the pressure build up or blow the valve off, resulting in the cylinder rocketing off at a high velocity. Careful inspection of the cylinder from a safe distance must be done FIRST before actually handling the item. Once it is deemed safe to proceed, the gas inside must be bled off into a drum of water. All of these actions will be explained and demonstrated in this section of training.







**And then you have the
One-Pot or Shake-n-Bake
Labs**



Section 4 – One Pot Labs

One pot labs are potentially the most simplistic lab type of all. However, this simplicity is what leads them to be the most dangerous cook method. The reason the danger level is so high for these labs is because the cooks mix all of the chemicals they have for cooking together into one or more bottles. This often leads to violent reactions that cause fires, explosions, and even fatalities.

The primary hazard in these bottles are a water reactive substance called Lithium. Lithium metal, when coming into contact with water, ignites and can cause large fires in the surrounding area. How to handle this problem and other chemicals on these types of labs will be explained and demonstrated in this section of training.











Section 5 – Miscellaneous Items

While performing cleanup duties, you may come across various items that are on all of the different types of labs. These items are things like sharps, kitty litter, bodily fluids, and pills. All of these items are extremely hazardous to your health and safety.

Sharps such as knives, razor blades, syringes, scissors, broken glass, and serrated metal can puncture or cut through protective clothing. These items represent a serious hazard due to the possibility of them carrying viruses, bacteria, and/or diseases.

Kitty litter doesn't seem like much. Its in nearly every home in America. On these labs, kitty litter is used to filter gases and vapors to make it safer for the cooks to continue their work. These vapors and gases though, form a crust in the litter and when broken can lead to the release of phosphine gas. Phosphine gas acts much like cyanide in that in only takes a minimal amount of inhalation to kill you.

Bodily fluids contain many of the same hazards that sharps do. Disease, bacteria, viruses, etc.... Proper personal protective equipment and common sense helps render the hazards nearly irrelevant.

Pills are common on most labs. The most common pill found is Sudafed which contains pseudoephedrine. Also, hydrocodone and other controlled substances can be found on all the different types of labs. These pills have their own way to be treated.



South Dakota

52A

555



Meth and Your Body

*Based upon NIDA Research Report Series -
Methamphetamine Abuse and Addiction*



At First...

Stimulant:

Euphoria and rush, increased energy,
decreased fatigue, sense of control

Weight loss:

Suppresses appetite; may increase
metabolism

Risky Behavior

- **Meth use lowers inhibitions, increases libido, and impairs judgment, often leading to risky behavior**

Meth & HIV and Hepatitis

- ① **If meth is injected, you run the risk of infection from dirty needles**
- ① **Given how meth impairs your judgment, there is also a risk of acquiring HIV, hepatitis, and STDs through promiscuous behavior**

⦿ **High doses of meth can:**

- **Elevate body temperature to dangerous, sometimes lethal, levels**
- **Cause convulsions**

In the long term

- ◎ **Psychotic behavior including:**
 - **Paranoia**
 - **Auditory hallucinations**
 - **Mood disturbances**
 - **Delusions**

● **Hallucinations include “crank bugs”**

- **Sensation of insects creeping on or under the skin**
- **Meth users pick at and scratch these areas to find relief**
- **Can create open sores that become infected**



2005© "Faces of Meth"



11 Months Later



2005© "Faces of Meth"



3 months later

Joseph

Meth Mouth

- **Meth can cause severe tooth decay because:**
 - **Meth reduces the amount of protective saliva around the teeth**
 - **Meth users consume excess sugared, carbonated soft drinks**
 - **Meth users tend to lack personal oral hygiene**
 - **Meth causes tooth grinding and jaw clenching**



Photos courtesy of: Sharlee Shirley, RDH, MPH; Jim Cecil, DMD, MPH, University of Kentucky, School of Dentistry

METH



MOUTH



10 Years of Meth Use





1998



2002



10 Years of Meth Use



Think... Is It Worth Your Life?!!



The Downward Spiral

Meth and the Environment



Meth production causes major damage to the environment

- ◎ **Some of the chemicals used to produce meth have independent toxicity**
- ◎ **When these chemicals are combined, they can have serious toxic and explosive effects**
- ◎ **Every pound of meth produced can yield up to five pounds of toxic waste**

Items to watch for:

Common cold pills containing ephedrine or pseudoephedrine

Acetone

Alcohol (Gasoline Additives or Rubbing)

Toluene (Brake Cleaner)

Engine Starter (Esher)

Drain Cleaner (Sulfuric Acid)

Coffee Filters

Iodine (Veterinarian Products)

Salt (Table/Rock)

Batteries (Lithium)

Propane Tank (Anhydrous Ammonia)

Lye (Sodium Hydroxide)

Matches (Red Phosphorus)

Dishes (Pyrex/Vialone)

Muriatic Acid

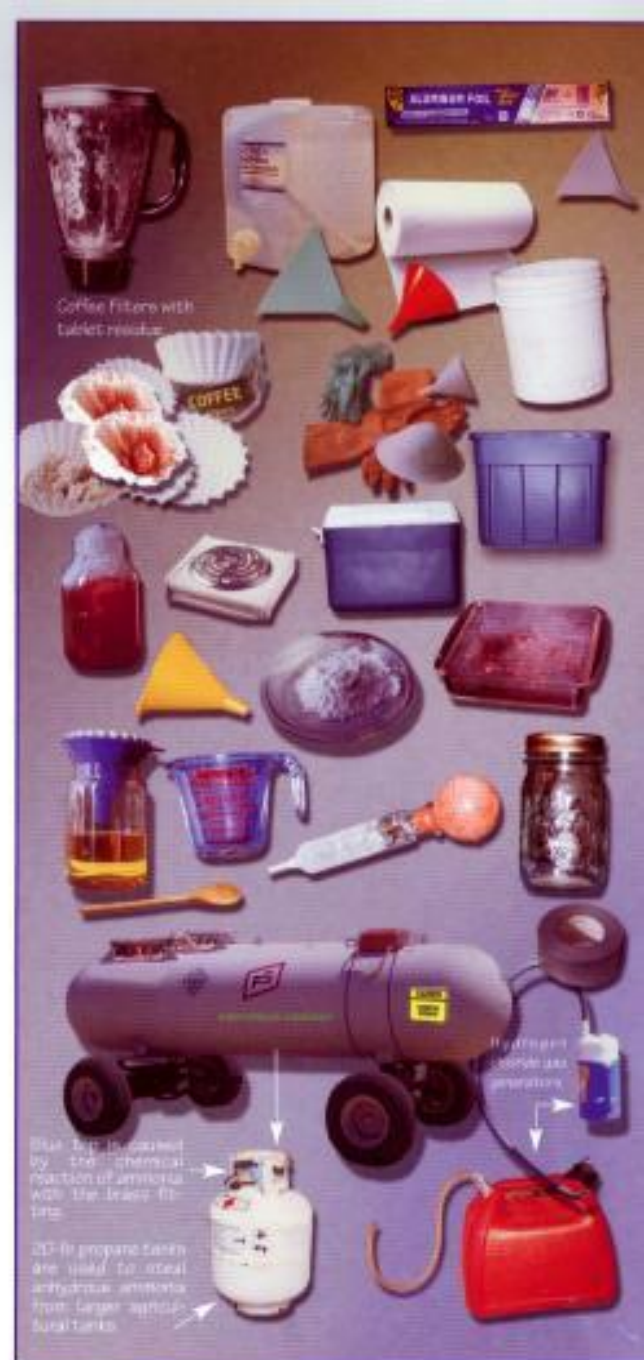


Lithium Batteries

Funnels, Rubber Tubing

Test Dip

Sodium Metal



Anhydrous Ammonia

Aluminum Foil







Drug Endangered Children

- **Many children are rescued from homes with meth labs or meth using parents**
- **Meth, chemicals, and syringes are all within reach of children**

- ◎ **Parents high on meth neglect their children**
- ◎ **The mental, physical, and emotional consequences for the children can be severe**



- *Photo courtesy of the United States Attorney's Office, Northern District of Iowa*

Domestic Violence

- ① **For meth users, judgment is clouded**
- ① **Relationships often revolve around meth**
- ① **Domestic violence and child neglect often result**

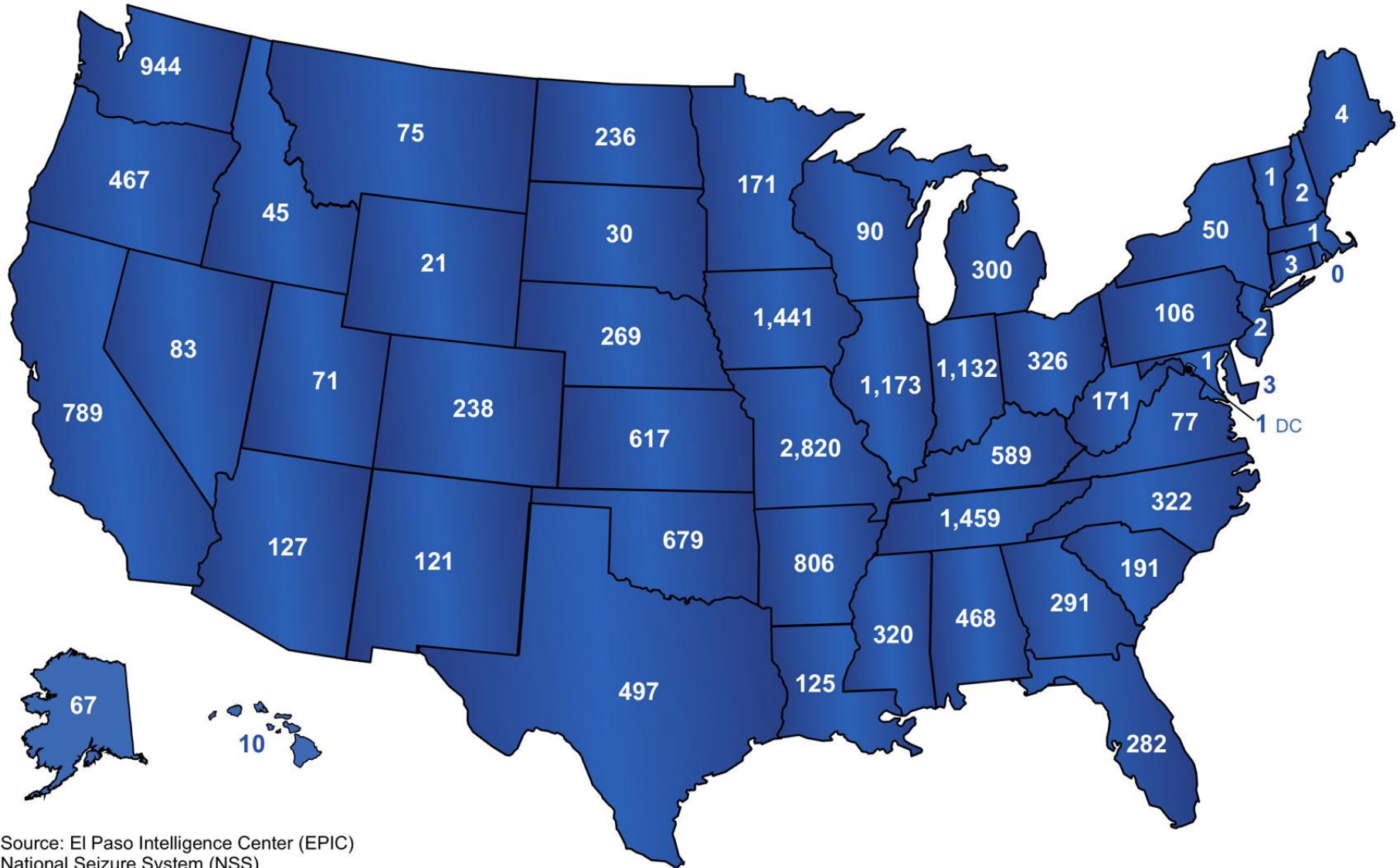


Stats on Meth Addiction

- According to statistics, the average life expectancy of a hard core meth addict is only five to seven years.
- The national average recovery rate for meth addicts is estimated to be between only 16- 20%.
- The psychotic effects of meth use can last years after cessation of meth use.
- The average meth "cook" annually teaches ten others how to make meth.
- A common side effect of meth is the feeling of “meth bugs”. Users will scratch and claw their way to their bones to try and rid themselves of these imaginary bugs.
- A single episode of smoking meth in a residence produces sufficient airborne methamphetamine to contaminate 18,500 square feet of surface area in a home to a concentration exceeding 0.5 micrograms per 100 square centimeters of surface area (0.5 $\mu\text{g}/100 \text{ cm}^2$).
- The incidence of clandestine drug laboratories has grown dramatically in the past 10 years. For example, in Fiscal Year 1992, the DEA's National Clandestine Laboratory Cleanup Program funded approximately 400 removal actions and by fiscal year 2001, the DEA Program funded more than 6,400 removal actions.

Calendar Year 2004
Total: 18,091

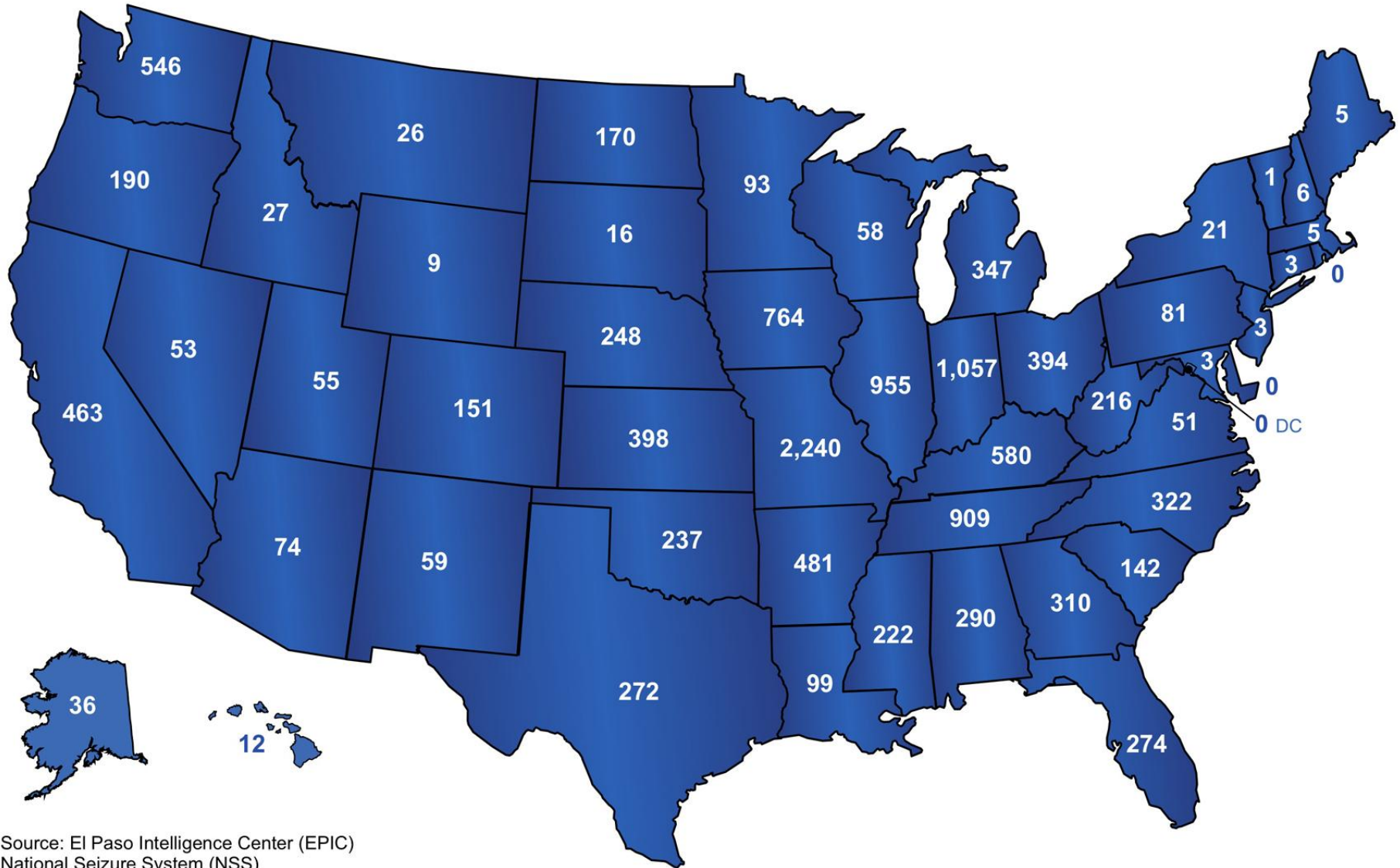
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2005
Total: 12,974

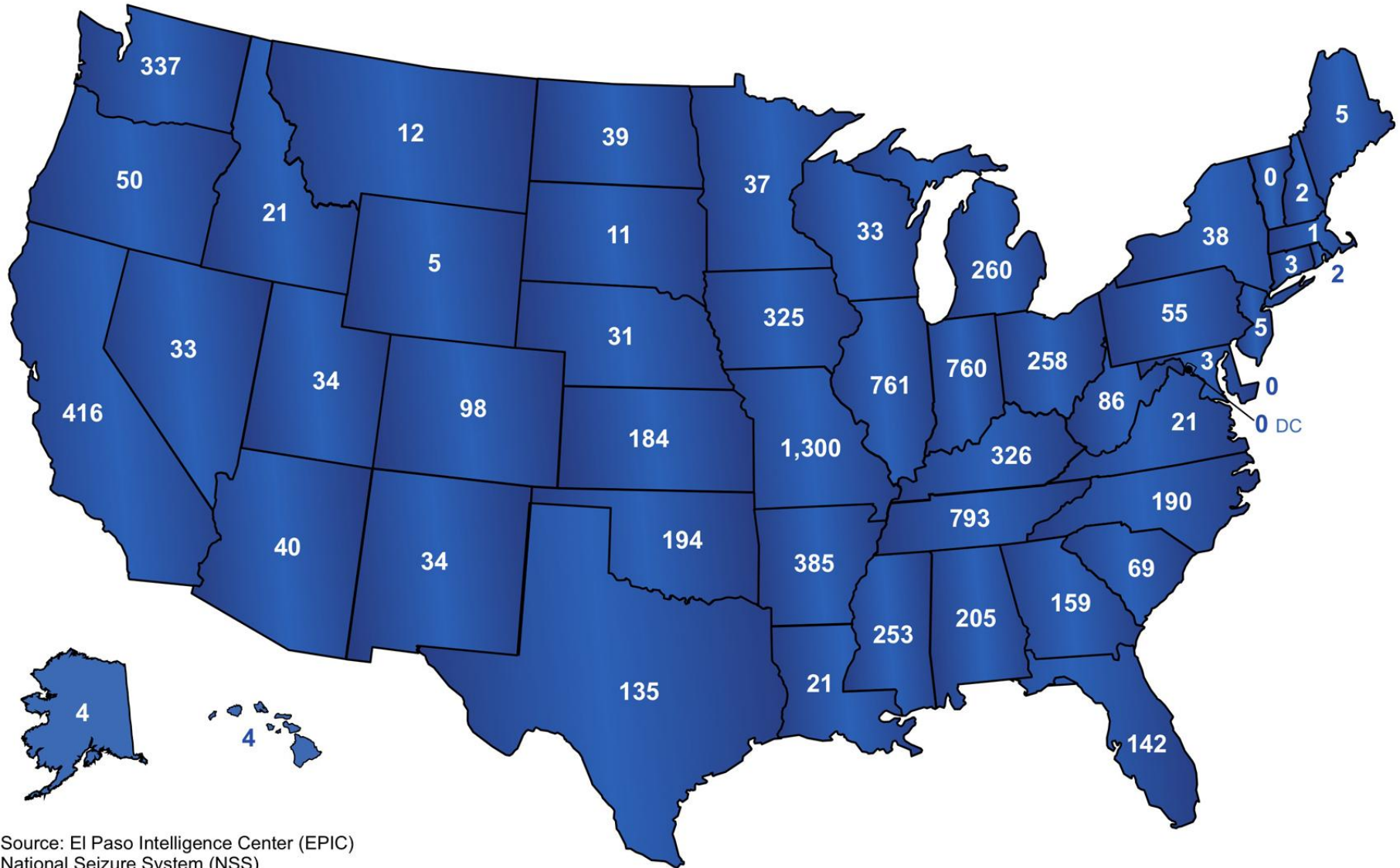
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2006
Total: 8,181

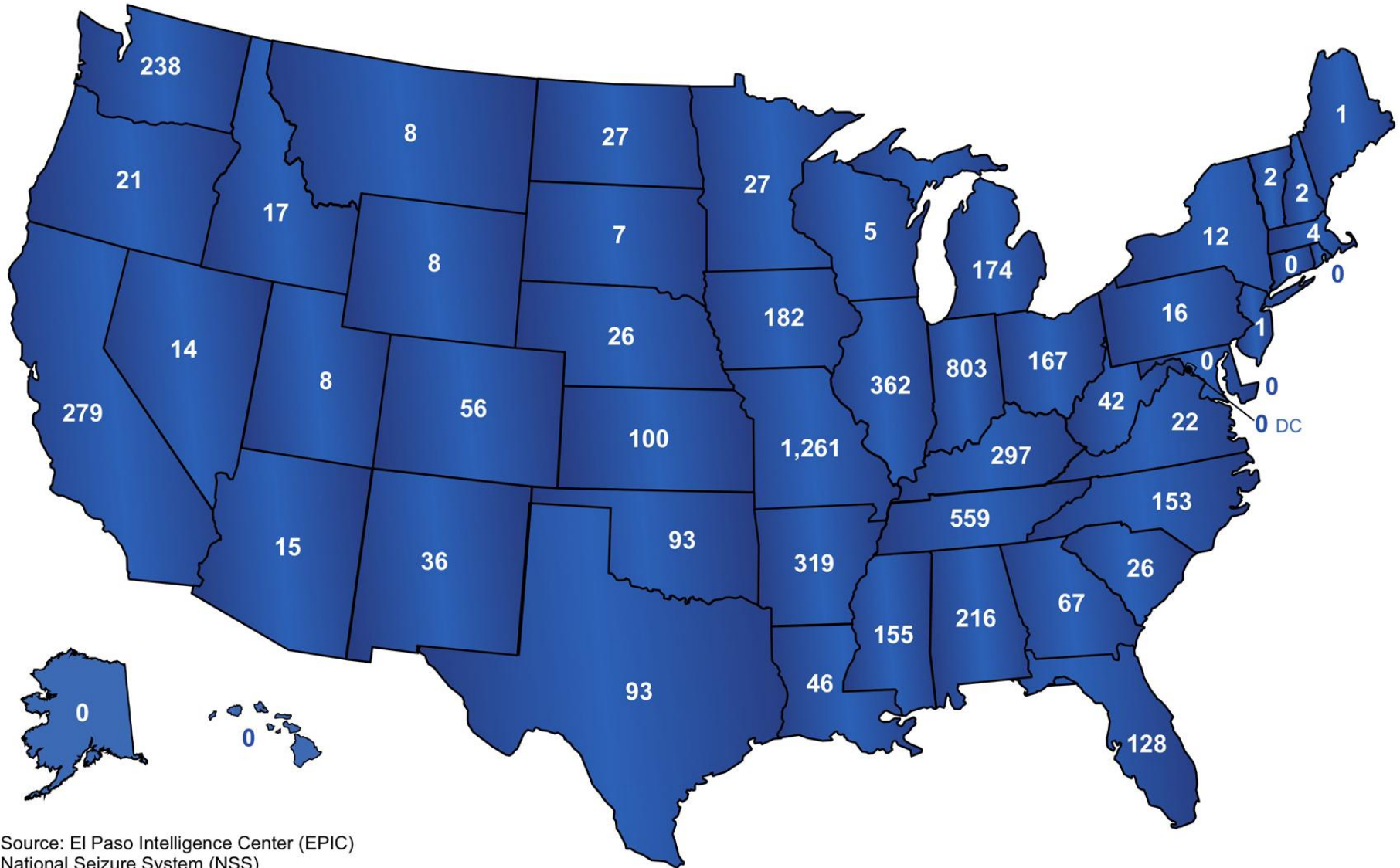
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2007
Total: 6,095

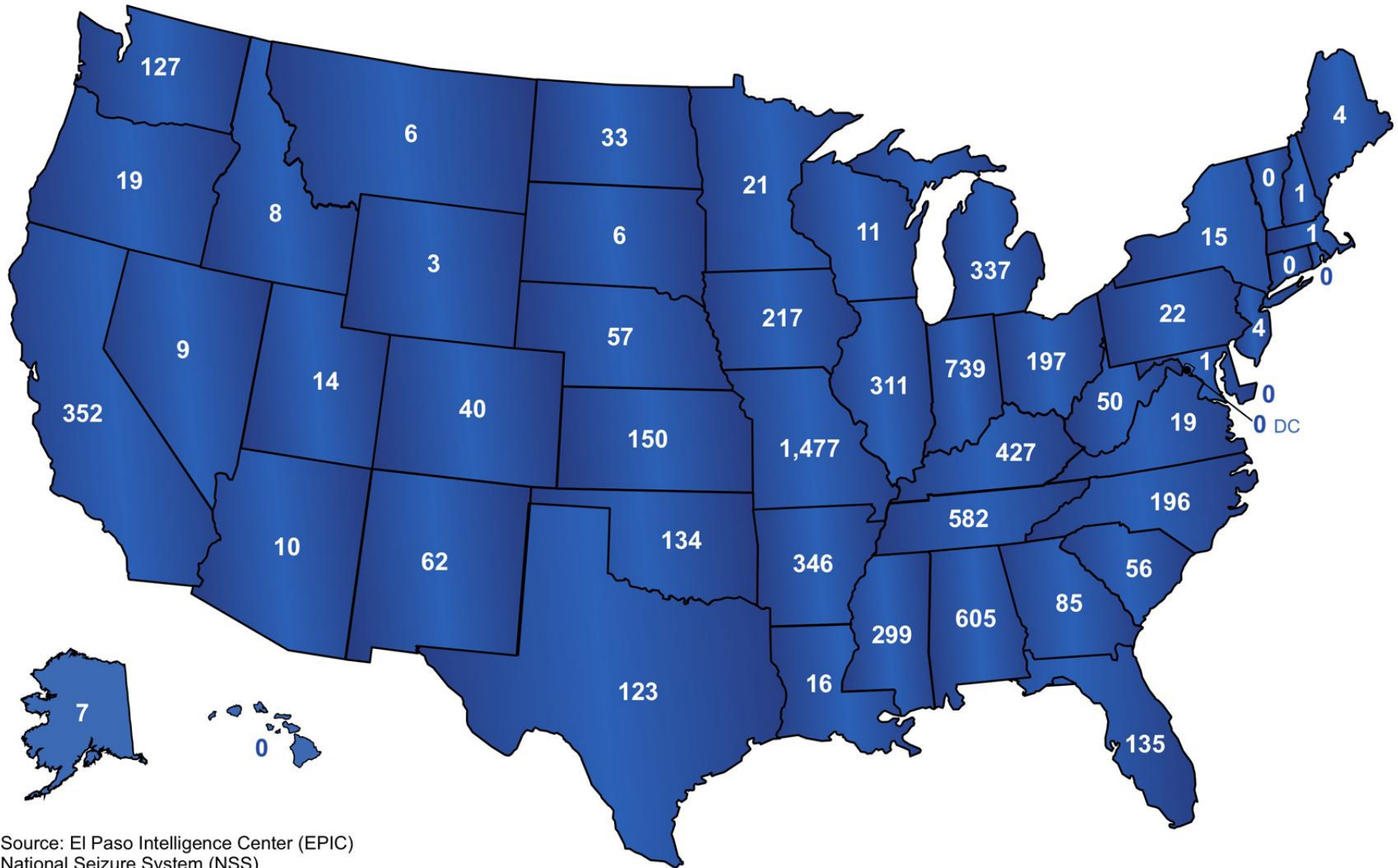
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2008
Total: 7,334

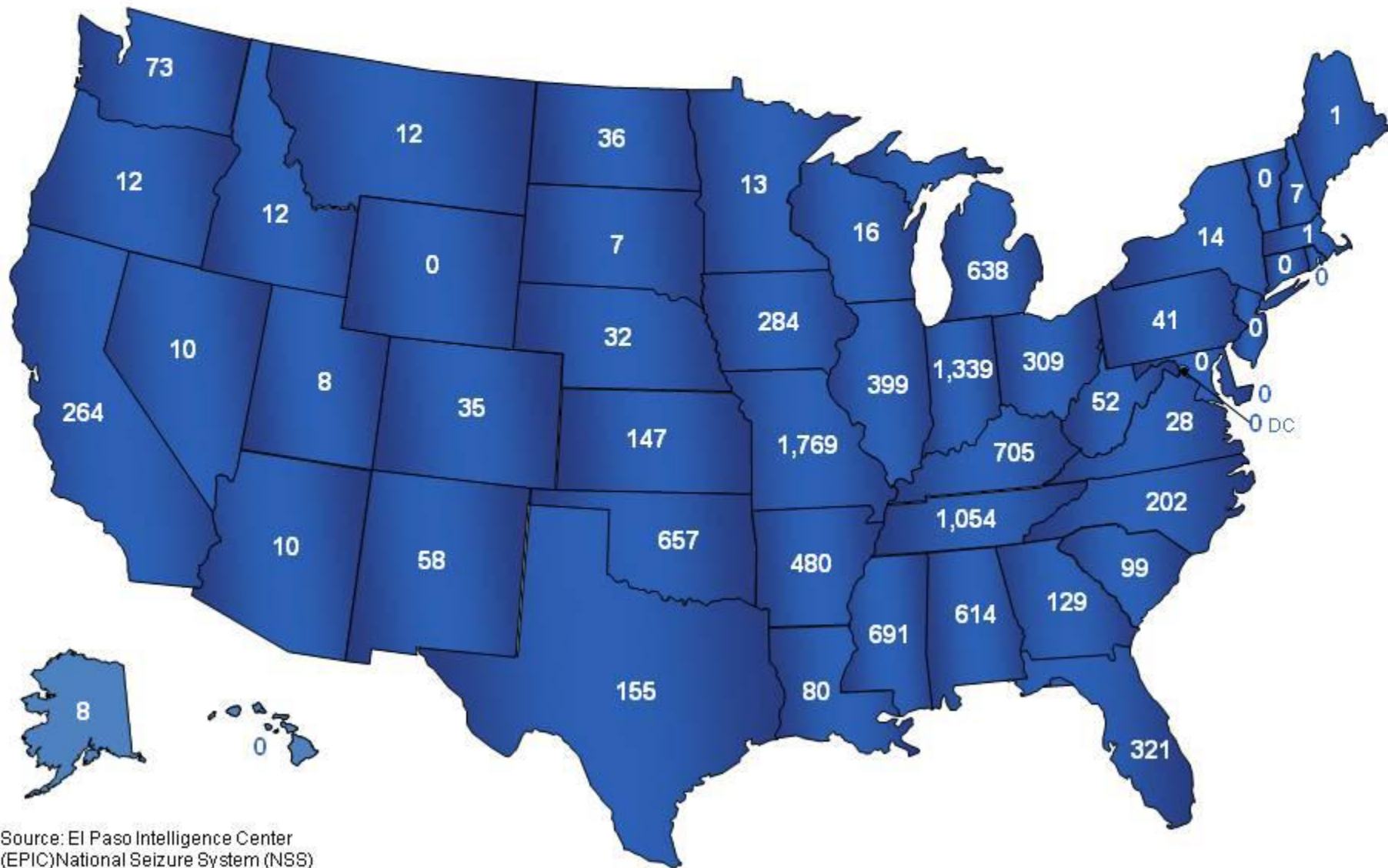
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2009
Total: 10,822

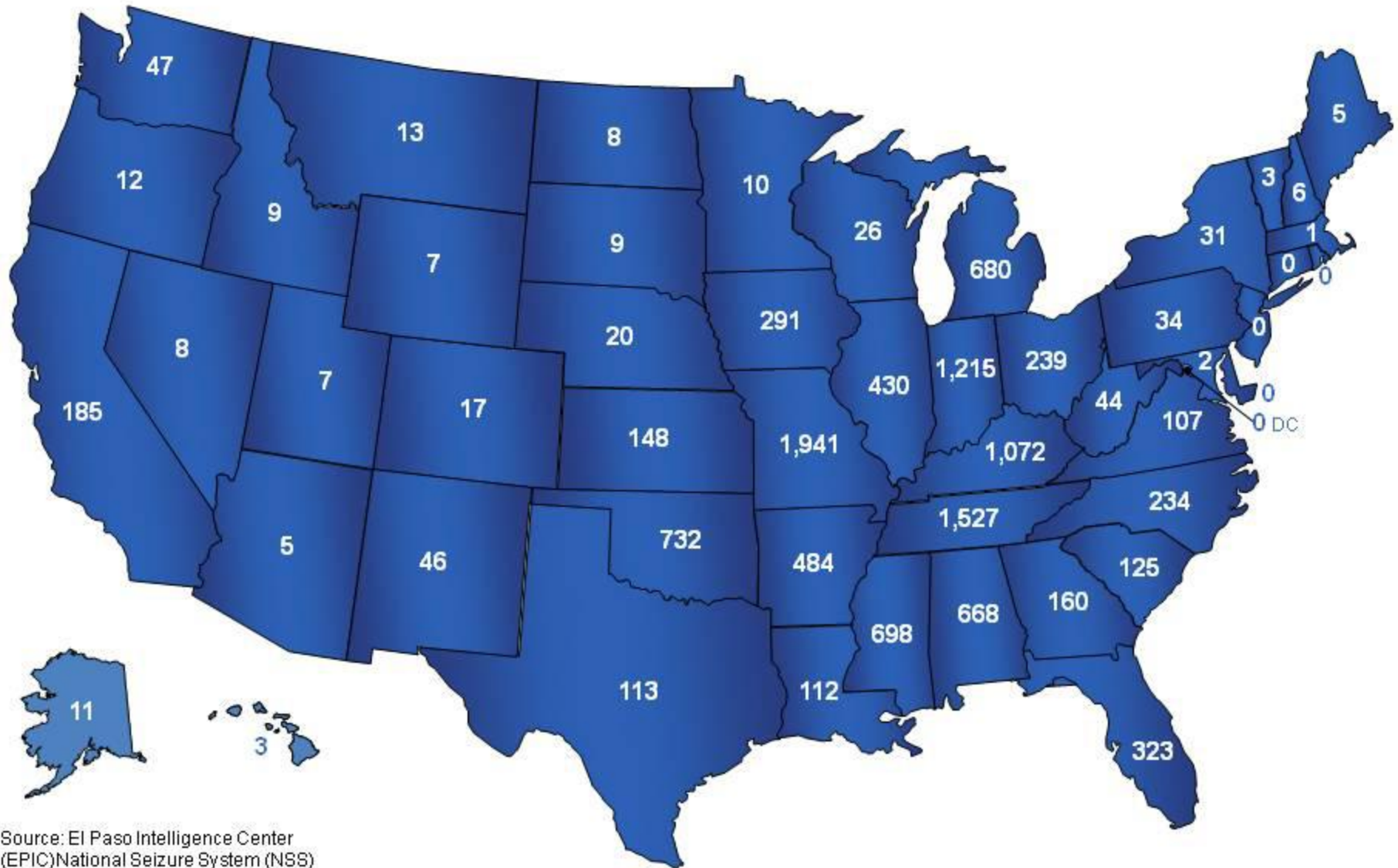
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC) National Seizure System (NSS)

Calendar Year 2010
Total: 11,868

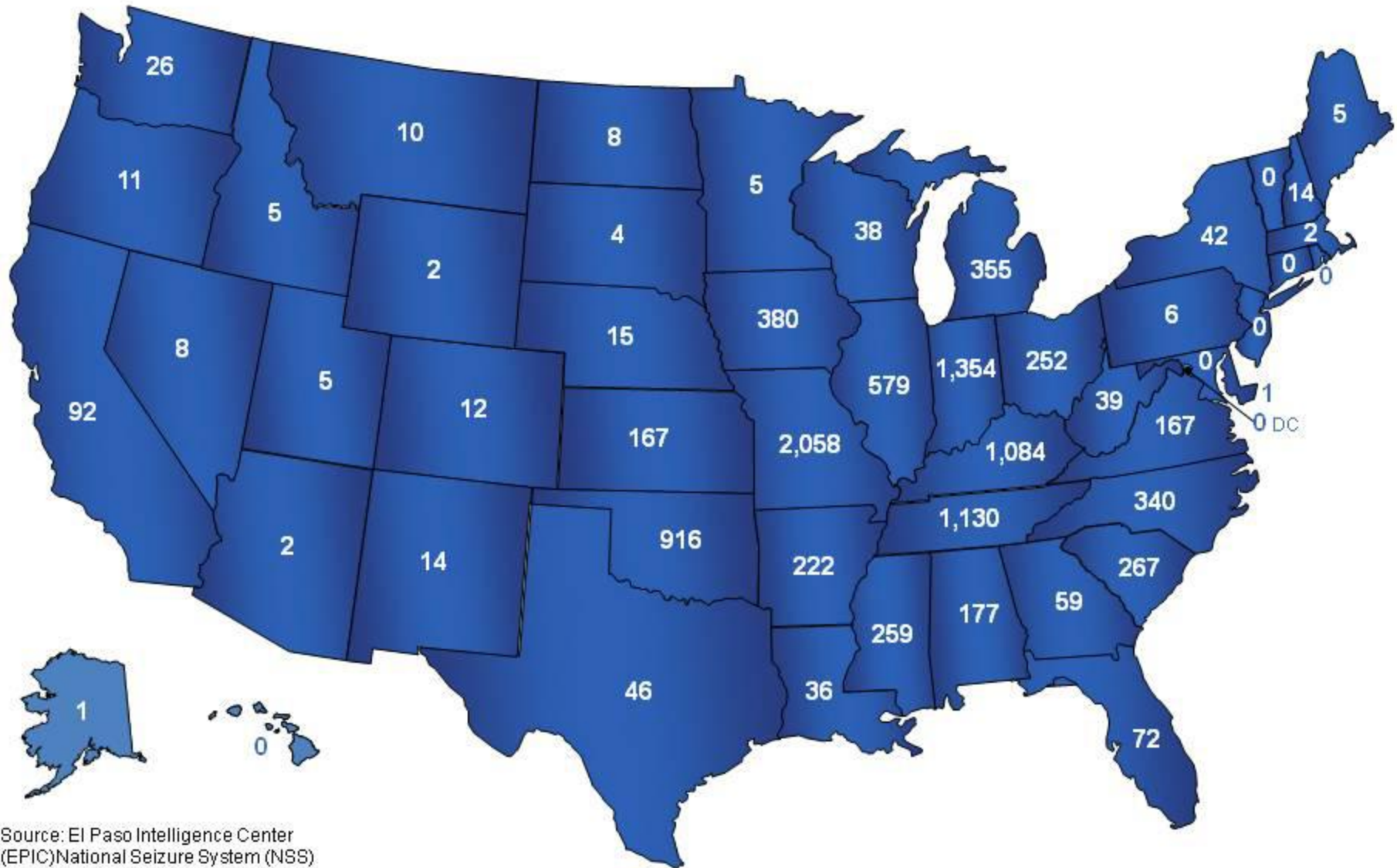
Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center
(EPIC) National Seizure System (NSS)

Calendar Year 2011
Total: 10,287

Total of All Meth Clandestine Laboratory Incidents
Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center
(EPIC) National Seizure System (NSS)

Meth Labs Produce Hazardous Waste

- Meth cooks often pour left over chemicals and sludge down household drains, household plumbing, storm drains, or directly onto the ground.
- Solvents and other toxic byproducts used to produce meth pose long-term hazards because they can persist in the soil and groundwater for years. -
- Meth labs are extremely harmful to the environment; production of one pound of methamphetamine produces an estimated five to seven pounds of hazardous waste.
- Americans consumed approximately 22 tons of methamphetamine in 2001, thereby introducing approximately 110-154 tons of hazardous waste into our environment.

Cleanup Guidelines

- Currently there are no national standards or guidelines for the cleanup of meth labs because the methods used to make meth vary greatly.
- EPA defers meth lab cleanup to the states, however, EPA representatives provide technical assistance to states and the agency is involved with several workgroups who are trying to answer the “how clean is clean” question.
- Many states have developed their own guidelines. NC is one of them.

Overview of State Guidelines

- 13 states have adopted numeric guidelines that generally are consistent with one of two meth cleanup guidelines:
 - Surface contamination must be ≤ 0.1 to $0.5 \mu\text{g}/100\text{cm}^2$
 - Surface contamination must be ≤ 1 to $5 \mu\text{g}/\text{ft}^2$
- Some states have also adopted cleanup guidelines for pollutants associated with meth production (e.g., volatile organic chemicals, mercury, lead)
- These cleanup guidelines are risk-based rather than health-based because currently there is insufficient research available on the health effects of meth
- Guidelines may be found in regulations, agency guidance, or policy

North Carolina (2005) Guidelines

- Meth: 0.1 $\mu\text{g}/100\text{cm}^2$
- Lead or Pb: 4.3 $\mu\text{g}/100\text{cm}^2$
- Mercury or Hg: 0.3 $\mu\text{g}/\text{m}^3$

Your Tax Dollars At Work

Costs of meth: clean-up,
helping rescued children,
dental care for prisoners,
law enforcement

