Clandestine Methamphetamine Laboratories: A Look at the Hazards That Remain If the Site Is Not Properly Remediated

Arnold L. Brown

Abstract

This research paper provides an in depth look at the manufacturing process of methamphetamine and the hazards that are associated with it. While law enforcement is tasked with enforcing laws we must recognize that methamphetamine isn't just law enforcements problem anymore. This research paper looks at law enforcements view on "meth lab" remediation as well as the private sectors views on who should be responsible for assuring that lab sites are properly cleaned. The information gathered from this research shows that there is a need for immediate legislation and training dealing with "meth lab" remediation.

Introduction

Methamphetamine has been a concern that law enforcement has been dealing with for nearly one century. Methamphetamine (meth) is no longer connected with the prescribed drug that it once used to be. Today, meth directly affects not only the user but it has an impact on their families, friends, and law enforcement.

In reality, Meth is no longer just a law enforcement problem; it is a dilemma that involves everyone. Beginning in the 90's and continuing today, the abuse of meth has reached epidemic levels, including the ever increasing number of clandestine laboratories (clan labs) that are being seized. In 2005, the legislature passed the Combat Methamphetamine Epidemic Act (CMEA) as part of the Patriot Act. This act aimed to prevent the over the counter sales of ephedrine, pseudoephedrine, and phenylpropanolamine products and other precursor and essential ingredients used to manufacture meth. The CMEA reduced the availability of precursor and essential chemicals that were necessary to manufacture meth. Once enacted, the CMEA did significantly reduce the number of clandestine laboratories that were seized. Although the CMEA reduced the number of seizure in clan labs, the problem still continues to exist today. Once law enforcement dismantles and collects evidence from these sites the presence of harmful hazardous toxins and chemicals still remain within the lab site. (Office of Diversion Control, 2006)

As a lieutenant with the Okaloosa County Sheriff's Office, I have spent the last 14 years of my career in the narcotics unit, where I have taken a distinct interest in this problem. I have personally participated with the dismantling and collection of evidence from approximately 30 clan lab sites. Based on my experiences with clandestine labs I have seen the hazards that remain at the site when law enforcement is finished processing the scene. This study was conducted based in part on my personal experiences in processing clan labs. Additionally, I chose to survey each of the 67

County Sheriff's Offices in Florida as well as to conduct interviews with stakeholders as to their input on the following questions. Should there be further action taken at these sites? Should actions be taken to assure that the site is properly remediated before innocent people are affected by the remnant chemical hazards that are not visibly noticeable? To answer these questions, just ask yourself if you are comfortable with the remnants of your neighbor's house that was once a meth lab?

Literature Review

History of Meth

Meth was first synthesized in Japan in 1919 and was widely prescribed to soldiers to keep them awake during World War II battles. It was marketed as Benzedrine in the 1950's and was the drug of choice for people who wanted to lose weight. A decade later, outlaw biker gangs in the United States learned the so called "Birch" or "Nazi" methods of manufacturing the drug from over the counter cold medication and created the market for "speed". (Sullivan, 2006)

Congress made the drug illegal without a prescription in 1970, but by the early 1980's new recipes had made meth easier to cook and more potent, offering the user a 6 to 24 hour high that also damaged the brain. (Sullivan, 2006)

A so called "super-meth" took off in Hawaii and southern California which was being manufactured by Mexican drug cartels. But soon the drug was being manufactured by "mom and pop" cooks. Within 20 years it spread eastward through the Rocky Mountains, into the Midwest and onto the East coast. An urban phenomenon at first, it turned rural as the smell associated with its productions caused the cooks to set up in less populated areas to avoid detection. (Sullivan, 2006)

Effects of Meth

Meth is a Schedule II controlled substance; it's a powerful central nervous system stimulant and is more potent than amphetamines. It has legitimate medical uses for treating some illnesses such as narcolepsy, yet it remains a lethal and unpredictably drug when abused. (Hargreaves, 2000)

The effects of meth are similar to cocaine, with users experiencing a sense of increased energy and euphoria with the duration of the high lasting from 6 to 14 hours. Chronic meth abusers usually inject or smoke the drug every 2 or 3 hours during day long binges that last for days. This often results in the abuser staying awake for more than a week and experiencing extreme irritability from sleep deprivation, increased nervousness, anxiety, paranoia, hallucinations, and violent or erratic behavior. (Hargreaves, 2000)

Meth Production

Unfortunately for law enforcement, meth is a very simple drug to manufacture. With the exception of marijuana, meth remains the most abused illegal drug that an individual can produce alone. As the demand for meth increases, abusers have

resulted to producing meth from over the counter cold medications and other essential ingredients. Unlike many other synthetic based drugs, it does not take a chemist to produce meth. Meth cooks are usually individuals who have little or no chemical training and simply learned a formula in prison or from the internet. (Hargreaves, 2000)

Ephedrine and pseudoephedrine are the primary precursors that are necessary to produce meth. There are several variations or methods used to produce meth; however, the Red Phosphorous (Red P) and the Ammonia (Nazi) labs are the most common and among the most popular because of their similarities. The procedures for manufacturing meth are similar between the Red P and the Nazi methods, in fact the first and last phase of production are the same. (Network Environmental Systems, Inc, 2000)

There are four steps for manufacturing meth using the aforementioned methods. The pill extraction phase is first, where the ephedrine and pseudoephedrine are removed from their binders and the pure Ephedrine is extracted.

The second step for each method is different. The Red P method involves a reflux process where red phosphorous and hydriodic acid are applied to a heat source and then cooled down. The second step for the Ammonia method involves a reduction process where anhydrous ammonia is combined with lithium or sodium metal. (Network Environmental Systems, Inc, 2000)

The third step for the Red P method involves a separation phase. Once step two cools down the mixture is filtered. Sodium hydroxide (lye) is added to the liquid and then an oil layer is formed in the water. The oil is removed from the water then a solvent is added. The third step for the ammonia method involves adding water to react with the second step allowing time for the ammonia to evaporate off. After a while the mixture forms an oil layer on the top which is removed and then it is ready for the final process.

The fourth step is the same for both methods and is known as the crystallization phase. A solvent is added and combined with a hydrogen chloride gas and then is allowed time to dry. Once this mixture dries, meth hydrochloride is formed and is ready for use. (Network Environmental Systems, Inc, 2000)

Hazards Associated with Production

Ephedrine and pseudoephedrine are the main precursors necessary to manufacture meth and are found in many cold and allergy products. The essential chemicals necessary for the production of methamphetamine can be found at any hardware store in America (Bruck, 2007).

The following is a list of products commonly used to manufacture methamphetamine.

Commercial Products	Chemicals	Hazards
Battery Acid	Sulfuric Acid	Corrosive Acid
Batteries	Lithium	Water Reactive
Coleman Fuel	Petroleum Distillates	Flammable
Kerosene	Petroleum Distillates	Combustible
Lacquer Thinner	Petroleum Distillates	Flammable
Mineral Spirits	Petroleum Distillates	Flammable
Denatured Alcohol	Mixture of Alcohols	Flammable
Epsom Salt	Magnesium Sulfate	
Heet	Methyl Alcohol	Flammable
Iodine Crystals	Iodine	Irritant
Muriatic Acid	Hydrochloric Acid	Corrosive Acid
Red Devil Lye	Sodium Hydroxide	Corrosive Base
Road Flares	Red Phosphorous	Flammable
Starting Fluid	Ethyl Ether	Flammable

*** *This reflects only a partial list of products used to manufacture methamphetamine.* (Hargreaves, 2000)

With all of the ingredients listed above the drug can then be cooked using the most common house hold equipment; stoves, camp stoves, hot plates, electric skillets, blow torches, pots, pans, coffee grinders, blenders, trash bags, plastic bottles, jars, plastic hoses and tubing.

The end result is a highly flammable and explosive atmosphere. A methamphetamine cooking session gone wrong can engulf a home or other structure in flames in a matter of seconds, putting everyone in the vicinity at risk. (Bruck, 2007)

John E. Snawder, PhD, DABT, Leader, Bio-monitoring Research Team, National Institute for Occupational Safety and Health (NIOSH) reminds us that the danger doesn't disappear when the clan lab sites have moved elsewhere. He cautions that "During cooking, toxic substances fill the atmosphere and residue settles throughout the area, creating the potential for injury through direct contact and inhalation." (Bruck, 2007)

The by-products of meth processing are toxic and can be lethal, creating an insidious threat of hazardous waste sites in communities across the country. Every pound of meth that is produced generates approximately 5 to 6 pounds of hazardous waste. That waste turns affected areas into toxic dumping grounds, ending up in trash cans, next to neighbors' homes, and in alleys, along highways in the back of vehicles, in parks and forests, and the list goes on. (Bruck, 2007)

Hazards to Law Enforcement

Raiding a clan lab has become one of the most dangerous operations a law enforcement officer can undertake. Officers sometimes refer to clan labs as "chemical time bombs" because they contain highly flammable and explosive materials, lethal chemicals, and even mechanical or chemical booby traps. Law enforcement has found these makeshift laboratories in apartments, hotel rooms, mobile homes, outdoor sites, and in all types of vehicles. As a result, an officer may inadvertently come into contact with such a laboratory when responding to a domestic violence call or even while making a traffic stop. (Hargreaves, 2000)

Not every officer that has investigated "meth labs" has become ill, even those who have been exposed to hundreds or thousands of them. For those who do, it may not be until years later and some never make the connection between their health problem and the exposures to lab sites. (Arballo, 2008)

Specialized Training

Police officers receive comprehensive training in many areas of law enforcement. However, very few officers have expertise in firefighting, chemistry, bomb handling techniques, and hazardous waste disposal. Unfortunately, illegal drug laboratories pose deadly threats in all of these areas (Hargreaves, 2000). The Occupational Safety and Health Act (OSHA) regulate safety conditions in the workplace and require that all first responder working in chemical hazardous environments be certified meeting OSHA standard 29 CFR 1910.

To meet this demand, in 1987, the DEA created a special training unit for DEA agents, state and local law enforcement officers. They train law enforcement to safely perform clan lab raids. To meet OSHA standards law enforcement officers receive at least 24 hours of training on how to handle hazardous chemicals prior to conducting clan lab raids in addition to the proper ways to process and dismantle the sites. (Hargreaves, 2000)

Are Hazards Left Behind?

Law enforcement is tasked with dismantling the lab site and must follow specific guidelines. This means that every piece of equipment used in the production must be treated as hazardous material. This encompasses everything from cookware to microwave ovens, chemicals, and the clothing worn by any suspects. These items are collected, categorized and segregated into specific hazardous classification groups as follows:

- Acids
- Caustics
- General Organics
- Metals & Oxidizers
- Reactive Materials
- Cylinders
- Trash and Debris

Once law enforcement has dismantled the lab site, a licensed chemical removal company must respond to receive and transport the hazardous waste. The segregated

items are then inventoried and placed into compatible containers and/or liners and prepared for transportation to a chemical receiving facility. The containers are then properly labeled and a Uniform Hazardous Waste Manifest is generated and then the material is removed from the site and taken to a disposal facility.

"Meth poses a serious danger not only to the users, but also to the first responders and those charged with cleaning up the lab sites" said Mike Sodrel, Republican US House of Representatives. For every pound of meth that is manufactured there is approximately six pounds of hazardous waste that is generated. (Geiselman, 2006)

After the equipment and chemicals from an illegal meth lab have been removed, residue from the various chemicals may still be present in the building on surfaces, furnishings, or household items. Some of the substances that were present while the laboratory was active, such as gases and volatile solvents, may have dissipated rapidly with ventilation. Areas where significant spills and saturation occurred will certainly retain residual amounts. Also, nonvolatile materials such as drug residues, other solids, or water based solutions of nonvolatile materials may persist on the surfaces and require additional cleanup. Finally, the dangerous by products generated from the ingredients pose serious environmental hazards that persist in the soil and groundwater for years. (Journal of Environmental Health, 2004)

We currently know that individuals moving into a home that has been used as a meth lab often have respiratory problems. This is especially true of children or adults with asthma or other respiratory problems. At this time we do not know what chemicals cause these symptoms, although many involved in the process are proven to affect the respiratory system. (Martyny, 2005)

Methods

The purpose of this research is to determine if there are issues or concerns associated with clandestine methamphetamine laboratories that were not properly remediated. The information was collected by gathering surveys that were sent to the sixty-seven Sheriff's Offices in the state of Florida (Appendix A). Statistically, the majority of the lab seizures have been made in unincorporated and less populated areas, opposed to the more populated municipalities. This is why the Florida Sheriff's Offices were selected for my survey. The target population was one individual within each of the Sheriff's Offices who actively worked narcotics investigations. Each investigator was able to share their insight on the problems of clandestine methamphetamine laboratories and the effects the labs have within their respective jurisdictions. To gain a private sector perspective (Appendix C), interviews were conducted with one person from the real estate industry, insurance industry and the environmental health industry. These professionals were selected to gather their input based on their knowledge, current role and recommendations on "meth lab" remediation.

Results

As mentioned, a survey (Appendix A) was sent to the sixty-seven Sheriff's Offices representing each county in Florida. Thirty-eight (38) of the Sheriff's Offices responded to the survey for a fifty-seven percent (57%) return.

After reviewing the results from the survey sent to the sixty-seven Sheriffs Offices that represent each county in Florida, only thirty-eight (38) responded resulting in a fifty-seven percent (57%) return. Of the reporting agencies, sixty-eight percent (68%) stated that their agencies were trained and prepared to respond to clandestine laboratory sites. Within the last twenty-four (24) months seventy-four percent (74%) of these agencies indicated they had responded to "Meth-labs" in their jurisdiction.

A staggering ninety-four percent (94%) of those surveyed suggested that "meth-lab" sites are a significant threat to the community if the labs are not properly remediated. Toxic chemical residue and other hazards left behind, resulted in eighty-seven percent (87%) of those surveyed believing that the labs should be quarantined until the location was rendered safe for reoccupation. Ninety percent (90%) agree that the property owners should be responsible for the remediation. In conjunction, ninety-five percent (95%) agree that the public should be notified when lab sites are seized. Giving law enforcement the authority to ensure that the labs are safe before occupancy was agreed upon by eighty-two percent (82%) of those surveyed, and nine-two percent (92%) felt that legislation should be passed to establish minimum and maximum exposure levels at lab sites

The final question of the survey was open for recommendations, training, laws or ordinances that they thought should be implemented to ensure that lab sites are properly remediated. Twenty-nine (29) of the thirty-eight responded to the question and provided recommendations. The majority of the group is consistent with the idea that legislation should be passed to guarantee that lab sites are inspected and deemed safe before allowing occupancy. Others suggested that law enforcement was already over tasked with enforcement duties and responsibilities associated with lab seizures. They recommended that the site be turned over to a regulatory agency such as the Department of Environmental Protection or Department of Health to assure compliance. Others suggested that the ultimate responsibility for remediation should fall on the property owner taking into consideration that the offender be held responsible for restitution.

I interviewed Environmental Specialist Michele Howard with the Okaloosa County Health Department. She was familiar with methamphetamine and the dangers associated with "meth lab" sites. The Okaloosa County Health Department does not take a proactive approach in the remediation of "meth lab" sites unless there is a significant hazard. She indicated that each county health department in the state operates differently, some offer more services and some offer less, all depending on the size of the county. They operate under the rules established by the Florida's Department of Health and in situations where indoor air quality is a concern they refer everything back to the state because they are not equipped to handle those situations.

I asked if she felt the Florida's Department of Health should be involved in establishing standard minimum and maximum levels of exposure for lab sites, she replied that the state sets all the guidelines. I also asked if she felt the Florida's Department of Health should be responsible for setting those limits, she had a mixed opinion. She indicated that there has to be a magic number established by someone

that sets the threshold. She said that if thresholds are established, then yes the Health Department should be responsible for enforcing those limits.

Looking for suggestions on what it would take to get legislation passed relating to remediating lab sites, Michele stated that first and foremost, there has to be documentation on negative health effects to show that legislation is necessary. Time is the next factor involved, it will take countless hours of research to show a link between the chemicals used in manufacturing methamphetamine and negative health effects. And finally, the cost associated with scientific research is enormous and the studies will take an extensive amount of time and manpower to collect the necessary data. (M. Howard, personal communications, February 23, 2009).

To address issues at the state level I contacted Tim E. Wallace, Environmental Health Program Consultant with the Florida Department of Health. He indicated last year that the state put together a task force and met at various locations throughout the state and heard testimony relating to "meth lab" remediation. From these meetings the task force prepared a report and forwarded the information to the Governor, Speaker of the House and the Senate President. The report was finalized and recognized that the natural place for a "meth lab" regulatory program was within the Department of Health. The flip side was that the Department of Health could not handle any additional programs without additional resources. With the current 4.5 billion dollar short fall that the state is facing, the Department of Health is not looking to expand programs, personnel or budgets, in fact, they are looking to consolidate and drop programs. The task force presented their finding at the end of summer in 2008 and to date, according to the Department of Health, the legislature has been provided with the findings from the task forces investigation.

Mr. Wallace suggested that when the legislature addresses "meth lab" remediation, considering the current budget cuts that he state is facing, he felt that the legislature would look at remediation from the disclosure aspect first. Disclosure would probably be looked at in terms of sellers, buyers, landlords and tenants, which is important and could be done with little financial implications. The data necessary to implement this into law is already known which would not require any scientific studies. (T. Wallace, personal communications, February 25, 2009).

Bill Roberts an Agent with Allstate Insurance Company in Okaloosa County was also interviewed. He indicated that he was familiar with the drug methamphetamine and knew of its adverse affects on the human body. He further indicated that he was somewhat familiar with the dangers associated with clandestine drug labs. When asked if the insurance industry should be involved in the remediation of "meth labs" he offered the following information.

Several years ago, the insurance companies would cover hazards such as mold without any question. Now most insurance companies are now requiring are requiring additional premiums to cover things like mold, etc. Mr. Roberts went on to add that there are exclusions written into homeowners policies that state if there are any substantial changes or hazards that the owner had control of, the policy would not cover the cost of remediation. This would be the primary factor considered as to if the insurance policy would cover the cost of remediation. It could be possible for a policy to pay for remediation in certain situations such as rental properties, however he felt as if most claims associated with criminal activities would be denied.

Mr. Roberts agreed that there should be a notification disclaimer made to anyone who would be a potential renter or buyer of a property where a “meth lab” had been discovered. He further agreed that there has got to be a way to address remediating lab sites and that it needs to be clarified as to who is responsible for different processes of remediation. When asked what kind of impact lab remediation would have on his industry he suggested that the financial impacts would be huge for the costs associated with remediation. He also added that there would be health concerns involved in which insurance companies would have to pay out for health care costs. (B. Roberts, personal communications, February 23, 2009).

I then spoke to Kevin Veach of Sothern Resorts Vacation Rental, who provides services in real estate, rentals and sales that covers the entire panhandle of Florida. Mr. Veach’s knowledge of methamphetamine is limited to what he has seen of television. Mr. Veach agreed that there certainly needs to be some sort of legislation passed to assure that the labs are properly remediated. He further agreed that disclaimers were needed to make the public aware of the existence of a “meth lab”. He went on to add that realtors currently were required to make notification to buyers of properties for such things as Radon gas and a “meth lab” should not be any different. He added that somebody needed to come up with a program for dealing with “meth labs” and did not think that it was law enforcements position to regulate remediation.

Mr. Veach was not familiar with the production methods of “meth” nor did he realize that “meth” labs were being discovered in Florida. He was shocked to know that “meth” could be produced in one of his rentals and virtually go unnoticed. One recommendation that he made, was to educate realtors on “meth” and the hazards associated with its production. He suggested that this education could be accomplished through continuing education programs for realtor to raise awareness associated with “meth” production.

When asked him if he felt that a properties value would be significantly reduced if a “meth lab” was discovered, he stated that, if the property was never remediated, then yes the property value would be devalued depending on the extent of the damage. If the property was properly cleaned and had supporting documentation then the value would not be lost. (K, Veach, personal communications, February 25, 2009).

Discussion

The information resulting from the survey sent to the law enforcement officers was extremely useful showing that the majority of the agencies throughout the state were consistent in their opinions on “meth lab” remediation. Equally important, was the input from those interviewed from the private sector as to their views on who should be responsible for “meth lab” remediation and their recommendations in addressing this problem. Each industry offered their professional views on how to address “meth lab” remediation and all agreed that there needs to be some sort of legislation pass to remedy the problem.

Through the interviews, I learned that the state took the initiative to organize a task force to address “meth lab” remediation. The task force finalized their report and provided it to governmental officials during the later part of 2008 for it to be sent to the

legislature. As of this date no action has been taken to address the problem as it relates to the report.

In addition to the recommendations from the task force, I learned that the Department of Health's budget has been cut and they are consolidating current programs, they are not taking on any additional programs or adding additional personnel to address "meth lab" remediation. In fact according to Tim Wallace, the Department of Health has put "meth lab" remediation on hold until they can get through a new crisis that has developed involving "dry wall". If and when the Department of Health gets the "dry wall" situation under control, then they can readdress "meth lab" remediation and come up with recommendations based on the scientific information that they have available.

On a federal level, the Methamphetamine Remediation Research Act of 2007 was passed by congress in December 2007. Congress recognized that "meth" use and production was a rapidly growing problem. They noted that materials used in the production of "meth" pose environmental concerns and that there has been little standardization in determining if a lab site has been properly remediated. This federal law called for establishment of voluntary compliance; No later than one year after the date of enactment of this Act, the Administrator of the Environmental Protection Agency in consultation with the National Institute of Standards and Technology, shall establish voluntary guidelines, based on the best currently available scientific knowledge, for the remediation of former methamphetamine laboratories, including guidelines regarding preliminary site assessment and the remediation of residual contaminants. The Florida Department of Health has indicated that these voluntary guidelines should have been completed by December 2008. To the best of their knowledge, the guidelines still have not been completed and the last time that they had heard anything, the program was running six (6) months behind schedule.

Additional spending for resources and personnel to address the "meth" problem has been put on hold due to the budget shortfall. Meanwhile funds are diverted to other programs and "meth" remediation continues to be a problem. I have compiled some statistical information relating to the current situation on "meth" use and production in the panhandle of Florida. This information was obtained from Special Agent Supervisor Ed Hudson with the Florida Department of Law Enforcement.

During the calendar year of 2008 the counties consisting of the Florida Panhandle (Escambia, Santa Rosa, Okaloosa, Walton, Holmes, Washington, Bay, Jackson, Calhoun, Gulf Liberty, Gadsden, Franklin) reported responding to eighty-four (84) clandestine "meth lab" sites. This clearly shows that the "meth" production continues to exist and shows no signs of dissipation. More alarming is the fact that CVS Pharmacy has reported through a program called "MethCheck" that the Florida Panhandle Counties have 794 individuals in a thirty (30) day period, from November 10, 2008 to December 10, 2008, who over purchased pseudoephedrine products. This means that those individuals purchased more than 3.6 grams of pseudoephedrine per day or 9 gram or more of pseudoephedrine within 30 days.

Panhandle County	Labs in 2008	Subjects Over Purchasing
Escambia	13	244

Santa Rosa	16	80
Okaloosa	2	108
Walton	12	75
Holmes	1	0
Washington	1	65
Bay	25	150
Jackson	3	58
Calhoun	1	4
Gulf	4	0
Liberty	0	0
Gadsden	5	8
Franklin	1	2
	84	794

The figures above are from only one (1) pharmacy chain participation in the pilot program of "MethCheck" and represent the Florida Panhandle during a one month period. Imagine what the number would be like across the state if you took into account every pharmacy, grocery, retail store and convenience store that sold pseudoephedrine. The numbers would be staggering! So, while everyone is looking around the table, pointing fingers and dragging their feet, "meth" is still being produced and unsuspected people and home owners are paying the consequences.

Recommendations

The primary purpose of this research paper was to bring to light the fact that there is a critical need for a statewide "meth" remediation program. The research shows from a law enforcement perspective that there is a need for legislation to require that certain standards be set for "meth" remediation. The private sector also agrees that there is a need for legislation and clear definitive laws dealing with "meth" remediation. The research further shows that the state has taken steps to address this issue however with the current budget cuts, it seems that "meth" remediation has taken a back seat to other projects.

The following are recommendations that are based on the research, evaluated by reviewing documents, information from surveys, and interviews from the private sector and state regulatory agencies.

- The state legislature needs to be presented with the facts collected by the task force from the meeting with law enforcement in 2008 and consideration needs to be given to creating laws and guidelines for properly remediating "meth labs", to include but not limited to:
  - Disclaimers requiring that public notice are made for any site where a "meth lab" was discovered.
  - A clear definitive program needs to be established, clearly defining the proper method for cleaning a lab site before it can be reoccupied and who is responsible for seeing that they are regulated.

- Funding needs to be made available to the Department of Health so that they can continue to research this issue and make recommendations on issues such as maximum exposure limits, etc.

- A training program should be established and mandatory awareness training should be provided to real estate and insurance agents.

- The Environmental Protection Agency needs to complete the voluntary compliance recommendations that were to be suggested in December of 2008. Once the guidelines are created, then the state would be able to move towards a standard approach for lab site remediation.

Lieutenant Arnold Brown has been in law enforcement for 22 years with the Okaloosa County Sheriff's Office. His career began in 1987 as a communications officer and has since worked road patrol, community policing, problem oriented policing and investigations. Arnold served 14 years as a narcotics investigator. He is currently the lieutenant assigned to the field services division serving as a shift commander.

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Appendix A

Survey Questions

Law Enforcements View on Meth Lab Remediation

1. Does your agency have certified personnel who respond to clandestine methamphetamine laboratories to collect evidence, dismantle the site and dispose of hazardous waste?
   - Yes 68.4%
   - No 31.6%

2. Has your agency responded to any sites where methamphetamine laboratories have been seized within the last 24 months? (If no, go to question 4)
   - Yes 73.7%
   - No 26.3%

3. If you answered yes to question #2, estimate how many sites you have responded to within the last 24 months.
   - 0 – 10 63.3%
   - 11 – 25 26.7%
   - 26 – 50 10.0%

4. Do you think that sites where meth-labs have been seized pose a significant threat to the community if they are not properly remediated?
   - Strongly Agree 71.1%
   - Somewhat Agree 26.3%
   - Neither Agree or Disagree 0.0%
   - Somewhat Disagree 2.6%
   - Strongly Disagree 0.0%

5. Toxic chemical residues and other hazards are left behind after methamphetamine laboratories have been dismantled by law enforcement. Do you think that law enforcement should have the ability to quarantine the lab site until the site is rendered safe for reoccupation?
   - Strongly Agree 55.3%
   - Somewhat Agree 31.6%
   - Neither Agree or Disagree 5.3%
   - Somewhat Disagree 2.6%
   - Strongly Disagree 5.3%

6. Do you think that property owners should be held responsible for assuring that clandestine lab sites are properly remediated prior to the site being reoccupied?
   - Strongly Agree 68.4%

- Somewhat Agree 21.1%
- Neither Agree or Disagree 7.9%
- Somewhat Disagree 0.0%
- Strongly Disagree 2.6%

7. Do you think that there should be legislation passed that gives authority to law enforcement to regulate reoccupation of lab sites that have not been properly remediated? (Meaning, if a site isn't properly remediated and person knowingly reoccupy the site before it is certified safe, Should law enforcement have the authority to remove persons until it is certified safe?)
   - Strongly Agree 47.7%
   - Somewhat Agree 34.2%
   - Neither Agree or Disagree 10.5%
   - Somewhat Disagree 2.6%
   - Strongly Disagree 5.3%

8. Do you think that there should be a mandated disclaimer made public for properties where lab sites have been seized? (Such as Board of Realtors, Deed of Records for property, Health Departments, CARFAX, etc.)
   - Yes 94.7%
   - No 5.3

9. Should there be legislation passed that would establish minimum exposure levels for toxic chemicals used in the production of methamphetamine? (Meaning, taking air and surface sample for remnant chemicals/toxins and establishing a baseline acceptable level before the area could be inhabited.)
   - Strongly Agree 56.8%
   - Somewhat Agree 35.1%
   - Neither Agree or Disagree 5.4%
   - Somewhat Disagree 2.7%
   - Strongly Disagree 0.0%

10. What recommendation for training, laws or ordinances do you believe need to be implemented to ensure that methamphetamine lab sites properly remediated?

Appendix B

Email Letter Requesting Research Assistance

Drug Unit Commander_____

I am Lt. Arnold Brown with the Okaloosa County Sheriff's Office. I am currently participating in the FDLE's Senior Leadership Program Class #13. I am doing a research project relating to Clandestine Drug Laboratories, specifically "Meth-Labs". The purpose of my study is to bring awareness to the fact that chemical hazards still exist even after law enforcement finishes dismantling and collecting evidence from the site. I'm trying to determine if further action is necessary to properly remediate the lab sites when law enforcement has concluded their investigation.

I am asking you to please go to the link listed below and complete my online survey. Simply click on the link below:

http://www.surveymonkey.com/s.aspx?sm=FOWrVAgnmuuK5kURFpesoA_3d_3d

This is a simple 10 question survey and does not ask for any identifying information other than the county in which you are working. Please make sure that you answer all questions so that I can assure that the survey's result will be accurate. When finished and simply press "DONE".

I am asking that you complete the survey by **December 19, 2008.**

I thank you for your help in advance. I know that the holiday's are upon us and I appreciate you taking time out of you day to assist me with my project.

Lt. Arnold L. Brown
"Delta-South"
Okaloosa County Sheriff's Office
1250 N. Eglin Parkway
Shalimar, Florida 32579
abrown@sheriff-okaloosa.org
850.651.7702 ext 501

Appendix C

Question for the insurance and real estate industry

1. Are you familiar with methamphetamine?
2. Are you aware of the chemical dangers associated with the production of methamphetamine?
3. What is you role in meth lab remediation?
4. Do you think that your industry should be involved in assuring that lab sites are properly remediated?
5. Who should be responsible for assuring that these sites are properly remediated?
6. Do you think that once a lab site has been discovered that there should be documentation to that effect? If yes, who will document? Where shall it be documented (deeds, title, property appraiser records)?
7. After detection should property owners or rental companies be required to notify potential residents of previous meth labs?
8. What recommendations would you suggest that legislators consider for assuring that lab sites are properly remediated?

Questions specifically for the health department

1. To date, what steps has the state of Florida done to assure that methamphetamine laboratory sites are properly remediated?
2. What future steps does the state of Florida plan on taking to assure that lab sites are properly remediated?
3. Do you think that the Florida Department of Health should be involved in determining minimum standard levels for the state of Florida? If not, who should be responsible for it?
4. What will it take to get legislation passed to assure that sites are properly remediated? (Minimum exposure levels, disclaimers to community, etc.)
5. Who should ultimately be responsible for lab site remediation?
6. What negative impacts, if any, do you think that former lab sites pose for your industry?