ISP FORENSIC SERVICES

Forensic Services Newsletter

WINTER 2010

Forensic Services has been very involved in the 2011 Idaho Legislative Session. ISPFS Chemists provided extensive technical expertise and testimony in support of "Spice" and "Bath Salt" legislation. ISPFS Chemists David Sincerbeaux and Corinna Owsley searched proposed legislation from many different jurisdictions in order to help draft the proposed Idaho legislation. Idaho will be one of the first states to control these compounds by class, rather than by individual drug name. Scheduling the drugs by class (or base structure) keeps the legislation slightly ahead of the organic chemists developing these designer drugs. There are potentially thousands of designer drugs that could be made from a simple base structure. When the Board of Pharmacy acted in 2010 to make several "synthetic cannabinoid" compounds illegal, the laboratory immediately saw a switch in the type of synthetic cannabinoids being marketed in Idaho. The legislation wording supported by the Board of Pharmacy, the Office of Drug Policy, and ISP controls all the known base structures of synthetic cathinones and synthetic cannabinoids. This legislation will hopefully keep all these products off store shelves and away from those that did not know how dangerous these substances really are.

BREATH ALCOHOL

The Idaho House Judiciary Committee and Senate Judiciary Committee recently approved the changes ISP proposed for IDAPA 11.03.01. The changes became effective September 1, 2010 and will continue at the end of the legislative session as a permanent rule. The rule (including implemented changes) can be viewed from the ISPFS Alcohol web page. The breath alcohol discipline has also formally published the Operator training on the ISPFS Alcohol page and all the revisions of the breath alcohol manuals are available on the web page. Many of the program manuals have been updated in the last few months. ISPFS is also emailing Operators and BTS officers as changes are made to this program. While the manual revisions and information is available on our website, the email list provides the information in advance for law enforcement purposes. Breath Testing Specialists and Operators should be added to this list after taking the course. To update your information or be added to the list please click here.

WHAT'S NEW

The Meridian Laboratory has been extensively remodeled. The lab has added a DNA database processing space, remodeled the DNA casework space, remodeled the latent print laboratory, and added more office space. The DNA database unit is now quickly processing samples and the new space allowed us to accommodate several new scientists. While wait times increased slightly on DNA cases during the remodel, the lab is quickly getting back to our strategic goal processing times.

ISP Forensics Website

Meridian Remodel Stats

- ~1760 square feet of new DNA lab space! (~600 sq. ft. more than the old space)
- ~180 linear feet of DNA exam space. (Over 100 linear feet more than the old space)
- ~92 linear feet of DNA instrument space. (Over 40 linear feet more than the old space)
- 8 DNA examiner work bays. (4 more than the old space)
- 6 evidence lockers—2 exam rooms with surgical lighting—1 new extraction hood.
- ~1000 sq. ft. of allocated DNA database space! (Old lab had little database space)
- ~40 linear feet of database sample prep space.
- High density database sample file system in lab. (Samples stored indefinitely)
- New CODIS administrative office. (Old office was a modified closet)
- Office for two new database examiners.
- Dedicated sample accessioning space.

Did you know?

Agencies with Lifeloc instruments can print without having a Lifeloc printer. Idaho agencies that have FC20 DataTrak software can download results from the FC20 to the software as a .txt file or .xls file. They can then print through the software to any office printer. This is a good alternative to showing the results in a dash camera or reading the results into an audio file. A site license for an agency is available from Lifeloc for around $165.00.
View Video Instructions

Updated Toxicology Submission Form

ISPFS recently updated the General Laboratory Submission Form for evidence. Now ISPFS has updated the Toxicology Submission Form. Agencies are able to fill the forms out electronically and they are more user friendly. The form is available on the ISPFS website. The addition of the investigator email address is greatly speeding up the examination process and improving communication.

UPCOMING TRAINING

Course	Location	Dates	Contact
Breath Testing Specialist	Pocatello	3/10-3/11	Register
Breath Testing Specialist	Coeur d'Alene	4/14-4/15	Register
Evidence Packaging	Hailey	4/27	Register
Breath Testing Specialist	Meridian POST	5/5-5/6	Register
IPAA Toxicology Training	Meridian POST	5/5-5/6	Register

* The first day of all BTS classes is Alcosensor/Lifeloc and the second is Intoxilyzer 5000/EN .

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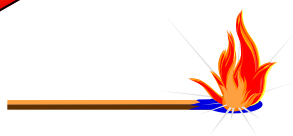
FOCUS ON

Fire Evidence Quick Tips



Scene Protection

As with any potential crime scene, a fire scene must be secured until all physical evidence has been recovered. Keep in mind that although the fire may appear accidental in nature, information may surface that indicates otherwise. Securing the fire scene means around the clock monitoring by fire or law enforcement personnel. Physical evidence recovered from a scene that has been released may not be admissible in court.

Comparison Samples

When a fire burns common household materials such as plastic, carpet, fabrics, etc., the polymers that make up these materials are broken down into their component parts. These parts try very hard to look like a petroleum product. The collection of a comparison sample of materials that are representative of the materials which may contain an ignitable liquid makes the process that fire analysts use to interpret the instrumental data much easier. Even with the current state of the art GC-MS technology that is used to analyze extracts recovered from fire evidence, the comparison sample is extremely important. The lack of an appropriate comparison sample may result in a negative finding, especially when the ignitable liquid residue that remains is at a very low concentration.

For example, a house that has been involved in a fire has wall-to-wall carpet throughout. The best carpet comparison sample would be a piece of carpet in an area where an ignitable liquid is not believed to have been used. In an ideal world, the carpet comparison sample would be burnt to the same degree as the samples collected from the area where an ignitable liquid is thought to have been poured.

Collaboration

Idaho State Police Forensic Services, the Utah Bureau of Forensic Services, and the Oregon State Police Forensic Services Division have joined efforts. ISPFS sends each Fire Analysis case to Utah or Oregon for technical review. Because Idaho only has one Fire Evidence Examiner, we must make arrangements for external technical review. The technical review process ensures that each case has been examined correctly and all conclusions are correct. When ISPFS has a second fully trained Fire Analyst (several months away) the technical review will again be done in Idaho. Thanks to Utah and Oregon!!

Evidence Packaging

Debris samples and clothing must be packaged in a friction lid can and/or heat sealable pouch material. Any heat-sealable pouch material must be specifically for fire evidence use. Choose a container size that is proportional to the sample size. Evidence container should be filled no more than ¾ full.

When using a friction lid can, make sure that lid is fully pressed on.

When using heat-sealing pouch material, check the seal for air-tightness by gently pressing the pouch.

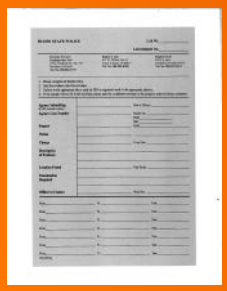
Friction lid cans may be placed into pouch material for a double-barrier of protection.

Do not put liquids suspected of being or containing an ignitable liquid directly into a friction lid can or heat-sealable pouch. A liquid must be placed in a glass, not plastic, vial. If placed inside of a plastic bottle, the liquid may partially or completely dissolve the plastic.

If the liquid is known to be an ignitable liquid, no more than 2mL should be submitted to the laboratory. To prevent evaporation, when sufficient liquid is available, completely fill the glass vial.

If shipping the sample to the Pocatello laboratory, no more than 2 tablespoons (14.8mL) can be shipped by UPS ground. Flammable liquid with a flashpoint of 20°F (-7°C) or below is prohibited in domestic mail.

Once the liquid is in a glass vial, the vial must be submitted in a friction lid can or heat sealable pouch material to prevent the contents of the vial from contaminating adjacent samples. The container should be filled with either cat litter or vermiculite to absorb the liquid if any leakage occurs.



The collection container must have full labeling including chain-of-custody. A convenient trick is to fill out the general information on a small evidence envelope, make copies and then fill out the evidence description and location found before placing it on the evidence container. Adjust the copy size to fit the size of can or pouch used.

Please save yourself some work and do not place the friction lid can or heat-sealed pouch into an evidence envelope or paper evidence bag. Doing so is time consuming for the analyst, especially when several containers are placed into one bag.

Items that are not properly packaged may be repackaged and/or not analyzed due to contamination issues. When the packaging has clearly compromised the integrity of the evidence, the sample(s) will be rejected and returned to the submitting agency.

FIRE ANALYSIS

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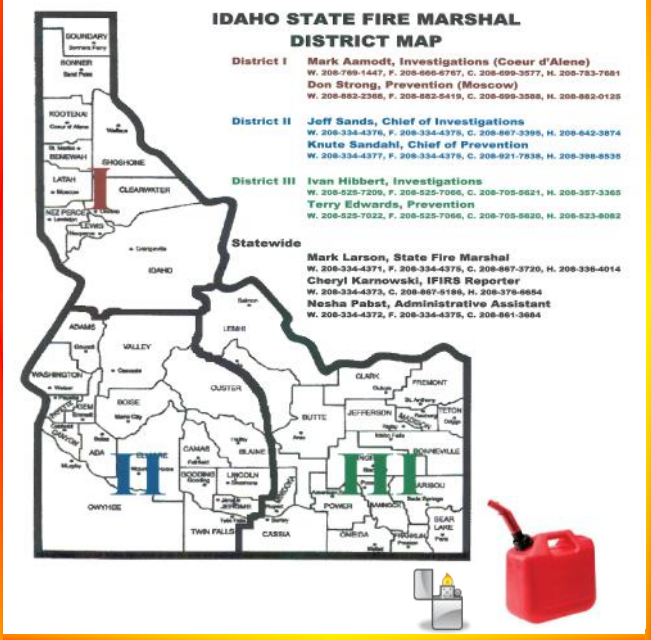
Idaho State Fire Marshal Office

Contact for assistance on cause and origin on an incident. Use the statewide district list
or
State-Comm. 1-800-632-8000 at any time.



How do I interpret my Laboratory Report?

Positive Results:

When the criteria for identification of an ignitable liquid are met, the analysis results indicate the class in which the ignitable liquid falls. The carbon range (light, medium, or heavy) as described will be indicated for all classes except gasoline. Following the class designation, a listing of potential sources of the ignitable liquid must be compiled and listed. The presence of an ignitable liquid on its own, without supporting information, may not indicate that the fire was incendiary in origin.

Negative Results:

When the criteria for identification of an ignitable liquid are not met, the analysis report will indicate that no ignitable liquids were detected in the sample.

Negative results must be considered in the context of fire scene scenario. Negative results do not mean that no ignitable liquids were used to start the fire. Remember that not all agents that are used to accelerate a fire are an ignitable liquid. For example, newspaper is an excellent accelerant, especially when it contains a lot of residual printing solvent.

A Negative laboratory analysis report may mean any of the following:

- No ignitable liquid was used to start the fire.
- An ignitable liquid was used but was consumed in the fire.
- An ignitable liquid was used but the matrix material (what burnt along with the ignitable liquid) is so overwhelming that the ignitable liquid cannot be detected.
- An ignitable liquid was used but was lost during fire suppression measures.

Reanalysis:

During the recovery of ignitable liquids from fire evidence, two charcoal strips are used. One of the strips is used for ISP-FS analysis. The additional strip is enclosed into a labeled, heat-sealed packet and placed in with the evidence. If your agency receives a request for reanalysis of fire evidence, this charcoal strip should be provided. This reserve strip allows the laboratory performing the reanalysis to gather data that compares with the data generated by ISPFS. Ignitable liquids residues recovered by the charcoal strips may not be detectable post analysis due to significant recovery by the charcoal strip and inevitable evaporation and degradation. In other words, if another recovery method is applied to the sample, the ignitable liquid that was previously present may not be detected.

For more information on Fire Evidence

Class	Light {C_4 - C_9}	Medium {C_8 – C_{13}}	Heavy {C_8 – C_{20+}}
Gasoline All brands, including gasohol	Fresh gasoline is typically in the C_4 –C_{12} range		
Petroleum Distillates	Petroleum Ether Some Cigarette Lighter Fluids Some Camping Fuels	Some Charcoal Starters Some Paint Thinners Some Dry Cleaning Solvents	Kerosene Diesel Fuel Some Jet Fuels Some Charcoal Starters
Isoparaffinic Products	Aviation Gas Some Specialty Solvents	Some Charcoal Starters Some Paint Thinners Some Copier Toners	Some Commercial Specialty Solvents
Aromatic Products	Some Paint & Varnish Removers Some Automotive Parts Cleaners Xylenes Toluene-based Products	Some Automotive Parts Cleaners Specialty Cleaning Solvents Some Insecticide Vehicles Fuel Additives	Some Insecticide Vehicles Industrial Cleaning Solvents
Naphthenic Paraffinic Products	Cyclohexane based solvents/products	Some Charcoal Starters Some Insecticide Vehicles Some Lamp Oils	Some Insecticide Vehicles Some Lamp Oils Industrial Solvents
N-Alkanes Products	Solvents Pentane Hexane Heptane	Some Candle Oils Some Copier Toners	Some Candle Oils Some Carbonless Forms Some Copier Toners
Oxygenated Solvents	Alcohols Ketones Some Lacquer Thinners Fuel Additives Surface Preparation Solvents	Some Lacquer Thinners Some Industrial Solvents Metal Cleaners/Gloss Removers	
Other-Miscellaneous	Single Component Products Some Blended Products Some Enamel Reducers	Turpentine Products Some Blended Products Various Specialty Products	Some Blended Products Various Specialty Products

The American Society for Testing and Materials (ASTM) E 1618-06[e1] Classification system consists of seven major classes of ignitable liquids and one miscellaneous class.

All classes except gasoline are further differentiated into light, medium or heavy subclasses based on carbon spread/n-hydrocarbon boiling range. The subclasses allow for the characterization of products, which fall between classes due to evaporation/weathering. A product may be described as “light to medium” or “medium to heavy” when the carbon number range does not fit neatly into one of the below categories. If this option is appropriate, the carbon number range should be reported. The products listed in *Table 1* are examples of commercially available products which fall within each classification and are **not** intended to be all-inclusive.

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CONTACTS

Meridian Lab	Pocatello Lab	Coeur d'Alene Lab
700 South Stratford Ste 125 Meridian, Id 83642 208.884.7170 Fax 208.884.7197	209 E. Lewis Pocatello, Idaho 83201 208.232.9474 Fax 208.232.3697	615 W. Wilbur Suite B Coeur d'Alene, Idaho 83815 208.209.8700 Fax 208.209.8612
NEW Lab Manager Lab Manager Skyler Anderson	Lab Manager Shannon Larson	Lab Manager Anne Nord

New Meridian Lab Manager

Donna Meade recently retired as the Lab Manager of the Meridian Laboratory. Donna was a long time employee of ISP and also worked for the forensic laboratory when it was part of the Health and Welfare Laboratory. In her career, Donna performed drug chemistry, breath alcohol, blood alcohol, and shoe/tire impression evidence analysis. Skyler Anderson has been hired from the ISP Pocatello Laboratory to be the new Meridian Lab Manager. Skyler is trained in drug chemistry, urine toxicology, breath alcohol, and blood alcohol analysis. Please join us in welcoming Skyler to Meridian. Skyler has some great ideas and we look forward to many process improvements in the coming months. The contact information for Skyler has been provided directly above this article.

Process Mapping

ISPFS has joined the Midwest Forensic Resource Center (MFRC) as a partner organization. MFRC is a forensic center of excellence and provides forensic training, forensic research support to higher education, and is very involved in forensic quality management. This is an important strategic partnership for ISPFS. The partnership has already increased laboratory productivity and provided ISPFS with hundreds of valuable free training hours. One of the most important projects we have been involved with is "process mapping." MFRC has provided ISPFS with nationally renowned experts from private industry and public service to identify process improvements in all of our processes. MFRC also trained many of our staff members in process mapping techniques. In the last year, ISPFS has examined the processes for evidence intake, biology and DNA, blood alcohol, and blood toxicology. The opportunities identified for improvement are quickly being implemented by the laboratory system. The laboratory has eliminated some unnecessary steps in processes, identified better and quicker ways to process evidence, and implemented new technology to do things more efficiently. More processes will be examined this year and more opportunities will be implemented. The laboratory is currently beta testing a new online reporting system so that reports will be immediately available to investigators and prosecutors as soon as the report is ready to be released from the lab. Other improvements from process mapping include: a new evidence class curriculum, a new laboratory information management system, new electronic submission forms (see first page of this newsletter), and many internal process changes to decrease the turnaround time of all evidence. Click here to read more about the MFRC.

FEEDBACK

ISP Forensic Services welcomes your feedback, questions, and kudos.

In 2010, ISP Forensic Services surveyed 279 officers from 76 unique law enforcement agencies we serve in Idaho. These targeted surveys provided us with a wealth of information about cases we analyzed and how our customers feel we can improve. In addition to these targeted surveys, a link to our survey is posted on the ISP Forensic Services website for any individual to provide feedback. Here are some comments from our most recent survey.

- **"I was pleased to have received a call from the scientist on this case. I have had a few conversations with employees at the facility and have personally dropped items off or picked them up. Each time I have been greeted by a member that seemed genuinely helpful and very pleasant to deal with. I would encourage you to keep up the good working conditions that appear to exist"—*Bonner County Deputy***
- **"Understanding the heavy case load the lab undertakes, the forensics lab seems to be getting results back faster and faster which is a great benefit to our agency. Thank you"—*Bonneville County Deputy***
- **"I have seen a great improvement over the years on results being returned in a timely manner. I am very pleased with that!"—*Ada County Deputy***
- **"Rylene Nowlin is usually the person who calls me regarding any questions about my cases. She is helpful and does a good job."—*CDA P.D. Officer***
- **"The time it takes to get a analysis report back has shortened."—*ISP Region 3 Trooper***
- **"The staff at Pocatello Lab is always very friendly when I go there."—*Minidoka County Deputy***
- **"Very nice front office staff. The Cd'a staff are shining stars."—*Lewiston P.D. Officer***

Submit your questions

If you have questions you would like answered in future editions of this newsletter, please email them to us. Please be concise and specific.