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Technology Transition Workshop| *Jay W. Henry*

The Utah Bureau of Forensic Services Adaptation Model

Background – Utah BFS

- Statewide laboratory system
- ASCLD/LAB International accredited (2007)
- 31 laboratory employees (23 forensic scientists)
- 8 scientists assigned to CS (controlled substances)
- 4 separate laboratories within the state
- 2.5 million population

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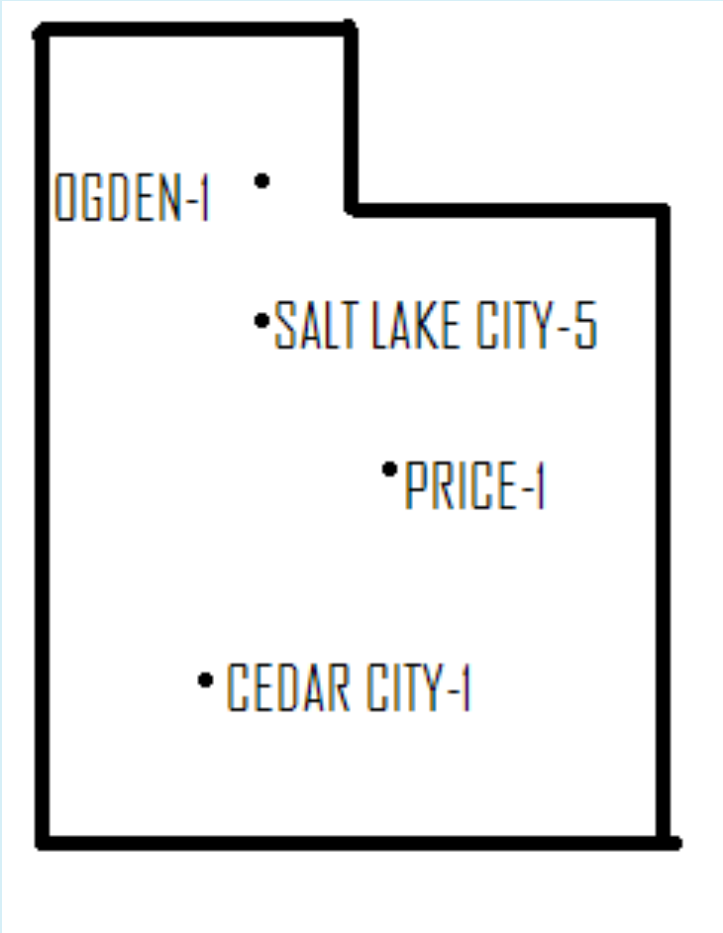
Background – Map with CS Chemists



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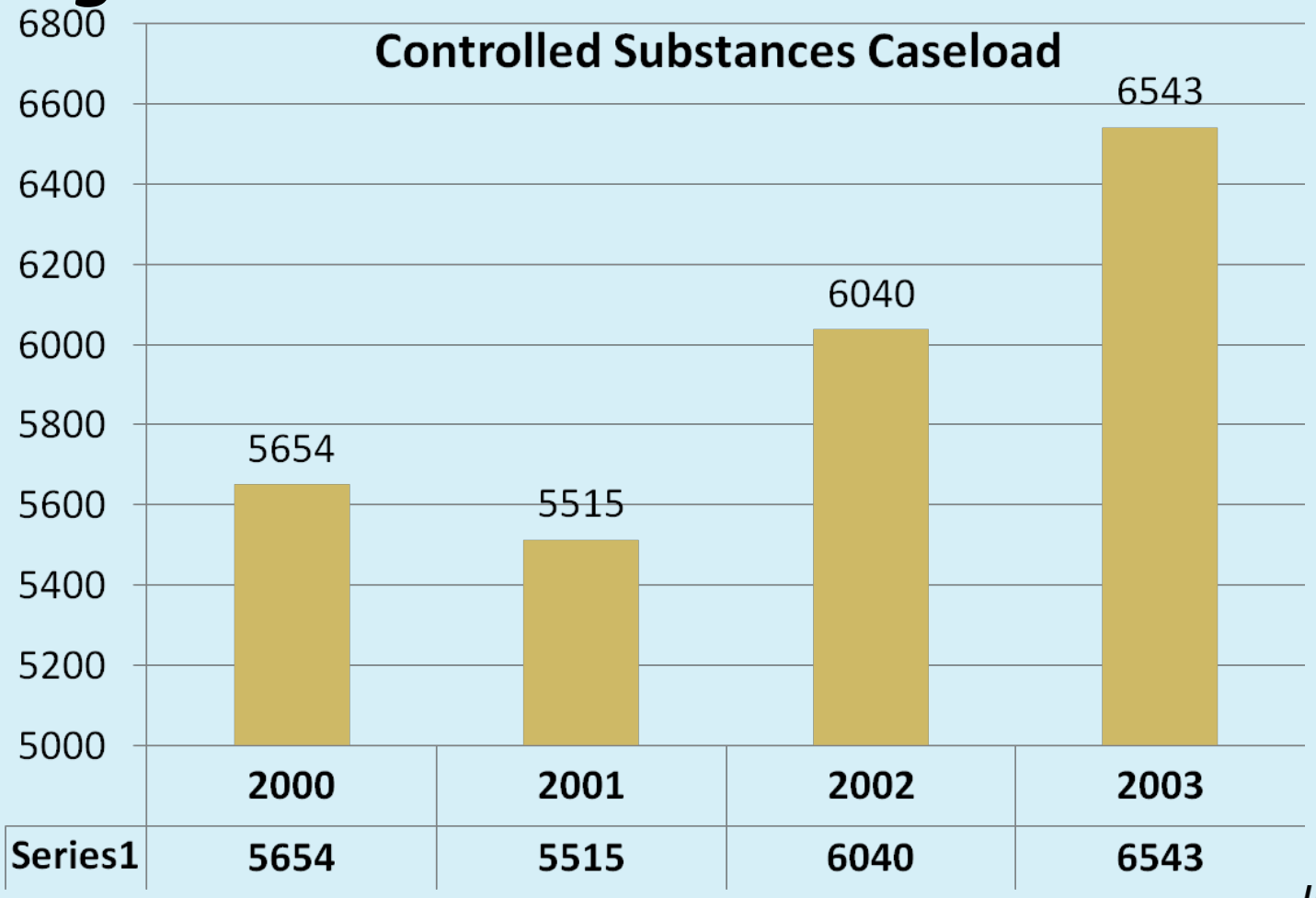
Background – Case Numbers



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Background – Utah BFS

- Limited resources to deal with increasing caseload (no more FTE's)
- Turnaround time averaged six to eight weeks
- Customer satisfaction low
- Both law enforcement and prosecution unhappy
- Staff unhappy with workload
- What do you? We felt that we were so buried in casework we didn't have time to teach, train or monitor

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Solution – MJ Tech Program and FIDO

- May 2003 offered Utah BFS MJ Leaf Technician Program
- Modeled after the Washington State Patrol Program and Weber State University
- Provide officers with 32 hour "certification" course in the identification of marijuana
- Officers are now the experts in the identification of marijuana using macroscopic, microscopic and chemical confirmation techniques

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Solution – MJ Tech Program and FIDO

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Solution – Utah BFS FIDO program

- Marijuana is only part of the solution
- Still need a way to screen for methamphetamine, cocaine and heroin
- Many Utah agencies already doing this testing
  - Use NIK® kit tests with varying degrees of success
  - Resulted in some judges accepting the results and others not
- Screening program at California DOJ
- Discovered NFSTC and FIDO

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Utah BFS's Adaptation of FIDO Program

- Trained at NFSTC and learned about FIDO
- Selling point was that it was a "national" program and was successful in Phoenix
- Flexible adaptability – we didn't need to screen for marijuana and could create our own kits
- Created the UNIT test kit – **U**tah **N**arcotic **I**dentification **T**est kit

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Utah BFS's Adaptation of FIDO Program: UNIT Test Kit

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Utah BFS's Adaptation of FIDO Program: UNIT Test Kit

- By creating the kits ourselves, we could:
  - Minimize the cost to BFS and agencies (we have no problem with NIK® kits, when properly used)
  - QC the reagents to make sure they worked
  - Kit cost factor allows officers to become more familiar with testing samples – (e.g., you can probably test 500 samples of methamphetamine with the UNIT kit)
  - Officers develop expertise faster
  - Include a bottle of methanol

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Utah BFS's Adaptation of FIDO Program: Training Class

- Adapted 8 hour "certification" training class that includes:
  - Background information on methamphetamine, heroin and cocaine (same slideshows from NFSTC)
    - Have to make some modifications applicable to Utah
    - E.g., rarely see powdered form of heroin
  - Emphasize presumptive nature of color testing

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Utah BFS's Adaptation of FIDO Program: Presumptive Color Testing

- In the classroom, the laboratory portion requires them to test the following types of samples:
  - Known
  - "False" positives
  - "Other" samples
- Lectures on shades, length of time and order of color formation
- Lab portion develops immediate expertise

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Color test exercise			
	Sodium Nitroprusside	Scotts	Froehdes
Aspartame			
Baby Powder			
Baking Powder			
Baking Soda			
Benzocaine			
Brown Sugar			
Butacaine			
Cinnamon			
Cocaine			
Cocoa			
Codeine			
Comet			
Corn Starch			
Dibucaine			
Dimethylamine			
Diphenhydraime			
Ephedrine			
Flour			
Guaiacol Glyceryl Ether			
Heroin			
Lidocaine			
MDMA			
Methamphetamine			
Onion Powder			
Oxycodone			
Phentermine			
Powdered Sugar			
Procaine			
Propoxyphene			
Pseudoephedrine			
Rock Salt			
Saccharine			
Salt			
Soap			
Sugar			
Tetracaine			

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Utah BFS's Adaptation of FIDO Program: Presumptive Color Testing

- Safety NFPA (National Fire Protection Association)

Chemical/Test	Health	**Flammability**	**Reactivity**
Sodium Nitroprusside	**3**	**4**	**2**
Sodium Carbonate	**2**	**0**	**1**
Scotts	**3**	**1**	**1**
Chloroform	**2**	**0**	**0**
Froehdes	**3**	**0**	**2**

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Utah BFS's Adaptation of FIDO Program: Presumptive Color Testing

- Instruction on QC and Best Practices
- Blank Test – Tests for contamination
  - Run the reagents without sample
- Known Test – Tests reagent reliability – Are they working?
  - Run the reagents with a known standard
  - Known standard = Mixture of dimethylamine and diphenhydramine – Non-controlled

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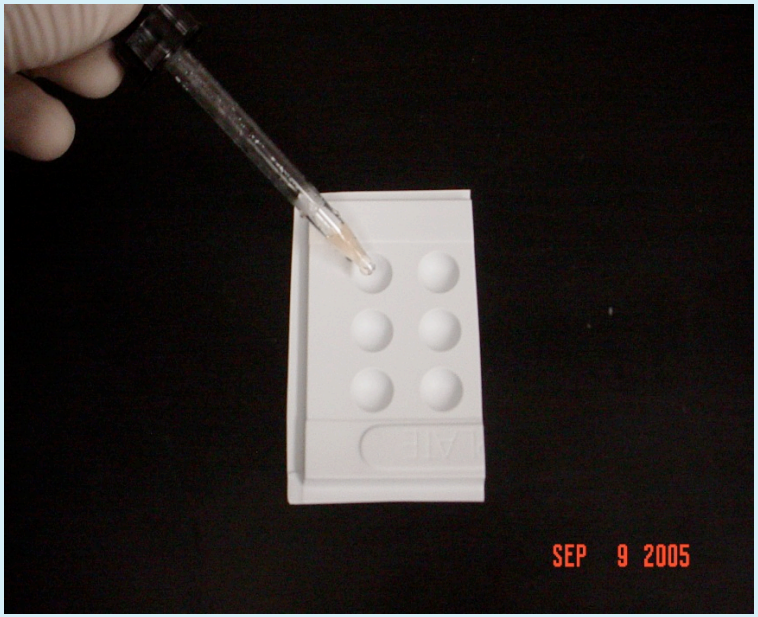
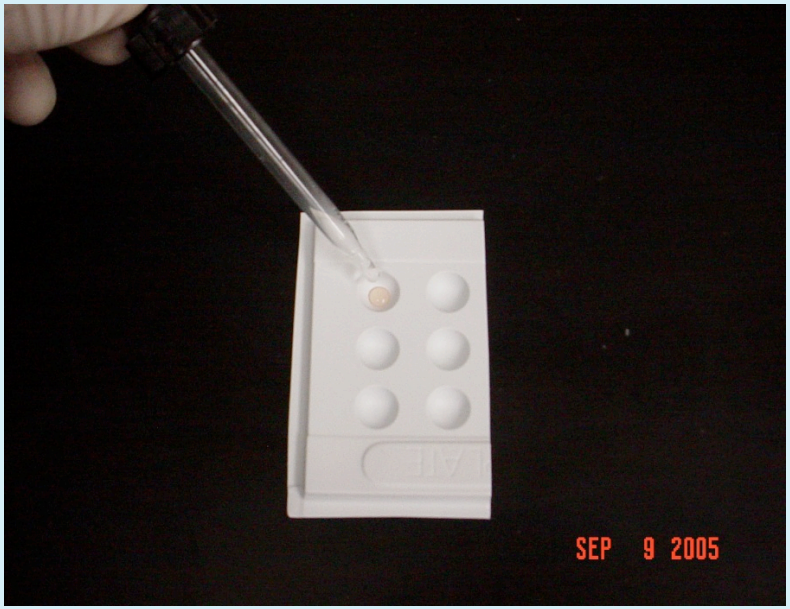
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #1 – Perform Blank Test





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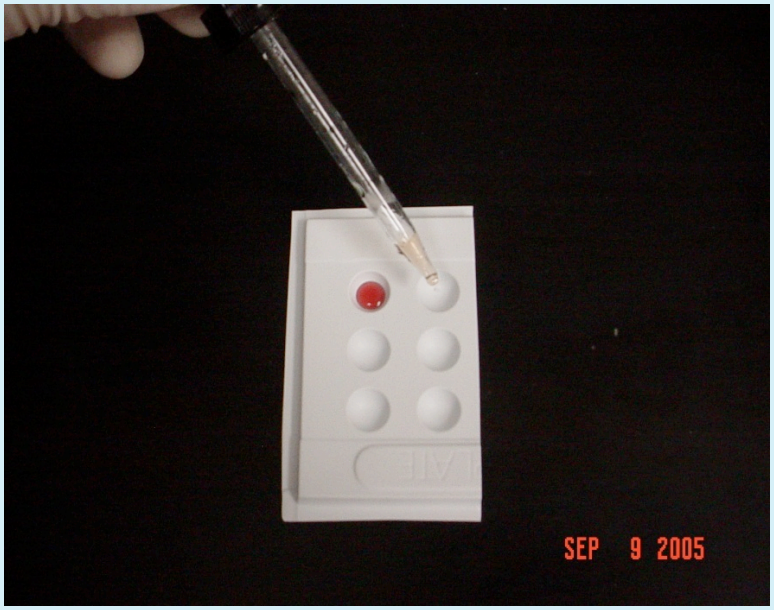
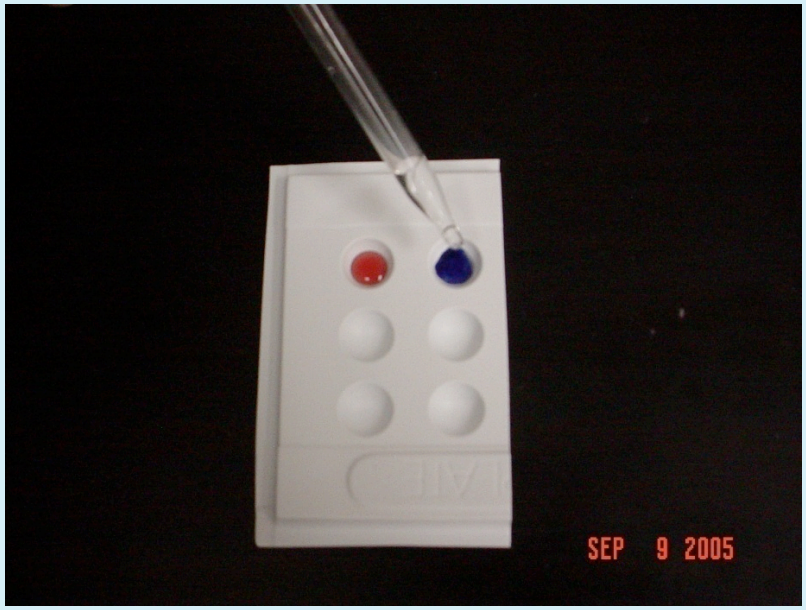
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #2 – Perform Known Test





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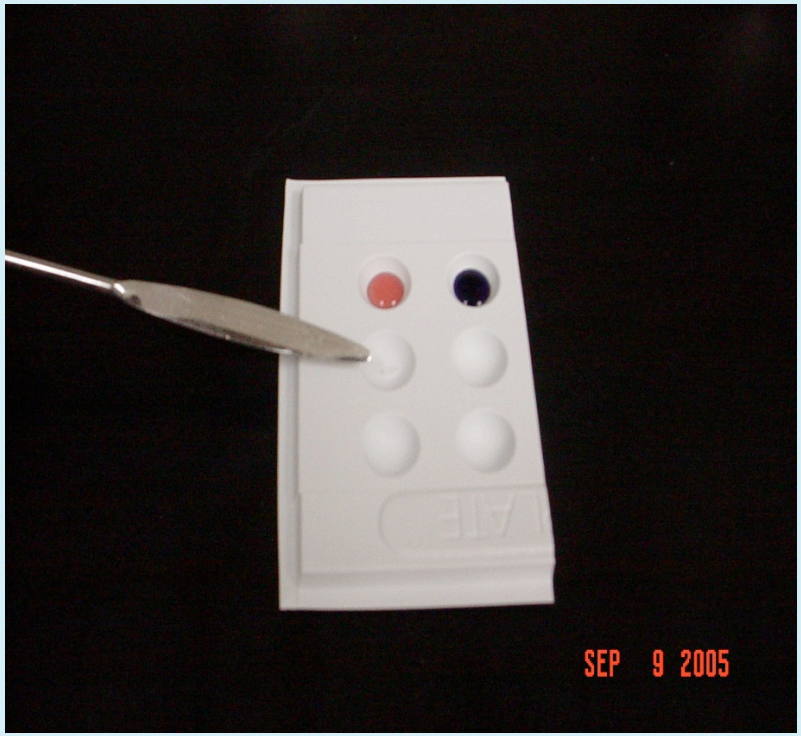
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #3 – Place Unknown in clean spot well



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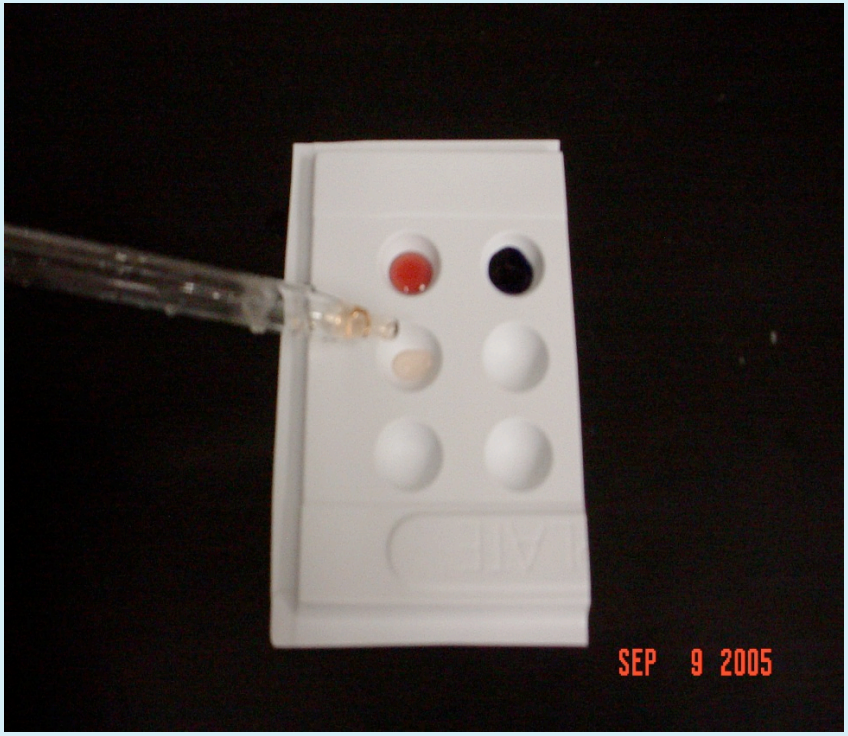
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #4 – Place one drop of Reagent #1 into spot well



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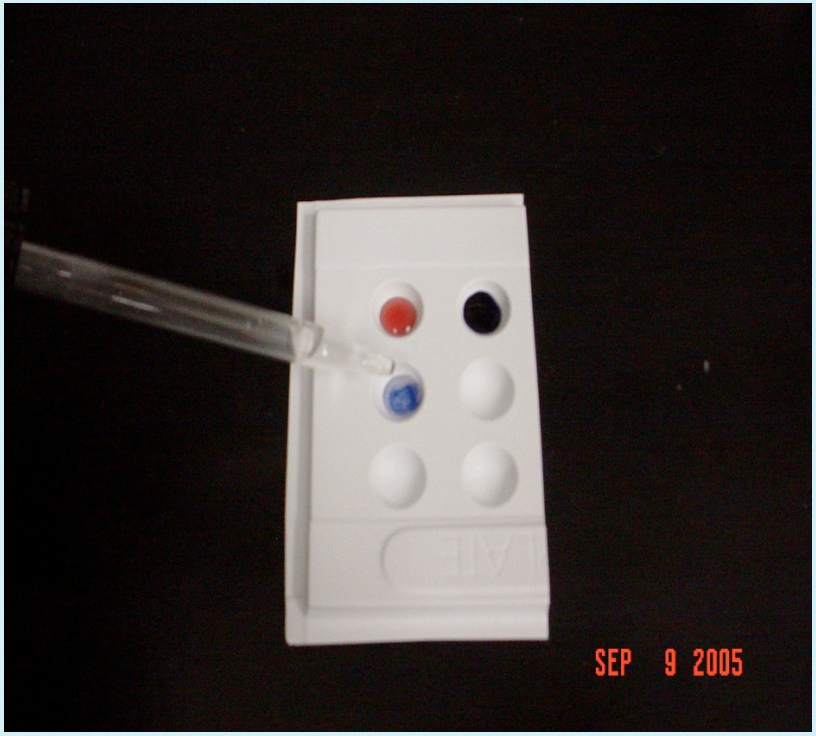
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #5 – Place one drop of Reagent #2 into spot well



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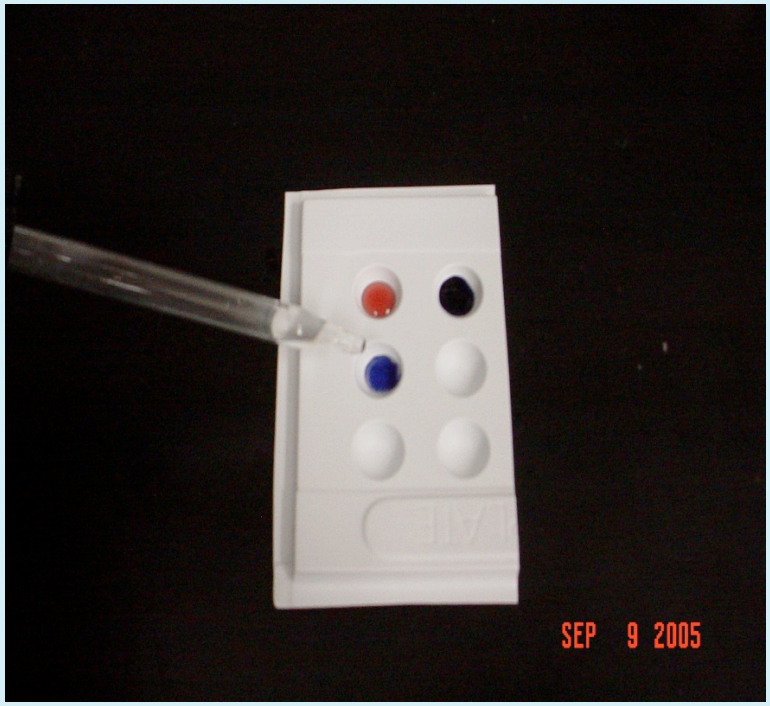
Methamphetamine: Step by Step Testing Example with UNIT Test Kit

- Step #6 – Formation of an *immediate dark blue color*



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Utah BFS's Adaptation of FIDO Program: Training Class Continued

- Lecture and practice taking notes

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FIDO Controlled Substance Note Sheet

Technician:	JWH	Agency:	UtahCo.PD	Control #:	0808808
Date:	1/24/2009	Agency #:	08-151624		

Physical Description of Evidence — Include Item # and all levels of packaging

Item #1 – One S/M Plastic (JWH) envelope L" UtahCo.P.D. --- 08-151624-#1 "c/ one plastic bag w/ white powder

Chemical Test

Blank Test performed? **Yes** **No** Known Test performed? **Yes** **No**

	Item # 1	Item #	Item #	Item #	Item #	Item #
Sodium Nitroprusside	positive "Blue"					
Scotts	NEG-					
Froehdes	NEG					
Indicated Drug	Meth					

Conclusion

The evidence examined presumptively contains:

Methamphetamine **Cocaine** **Heroin** **Inconclusive**

Circle the drug that was indicated by the color test. If the drug cannot be determined circle inconclusive and send the evidence to the Crime Lab for Identification.

Evidence Repackaging and Comments

Item #1 was repackaged and returned to evidence

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Utah BFS's Adaptation of FIDO Program: Training Class Continued

- Lecture and practice taking notes
- Lecture and practice writing reports

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FIELD DRUG TEST REPORT

Agency: Utah Co. P.D
Case Officer: HENRY
Suspect: JONES

Control Number: 080808
Agency Case Number: 08-151624

Item Tested – Test Results (Enter X for Positive Results)

Item No.	Description	Methamphetamine	Cocaine	Heroin
1	ONE ENVELOPE with white powder	X		

Results

The result(s) of the chemical field test(s) indicate(s) the presence of the above listed controlled substance. A portion of the evidence was tested and the remainder has been properly packaged and retained.

Certification

☒ I certify that I have successfully completed training from the Utah Bureau of Forensic Services in the use and interpretation of chemical field tests for the identification of the controlled substances listed in the table above and that I hold a current Field Drug Testing Certificate, number 001.

I also certify that I have followed the proper testing procedure currently in use by my agency.

Details of the training program and contact information may be obtained from http://forensicservices.utah.gov.

☒ If this matter proceeds to Court, I will be available to testify as to my findings in this case.

If trial proceedings are required for the adjudication of this matter, an analysis will be performed by the Utah Bureau of Forensic Services - Crime Laboratory and a written report will be provided. Please notify the Utah Bureau of Forensic Services - Crime Laboratory referencing this drug report at least four weeks prior to the start of the trial.

JAY W HENRY
Name (please print)

1/24/2009
Date Tested

Jay W. Henry
Signature

Page 1 of 1

Utah BFS's Adaptation of FIDO Program: Training Class Continued

- Written exam (20 questions) – Must receive 80%
- Complete 20 unknown "challenging" samples
- Competency test (3 samples) – Must receive 100%
- Annual Case Review (5%) – Done at recertification
- Suggested 100% Technical Review
- Audit – Done at recertification
- Certifications valid for one year
- Recertification every year – 5 proficiency test samples – Must achieve 100%

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Utah Bureau of Forensic Services
Certificate of Qualification

is hereby granted to:

Jay Henry

to certify that they have successfully completed

Field Investigation Drug Officer

Certification Training

Granted: February 26, 2009

Jay W. Henry, Laboratory Director

Utah Bureau of Forensic Services

Certificate Number :160

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General FIDO Stats (2007-2008)

- Discontinued analyzing marijuana botanical samples as of 12/31/2006
- Taught 13 certification classes and certified 168 people in FIDO throughout the state
- Taught 10 recertification classes and recertified 113 people in FIDO throughout the state
- 43% have returned statistics for 2008

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FIDO Case Stats 2008 : Samples Tested

- Methamphetamine – 71 positive
- Cocaine – 29 positive
- Heroin – 28 positive
- Inconclusive – 5 positive

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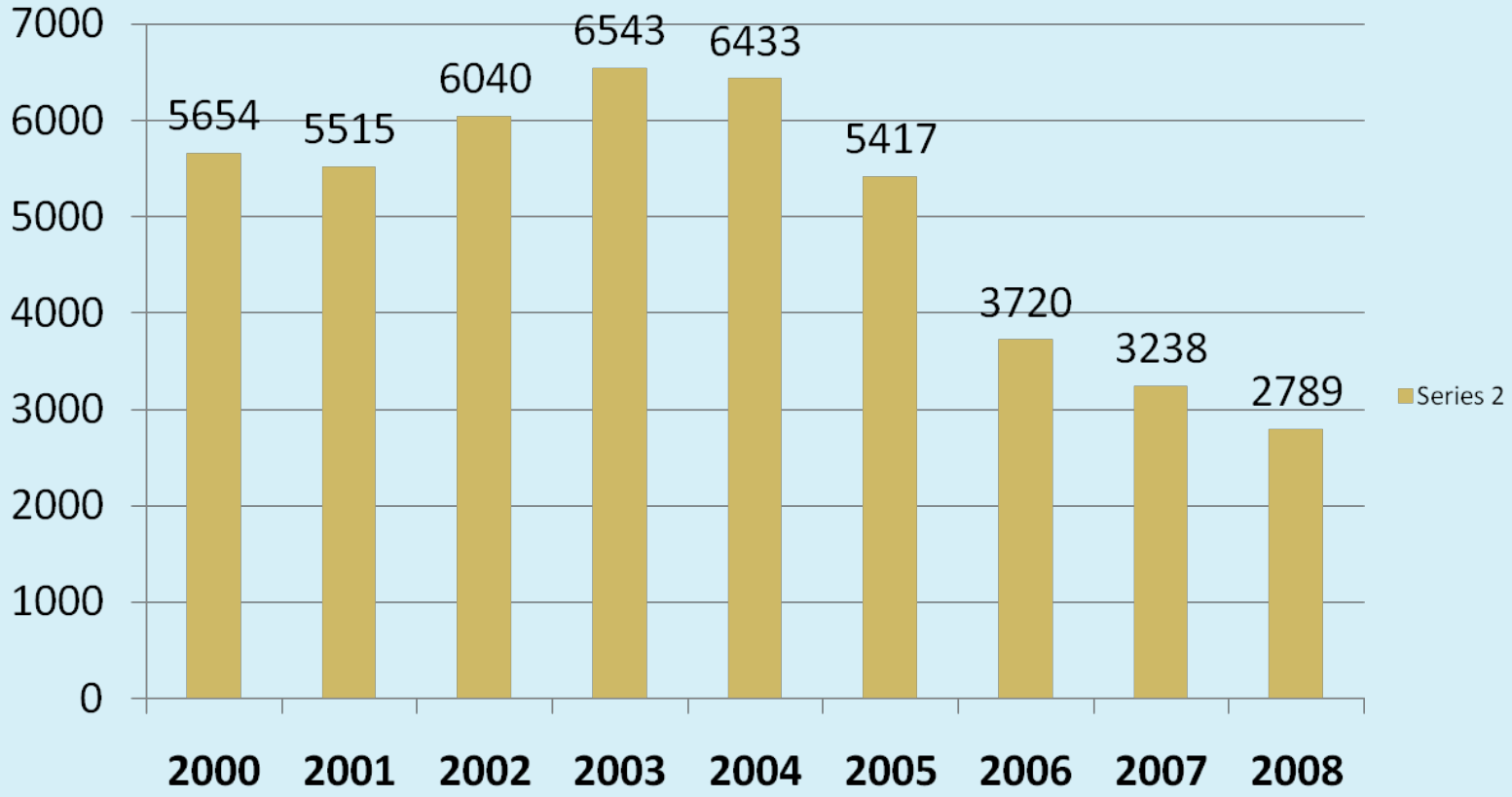
Utah BFS's Case Statistics: Controlled Substances



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Utah's FIDO Program: Results

- 57% reduction in controlled substances submissions from 2003 thru 2008
- Where did the cases go?
- Customer Satisfaction?
  - Law Enforcement
  - Prosecutorial
  - Laboratory Staff

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Utah's FIDO Program: So What Did We Do With That Extra Resource?

- Decreased our turnaround time
  - Central laboratory controlled substances (10 days)
  - Central laboratory serology (14 days)
  - Central laboratory DNA (33 days)
  - Southern laboratory controlled substances (5 days)
- Trained 18 crime scene responders
- Transitioned from Legacy to ISO

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Utah's FIDO Program: So What Did We Do With That Extra Resource?

- Enhanced our trace program
  - Paint analysis
  - Glass, hair and fibers to follow
- Implemented video analysis
  - Audio analysis to follow
- Economic downturn
- Evidence intake
  - Reduced their caseload by at least 50%
  - Reassigned to AFIS and crime scene team

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Contact Information

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Note: *All images and graphics contained within this presentation are courtesy of the Utah Bureau of Forensic Services laboratory personnel or laboratory director Jay W. Henry.*

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