DCA15MR010
Philadelphia, PA
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Medical Factual Group Chairman's Report
Attachment 1: FRA Post Accident Testing Program Details

FRA SUMMARY OF ANALYSES PERFORMED ON SPECIMENS FOR TOXICOLOGY UNDER THE FRA POST-ACCIDENT TESTING PROGRAM

Revised 1-2-2013

The following summarizes the procedures for analysis of blood and urine specimens submitted under the FRA Post-Accident Program.

Urine Integrity Test: Urine is tested for pH, specific gravity, and creatinine. If the pH or temperature is out of range, the specific gravity is less than 1.0030, the creatinine is less than 20 mg/dL, the sample appears adulterated, or as directed by FRA, both the urine and the blood specimens may be tested for drugs.

Analysis of Drugs/Initial Testing: Initial testing is performed on urine by combination of EIA, ELISA and GC/MS (for sedating antihistamines). If urine is unavailable or unsuitable, testing is performed on blood using ELISA and GC/MS for antihistamines. Ethanol screening is performed on blood by GC-Head Space. If the tests are negative (that is, the results are below the cut-off), no further analyses are performed routinely.

Drug or Metabolite[a]	Cutoffs (ng/mL)[b] Urine	Blood
Amphetamines	300	50
Barbiturates	200	100
Benzodiazepines	100	50
Cocaine	150	20
Cannabinoids	20	10
Methadone	300	50
Opiates	300	50
Oxycodone	100	50
Phencyclidine	25	2.5
Propoxyphene	300	50
Tramadol	100	100
Fentanyl	0.5	0.5
Sedating Antihistamines	50	50

Analysis of Drugs/Confirmation: If the initial screening test is positive, the urine and/or the blood specimens are confirmed using GC/MS, LC/MS, and GC (for ethanol). Normally, blood analysis is not required if urine results are negative. Except as noted, only positive confirmed findings at or above the cutoff are reported; they are expressed as quantitative results based on the confirmatory analysis.

Specific Drug or Metabolite		Confirmation Cutoffs (ng/mL)[b] Urine	Blood
Amphetamines			
	Amphetamine	100[c]	20
	Methamphetamine	100[c]	20
	MDMA	200	20
	MDA	200	20
Barbiturates			
	Pentobarbital	200	100
	Secobarbital	200	100
	Amobarbital	200	100
	Butalbital	200	100
	Phenobarbital	1000	1000
Benzodiazepines			
	Nordiazepam	50	20
	Oxazepam	50	20
	Temazepam	50	20
	Hydroxyethylflurazepam	50	20
	alpha-Hydroxyalprazolam	50	N/A
	alpha-Hydroxytriazolam	50	N/A
	Aminoclonazepam	50	N/A
	Lorazepam	50	20
	Diazepam	N/A	20
	Flurazepam	N/A	20
	Alprazolam	N/A	10
	Triazolam	N/A	10
	Clonazepam	N/A	10
Cannabinoids			
	Delta-9-tetrahydrocannabinol (THC)[c]	N/A	1
	THCA (a metabolite of THC)	15	5
Cocaine			
	Cocaine	50	10
	Benzoylecgonine (a metabolite of cocaine)	100	10
Opiates			
	Morphine (total)	300	N/A
	Morphine (unconjugated)	N/A	5
	Codeine (total)	300	N/A
	Codeine (unconjugated)	N/A	5
	6-Monoacetylmorphine (6-MAM)	2	3
Synthetic/ **Semi-Synthetic Opioids**			
	Hydrocodone	300	5
	Hydromorphone	300	5
	Methadone	200	25
	Methadone Metabolite (EDDP)	200	25
	Oxycodone	100	5
	Oxymorphone	100	5
	Fentanyl	0.5	0.5
	Propoxyphene	N/A	50
	Norpropoxyphene	200	50
Phencyclidine		25	2.5
Tramadol			
	Tramadol	100	100
	Desmethyltramadol	100	100
Sedating Antihistamines			
	Diphenhydramine	50	50
	Doxylamine	50	50
	Chlorpheniramine	50	50
	Brompheniramine	50	50
	Pheniramine	50	50

Analysis for Alcohol: The blood specimen (or urine if blood is unavailable) is analyzed for ethyl alcohol by gas chromatography (GC). If the blood specimen is positive, the analysis is repeated using a separate portion of the specimen and the urine is also analyzed by gas chromatography. In fatalities, vitreous (if available) is also analyzed.

Substance	Initial Test Cutoff (g/100 mL)	Confirmation Cutoff (g/100 mL)
Ethyl Alcohol	0.01	0.01

Analysis in the Case of a Fatality: If urine or blood is not available, or as directed by the FRA, other body fluids and/or tissue specimen(s) may be analyzed.

Special Assays: On direction from the FRA, additional testing for controlled substances and/or their metabolites may be conducted. If such tests are performed, they are specifically described on each individual report.

[1] *Metabolites and/or analogs of these compounds may also be detected.*
[2] *These cutoffs are subject to periodic review and update.*
[3] *THC is the active constituent of marijuana or hashish preparations.*
[4] *LOQ: Limit of quantitation.*
[5] *A confirmed urine positive for methamphetamine will result in a d&l isomer analysis and is reported as the % of each isomer present.*