

**JUST SAY MAYBE: A REVIEW OF DRUG
TESTING METHODS AND
CONSTITUTIONAL CHALLENGES TO
PUBLIC SECTOR COMPULSORY
URINALYSIS IN THE THIRD CIRCUIT**

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I. INTRODUCTION

Few subjects have produced as much legal commentary in such a brief period of time as the issue of compulsory drug testing has generated over the past two years.¹ Despite this wealth of analysis, both courts and commentators are far from reaching a consensus on the matter. This comment attempts to give an overview of the major issues which have been, and most still are, the object of heated controversy. The state of modern technology is discussed at length, followed by a review of constitutional issues, with an emphasis on Third Circuit opinions as a jurisdiction highly representative of the divergent schools of thought.

Although drug urinalysis litigation has been around for over a decade,² the recent surge in legal commentary is due to a great

¹ See, e.g., Cecere & Rosen, *Legal Implications of Substance Abuse Testing in the Workplace*, 62 NOTRE DAME L. REV. 859 (1987); Flannery, *Unilaterally Instituted Drug Screen Tests in the Unionized Private Industry*, 38 LAB. L.J. 756 (1987); Lock, *Drug Testing in the NFL and the Obligation to Bargain under the NLRA*, 3 LAB. LAW. 239 (1987); Lock, *The Legality under the National Labor Relations Act of Attempts by National Football League Owners to Unilaterally Implement Drug Testing Programs*, 39 U. FLA. L. REV. 1 (1987); Miller, *Mandatory Urinalysis Testing and the Privacy Rights of Subject Employees*, 48 U. PITT. L. REV. 201 (1986); Rivest, *Implications of the Fourth Amendment to the U.S. Constitution in Regard to Mandatory Drug Testing*, 60 WIS. B. BULL. 19 (1987); Rothstein, *Drug Testing in the Workplace: The Challenge to Employment Relations and Employment Law*, 63 CHI-KENT L. REV. 683 (1987); Comment, *Random Drug Testing of Government Employees*, 54 U. CHI. L. REV. 1335 (1987); Comment, *Yellow Rows of Test Tubes Due: Process Constraints on Discharges of Public Employees Based on Drug Urinalysis Testing*, 135 U. PA. L. REV. 1623 (1987); Comment, *Your Urine or Your Job: Is Private Employee Drug Urinalysis Constitutional in California*, 19 LOY. L.A.L. REV. 1451 (1986); Note, *A Proposal for Mandatory Drug Testing of Federal Civilian Employees*, 62 N.Y.U.L. REV. 322 (1987); Note, *Behind the Hysteria of Compulsory Drug Screening in Employment*, 25 DUQ. L. REV. 597 (1987); Note, *Dragnet Drug Testing in Public Schools and the Fourth Amendment*, 86 COLUM. L. REV. 852 (1986); Note, *Drug Testing in the Workplace: The Need for Quality Assurance Legislation*, 48 OHIO ST. L.J. 887 (1987); Note, *Drug Testing of Florida's Public Employees*, 15 FLA. ST. U. L. REV. 101 (1987); Note, *Drug Testing of Government Employees and the Fourth Amendment*, 62 NOTRE DAME L. REV. 1063 (1987); Note, *Employee Drug Testing and the Fourth Amendment*, 38 LAB. L.J. 611 (1987); Note, *Employee Drug Testing—Balancing the Employer's Right to Know with the Employee's Right to Privacy*, 1987 DET. C.L. REV. 27 (1987); Note, *Employee Drug Testing—Issues Facing Private Sector Employers*, 85 N.C. L. REV. 832 (1987); Note, *Employee Drug Testing Legislation: Redrawing the Battlelines in the War on Drugs*, 39 STAN. L. REV. 1453 (1987); Note, *Lovvorn v. City of Chattanooga: Watering Down Public Employees' Fourth Amendment Rights*, 20 MAR. L. REV. 769 (1987); Note, *Public Sector Employer Drug Testing Programs: Has Big Brother Finally Arrived?*, 20 MAR. L. REV. 769 (1987); Note, *Shoemaker v. Handel and Urinalysis Drug Testing: Looking for an American Standard*, 21 GA. L. REV. 467 (1986); Note, *Urinalysis Testing in Correctional Facilities*, 67 B.U.L. REV. 475 (1987); Note, *Urinalysis Testing of Private Employees: A Call for Legislation in Pennsylvania*, 91 DICK. L. REV. 1015 (1987).

² See *Division 241 Amalgamated Transit Union v. Suscy*, 533 F.2d 1264 (7th Cir.), cert. denied, 429 U.S. 1029 (1976) (upholding drug testing of bus drivers who are involved in serious accidents or who are suspected of being under the influence

extent to the Chief Executive's determination to test federal employees. On September 15, 1986, President Ronald Reagan directed the heads of all federal agencies to establish drug³ testing programs using whatever criteria may be necessary to insure a drug-free working environment.⁴ Under the presidential directive, all government employees may be tested where there is a reasonable suspicion of drug use or where there is a concern for safety.⁵ Random testing, however, is authorized only for employ-

of drugs or alcohol).

³ The United States Code defines drug as:

(A) [A]rticles recognized in the official United States Pharmacopoeia, official Homoeopathic Pharmacopoeia of the United States or, official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any article specified in clauses (A), (B), or (C) of this paragraph; but does not include devices or their components, parts, or accessories.

21 U.S.C. § 321(2)(g)(1) (1982).

The term drug, as used throughout this comment, has the same legal meaning as "controlled substance." See *infra* note 15. Although alcohol is the "drug of choice" in America (see *infra* note 21), because possession and consumption is not illegal in this country and levels of intoxication can be accurately determined by means other than testing body fluids, it is usually excluded from the meaning of the term "drug" when used as a synonym for "controlled substance." See *infra* note 15.

⁴ See Exec. Order No. 12,564, 3 C.F.R. 224 (1986). The order provides in part:

Sec. 2. Agency Responsibilities.

(a) The head of each Executive agency shall develop a plan for achieving the objective of a drug-free workplace with due consideration of the rights of the government, the employee, and the general public.

.....

Sec. 3. Drug Testing Programs.

(a) The head of each Executive agency shall establish a program to test for the use of illegal drugs by employees in sensitive positions. The extent to which such employees are tested and the criteria for such testing shall be determined by the head of each agency, based upon the nature of the agency's mission and its employee's duties, the efficient use of agency resources, and the danger to the public health and safety or national security that could result from the failure of an employee adequately to discharge his or her position.

Id. at 225-26.

⁵ Section 3(c) of the order provides:

(c) In addition to the testing authorized in subsections (a) and (b) of this section, the head of each executive agency is authorized to test an employee for illegal drug use under the following circumstances:

- (1) When there is a reasonable suspicion that any employee uses illegal drugs;
- (2) In an examination authorized by the agency regarding an accident or unsafe practice; or
- (3) As part of or as a follow-up to counseling or rehabilitation for illegal drug use through an Employee Assistance Program.

ees in "sensitive positions."⁶ These executive provisions are the last in a series of government drug detection programs which started six years ago in the Department of Defense.⁷ In the last few years, testing to detect drug use has become widespread both in government and in private enterprises.⁸ Municipalities across

Id. at 226.

⁶ *Id.* § 3(a). Section 7(d) of the order defines "employees in a sensitive position" as:

- (1) An employee in a position that an agency head designates Special Sensitive, Critical-Sensitive, or Non critical-Sensitive under Chapter 731 of the Federal Personnel Manual or an employee in a position that an agency head designates as sensitive in accordance with Executive Order No. 10450, as amended;
- (2) An employee who has been granted access to classified information or may be granted access to classified information pursuant to a determination of trustworthiness by an agency head under Section 4 of Executive Order No. 12356;
- (3) Individuals serving under Presidential appointments;
- (4) Law enforcement officers as defined in 5 U.S.C. § 8331(20); and
- (5) Other positions that the agency head determines involve law enforcement, national security, the protection of life and property, public health or safety, or other functions requiring a high degree of trust and confidence.

Id. § 7(d).

At least 1.1 million out of approximately 2 million federal civilian employees may be considered "sensitive employees." N.Y. Times, Nov. 29, 1986 at A-1, col. 3.

⁷ The prevalence of drug use, particularly marijuana, among the returning Vietnam veterans, prompted the Department of Defense to implement drug detection procedures. See Hanson, *Drug Abuse Testing Programs Gaining Acceptance in the Workplace*, CHEM. & ENG. NEWS, June 2, 1986, at 7-8. The Navy, which was identified as the branch with the highest incidence of marijuana use, implemented in 1981 what many consider the best drug detection program in the country. *Id.* at 8. The Navy claims an almost 80% drug use reduction for the under-25 age group from the inception of the program in 1981 to 1984 (47% to 10%). *Id.* See also ALCOHOL & DRUGS IN THE WORKPLACE: COSTS, CONTROLS, AND CONTROVERSIES (BNA) 27-28 (1986) [hereinafter ALCOHOL & DRUGS IN THE WORKPLACE]. Overall drug use reduction in the armed forces is estimated at two thirds, from 27% to 9% in five years. *Battle Strategies*, TIME, Sept. 15, 1986 at 71. The Department of Defense uses random urinalysis testing. *Id.*

⁸ See Englade, *Who's Hired and Who's Fired*, 14 STUDENT LAW. 20, 22, Apr. 1986; Rust, *Drug Testing: The Legal Dilemma*, A.B.A.J., Nov. 1, 1986, at 60; *The Enemy Within*, TIME, Sept. 15, 1986 at 58, 62; ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 27-28; Hanson, *supra* note 7, at 7; Stille, *Drug Testing*, Nat'l L.J., Apr. 7, 1986, at 1, col. 1; Kaufman, *The Battle Over Drug Testing*, N.Y. Times, Oct. 19, 1986 § 6 (Magazine), at 52, 54. L. Abraham, *Foreword* to FACE OFF WITH AMERICAN DISEASE, A SYMPOSIUM ABOUT SUBSTANCE ABUSE SCREENING, AMERICAN ASSOCIATION FOR CLINICAL CHEMISTRY RESEARCH SERVICE 3 (Roche Diagnostic Systems, Nov. 1986) [hereinafter FACEOFF WITH THE AMERICAN DISEASE]. The trend has not yet reached the student population at large. At least one attempt to test school children has been summarily disallowed. See *Odenheim v. Carlstadt-East Rutherford Regional School Dist.*, 211 N.J. Super. 54, 510 A.2d 709 (Ch. Div. 1985); *accord Anable v. Ford*, 663 F. Supp. 149, 152 (W.D. Ark. 1985) (marijuana urinalysis testing of students vio-

the country are testing policemen and firefighters.⁹ Most common carrier employees, particularly pilots or drivers, must submit to drug testing.¹⁰ More than 25% of the Fortune 500 companies¹¹ as well as all major league baseball,¹² basketball¹³ and football¹⁴ teams now test for use of controlled substances.¹⁵

lates fourth and fourteenth amendments to federal constitution). *But see* Schail ex rel. Kross v. Tippecanoe County School Corp., 679 F. Supp. 833, 857 (N.D. Ind. 1988) (random testing of high school student athletes did not violate either fourth or fourteenth amendments to federal constitution). Parents, however, may very well do so at home without too much trouble albeit with probably much lower standards of reliability. A Texas manufacturer has offered "home urinalysis kits" which would allow parents to take urine samples of their children and mail them in a safety package back to the manufacturer's laboratory for testing. *Bringing Home the Drug Test Dilemma*, NEWSWEEK, July 21, 1986 at 56; Sims, *Boom in Drug Tests Expected*, N.Y. Times, Sept. 8, 1986 at D21, col. 1.

⁹ See Stille, *supra* note 8, at 23, col. 1. See also Banzhaf, *How to Make Drug Tests Pass Muster*, Nat'l L.J., Jan. 12, 1987, at 13-14.

¹⁰ See Parade Mag., Nov. 23, 1986, at 19, col. 4; Rust, *supra* note 8, at 50-54. One example of current testing procedures for common carriers can be found in the Federal Railroad Administration (FRA) rules as amended December 15, 1985. See Department of Transportation (FRA) Control of Alcohol and Drug Use in Railroad Operations, 49 C.F.R. § 219 (1987). The FRA requires testing upon "reasonable suspicion" or after an "accident/incident" if the supervisor believes the employee's conduct "contributed to the occurrence or severity of the accident or incident," or if the employee has committed any one of a series of operating infractions. 49 C.F.R. § 219.301 (1987). Recently, the Ninth Circuit declared this testing program unconstitutional. See *Railway Labor Executives' Ass'n v. Burnley*, 839 F.2d 575, 587 (9th Cir.), cert. granted, 108 S. Ct. 2033 (1988) ("Accidents, incidents or rule violations, by themselves, do not create reasonable grounds for suspecting that tests will demonstrate alcohol or drug impairment in one railroad employee, much less an entire train crew.").

¹¹ See Stille, *supra* note 8, at 23; Lahey, *Whose Rights Are Violated?*, NAT'L SAFETY & HEALTH NEWS, June 1986 at 28; Englade, *supra* note 8, at 22. See also McClenahan, *The Privacy Invasion*, INDUSTRY WEEK, Nov. 11, 1985 at 50.

¹² See *The Commissioner Gets Tough*, SPORTS ILLUSTRATED, at 32, May 20, 1985.

¹³ Wash. Post, Aug. 17, 1986 at B1, B13 col. 3.

¹⁴ Rust, *supra* note 8, at 51; N.Y. Times, Apr. 3, 1986, at 12, col. 3; Newark Star-Ledger, March 20, 1986, at 78, col. 2.

¹⁵ "Controlled substance" is defined as "[a]ny narcotic drug so designated by law." BLACK'S LAW DICTIONARY 298 (5th ed. 1979). Such drugs are listed in the federal Controlled Substances Act (Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970, 21 U.S.C. §§ 321, n.321, 331, 333-34, 360, 372, 281, 801, n.801, 802, n.803, 811-12, 821-22, n.822, 823-29, n.830, 841-52, 871-86, 901-04 (1982 & Supp. IV 1987)) and in various state acts modeled after the Uniform Controlled Substances Act which were enacted "to control the distribution, classification, sale and use of drugs." See *id.* Most statutes specifically exclude "distilled spirits, wine, malt beverages, or tobacco" from the scope of the act. *E.g.*, 21 U.S.C. § 802(6) (Supp. IV 1987).

The generic term "narcotic" is defined as "any drug which dulls the senses or induces sleep and which commonly becomes addictive after prolonged use." BLACK'S LAW DICTIONARY 922 (5th ed. 1979). It is also defined as:

1 a: a drug (as opium) that in moderate doses dulls the senses, relieves pain, and induces profound sleep but in excessive doses causes stupor, coma or convulsions b: a drug (as marijuana or LSD) subject to restriction similar to that of addictive narcotics whether in fact physiologically addictive and narcotic or not c: something that soothes, relieves or lulls.

WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 787 (1987).

Similarly, "narcotic drug" is statutorily defined as:

(A) Opium, opiates, derivatives of opium and opiates, including isomers, esters, ethers, salts, and salts of isomer, esters, and ethers, whenever the existence of such isomers, esters, ethers, and salts is possible within the specific chemical designation. Such term does not include the isoquinoline alkaloids of opium.

(B) Poppy straw and concentrate of poppy straw.

(C) Coca leaves, except coca leaves and extracts of coca leaves from which cocaine, ecgonine, and derivatives of ecgonine or their salts have been removed.

(D) Cocaine, its salts, optical and geometric isomers, and salts of isomers.

(E) Ecgonine, its derivatives, their salts, isomers and salts of isomers.

(F) Any compound, mixture or preparation which contains any quantity of the substances referred to in subparagraphs (A) through (E).

21 U.S.C. § 802(17) (Supp. IV 1987).

"Opiate" is specifically defined as "any drug or other substance having an addiction-sustaining liability similar to morphine or being capable of conversion into a drug having such addiction-forming or addiction-sustaining liability." *Id.* § 802(18). Consequently, the statutory designation of "controlled substance" includes drugs other than the traditional narcotic-opiates. Hallucinogens marijuana (usually listed as "cannabis sativa L") and LSD (lysergic acid diethylamide); stimulants cocaine and amphetamine; and depressant barbiturates and glutethimide are also commonly included in the definition of "controlled substance." *See, e.g.*, 21 U.S.C. § 812 (1982 & Supp. IV 1987); N.J. STAT. ANN. § 24:21-5(e), -6(4), -7(c)(1), -7(d)(1), (3) (West Supp. 1986). The standard for inclusion of a drug in a specific schedule is based on the following factors: (1) the degree to which the drug is subject to abuse, (2) the degree to which it induces dependency, and (3) the degree of acceptability for medical use in the United States. *See* 21 U.S.C. §§ 811(a), (c), 812(b) (1982); N.J. STAT. ANN. § 24:21-3, -5(a), -6(a), -7(a), -8(a), -8.1(a) (West Supp. 1986). *See* Annotation, *Validity of Delegation to Drug Enforcement Administration of Authority to Schedule or Reschedule Drugs Subject to Controlled Substances Act*, 47 A.L.R. FED. 869 (1980) for a discussion of the Drug Enforcement Administration's discretion to schedule or reschedule drugs. *See also* United States v. Pastor, 557 F.2d 930, 939-41 (2d Cir. 1977) (discussing drug schedules).

These classifications have received extensive judicial challenge. *See* United States v. Alexander, 673 F.2d 287, 288 (9th Cir.), *cert. denied*, 459 U.S. 876 (1982); United States v. Stieren, 608 F.2d 1135, 1136-37 (8th Cir. 1979); United States v. DiLaura, 394 F. Supp. 770, 772-73 (D. Mass. 1974) (each station classification of cocaine as narcotic is constitutional despite cocaine's proper pharmacological classification). *See also* States v. Rodriguez-Camacho, 468 F.2d 1220, 1221-22 (9th Cir. 1972), *cert. denied*, Rodriguez-Camacho v. United States, 410 U.S. 985 (1973); United States v. LaFroschia, 354 F. Supp. 1338, 1340-41 (S.D.N.Y. 1973) (each stating marijuana properly classified as a controlled substance); *cf.* State v. Nugent, 125

Illicit¹⁶ drug use has become pandemic in the United States.¹⁷ A legacy of the cultural revolution of the 1960's and

125 N.J. Super. 528, 533, 312 A.2d 158, 161 (App. Div. 1973) (classification of marijuana as a narcotic under previous law was not irrational). *But cf.* State v. Carus, 118 N.J. Super. 159, 159-62, 286 A.2d 740, 741-42 (Law Div. 1972) (marijuana improperly classified as narcotic for moving traffic violation). *See generally* Annotation, *Marijuana, Psilocybin, Peyote, or Similar Drugs of Vegetable Origin as Narcotics for Purposes of Drug Prosecutions*, 50 A.L.R.3d 1164 (1973); Annotation, *LSD, STP, MDA or Other Chemically Synthesized Hallucinogenic or Psychedelic Substances as Narcotics for Purposes of Drug Prosecutions* 50 A.L.R.3d 1284 (1973) (discussing drug classification under different controlled substance acts).

¹⁶ Not all drugs of abuse are necessarily illicit drugs, although almost all are controlled substances. *See supra* note 15. Some drugs only become illicit when produced, marketed or used in an unlawful manner. *See* 21 U.S.C. § 841(a)(1) (1982). *See also* Exec. Order, *supra* note 4, at § 7(c). For example, prescription drugs such as the sedative diazepam (Valium®), the soporific sodium pentobarbitone (Nembutal®), or the anti-depressant dexamphetamine sulfate (Dexedrine®) are not illicit when purchased with a legitimate medical prescription. *Id.* *See also* W. GARDNER, *HANDBOOK OF CHEMICAL SYNONYMS & TRADE NAMES* 232, 238, 490 (E.I. Cooke & R.W.I. Cooke, eds., 8th ed., 1978). Nevertheless, whether legally or illegally obtained, these drugs are subject to abuse when intake exceeds the prescribed dosage or are used for recreational rather than therapeutic purposes. *See* Department of Transportation (FRA) Control of Alcohol and Drug Use in Railroad Operations, 52 Fed. Reg. 2,112-20 (1987) [hereinafter DOT Comments (1987)]; *but see supra* note 10 (discussing recent Ninth Circuit decision holding this drug testing program unconstitutional). The U.S. Attorney General has the power, within certain limits, to authorize the manufacture, distribution, or dispensation of controlled substances for specific periods of time. 21 U.S.C. § 822 (1982 & Supp. IV 1987). This authorization is carried out through a registration system which allows petitioning registrants who have never been convicted of controlled substance violations to manufacture, distribute, or dispense controlled substances when, in the opinion of the registering authority, the substance is to be used in accordance with all applicable laws "for legitimate, medical, scientific, research, and industrial purposes" which are "consistent with the public health and safety." *See* 21 U.S.C. § 823(a)(1), (6) (1982).

¹⁷ The Drug Abuse Warning Network (DAWN) collects data from 733 hospital emergency rooms and 73 medical examiners located primarily in 27 metropolitan areas including Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Dallas, Denver, Detroit, Indianapolis, Kansas City, Los Angeles, Miami, Minneapolis, New Orleans, New York, Newark, Norfolk, Oklahoma City, Philadelphia, Phoenix, St. Louis, San Antonio, San Diego, San Francisco, Seattle and Washington, D.C. with a total population of 72,314,400 (1980 census). NATIONAL INSTITUTE ON DRUG ABUSE (NIDA), DIVISION OF EPIDEMIOLOGY AND STATISTICAL ANALYSIS, UNITED STATES DEPARTMENT OF HEALTH AND HUMAN SERVICES, *DRUG ABUSE WARNING NETWORK (DAWN) 1985 ANNUAL REPORT* 5 [hereinafter NIDA]. In 1985, DAWN reported a total 105,699 drug abuse episodes involving 172,885 different drugs. For the same period there were 3,562 total drug abuse related deaths involving 7,988 drugs. (Death statistics do not include New York City because data from the City's medical examiner was not available.) *Id.* These statistics are not from random samples of eligible facilities, but from DAWN reporting facilities in an area comprising approximately one-third of the U.S. population. *Id.* at 3. The data represent only drug use incidents resulting in medical crises, not total use. *Id.* Understandably, it is

1970's, as the baby boom generation matured and entered the work force, it brought along its drug habits and its skepticism of warnings about such "recreational" substances as marijuana and cocaine.¹⁸ Once associated with the marginal elements of society and the super-rich, drug abuse has invaded the middle class and it is now found in all sectors of American government, business and professional life.¹⁹ It is perhaps this entry into the conservative realms of the bourgeoisie that has triggered a public outcry against drug use not seen in this country since the turn of the century.²⁰ The drive against drugs has been fueled by an explosion of media coverage²¹ which began in the early 1980's with the discovery of widespread use of controlled substances among major sports figures²² and culminated with the current "war on

impossible to obtain actual statistics on drug use as it involves a criminal activity. Englede, *supra* note 8, at 22. Nevertheless, the NIDA statistics give a general indication of the extent of the problem. See NIDA, *supra*, at 4-240.

¹⁸ See Hoffer, *Business War on Drugs*, NATION'S BUSINESS, Oct. 1986 at 18, 22; Korda, *What's Wrong with Success?*, SELF, Feb. 1987 at 94, 97; *The Enemy Within*, *supra* note 8, at 63-65.

¹⁹ See Department of Transportation (FRA) Control of Alcohol and Drug Use in Railroad Operations, 50 Fed. Reg. 31,508, 31,515 (1985) [hereinafter DOT Comments (1985)]; Dal Cortivo, *Substance-Abuse Testing in a Government Laboratory*, in FACE OFF WITH THE AMERICAN DISEASE, *supra* note 8, at 16; Hoffer, *supra* note 18, at 18, 19; Lang, *America on Drugs*, U.S. NEWS & WORLD REP., July 28, 1986 at 48-49; *Speedway to Euphoria*, ECONOMIST, June 21, 1986 at 63; *Drug Use and Testing*, 30 SEC. MGMT. 18, May 1986; Kaufman, *supra* note 8, at 54.

²⁰ See *The Enemy Within*, *supra* note 8, at 61-65.

²¹ See Diamond, Acosta & Thornton, *Is TV News Hyping America's Cocaine Problem?*, TV GUIDE, Feb. 7, 1987 at 4; Henry, *Reporting the Drug Problem*, TIME, Oct. 6, 1986 at 73. Some sources claim that the issue has been overreported, giving Americans a distorted view of the nature and extent of drug use in the country. *Id.* While drug use in the United States may have reached a plateau in the 1980's, the magnitude of the problem cannot be dismissed as "media hype." The number of people using cocaine, for example, may not have increased significantly since 1983, but the deaths attributed to cocaine use have. See *The Enemy Within*, *supra* note 8, at 63-65; Lang, *supra* note 19, at 50. The increase in the death rate is attributed to higher concentrations of narcotic intake due to improved refining methods which produce an almost pure grade drug and to smoking instead of sniffing. The higher concentration can have an instant traumatic effect on some users causing death through cardiac arrest, respiratory failure, or brain hemorrhage. *Id.* In addition, experiments with combinations of drugs such as "speedballs" (injections of heroin mixed with cocaine), or smoking of cocaine combined with PCP (phencyclidine, also known as "angel dust" or "loveboat"), and the new crystalline cocaine, "crack," have not only heightened cocaine dependency, but also accelerated the death rate. *Id.* Nevertheless, it should be noted that NIDA report places cocaine deaths a distant third at 643, below heroin/morphine deaths (1,315), and deaths due to alcohol, America's "drug of choice," when ingested in combination with other drugs (1,288) (New York City metropolitan area not included). NIDA, *supra* note 17, at 53-55.

²² See Brubaker, *A Pipeline Full of Drugs*, SPORTS ILLUSTRATED, Jan. 21, 1985 at 18

drugs.”²³ Recently, the American public has been bombarded with alarming statistics²⁴ linking drug use to economic and moral decay across the nation.²⁵ The connection to organized and

(steroids); Kaplan, *Taking Steps to Solve the Drug Dilemma*, SPORTS ILLUSTRATED, May 28, 1984 at 36; Sullivan, *In Pittsburgh, the Party May Soon Be Over*, SPORTS ILLUSTRATED, May 20, 1985 at 34. Between 1980 and 1986, the following major league baseball figures have been publicly linked to drug use: Darrell Porter, Kansas City catcher (treated at rehabilitation clinic for drugs and alcohol abuse); Ferguson Jenkins, Texas pitcher (arrested in Canada for possession of marijuana, cocaine, and hashish); Alan Wiggins, San Diego outfielder (arrested for cocaine possession, treated at rehabilitation clinic); Juan Bonilla, San Diego second baseman (treated at rehabilitation clinic); Tim Raines, Montreal outfielder (treated at rehabilitation clinic); Ken Landreaux, Los Angeles outfielder (treated at rehabilitation clinic); Steve Howe, Los Angeles relief pitcher (treated several times at rehabilitation clinics); Lonnie Smith, St. Louis Cardinal outfielder (treated at rehabilitation clinic for drugs and alcohol abuse); Steve Bedrosian, Atlanta reliever (treated for cocaine abuse); Claudell Washington, Atlanta outfielder (admitted cocaine dependency); Willie Wilson, Kansas City outfielder (convicted of attempting to buy cocaine); Willie Aikens, Kansas City first baseman (convicted of attempting to buy cocaine); Vida Blue, former Kansas City pitcher (convicted of possession of cocaine); Pascual Perez, Atlanta pitcher (convicted in the Dominican Republic of possession of cocaine); Rod Scurry, Pittsburgh relief pitcher (treated at rehabilitation clinic); Jeff Leonard, San Francisco pinch-hitter (treated at rehabilitation clinic). See Kaplan, *supra*, at 45; Sullivan, *supra*, at 34. Drug abuse is not restricted to professional baseball: this was dramatically illustrated in the summer of 1986 by the tragic deaths, a week apart, of Len Bias, a basketball forward for the University of Maryland who had just been signed by the Boston Celtics, and football player Don Rogers, a defensive back for the Cleveland Browns. Both players died of cocaine intoxication. *Cocaine Is a Loaded Gun*, NEWSWEEK, July 7, 1986 at 26; Wash. Post, Aug. 17, 1986, at B1, B13 col. 3; Wash. Post, June 30, 1986 at D1 col. 1; Wash. Post, June 20, 1986 at A1 col. 5 & C1 col. 1.

²³ The Reagan administration “declared war” on drugs in 1981. See Lang, *supra* note 19, at 54. As part of this effort, Mrs. Reagan was later made spokeswoman for the “just say no” campaign aimed primarily at school children and young teenagers. See Diamond, *supra* note 21, at 7; *Battle Strategies*, *supra* note 7, at 73; Henry, *supra* note 21, at 73; Sidey, “It’s Morally Wrong”, TIME, Oct. 6, 1986 at 22. There seems to be an inexhaustible supply of drugs coming into this country. It is, therefore, the administration’s view that since the supply remains substantially unchecked (only 10% of drug traffic is normally captured), they must direct their efforts at stemming the demand. See Hoffer, *supra* note 18, at 22; *Battle Strategies*, *supra* note 7, at 69; *The Enemy Within*, *supra* note 8, at 60-62; Lang, *supra* note 19, at 54.

²⁴ See Kaufman, *supra* note 8, at 54 (20 million use marijuana and 6 million use cocaine at least once a month); *The Enemy Within*, *supra* note 8, at 62-63 (22 million tried cocaine; 4.3 million are regular users; 5% of high school seniors smoke marijuana every day); *Speedway to Euphoria*, *supra* note 19, at 63 (America consumes half the world’s cocaine; 30 million people have tried cocaine; 6 million are regular users); *Drug Use and Testing*, *supra* note 19, at 18 (cocaine related deaths increased 77% and requests for cocaine abuse treatment 600% between 1983 and 1986); Englade, *supra* note 8, at 22 (64% of Americans aged 18-25 tried marijuana at least once; 28% tried cocaine at least once) (quoting 1982 survey from the National Center on Drug Abuse of Rockville, Maryland).

²⁵ See Exec. Order No. 12,564, 3 C.F.R. 224 (1986); Proclamation No. 5591, 3

common crime is now unquestionable;²⁶ the quoted human and economic costs, staggering.²⁷ Reports of high incidence of drug

C.F.R. 174 (1986); *The Enemy Within*, *supra* note 8, at 60-61.

²⁶ It is estimated that cocaine alone brings \$11 billion annual revenues to organized crime. *Drug Use and Testing*, *supra* note 19, at 18. See also *Washington Report*, THE OFFICE, May 1986 at 31. It is difficult to substantiate any figures. Estimates of total drug traffic income vary from a low of \$27 billion to an incredible \$110 billion per year. *The Enemy Within*, *supra* note 8, at 63. A very high proportion of street crime is linked directly to drug abuse. *Id.* at 65; see Reagan, *Declaring War on Organized Crime*, N.Y. Times, Jan. 12, 1986, § 6 (Magazine), at 26; Exec. Order No. 12,564, 3 C.F.R. 224 (1986). There is a second, "tax free" economy in the United States which thrives in the shadows of the underworld. Illegal drug traffic accounts for the largest growth sector. A kilo of cocaine which sells for \$5,000 to \$10,000 in Colombia retails for \$500,000 in the United States. Courtney, *Dark Side of Growth: Drugs*, N.Y. Times, April 27, 1986, § 11 (N.J.) at 5, col. 1.

A very high proportion of common crime is also linked directly to drug abuse. At least one study found that criminals increase their criminal activities between six and eight times when on drugs. *Id.*; Bronstein, *Study Shows Sharp Rise in Cocaine Use by Suspects in Crimes*, N.Y. Times, Feb. 19, 1987 at B1, col. 1. Between April and October of 1984, the United States Department of Justice compiled data on drug use by people arrested for serious crimes in New York City and Washington, D.C. The study showed that approximately between 50 and 60% of those arrested used drugs. *Id.*; N.Y. Times, June 4, 1986 at A14, col. 6. The same study conducted in 1986 found that, while there was no significant change in the use of most drugs, cocaine use among criminals in New York City had jumped from 42% in 1984 to 78% in 1986. Bronstein, *supra*, at B1, col. 4. The crime rate for the same period had also risen, particularly robberies which had not shown an increase in four years. They study found that over 70 percent of robbery suspects used cocaine. *Id.* See also Purdum, *Rise in Major Crimes in City Continues, the Police Report*, N.Y. Times, August 1, 1986 at B4, col. 1 (35 percent of all murders in New York City from January to June, 1986 were drug related, 20 percent specifically tied to "crack"); Califano, *A National Attack on Addiction is Long Overdue*, N.Y. Times, Sept. 23, 1986, at A35, col. 2 (Justice Department's figures for 1984 showed that "heroin addicts committed at least 100,000 burglaries, robberies and automobile thefts each day"). For a thorough analysis of the relationship between delinquent activities and drug abuse (association between common crime and illicit drug use repeatedly established), see Kandel, Simcha-Fagan, & Davies, *Risk Factors for Delinquency and Illicit Drug use from Adolescence to Young Adulthood*, 46 J. OF DRUG ISSUES 67 (Winter 1986). *But cf.* Inciardi & Pottieger, *Drug Use and Crime Among Two Cohorts of Women Narcotics Users: An Empirical Assessment*, 46 J. OF DRUG ISSUES 91, 101-102 (1986) (Drug abuse and delinquent activity "are less like cause and effect than they are like parts of the same adolescent phenomenon."). Noting that the relationship is more prominent with certain drugs, the authors pointed out that in the study sample "the regular use of heroin and other narcotics began several years after the onset of criminal activities." *Id.*

²⁷ National costs due to lost productivity, lost wages, higher accident rates, and higher health care expenses caused by drug abuse are estimated to exceed \$25 billion annually. Englade, *supra* note 8, at 22; *The Enemy Within*, *supra* note 8, at 63; Lahey, *supra* note 11, at 27. Some sources put the cost as high as \$100 billion per year. Hanson, *supra* note 7, at 8. Nevertheless, alcohol is still by far the "costliest" drug. *The Enemy Within*, *supra*, at 64 (1983 health care costs totaled \$59.7 billion for drug abuse; \$116.7 billion for alcohol abuse according to a study by the National Center for Health Statistics).

use in both the public and private workplace have prompted massive efforts to eradicate the problem through identification by testing, and rehabilitation or dismissal.²⁸ Such testing did not go unchallenged; virtually all programs have been challenged in court on various constitutional grounds.²⁹ Private employers, however, are not subject to the same constitutional restraints as

The impact on industry is particularly critical at a time when the United States is losing its competitive edge abroad. A profile of a "typical recreational user in the work force" discloses that such a worker is 22-39 years old and

- Is late three times as often as fellow employees.
- Asks for early dismissal or other time off 2.2 times as often.
- Has 2.5 times as many absences of either or more days.
- Is five times more likely to file a workers' compensation claim.
- Is involved in accidents 3.6 times more frequently than other workers.

Hoffer, *supra* note 18, at 19. See also Wiedrich, *Help Workers Beat Substance Abuse*, BUSINESS INSURANCE, June 6, 1986, at 24; Lahey, *supra* note 11, at 27. Drug abusers are also three times more likely to cause injuries to themselves and others, plus they are more likely to steal cash, products or equipment from the workplace. *Id.* See also DOT Comments (1985), *supra* note 19, 50 Fed. Reg. at 31,514-17 (prevalence of alcohol and drug abuse among railroad employees posing a significant safety problem). See generally ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 1-12 (statistical analysis of chemical abuse in the workforce).

²⁸ See *The Enemy Within*, *supra* note 8, at 60-62; Weidrich, *supra* note 27, at 24. Detection of drug abuse does not always mean dismissal. The investment an employer has in an otherwise valuable employee and social considerations have prompted many employers to set up Employee Assistance Programs (EAP's) to counsel and rehabilitate alcohol and drug addicts. *Id.* Failure to rehabilitate, however, usually means dismissal. See ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 79-124.

²⁹ See *National Treasury Employees Union v. Von Raab*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988) (customs officials); *McDonell v. Hunter*, 809 F.2d 1302 (8th Cir. 1987) (corrections employees); *Brotherhood of Maintenance of Way Employees v. Burlington N. R.R. Co.*, 802 F.2d 1016 (8th Cir. 1986) (railway employees); *Shoemaker v. Handel*, 795 F.2d 1136 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986) (horse-racing jockeys); *Division 241 Amalgamated Transit Union v. Suscy*, 538 F.2d 1264 (7th Cir.), *cert. denied*, 429 U.S. 1029 (1976) (transit employees); *Committee for GI Rights v. Callaway*, 518 F.2d 466 (D.C. Cir. 1975) (armed forces); *Mack v. United States*, 653 F. Supp. 70 (S.D.N.Y. 1986), *aff'd*, 814 F.2d 120 (2d Cir. 1987) (FBI agent); *Capua v. City of Plainfield*, 643 F. Supp. 1507 (D.N.J. 1986) (fire fighters); *Allen v. City of Marietta*, 601 F. Supp. 482 (N.D. Ga. 1985) (public utility employees); *Storms v. Coughlin*, 600 F. Supp. 1214 (S.D.N.Y. 1984) (prisoners); *Turner v. Fraternal Order of Police*, 500 A.2d 1005 (D.C. 1985) (police officers); *Odenheim v. Carlstadt-East Rutherford School Dist.*, 211 N.J. Super. 54, 510 A.2d 709 (Ch. Div. 1986) (students); *Patchogue-Medford Congress of Teachers v. Board of Educ. of the Patchogue-Medford Union Free School Dist.*, 119 A.D.2d 35, 505 N.Y.S.2d 888 (1986), *aff'd*, 70 N.Y.2d 57, 517 N.Y.S.2d 456 (1987) (school board employees).

³⁰ See *Blum v. Yaretsky*, 457 U.S. 991, 1002-03 (1982); *Lugar v. Edmondson Oil Co., Inc.*, 457 U.S. 922, 936-37 (1982); *Rendell-Baker v. Krohn*, 457 U.S. 830, 837 (1982); ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 60; *Hanson*, *supra* note 7, at 13. See also Marie, "Letters to the Editor," STUDENT LAWYER, April 1987 at 3.

the government.³⁰ Consequently, most current litigation involves only public employers, or employers in highly regulated private areas.³¹

Drug use in the public sector and in most government regulated activities is of particular concern as it may affect both public safety and national security. Heightened perception of such dangers has gone a long way towards deglamorizing dope. Whether or not the extent of the problem is as serious as depicted, the original resistance to drug testing is changing into conditional acceptance. There is a conservative wind blowing across this country and the question is no longer whether or not to test, but how to test.

II. THE MECHANICS OF TESTING

Employers who make the decision to test for drug abuse among their employees are faced with procedural problems: the system used to select employees for testing and the testing method itself must withstand judicial challenges.³² Although public employers are subject to more constitutional constraints than private employers,³³ both must insure that the test used is reliable;³⁴ that all positive results are confirmed³⁵ by a different, more accurate method of analysis;³⁶ and that the integrity of the

³¹ Hanson, *supra* note 7, at 13.

³² See McClenahan, *supra* note 11, at 50-53; Marini, *The Corporate Experience—A Case History*, in FACE OFF WITH THE AMERICAN DISEASE, *supra* note 8, at 10.

³³ See *supra* note 30.

³⁴ See Marini, *supra* note 32, at 10; ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 30, 68. "The success or failure of an analysis is often critically dependent upon the proper selection of method." D. SKOOG & D. WEST, FUNDAMENTALS OF ANALYTICAL CHEMISTRY 5 (3d ed. 1976). Research scientists can choose from an increasing array of analytical methods. They usually choose on the basis of "speed, convenience, accuracy, availability of equipment, number of analyses, amount of sample that can be sacrificed, and concentration range of the analytes." *Id.* In the commercial environment, however, cost often tops the list and modifies all other considerations. See Rosenthal, *Cutting Costs in Clinical Chemistry*, MED. LAB OBS. 31, July, 1984. See also Stille, *supra* note 8, at 23; Englade, *supra* note 8, at 23.

³⁵ See Hanson, *supra* note 7, at 9-11. See also *infra* note 49.

³⁶ Accuracy, in this context, indicates "nearness of a measurement to its accepted value and it is expressed in terms of error." SKOOG, *supra* note 34, at 45 (emphasis in original). It should not be confused with precision which denotes reproducibility of results, i.e., obtaining the same numerical value when measurements are made in an identical way. *Id.* at 44. Assuming there is an amount X of drug in the sample and test *a* shows a measurement of X-1 while test *b* shows a measurement of X, test *b* is more accurate than test *a*. However, if repeated measurements of the same sample using test *a* always show a measurement of X-1 while test *b* shows a variation, sometimes X, sometimes X-1, then test *a* is more precise than test *b*. See *id.*

sample³⁷ to be analyzed is maintained throughout by proper chain-of-custody procedures.³⁸

A. *The Tests*

The expansion in drug testing correlates to the modern evolution of physical chemistry³⁹ and the biological sciences.⁴⁰ Highly sophisticated laboratory equipment and analytical methods can now identify minute concentrations⁴¹ of organic compounds⁴² in biological fluids.⁴³ Dramatic discoveries in enzymatic analysis⁴⁴ during the past twenty years have led to the

³⁷ Unless otherwise indicated, the term "sample" throughout this comment, when used in the context of testing for drug use, is intended to mean urine sample.

³⁸ See Jatlow, *Overview and Assessment of the Challenges*, in *FACE OFF WITH THE AMERICAN DISEASE*, *supra* note 8, at 9; *ALCOHOL & DRUGS IN THE WORKPLACE*, *supra* note 7, at 30-31.

³⁹ The application of the laws of physics to the study of chemical substances has given rise to a variant—some might consider it a separate discipline—of both chemistry and physics known as physical chemistry. 10 *MCGRAW-HILL ENCYCLOPEDIA OF SCIENCE & TECHNOLOGY* 263 (1982) [hereinafter *MCGRAW-HILL*]. This field of study has experienced extraordinary growth since World War II, developing new methodology particularly in the area of energy transformation and chemical interaction of substances. Adlar, Stock & Whitham, *Gas Chromatography*, in 2B *COMPREHENSIVE ANALYTICAL CHEMISTRY*, 55-57 (C.L. Wilson, D.W. Wilson & C.R.N. Strouts, eds., 1968).

⁴⁰ See Bergmeyer & Gawehn, *Brief History and Definition*, in 1 *METHODS OF ENZYMATIC ANALYSIS* 2-7 (H.U. Bergmeyer, ed., 1983).

⁴¹ See Jatlow, *supra* note 38, at 4; Graff, *Automating a Research Lab*, *HIGH TECH*, Nov. 1985 at 45; Alpert, *How Technology Transfer is Changing Lab Medicine*, *MEDICAL LABORATORY OBSERVER*, Jan. 1986 at 27; Dal Cortivo, *supra* note 19, at 17; 23 R. Kirk & D. Othmer, *ENCYCLOPEDIA OF CHEMICAL TECHNOLOGY, TRACE AND RESIDUE ANALYSIS*, 310 (3d ed. 1978).

⁴² A compound is a definite substance formed by combining specific elements or radicals in fixed proportions by weight. *WEBSTER NINTH COLLEGIATE DICTIONARY* 270 (1987). An organic compound is a compound containing carbon. *Id.* at 831. Almost all drugs of abuse are organic compounds. See U.S. PAT. NO. 3,975,237 at 7 (K. Rubenstein & E. Ullman) (Aug. 17, 1976).

⁴³ Biological fluids are fluids produced by living organisms, such as blood, urine, saliva, tears, etc. The biological fluids normally used in drug testing are urine and blood, although saliva could also be used to detect some drugs such as cannabinoids (marijuana). See *ALCOHOL & DRUGS IN THE WORKPLACE*, *supra* note 7, at 31-32.

⁴⁴ Enzymatic analysis is a type of analytical chemistry concerned with enzymes and their catalytic properties. See Bergmeyer & Gawehn, *supra* note 40, at 5. Enzymes are protein molecules, usually of high molecular weight, produced by living cells. They are principally catalysts, that is, they accelerate or alter biochemical reactions while themselves remaining unchanged; but they can also initiate such reactions. See 5 *MCGRAW-HILL*, *supra* note 39, at 137-44. See generally Bergmeyer & Gawehn, *supra* note 40, at 2-5; Moss, *Nomenclature and Units in Enzymology*, in 1 *METHODS OF ENZYMATIC ANALYSIS*, *supra* note 40, at 7-14; Bergmeyer, *Fields of Application*, in 1 *METHODS OF ENZYMATIC ANALYSIS* *supra* note 40, at 15-21. Enzymes are essential to life processes, most notably metabolism (the sum of all chemical and physical

commercial development of several immunogenic processes for drug detection.⁴⁵ These processes, or "immunoassays,"⁴⁶ have

reactions that make possible assimilation of nutrients and disposal of wastes in a living organism) and immunization (the production of antibodies as protection against invasion by foreign organisms or substances). 5 MCGRAW-HILL, *supra* note 39, at 137-44. Through the metabolic process, enzymes digest (attack and break down) organic compounds, such as drugs of abuse, into smaller molecules which are either assimilated or excreted from the body through biological fluids. *Id.* The substance subject to attack by an enzyme is called a substrate; the substance produced or converted through the metabolic activity of an enzyme is called a metabolite. *Id.* See also W. DEGRUYTER, CONCISE ENCYCLOPEDIA OF BIOCHEMISTRY 272 (1983).

Enzymes are highly specific; that is, a given enzyme will only react with a certain substrate or closely related compounds and not others. This affinity or close fit between an enzyme and a given substrate has been described as a "lock and key." See Bergmeyer & Gawehn, *supra* note 40, at 3-4; 5 MCGRAW-HILL, *supra* note 39, at 141. The specificity of enzymes is also a factor in the immunization process. When a foreign body invades the bloodstream of a vertebrate, a substance in the foreign body stimulates the production of antibodies which neutralize the invader. The substance that induces the formation of antibodies is called an antigen. Antigens are usually proteins or carbohydrates, such as enzymes and toxins, of high molecular weight. Antibodies are proteins which react specifically with a given type of antigen, by combining or "binding" to the antigen and ideally, eliminating it. See *id.* at 5; Bergmeyer, *supra*, at 16; Oellerich, *Principles of Enzyme Immunoassays*, in 1 METHODS OF ENZYMATIC ANALYSIS, *supra* note 40, at 237; 1 MCGRAW-HILL, *supra*, at 608-10; 7 *id.* at 40-42.

⁴⁵ See Bergmeyer & Gawehn, *supra* note 40, at 5. Screening for drug abuse originated in the 1960s as a service to methadone treatment clinics and has emerged as a distinct discipline during the past two decades. Jatlow, *supra* note 38, at 4. The street availability of new natural and synthetic drugs of abuse has greatly stimulated the growth of research in drug testing techniques. *Id.* at 6. Traditionally, clinical facilities were equipped to deal with heroin, amphetamines, barbiturates and methadone. During the last twenty years, the increasing popularity of marijuana, cocaine, phencyclidine (PCP), the benzodiazepines and other hallucinogens, stimulants, and sedatives has taxed researchers to find new detection methods. *Id.* Of particular interest are the so-called "designer drugs," or synthetic drug variations or "analogs" of controlled substances which induce a similar "high" as illicit drugs. Lang, *supra* note 19, at 50, 53. Most of these "designer drugs" are variations of fentanyl (Sublimaze®), meperidine and PCP, such as MDMA ("Ecstasy"), which was outlawed by the U.S. Drug Enforcement Administration (DEA) on July 1, 1985. *Id.* Because designer drugs are slightly different from banned substances, until recently, they did not fall automatically under the Controlled Substances Act. Thus, they could be sold legally until specifically included in the controlled substances schedules. *Id.* However, no sooner a "designer drug" was outlawed than another took its place: two new synthetic drugs, "Eve" (an MDMA analog) and "Rhapsody," appeared in the "legal" street market immediately after MDMA was outlawed. *Id.* At last, Congress included analogs in general, "to the extent intended for human consumption," within the statutory schedule. 21 U.S.C. § 813 (Supp. IV 1987). One reason these analogs are so readily available is that apparently they can be created and manufactured by anyone with some college chemistry background. Lang, *supra* note 19, at 53. Drug screening researchers must constantly develop new tests to keep up with the expanding choice in drugs. The new immunogenic processes have made it possible to create screening tests specifically for each new drug with relative ease. See *infra* note 46.

revolutionized drug testing for their simplicity of use and fast results at a reasonable cost.⁴⁷ Often sold as "kits" for either clinical or on-site use,⁴⁸ they have made systematic screening for

⁴⁶ An "assay" is a process of analysis "to determine the presence, absence or quantity of one or more components" in a given sample. WEBSTER'S NINTH COLLEGIATE DICTIONARY 108 (1987). It is also "the tabulated result of assaying." *Id.* Immunoassays are assays which use the antigenic ability of enzymes to produce antibodies specific to an organic substance or family of substances to detect and measure such substances in a given sample. 7 MCGRAW-HILL, *supra* note 39, at 41-42. Oellerich, *supra* note 44, at 233-37. The introduction of monoclonal antibodies, which have specific affinity for a given antigen within a family of antigens, made possible the commercial development of the enzyme immunoassays. *Id.*; Alpert, *Emerging Developments in Laboratory Technology*, MED. LAB. OBS., Sept. 1983 at 36. See also U.S. PAT. No. 3,817,837 at 2-3, 8 (K. Rubenstein & E. Ullman) (Aug. 18, 1974), U.S. PAT. No. 3,867,366 at 1 (K. Rubenstein & E. Ullman) (Feb. 18, 1975), U.S. PAT. No. 3,875,011 at 1-2 (K. Rubenstein & E. Ullman) (Apr. 1, 1975); U.S. PAT. No. 3,878,187 at 1 (R. Schneider & O. Wagner) (Apr. 15, 1975); U.S. PAT. No. 3,884,898 at 1 (R. Schneider) (May 20, 1975); U.S. PAT. No. 3,887,698 at 1-4 (H. McConnell & G. Humphries) (June 3, 1975); U.S. PAT. No. 3,888,866 at 1-2 (R. Leute & G. Bolz) (June 10, 1975); U.S. PAT. No. 3,905,871 at 2-7 (K. Rubenstein & E. Ullman) (Sept. 16, 1975); U.S. PAT. No. 3,935,074 at 2-5 (K. Rubenstein & R. Leute) (Jan. 27, 1976); U.S. PAT. No. 3,975,237 at 2-5 (K. Rubenstein & E. Ullman) (Aug. 17, 1976); U.S. PAT. No. 3,996,344 at 1-2 (J. Gross) (Dec. 7, 1976); U.S. PAT. No. 4,022,878 at 1-5 (J. Gross) (May 10, 1977), U.S. PAT. No. 4,064,228 at 1-4 (J. Gross) (Dec. 20, 1977); U.S. PAT. No. 4,282,325 at 2-7 (K. Rubenstein & E. Ullman) (Aug. 4, 1981), U.S. PAT. No. 4,376,825 at 2-7 (K. Rubenstein & E. Ullman) (Mar. 15, 1983) (enzyme-labelled immunoassay patents); and U.S. PAT. No. 3,690,834 at 1-5 (A. Goldstein, R. Leute & E. Ullman) (Sept. 12, 1972); U.S. PAT. No. 3,704,282 at 1-2 (S. Spector) (Nov. 28, 1972); U.S. PAT. No. 3,709,868 at 1-2 (S. Spector) (Jan. 9, 1973); U.S. PAT. No. 4,016,146 at 1-3 (J. Soares) (Apr. 5, 1977); U.S. PAT. No. 4,041,076 at 1-4 (R. Avenia, J. Christenson & B. Pecherer) (Aug. 9, 1977); U.S. PAT. No. 4,053,459 at 1-3 (J. Christenson) (Oct. 11, 1977), U.S. PAT. No. 4,102,979 at 1-3 (J. Christenson) (July 25, 1978), U.S. PAT. No. 4,107,285 at 1-2 (J. Christenson) (Aug. 15, 1978), U.S. PAT. No. 4,182,879 at 1-3 (J. Christenson) (Jan. 8, 1980) (radioimmunoassay patents). See also *infra* note 50 for an explanation of labelling technique.

⁴⁷ Depending on the volume and the type of drug to be detected, immunoassays range in cost from \$5 to \$20 per sample tested. This compares very favorably with the cost of traditional chemical tests, such as gas chromatography where the cost ranges from \$80 to \$100 per sample tested. See Englade, *supra* note 8, at 23; Stille, *supra* note 8, at 24; Rust, *supra* note 8, at 51. See also *Why Drug Testing Can Be a Very Bad Trip*, DISCOVER, March 1986 at 12. *But cf.* Rosenthal, *supra* note 34, at 36-38.

⁴⁸ See Bluestone, *On-The-Job Drug Tests: Bonanza or Bane?*, CHEMICAL WEEK, Dec. 10, 1986 at 12; *Low-Cost Kit For Drug Screening Now Available*, CHEM. & ENG. NEWS, Dec. 8, 1986 at 5. See generally HOFFMAN-LA ROCHE INC., ROCHE DIAGNOSTIC SYSTEMS, ABUSCREEN® RADIOIMMUNOASSAY FOR AMPHETAMINES (Package Insert) (Jan. 1986) [hereinafter ROCHE, ABUSCREEN® AMPHETAMINE RIA]; HOFFMAN-LA ROCHE INC., ROCHE DIAGNOSTIC SYSTEMS, ABUSCREEN® RADIOIMMUNOASSAY FOR CANNABINOIDS (Package Insert) (Aug. 1985) [hereinafter ROCHE, ABUSCREEN® CANNABINOID RIA]; HOFFMAN-LA ROCHE INC., ROCHE DIAGNOSTIC SYSTEMS, ABUSCREEN® SYSTEM (Price listing) (Jan 1, 1987) [hereinafter ROCHE, PRICE LISTING]; SYVA CO., FREQUENTLY ASKED QUESTIONS ABOUT SYVA AND DRUG ABUSE TESTING 2 (1985) [hereinafter SYVA Co., QUESTIONS]; SYVA Co., EMIT® TESTING AND DRUGS OF ABUSE

drug abuse economically feasible for most employers in the United States.⁴⁹

There are several types of immunoassays of which two, the "enzyme-labelled"⁵⁰ immunoassay (EIA)⁵¹ and the radioimmunoassay (RIA),⁵² are the best known and most commonly used for drug screening.⁵³ Another test, thin-layer chromatography

(1983) [hereinafter SYVA CO. EMIT® TESTING].

⁴⁹ Screens are initial tests, sometimes made on-site through "kits." See *supra* note 48. Whether screens are made on-site or at an independent laboratory, they are only meant as a first step subject to confirmation by a different method. See Hanson, *supra* note 7, at 9; Jatlow, *supra* note 38, at 6-7; SYVA CO., QUESTIONS, *supra* note 48, at 3-6.

⁵⁰ In chemistry, to "label" usually means to join an atom with another capable of giving a signal to be used as a tracer in chemical or biological processes. Labels can be radioactive, fluorescent, or enzymatic. See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 668 (1987); 7 MCGRAW-HILL, *supra* note 39, at 41-42; 12 *id.* at 899. The term "enzyme-labelled" refers to the coupling of a drug molecule (or other organic compound) to an enzyme thereby "labelling" the drug with the catalytic and antigenic properties of the enzyme. See 7 MCGRAW-HILL, *supra* note 39, at 41-42; Bergmeyer & Gawehn, *supra* note 40, at 5.

⁵¹ There are several enzyme immunoassays on the market. See Sims, *supra* note 8, at D1, col. 1; Bluestone, *supra* note 48, at 12. The first enzyme-multiplier immunoassay, the EMIT®, was developed by K.E. Rubenstein, R.S. Schneider and E.F. Ullman in 1972. See SYVA CO., EMIT® TESTING, *supra* note 48; Oellerich, *supra* note 44, at 245. Manufactured by the Syva Company of Palo Alto, California, a Syntex company, the EMIT® was the first enzyme-labelled immunoassay to be mass marketed in the United States, realizing \$40 million in sales in 1985. See Sims, *supra* note 8, at D1, col. 1; Jatlow, *supra* note 38, at 5. There are different EMIT® tests for different drugs, but they all come in two basic types: the EMIT® st™ System, which is a portable unit mainly intended for on-the-spot testing; and the EMIT® d.a.u.™ System, mostly used in laboratories and intended for large drug testing programs. See QUESTIONS, *supra* note 48, at 5. The EMIT® tests are by far the most popular enzyme-labelled immunoassays currently in use. Stille, *supra* note 8, at 24-25; Englade, *supra* note 8, at 22-25.

⁵² The radioimmunoassay uses molecules labelled with radioisotopes. 19 A. KIRK & D. OTHMER, *supra* note 41, at 631; Hanson, *supra* note 7, at 9. Developed in 1959 by R.S. Yalow and S.A. Benson, it is an older technology than the EIA and, some claim, more accurate albeit more dangerous to use than EIA since it involves handling of radioactive material. See Oellerich, *supra* note 44, at 233. 19 R. KIRK & D. OTHMER *supra* note 41, at 631. The most popular RIA is the Abuscreen® manufactured by Roche Diagnostic Systems of Nutley, New Jersey, a division of Hoffman-La Roche, Inc. The Abuscreen® RIA is the test of choice of the Department of Defense. Hanson, *supra* at 10; *In re Syva Co.—Reconsideration*, B-218359.3, Comp. Gen. (Jan. 22, 1986).

⁵³ See Hanson, *supra* note 7, at 9. Two other competent processes are the "free-radical," also known as "spin-label" immunoassay and the fluorescent immunoassay. See U.S. PAT. NO. 3,887,698 at 1 (H. McConnell & G. Humphries) (June 3, 1975); U.S. PAT. NO. 3,966,764 at 2-3 (A. Goldstein, R. Leute & E. Ullman) (June 29, 1976); U.S. PAT. NO. 4,025,501 at 1 (R. Leute) (May 24, 1977) (free-radical/spin-label immunoassay); U.S. PAT. NO. 3,998,943 at 2 (E. Ullman) (Dec. 21, 1976) (fluorescent immunoassay). The free-radical immunoassay (FRIA) was one of the first non-isotopic immunoassays on the market. It is "based on the principle

(TLC), is a classic physical separation process.⁵⁴ TLC is one of the oldest technologies still in use.⁵⁵ None of these methods is 100% reliable by itself.⁵⁶ Any positive finding⁵⁷ must be confirmed by other, more accurate means such as gas chromatography (GC),⁵⁸ high pressure liquid chromatography (HPLC),⁵⁹ mass-spectrometry (MS)⁶⁰ or a combination thereof. The combination GC/MS is almost universally accepted as the best confirmation process for any of the screens.⁶¹

1. The Screening Tests

a. *The Immunoassays*

All immunoassays use antibodies to a specific drug.⁶² Most drugs, however, are haptens⁶³ and therefore they must be at-

that the signal obtained from spin-labelled drugs is altered upon their binding to an antibody." Jatlow, *supra* note 38, at 5. This system works well but the equipment is too costly and complex for mass screening. *Id.*

⁵⁴ See *infra*, notes 87-95, 148-50 and accompanying text. Physical separation methods use the physical characteristics of the analyte to divide it into fractions representative of its different component substances. See Bergmeyer, Fresenius & Haegele, *Present Status and Future Aspects of Enzymatic Analysis*, in 1 METHODS OF ENZY-MATIC ANALYSIS, *supra* note 40, at 57. Chromatography is one of the most commonly used physical separation methods in chemical analysis. See *id.*

⁵⁵ Jatlow, *supra* note 38, at 4-5.

⁵⁶ See DOT Comments (1985), *supra* note 19, 50 Fed. Reg. at 31,555-56; ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 30; Jatlow, *supra* note 38, at 7-8; Hanson, *supra* note 7, at 10-11; Rust, *supra* note 8, at 51-52.

⁵⁷ A "positive" finding only means detection above a certain level. Depending on the cut-off point of a particular testing process, a person could be found both positive and negative with the same drug concentration in the specimen. See *infra* note 136.

⁵⁸ Nomenclature can be somewhat confusing. The literature often refers to gas-solid chromatography as GC, as distinct from gas-liquid chromatography, GLC, while generally referring to *both* also as GC—sometimes in the same paragraph. See *infra* note 97. Except where otherwise indicated, the term gas chromatograph (GC) throughout this comment will indicate any chromatographic method using gas as a carrier. See *infra* notes 101-07 and accompanying text for a discussion of gas chromatography.

⁵⁹ See *infra* notes 101-13 and accompanying text for a discussion of HPLC.

⁶⁰ Spectrometric analysis determines the presence or concentration of a compound by measuring the electromagnetic radiation forced to emanate or interact with a given sample. See 12 MCGRAW-HILL, *supra* note 39, at 854. See also *infra* notes 114-35 for an explanation of mass-spectrometry.

⁶¹ See DOT COMMENTS (1985), *supra* note 19, 50 Fed. Reg. at 31, 555-56; ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 30; Hanson, *supra* note 7, at 10-11; Rust, *supra* note 8, at 51-52; Jatlow, *supra* note 38, at 7-8; 6 MCGRAW-HILL, *supra* note 39, at 63; 22B CHROMATOGRAPHY, B289 (E. Heftman, ed., 1983).

⁶² See 7 MCGRAW-HILL, *supra* note 39, at 41-43. See also *supra* note 44 and *infra* note 63, 66, 69-70 for a discussion of use of antibodies with immunoassays.

⁶³ See U.S. PAT. NO. 3,887,69 at 7-8 (H. McConnell & G. Humphries) (June 3, 1975). A hapten is a partial antigen incapable, by itself, of simulating the produc-

tached to an immunogenic carrier⁶⁴ in order to induce the production of antibodies in a host animal.⁶⁵ The usual carriers are enzymes,⁶⁶ which are conjugated⁶⁷ to the drug haptens.⁶⁸ The conjugated enzyme or antigen is then introduced into the bloodstream⁶⁹ of a suitable host animal.⁷⁰ The animal is "loaded" through successive booster shots until its blood produces the desired quantity and quality of antibodies. The antibodies are formed in a geometrical shape that fits the antigen much like a "lock and key."⁷¹ The animal is then bled and the antibodies re-

tion of antibodies; but, when a hapten is coupled or "conjugated" to an immunogenic substance, the result is an artificial antigen which will induce the formation of monoclonal antibodies which are specific for, *i.e.* react to or recognize, the hapten half of the artificial (conjugated) antigen. *Id.* at 3; U.S. PAT. No. 3,975,237 at 8 (K. Rubenstein & R. Ullman) (Aug. 17, 1976). See Oellerich, *supra* note 44, at 234; 1 MCGRAW-HILL, *supra* note 39, at 609. See also *supra* note 44; *infra* notes 67, 69.

⁶⁴ See U.S. PAT. NO. 3,996,344 at 3-5 (J. Gross) (Dec. 7, 1976). The term "immunogenic carrier" refers to a type of antigen, which is capable, by itself, of inducing the production of antibodies in the bloodstream of a host animal, and which can be conjugated to a hapten. Oellerich, *supra* note 44, at 234; U.S. PAT. NO. 4,041,076 at 1-2 (R. Avenia, J. Christensen & B. Pecherer) (Apr. 9, 1977), U.S. PAT. NO. 4,053,459 at 1-2 (J. Christensen) (Oct. 11, 1977); U.S. PAT. NO. 4,182,879 at 1-2 (J. Christensen) (Jan. 8, 1980).

⁶⁵ See *infra* note 69.

⁶⁶ See 11 MCGRAW-HILL, *supra* note 39, at 351. Although simple proteins are the preferred immunogenic carriers, natural or synthetic polymeric compounds, such as polypeptides or polysaccharides are also suitable. See *id.* U.S. PAT. NO. 3,996,344 at 4 (J. Gross) (Dec. 7, 1976); U.S. PAT. NO. 4,022,878 at 10 (J. Gross) (May 10, 1977); U.S. PAT. NO. 4,282,325 at 9 (R. Rubenstein & E. Ullman) (Aug. 4, 1981). Currently, most immunoassays use the glucose-6-phosphate dehydrogenase enzyme (G-6PDH). See Hanson, *supra* note 7, at 9; U.S. PAT. NO. 3,875,011 at 20-21 (K. Rubenstein & E. Ullman) (Apr. 1, 1975).

⁶⁷ A conjugated enzyme is a compound formed by bonding a protein to a non-protein or hapten. See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 277 (1987).

⁶⁸ See *supra* note 64.

⁶⁹ Antibodies are proteins which are formed principally in blood serum in reaction to a specific natural or artificial (conjugated) antigen. The antigen must always be foreign to the host, *i.e.* extracted from a different host. Oellerich, *supra* note 44, at 233-37.

⁷⁰ The process of producing antibodies through host animals is well established in the scientific community. See 11 MCGRAW-HILL, *supra* note 39, at 351-352; Oellerich, *supra* note 44, at 234-236. Originally developed for the creation of vaccines, this method of producing antibodies is now employed for a variety of other uses. See MCGRAW-HILL, YEARBOOK OF SCIENCE & TECHNOLOGY, 1986 at 478, 479 (1985). Any vertebrate is a competent animal for this purpose, but mammals are preferable. Suitable hosts are rabbits, goats, sheep, horses and cows. See U.S. PAT. NO. 3,996,344 at 1 (J. Gross) (Dec. 7, 1976); U.S. PAT. NO. 4,016,146 at 1 (J. Soares) (Apr. 5, 1977), U.S. PAT. NO. 4,025,501 at 1 (R. Leute) (May 24, 1977).

⁷¹ See Bergmeyer & Gawehn, *supra* note 40, at 4; Oellerich, *supra* note 44, at 234-36; 5 MCGRAW-HILL, *supra* note 39, at 141. See also U.S. PAT. NO. 4,376,825 at 3-4 (K. Rubenstein & E. Ullman) (March 15, 1983).

covered and separated from the antigen.⁷² These antibodies are now the "key" to the antigen "lock," *i.e.* they are "specific"⁷³ for the same drug as the haptens in the conjugated antigen.⁷⁴ Thus, when they come into contact with such drug, they will recognize the drug and bond with it.⁷⁵

In both types of immunoassays, EIA and RIA, a given amount of conjugated ("enzyme labelled") antigen and a given amount of specific antibody are mixed with the sample, either serially or at once.⁷⁶ The RIA tests additionally "label" the conjugated antigens with a radioactive isotope for ease of detection.⁷⁷ The conjugated antigens act as a reagent⁷⁸ inducing the haptens

⁷² Oellerich, *supra* note 44, at 234-36. See also U.S. PAT. NO. 4,022,878 at 3 (J. Gross) (May 10, 1977); U.S. PAT. NO. 4,064,228 at 13-14 (J. Gross) (Dec. 20, 1977).

⁷³ Specificity, in chemical analysis, generally refers to "[t]he ability of an analytical method to determine solely the component(s) it purports to measure." Bergmeyer, Horder & Markowetz, *Reliability of Laboratory Results and Practicability of Procedures*, in 1 METHODS OF ENZYMATIC ANALYSIS, *supra* note 40, at 22. In enzymatic analysis it means that an enzyme "converts only a certain substrate and not similar compounds (such as homologues)." *Id.* at 24. This specificity is the basis of immunoassays. *Id.* However, some enzymes are only capable of "group specificity," *i.e.* cannot discriminate among chemically related substances. *Id.*; 5 MCGRAW-HILL, *supra* note 39, at 141. See also U.S. PAT. NO. 4,016,146 at 2-3 (J. Soares) (Apr. 5, 1977).

⁷⁴ See *supra* note 63.

⁷⁵ Bonding is achieved by having the geometrical shapes of the antibody "fit into" and cover the antigen, thus neutralizing it. See U.S. PAT. NO. 3,887,698 at 4 (H. McConnell & G. Humphries) (June 3, 1975); U.S. PAT. NO. 3,905,871 at 7 (K. Rubenstein & E. Ullman) (Sept. 16, 1975); U.S. PAT. NO. 3,935,074 at 3 (K. Rubenstein & R. Leute) (Jan. 27, 1976).

⁷⁶ 7 MCGRAW-HILL, *supra* note 39, at 41-42; Oellerich, *supra* note 44, at 237-40.

⁷⁷ 7 MCGRAW-HILL, *supra* note 39, at 41-42. See also *supra* note 50. Chemical elements can be composed of two or more species of atoms known as isotopes of the same element. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 402, 642 (1987). Isotopes of an element are almost identical: they have the same atomic number but different mass number, *i.e.* the same number of protons but different number of neutrons in their nuclei. *Id.* Atomic nuclei can be stable or unstable. An unstable nuclei emits alpha, beta or gamma-rays, thus an unstable isotope is a radioactive isotope or "radioisotope." 11 MCGRAW-HILL, *supra* note 39, at 352. There are approximately a dozen naturally occurring radioisotopes. Hundreds of artificial radioisotopes, however, have been created by atomic bombardment of stable nuclei. *Id.* Iodine¹²⁵ (I-125) is the radioisotope most commonly used in RIA's. *Id.* Radioisotopes make ideal tracers because: "(1) At the molecular level, the physical and chemical behavior of a radioisotope is practically identical with that of the stable isotopes of the same element. (2) Radioisotopes are detectable in extremely minute concentrations. (3) Analysis for radioisotopic content often can be achieved without alteration of the sample or system." *Id.*

⁷⁸ Generally, reagents are chemical substances used to determine the nature and composition of other substances by reacting with the substances to be analyzed. 11 MCGRAW-HILL, *supra* note 39, at 420. In enzymatic analysis, a reagent is a conjugated molecule with two different epitopes, one in the haptens and the other in the immunogenic carrier, but spatially juxtaposed so that antibodies cannot bind simul-

in the sample, *i.e.* the substance of abuse, to compete with these conjugated antigens for the available antibodies.⁷⁹ Once the bonding of all the antigens to the antibodies is completed, the catalytic activity⁸⁰ in the EIA, or the amount of radioactive molecules not precipitated⁸¹ in the RIA, is measured to determine the presence or absence of the suspected drug.⁸²

Because each controlled substance normally binds only with the specific antibody, the laboratory must run several screens on

taneously to both. See U.S. PAT. No. 3,935,074 at 3 (K. Rubenstein & R. Leute) (Jan. 27, 1976); U.S. PAT. No. 3,887,698 at 2-3 (H. McConnell & G. Humphries) (June 3, 1975). Epitopes or "determinant sites" are those sites in a molecule which specifically attract and bind with an antibody. *Id.*; see also Oellerich, *supra* note 44, at 234-36, 238, 244-45.

⁷⁹ See 11 MCGRAW-HILL, *supra* note 39, at 350-51.

⁸⁰ See Moss, *supra* note 44, at 12-14. See also *supra* note 44 (discussing enzymatic analysis).

⁸¹ Precipitation is "[t]he process of producing a separable solid phase within a liquid medium." 10 MCGRAW-HILL, *supra* note 39, at 737. It is a common method of separating the antigen-antibody complexes in the radioimmunoassay to discover whether there is any controlled substance in the sample. 11 *id.* at 350-51. Precipitation is a necessary step prior to measurement in heterogeneous immunoassays. See *infra* note 82.

⁸² In competitive binding assays, such as the EIA and the RIA, where the labelled and unlabelled antigens are "competing" for the available binding places (epitopes) on a constant number of antibodies, there are two ways to measure the results: either determine what amount of labelled antigen has been bound or what amount remains free. Oellerich, *supra* note 44, at 237. Note that only the labelled antigen is measured since it is precisely the "label" which produces the necessary detectable signal. Since the amount of labelled antigen and antibody epitopes is known, the presence of unlabelled antigens, *i.e.*, the drug of interest, can then be determined by the amount of labelled antigen that either did or did not bind. *Id.* The measuring process sometimes requires previous separation of the bound and unbound labelled antigen without disturbing the equilibrium. Assays that require this additional step are called heterogeneous assays. The RIA is a heterogeneous assay. *Id.* Homogeneous assays do not require separation before measurement: the enzymatic activity is compared to a pre-existing calibration curve constructed by the manufacturer. *Id.* The EIA is a homogeneous assay. *Id.* at 244-247.

There are several measuring methods applicable to immunoassays. Spectrophotometry is the one most commonly used for measuring EIA's. See Price, Hammond, Campbell & Atkinson, *Drugs of Abuse and of Toxicological Relevance*, in 12 METHODS OF ENZYMATIC ANALYSIS, *supra* note 40, at 269-354. Spectrophotometry measures the amount of light irradiated by a sample which has been subjected to a monochromatic light. The intensity of the light irradiated by the sample is compared to a calibration curve to obtain a reading. 12 MCGRAW-HILL, *supra* note 39, at 856-58. In the RIA, detection depends on measuring the level of radiation emitted by the isotope labelled antigen. See 11 *id.* at 350-52. Although a Geiger counter could be used to detect the level of radioactivity in either the antibody-bound or the free fraction, liquid scintillation counting provides a more sensitive method of detection. This method involves converting the radiation into light by passing it through the allium-activated sodium iodide scintillation crystals. The light is detected, amplified, and measured by photomultiplier tubes which are connected to a light meter. 19 R. KIRK & D. OTHMER, *supra* note 41, at 635.

the sample; usually one for each suspected drug.⁸³ The bonding of antigen and antibody does not occur spontaneously outside of a vertebrate's bloodstream, but must be induced under strictly controlled conditions,⁸⁴ such as a given temperature and pH.⁸⁵ Any change in these conditions will affect the result of the assay significantly.⁸⁶

b. *Thin-Layer Chromatography*

Thin-layer chromatography⁸⁷ (TLC) is a physical method of separation.⁸⁸ It uses the adsorption⁸⁹ properties of the different substances in a sample to separate and identify such substances.⁹⁰ A thin layer of very fine powder is coated onto a rigid plate.⁹¹ The suspected sample is assayed by depositing ("spotting") it at the bottom of the chromatoplate and adding a solvent to elute⁹² the components of the sample. As the various substances in the sample are washed along the chromatoplate, they separate into identifiable spots.⁹³

⁸³ See ROCHE, PRICE LISTING, *supra* note 48; SYVA CO., TESTS FOR DRUGS OF ABUSE IN URINE, EMIT® D.A.U.™ (1985); 12 METHODS OF ENZYMATIC ANALYSIS, *supra* note 40, at 269-354.

⁸⁴ See Clement, *Should Community Hospitals Perform Substance of Abuse Screening?*, in FACE OFF WITH THE AMERICAN DISEASE, *supra* note 8, at 9; R. KIRK & D. OTHMER, *supra* note 41, at 206. See also *infra* notes 210-16 and accompanying text.

⁸⁵ The symbol pH indicates the level of acidity or alkalinity on a liquid on a scale of 0 to 14 where 7 is the neutral point, 0 is extreme acidity and 14 is extreme alkalinity. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 880 (1987).

⁸⁶ See *infra* note 202.

⁸⁷ Chromatography is a qualitative analytical method which generally uses the dynamic attraction between a mobile and a stationary medium to separate and identify the various substances in a sample according to the different rates of affinity of such substances for the stationary medium. See 3 MCGRAW-HILL, *supra* note 39, at 142-43. The stationary medium can be either a liquid or a solid adsorbent. See *id.* See also *infra* notes 97-112 and accompanying text for an explanation of other types of chromatography.

⁸⁸ See *supra* note 54.

⁸⁹ Adsorption is the basic thermodynamic property of a body to attract and hold on its surface the molecules of a gas or soluble substance in an extremely thin layer. See 1 R. KIRK & D. OTHMER, *supra* note 41, at 531.

⁹⁰ Peereboom, *Paper Chromatography and Thin-Layer Chromatography*, in COMPREHENSIVE ANALYTICAL CHEMISTRY 1-2 (C.L. Wilson, D. Wilson & C.R.N. Strouts, eds., 1968).

⁹¹ *Id.* Chromatoplates are normally made of glass, but any non-fibrous, non-flexible flat support material may also be used. *Id.*

⁹² To elute is to remove or "wash" adsorbed materials with a solvent. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 405 (1987).

⁹³ Peereboom, *supra* note 90, at 1-2. The different components of a sample have different degrees of affinity for the coating on the chromatoplate, *i.e.*, the adsorbent; thus, each substance is adsorbed at a different rate. *Id.* The coating on the plate is the "stationary phase." When a solvent is added, it acts as the "mobile

TLC does not require costly equipment and the assay can often be completed in relatively short time.⁹⁴ It is not amenable to automation, however. It also lacks specificity and sensitivity, and is almost totally labor dependent with its attendant risk of subjective mistake.⁹⁵

2. The Back-Up Tests

a. *The Chromatographies*

There are two chromatographic methods⁹⁶ suitable as confirmation tests: gas chromatography (GC)⁹⁷ and high pressure liquid chromatography (HPLC).⁹⁸ All chromatographic devices are based on the same physiochemical principles: they use the relative movement of two immiscible phases to separate the sample into its component parts.⁹⁹ As in TLC, there is a mobile phase and a stationary phase,¹⁰⁰ but in GC and HPLC the stationary phase is packed in a "column"¹⁰¹ and it may be either a solid

phase," eluting the various components of the sample along the plate. *Id.* As the sample migrates, its molecules are either dissolved in the solvent or are adsorbed by the thin layer of coating. *Id.* at 2. The sample-solvent mixture migrates "only during the time that it is dissolved in the mobile phase." *Id.* The sum of all the times *t* equals the distance travelled by the mixture along the chromatogram, *i.e.* the "length of the run." *Id.* Each substance in the mixture has a different *t* value and therefore a different run length. Once development ends, *i.e.* the mixture stops running, the chromatogram is sprayed with a detection agent which makes the different spots visible. *Id.* "Each component is typified by the distance the spot has moved on the chromatogram divided by the distance travelled by the solvent front." *Id.* This is the "ratio front" R_f :

$$R_f = \frac{\text{Distance travelled by sample}}{\text{Distance of solvent run}}$$

Id. See also Ganshirt, *Documentation of Thin-Layer Chromatography*, in THIN-LAYER CHROMATOGRAPHY 127 (E. Stahl, ed. 1969). Photometry or fluorometry is often used to evaluate the spots. Bergmeyer, Fresenius & Haegele, *supra* note 54, at 62.

⁹⁴ See Bergmeyer, Fresenius & Haegele, *supra* note 54, at 62.

⁹⁵ *Id.*; CHROMATOGRAPHY, *supra* note 61, at B289.

⁹⁶ See *supra* note 87.

⁹⁷ Gas chromatography is technically two processes: gas-solid (GSC) and gas-liquid (GLC). See Adlar, Stock & Whitman, *supra* note 39, at 55-56. The common nomenclature, however, indicates the sorbent only in gas-liquid chromatography. See CHROMATOGRAPHY, *supra* note 61, at B287-89. For separation of drugs of abuse GLC is, by far, the more common gas chromatographic method. See *id.* at B288-89.

⁹⁸ Also commonly referred to as high "performance" liquid chromatography. Bergmeyer, Fresenius & Haegele, *supra* note 54, at 63. See also CHROMATOGRAPHY, *supra* note 61, at B287-88.

⁹⁹ See *supra* notes 54 and 87.

¹⁰⁰ See *supra* note 93 and accompanying text.

¹⁰¹ 3 MCGRAW-HILL, *supra* note 39, at 146; 6 *id.* at 61. A conventional gas chromatographic column is typically a long thin tube, 20 to 100 meters long by 0.2 to 0.8 millimeters inside diameter. *Id.*

adsorbent¹⁰² or a liquid.¹⁰³ In GC, the mobile phase is an inert gas¹⁰⁴ which carries the vaporized sample at a constant high temperature¹⁰⁵ through the packing in a heated column.¹⁰⁶ The HPLC method uses a liquid as a mobile phase, and either a solid or a liquid as the stationary phase.¹⁰⁷ The mobile phase liquid is propelled through the column by high pressure pumps;¹⁰⁸ it does not require vaporization of the sample or a heated column.¹⁰⁹ In both methods, the affinity of the various substances in the sample for the stationary phase¹¹⁰ determines the rate of progress of the

¹⁰² 3 *id.* at 61. See also *supra* note 89 (for definition of adsorption). Most common solid adsorbents are carbon, alumina, or silica gel. A. B. LITTLEWOOD, *GAS CHROMATOGRAPHY* 3 (1962).

¹⁰³ See MCGRAW-HILL, *supra* note 39, at 142. The liquid is usually coated on a porous solid which only acts as support, "and, ideally, does not participate in the separation process." *Id.* See also Adlar, Stock & Whitman, *supra* note 39, at 55.

¹⁰⁴ Typical inert gases used in gas chromatography are helium, nitrogen, hydrogen or argon. A.B. LITTLEWOOD, *supra* note 102, at 4; 3 MCGRAW-HILL, *supra* note 39, at 146.

¹⁰⁵ See A.B. LITTLEWOOD, *supra* note 102, at 5-6. In GC the sample must be vaporized or at least derivatized into a vaporizable compound in order to be carried through the chromatographic column by the carrier gas. See *id.*; MCGRAW-HILL YEARBOOK OF SCIENCE AND TECHNOLOGY, 1982-1983 227 (1983) [hereinafter MCGRAW-HILL YEARBOOK 1982-83]. This requires that the column itself also be kept at a constant high temperature. See A.B. LITTLEWOOD, *supra* note 102, at 5-6. Although columns generally can withstand temperatures of up to 400°C, most compounds analyzed by this method have boiling points below 250°C. See Adlar, Stock & Whitman, *supra* note 39, at 67; 6 MCGRAW-HILL, *supra* note 39, at 61.

¹⁰⁶ See 3 MCGRAW-HILL, *supra* note 39, at 146-47; A.B. LITTLEWOOD, *supra* note 102, at 2, 8. Professor Littlewood explains the process succinctly:

When two or more components are present in the sample, each usually behaves independently of the others, so that for a given carrier gas flow rate, the speed of the zone of each component will depend on the extent to which it is adsorbed. Since different substances differ in their adsorption, they may therefore be separated by making use of their different speeds of progress through the column. If they are eluted to the far end of the column, they will appear one after the other in the gas stream, the fastest first and the slowest last.

Id. at 2.

¹⁰⁷ See 3 MCGRAW-HILL, *supra* note 39, at 147. Where the stationary phase and the mobile phase are both liquid, these liquids must be immiscible. See *id.* "Since immiscibility means automatically that the two phases must have significantly different chemical properties, only combinations of either a nonpolar mobile phase and a polar stationary phase or [vice versa] are feasible. A system that uses a nonpolar stationary phase and an aqueous mobile phase is frequently called reverse-phase chromatography." *Id.*

¹⁰⁸ In HPLC, inlet pressures of several hundred atmospheres are often used to impel the mobile phase through particle cases no bigger than 30 microns. Pressures of 1000-6000 psi are common (1 psi = 6890 N/m²). 7 MCGRAW-HILL, *supra* note 39, at 739.

¹⁰⁹ *Id.* at 738-39.

¹¹⁰ See 3 MCGRAW-HILL, *supra* note 39, at 142-143. This affinity is translated into

mixture¹¹¹ and the ultimate partition of the sample into its component substances.¹¹² A detection device identifies each separated substance as it emerges from the column.¹¹³

b. *Mass Spectrometry*

Mass¹¹⁴ spectrometry is a physical method of separation and

different degrees of adsorption (GSC) or solubility (GLC, HPLC) for each substance in the mixture. *See id.* *See also supra* notes 89, 102-03 and accompanying text.

¹¹¹ *See supra* note 93.

¹¹² 3 MCGRAW-HILL, *supra* note 39, at 145-46. The column type and packing determines the degree of selectivity and resolution of the chromatograph. *Id.* Selectivity indicates the capability of a certain chromatographic system to "select" and separate a given substance or group of substances from a complex mixture. *Id.* at 145. Resolution is a "crucial parameter for the effectiveness of separations." *Id.* A high resolution is indicated by the narrowness of the chromatographic separation, since "the narrower the zones, the greater the number of peaks that can be spaced between the components, and the higher the resolving power of the column." *Id.* at 145-46. The position of a given substance within the chromatogram, which is directly related to its retention rate, identifies the substance, while the degree of resolution indicates quantity. *Id.* at 146. A recorder attached to a detection device translates this information into peaks, similar to a wavelength, printed on continuous feeding paper. *See infra* note 113. The geometrical shape and chemical composition of the column, the type and density of the packing, and the quantity of stationary phase, as well as the flow rate, temperature, and calibration of the column can significantly affect the accuracy of the results. *See* 3 MCGRAW-HILL, *supra* note 39, at 146. Accurate separations are ultimately dependent on the quality of the equipment and the knowledge of the technician operating the equipment. *See generally id.* at 142-49.

¹¹³ *See* 3 MCGRAW-HILL, *supra* note 39, at 147-48. The type and reliability of detection devices vary with each chromatographic system. The best detection methods for organic compounds in GC are based on gas-phase ionization principles. The flame ionization detector is the most common of these methods. *See id.* at 147. It works by thermal ionization of the effluent in a hydrogen flame as it emerges from the column: "An electrode situated above the flame monitors changes in the flame conductivity. The hydrogen flame is ordinarily nonconductive, but current can occur, owing to the ionization of solutes emerging from the column. The signal is then amplified and recorded." *Id.* There are no comparable general detection methods for liquid chromatography. The fractions emerging from the column can be collected at predetermined time intervals or in given volumes and subjected to further study by other physical or chemical methods. *See id.* at 148. The only continuous detection method enjoying some success is the moving-wire flame ionization detector which uses an "on line" process to retain, and thermally evaporate, part of the total column effluent on a moving platinum wire. The dry residue left on the moving wire is then exposed to a flame ionization detector similar to the GC flame ionization detector. *Id.* This detector, however, is not as effective or sensitive as the GC version. *Id.* Ultimately, a device such as a mass spectrometer or an adsorption spectrometer coupled "on line" to the column provides the best detection methods for any chromatographic system by subjecting the sample to further analysis and measurement. *See id.* at 147-48. *See also infra* notes 114-35 and accompanying text for discussion of spectrometric methods.

¹¹⁴ Mass is the measure of a body's inertia, *i.e.* a body's resistance to change or motion which is directly related to the amount of matter in that body. WEBSTER'S

measurement of chemical compounds through ionization¹¹⁵ and identification by atomic weight.¹¹⁶ The vaporized sample¹¹⁷ is introduced into a mass-spectrometer¹¹⁸ where it is ionized by electron impact¹¹⁹ or by chemical ionization¹²⁰ in a particle accelerator chamber.¹²¹ This method releases both positive and negative charged ions, but only the positive ions, or "cations"¹²² are significant to the analytical process.¹²³ The accelerated cations are swept through a magnetic field which deflects their

NINTH NEW COLLEGIATE DICTIONARY 731 (1987). Mass should not be confused with weight. Although mass causes a body to have weight in a gravitational environment, and it may have the same value, it is a different concept. *See id.* at 1337. Weight is "the force with which a body is attracted toward the earth or a celestial body by gravitation and which is equal to the product of the mass and the local gravitational acceleration." *Id.* Atomic mass, however, is usually called atomic weight. *See infra* note 116.

¹¹⁵ When an atom gains or loses one or more electrons, it becomes an ion. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 638 (1987). An atom that has lost electrons carries a positive charge and it is called a "cation." *See* S. STERNHELL & J.R. KALMAN, ORGANIC STRUCTURES FROM SPECTRA 19 (1986). An atom that gains one or more electrons, an uncommon occurrence, carries a negative charge and it is called an "anion." *See id.* Mass spectrometry generally deals only with cations. *Id.* at 20.

¹¹⁶ 8 MCGRAW-HILL, *supra* note 39, at 234-35. Atomic weight is really "the average atomic mass of an element compared to $1/12$ the mass of carbon 12" in atomic mass units. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 113 (1987). An atomic mass unit (amu) measures the "masses of atoms, molecules, or nuclear particles equal to $1/12$ of the atomic mass of the most abundant carbon isotope ${}^6\text{C}^{12}$." *Id.*

¹¹⁷ The sample must be in a gaseous phase prior to ionization, which normally requires a high vacuum heated chamber. *See* S. STERNHELL & J.R. KALMAN, *supra* note 115, at 19-20; 8 MCGRAW-HILL, *supra* note 39, at 234. However, where the source of the analyte is a chromatographic column, the vaporizing stage is unnecessary as the chromatographed effluent is already volatilized. *See supra* note 105.

¹¹⁸ A mass spectrometer is a spectroscopic measuring instrument which sorts and identifies minute traces of substances by determining their atomic weight. *See* S. STERNHELL & J.R. KALMAN, *supra* note 115, at 20. *See generally* 8 MCGRAW-HILL, *supra* note 37, at 234-40.

¹¹⁹ Ionization by electron impact is a method whereby the vaporized substance is bombarded with a high voltage beam of electrons (70 microvolts). S. STERNHELL & J.R. KALMAN, *supra* note 115, at 20. The high energy applied to the analyte not only rips open the molecules but also breaks the loose electrons into atomic particles, and often these particles into yet smaller fragments. *Id.* at 20.

¹²⁰ Besides electron impact, the most common ionization method in spectroscopy is chemical ionization where a reactant gas, usually methane, is "introduced at a higher concentration than that of the substance being investigated. The carrier gas is ionized by electron impact and the substance is then ionized by collisions with these ions." *Id.* at 19-20; 8 MCGRAW-HILL, *supra* note 39, at 234-35.

¹²¹ A particle accelerator is a device that imparts a high velocity to ions and atomic particles, often using magnets or electron bombardment. *See* S. STERNHELL & J.R. KALMAN, *supra* note 115, at 22; 8 MCGRAW-HILL, *supra* note 39, at 234-37.

¹²² *See supra* note 115.

¹²³ S. STERNHELL & J.R. KALMAN, *supra* note 115, at 20.

flight paths into a circular motion and eventually through a slit into an ion collector and detecting system.¹²⁴ The degree of flight path deflection depends on the atomic weight of the cations with the lighter ions experiencing the sharper deflection.¹²⁵ This process sorts the cations by weight before passing sequentially into the ion collector to be measured.¹²⁶ Since the mass of a cation is directly related to the mass of the atom from which it proceeds,¹²⁷ it is possible to identify the atomic substance by referring to the periodic table.¹²⁸ Furthermore, as the mass-spectrometer can be calibrated to release ions from a chosen specific site in the molecule,¹²⁹ a competent operator can produce the molecular formula of a compound.¹³⁰ A computer attached to the spectrometer translates all this information into a wavelength graph known as the "spectrum"¹³¹ of the analyte.¹³² By compar-

¹²⁴ *Id.* "In practice, the magnetic field is scanned so that streams of ions of different mass pass sequentially through the slit before striking the detecting system (ion collector)." *Id.* "The magnetic scan is synchronized with . . . a recorder and calibrated to appear as *mass number* . . ." *Id.* at 21.

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ Actually, we can only measure the mass to charge ratio m/e and we assume that $e = 1$. This is because although there are some multicharge ions, the great majority of the ions carry a single charge. *See id.* at 19.

¹²⁸ 10 MCGRAW-HILL, *supra* note 39, at 21. The periodic table lists all known elements in a grid table grouping together elements with similar properties. Each element has a given atomic number that corresponds to its atomic weight. *See id.*

¹²⁹ These specific sites are called chromophores. S. STERNHELL & J.A. KALMAN, *supra* note 115, at 2-3. They are commonly defined as "a chemical group that gives rise to color in a molecule." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 239 (1987). The most important function of chromophores in spectrometrical analysis is their identification with a single atom or group of atoms to pinpoint a specific functional group within a molecule. S. STERNHELL & J.R. KALMAN, *supra* note 115, at 3. This is a crucial advantage, as Professors Sternhell and Kalman point out:

The detection of a chromophore permits us to deduce the presence of a *structural fragment or a structural element* in the molecule.

The fact that it is the chromophores and not the molecules as a whole that give rise to spectral features is very fortunate. Otherwise, spectroscopy would only permit us to identify known compounds by direct comparison of their spectra with authentic samples. This "fingerprint" technique is often useful, but direct determination of molecular structure is far more powerful, if more difficult.

Id. at 3.

¹³⁰ *See id.* at 3, 21.

¹³¹ Spectrum is defined as "an array of the components of an emission or wave separated and arranged in the order of some varying characteristic (as wavelength, mass, or energy)." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1133 (1987). It is also the actual graph representing the above information. *See id.*

¹³² *See* S. STERNHELL & J.R. KALMAN *supra* note 115, at 23; 8 MCGRAW-HILL, *supra* note 39, at 239-40; 12 *id.* at 854.

ing this spectrum with prerecorded spectra¹³³ of known substances or compounds, it is possible to "fingerprint" the analyte.¹³⁴ Mass spectrometry is extremely accurate when used properly by a well trained technician.¹³⁵

3. Evaluation

a. Accuracy

Both the screens and the back-up tests have a place in the testing procedure. The screens provide a convenient method for eliminating most *non-users*,¹³⁶ while the back-up tests provide the necessary scientific certainty to insure a positive result will stand up in court.¹³⁷ All the tests are designed to detect infinitesimal

¹³³ There are currently several spectra libraries in the United States, some exceeding 25,000 spectra on file. 8 MCGRAW-HILL, *supra* note 39, at 240. It is a relatively simple process to compare the graph of the analyte with the archival graphs to see if there is a match which would "fingerprint" the substance. *See id.* *See also supra* note 129. An alternative method would involve recognizing the patterns in the graph through "learning-machine and factor-analyses approaches." 8 MCGRAW-HILL, *supra* note 39, at 240. Although mass spectrometry is not a new technique, it could not be used for systematic identification of substances until recently. It took a long time to program the profiles of controlled substances into the testing system as many as 38,000 by 1984. Voy, *The Science of Fair Play*, TECHNOLOGY REVIEW, Aug. 1984 at 34.

¹³⁴ *See* Voy, *supra* note 133, at 34. *See also supra* note 129.

¹³⁵ *See* S. STERNHELL & J.R. KALMAN, *supra* note 115, at 4.

¹³⁶ The screens, particularly the immunoassays, are calibrated to indicate detection at a certain concentration percentage level. *See* Hanson, *supra* note 7, at 9-10. For example, the EMIT® stTM Cannabinoid (marijuana) Assay and the EMIT® d.a.u.TM Cannabinoid 100 Assay have a cut-off detection point of 100 ng/ml (nanograms per milliliter); while the EMIT® d.a.u.TM Cannabinoid 20 Assay is set at 20 ng/ml. SYVA CO., QUESTIONS, *supra* note 48, at 7. Thus, a person showing a cannabinoid content between 20 and 100 ng/ml could be found both positive and negative for marijuana depending on the test used. A high cut-off level gives a margin of insurance against false positives, but increases the percentage of false negatives. Jatlow, *supra* note 38, at 7. It is the industry's opinion that the majority of the incorrect results are false negatives. *See* Hanson, *supra*; Bluestone, *supra* note 48, at 12. Nevertheless, even a single incorrect positive cannot be tolerated considering that a person's reputation and livelihood may be at stake. There is a presumption, supported by a high probability, that a negative result indicates a non-user, while a positive result only indicates a probable user. All positive results must be confirmed. *See The Challenge of Substance Abuse Screening*, in FACE OFF WITH THE AMERICAN DISEASE, *supra* note 8, at 34, 35; Dal Cortivo, *supra* note 19, at 18; Hanson, *supra* at 9.

¹³⁷ *See* Dal Cortivo, *supra* note 19, at 16-18; Hanson, *supra* note 7, at 10. *See also* Spence v. Farrier, 807 F.2d 753, 756-57 (8th Cir. 1986) (confirmation by same test); Jones v. McKenzie, 628 F. Supp. 1500, 1505 (D.D.C. 1986), *rev'd on other grounds*, 833 F.2d 335 (D.C. Cir. 1987) (confirmation by another method). *But see* Smith v. State, 250 Ga. 438, 298 S.E.2d 482 (1983) (unconfirmed EMIT test sufficient to revoke parole).

amounts of either the parent substance or its metabolite.¹³⁸

The immunoassays are rapid, inexpensive and relatively easy to use. On the other hand, they require a different assay for each suspected drug of abuse and kits may not be readily available for new drug variants.¹³⁹ There are some claims that the RIA is more accurate than the EIA; it has certainly been found superior at least in the eyes of the Department of Defense.¹⁴⁰ The RIA, however, presents some handling problems: it uses radioactive materials which can contaminate premises and personnel, and may even interfere with the immunochemical reaction itself. The RIA's also require strictly monitored storage, use, and disposal procedures, and only laboratories licensed by the Atomic Energy Commission can perform RIA tests.¹⁴¹ The advantage of using EIA's is that they are faster and easier to perform.¹⁴² EIA's are homogeneous,¹⁴³ present no safety problems, and have a long shelf life.¹⁴⁴ Many can be administered on site.¹⁴⁵ Unfortunately, sometimes they are affected by the enzyme poisons often found

¹³⁸ Hanson, *supra* note 7, at 9. See *supra* note 44 (for definition of metabolite). Some drugs break down and are eliminated very rapidly from the system. Others remain as metabolites for long periods of time. See SYVA CO., QUESTIONS, *supra* note 48, at 4.

¹³⁹ See *supra* notes 44-46. Although combining antisera from various animals for use in a single immunoassay will elicit a positive response if the sample contains some drug, such a practice has a "dilution effect" on the screen and does not identify the drug triggering the positive response. A screen which combines several tests for various drugs in a single urinalysis must be followed by individual screens for each drug to be identified. U.S. PAT. NO. 4,235,864 at 2-3 (B. Kaul, B. Davidow & S. Millian) (Nov. 25, 1980). Even where the drug is of known composition and on the controlled substance list, it may have been altered through the smuggling process, e.g. cocaine is sometimes smuggled in an alcohol solution which affects the chemical composition of the drug. See U.S. PAT. NO. 4,110,078 at 1 (T. Zelonis) (Aug. 29, 1978).

¹⁴⁰ See *In re Syva Co.—Reconsideration*, No. B-218359.3 (Comp. Gen.) (Jan. 22, 1986); *In re Syva Co.*, No. B-218359.2 (Comp. Gen.) (Aug. 22, 1985); Hanson, *supra* note 7, at 10.

¹⁴¹ See ROCHE, ABUSCREEN® AMPHETAMINE RIA, *supra* note 48, at 2; ROCHE ABUSCREEN® CANNABINOID RIA, *supra* note 48, at 2, U.S. PAT. NO. 4,400,353 at 2 (P. Meserol & J. Acker) (Aug. 23, 1983). Radioisotopes decay very rapidly, therefore they have a very short shelf life. See generally Alpert, *supra* note 41, at 27-28; Peter & Berry, *Guidelines for Evaluating and Introducing New Tests*, MED. LAB. OBS., July 1983 at 76. Iodine¹²⁵, the isotope most commonly used in RIA's, has a half-life of 60 days. 11 MCGRAW-HILL, *supra* note 39, at 352.

¹⁴² See Kropp, *Our Mini-Screen for Drug Abuse Testing*, MED. LAB. OBS., May 1986 at 40.

¹⁴³ See *supra* note 82. See also U.S. PAT. NO. 3,935,074 at 2 (K. Rubenstein & R. Leute) (Jan. 27, 1976).

¹⁴⁴ See Peter & Berry, *supra* note 141, at 76.

¹⁴⁵ See *supra* notes 46-48 and accompanying text.

in biological specimens.¹⁴⁶

The greatest problem with both RIA's and EIA's is that they are both subject to a certain amount of cross-reactivity.¹⁴⁷ Several over-the-counter medicines contain antigens so closely resembling the antigens of some controlled substances that the antibody "key" will fit the "locks" of enough of these medicines as to precipitate a false positive.¹⁴⁸ These clinically meaningful but marginal reactions might account for as much as four percent of all positive results.¹⁴⁹

TLC is inexpensive, reasonably specific, and the results are quantifiable.¹⁵⁰ It allows simultaneous screening of various drugs and, occasionally, it is the only method capable of separating some closely related compounds.¹⁵¹ Easy to maintain and operate, it is, nevertheless, labor dependent as it is not amenable to automation, the sample must be extracted and concentrated prior to analysis, and it requires a high degree of proficiency in its application and interpretation. It is frequently slow, vulnerable to interference, and subject to severe fluctuation in reliability.¹⁵²

¹⁴⁶ U.S. PAT. NO. 4,235,864 at 2 (B. Kaul, B. Davidow & K. Millian) (Nov. 25, 1980).

¹⁴⁷ Cross-reactivity is the affinity of some antibodies for antigens other than the antigen of interest. WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 310 (1987). Antigenic substances of similar configuration sometimes attract antibodies of low specificity originally developed to bond with only one of the similar substances. Hanson, *supra* note 7, at 10-11. When this happens, a test will give a false positive reading for the compound of interest. *Id.* Some controlled substances are more prone than others to cross-react with over-the-counter medicines. *Id.* See also *infra* note 148.

¹⁴⁸ See SYVA CO., TESTS FOR DRUGS OF ABUSE IN URINE, EMIT® D.A.U.™ (1985); SYVA CO., URINE ASSAYS FOR DRUGS OF ABUSE ON THE EMIT® ST™ DRUG DETECTION SYSTEM, (1985) (d.a.u.™ homogeneous enzyme immunoassays and st™ single-visual homogeneous enzyme immunoassays for amphetamine also detect structurally similar phenethylamines found in over-the-counter products; barbiturate assays also detect high levels of glutethimide such as Doriden®; the opiate assays show equal reactions to codeine); HOFFMAN-LA ROCHE INC., ROCHE DIAGNOSTIC SYSTEMS, THE ABUSCREEN® SYSTEM BASIC PRODUCT INFORMATION (Dec. 1985) and ROCHE, ABUSCREEN® AMPHETAMINE RIA, AND ROCHE, ABUSCREEN® CANNABINOID RIA, *supra* note 48, at 5-6 (opiate assays show equal reaction to codeine; amphetamine assay cross reacts with phenylpropanolamine); Hanson, *supra* note 7, at 11 (ibuprofen, sold over-the-counter as Advil®, cross reacts with the EMIT® cannabinoid assays). See also *supra* note 44 and accompanying text for discussion of "lock and key."

¹⁴⁹ See SYVA CO., QUESTIONS, *supra* note 48, at 5; Hanson, *supra* note 7, at 9. *But see In re Syva Co.*, *supra* note 140, at 6 (RIA 100% accurate); ROCHE, ABUSCREEN® AMPHETAMINE RIA, *supra* note 48, at 6 (claiming 99% accuracy).

¹⁵⁰ CHROMATOGRAPHY, *supra* note 61, at B289, B315.

¹⁵¹ *Id.*; Hanson, *supra* note 7, at 9.

¹⁵² CHROMATOGRAPHY, *supra* note 61, at B289, B316; Bergmeyer, Fresenius &

Assuming that the employer uses proper procedures for obtaining the testing sample; the laboratory facilities, equipment, and protocols are of certification standard; and the sample is analyzed by proficient laboratory personnel,¹⁵³ all three screens can perform satisfactorily as preliminary tests.¹⁵⁴ They all, however, must be confirmed by one or more of the back up tests.¹⁵⁵ Of all the confirmation tests commonly used, GLC enjoys the greatest popularity, although HPLC is becoming more competitive.¹⁵⁶ Generally, GC is faster and provides higher resolution than LC,¹⁵⁷ while HPLC works better with substances of poor volatility or thermally unstable.¹⁵⁸ Both methods have high detectability,¹⁵⁹ and are particularly suited for separation of complex substances and differentiation among chemically related compounds over a wide range of concentrations.¹⁶⁰ Column chromatographies are highly accurate, provided a proper measuring device is attached to the chromatographic apparatus. This is relatively easy with GC, but as yet, no detection device of high reliability similar to those used in GC has been found for HPLC.¹⁶¹ These methods depend on expensive sophisticated equipment and require a considerable amount of technical knowledge by the operator.¹⁶²

Haegele, *supra* note 54, at 62; Hanson, *supra* note 7, at 9. See also U.S. PAT. NO. 3,905,871 at 1 (K. Rubenstein & E. Ullman) (Sept. 16, 1975); U.S. PAT. NO. 3,975,237 at 1 (K. Rubenstein & E. Ullman) (Aug. 17, 1976), U.S. PAT. NO. 4,282,325 at 1 (K. Rubenstein & E. Ullman) (Aug. 4, 1981).

¹⁵³ See *infra* notes 210-16 and accompanying text.

¹⁵⁴ See *supra* note 49.

¹⁵⁵ *Id.*

¹⁵⁶ Since the 1970's, advances in column design and the development of extremely powerful high pressure pumps have made HPLC a highly desirable tool in forensic analysis. NATIONAL RESEARCH COUNCIL, OPPORTUNITIES IN CHEMISTRY, 272-74 (1985). Where some separations originally took days to complete, now they can be accomplished in minutes with high selectivity and resolution. *Id.* at 272. See also *supra* notes 108, 112-13 and accompanying text.

¹⁵⁷ Organic molecules diffuse much more rapidly in gasses than in liquids. This results in sharper bands (resolution) and higher flow rates (turn-around speed). See Adlar, Stock & Whitman, *supra* note 39, at 64-65, 152-53; CHROMATOGRAPHY, *supra* note 61, at B288-89.

¹⁵⁸ *Id.*

¹⁵⁹ Bergmeyer, Fresenius & Haegele, *supra* note 54, at 63. Detectability or "detector limit" is the smallest possible measurement, expressed as "the smallest single result which, with a stated probability, can be distinguished from a suitable blank. The limit may be a concentration or an amount and defines the point at which the analysis becomes just feasible." Bergmeyer, Horder & Markowitz, *supra* note 73, at 24-25.

¹⁶⁰ *Id.* at 25; NATIONAL RESEARCH COUNCIL, *supra* note 156, at 252-53.

¹⁶¹ See *supra* note 113.

¹⁶² Bergmeyer, Fresenius & Haegele, *supra* note 54, at 63; *Challenge*, *supra* note

Mass spectrometry is the most accurate measuring device currently available for detecting microscopic substances in biological fluids; it can even differentiate between isomeric substances.¹⁶³ It does require extraction and pre-volatization of the sample¹⁶⁴ and the instrumentation is extremely costly and very difficult to operate.¹⁶⁵ Only technical personnel especially trained in this equipment can normally operate mass spectrometers.¹⁶⁶

By far, the most accurate and efficient drug testing method is the combination GC/MS where a mass spectrometer becomes a detector for a GC column, often by direct coupling of the two systems.¹⁶⁷ The volatization and separation of the sample in the GC column increases the efficiency of the mass spectrometer, which then acts only as a measuring device for each separated substance as it comes into the particle accelerator chamber.¹⁶⁸ This system produces a 100 percent reliable "fingerprint" of the component substances in the sample.¹⁶⁹ The simple objection to combining these methods is the double expense of two very costly, extremely sophisticated instruments which require highly trained and experienced personnel to operate.¹⁷⁰

136, at 35. *But cf.* Rosenthal, *supra* note 34, at 38 (chromatography costs comparable to automated EIA's and RIA's and within competence of many laboratory technicians).

¹⁶³ See S. STERNHELL & J.R. KALMAN, *supra* note 115, at 23; NATIONAL RESEARCH COUNCIL, *supra* note 156, at 183-84, 254-55.

¹⁶⁴ See *supra* note 115.

¹⁶⁵ S. STERNHELL & J.R. KALMAN, *supra* note 115, at 4. In 1980, a top of the line instrument cost \$400,000. See NATIONAL RESEARCH COUNCIL, *supra* note 156, at 185. Although there is a wide range in prices, a commercial laboratory should expect to pay at least \$200,000 for an average mass spectrometer. See S. STERNHELL & J.R. KALMAN, *supra* note 115, at 4; Voy, *supra* note 133, at 34.

¹⁶⁶ S. STERNHELL & J.R. KALMAN *supra* note 115, at 4; Bergmeyer, Fresenius & Haegele, *supra* note 40, at 64.

¹⁶⁷ See *supra* note 61.

¹⁶⁸ See *supra* notes 117-21 and accompanying text. An alternative method to direct coupling of the two systems is to trap the effluent as it emerges from the chromatographic column and submit the fractions to mass spectrometric analysis. See 8 MCGRAW-HILL, *supra* note 39, at 240. The advantage of this alternative method lies in the elimination of the carrier gas before mass spectrometry which is not the case with direct coupling. See *id.* Direct coupling, therefore, requires the additional step of carrier gas extraction during the ionization process. See *id.*

¹⁶⁹ See 8 MCGRAW-HILL, *supra* note 39 at 240; CHROMATOGRAPHY, *supra* note 61, at B289; Voy, *supra* note 133, at 34.

¹⁷⁰ See NATIONAL RESEARCH COUNCIL, *supra* note 156, at 185; K. STERNHELL & J.R. KALMAN, *supra* note 115, at 4-5. See also *supra* notes 162, 166 and accompanying text.

b. *Impairment.*

The most accurate tests currently available can only measure presence or absence of certain amounts of controlled substances in biological fluids.¹⁷¹ Some types of tests can approximate the time of ingestion, but none can supply proof of impairment.¹⁷² Unlike alcohol, there is no scientific or "official" impairment benchmark for controlled substances.¹⁷³ Legislatures have determined that a given level of alcohol content in the blood renders a person legally drunk, usually for the purpose of operating a motor vehicle.¹⁷⁴ It is an artificial figure which may or may not indicate actual impairment for every person affected, but it does give a benchmark for the administration of the law. Alcohol intoxication levels can be determined quite accurately by a breathalyzer reading, the least intrusive of all tests.¹⁷⁵

To establish a similar system of legal impairment levels for drugs of abuse, it will be necessary to show the correlation between consumption per body weight and behavior for each drug of abuse in the market. Current urinalysis does not provide this data.¹⁷⁶ The presence of controlled substances or their metabolites in the urine only indicates that the body is breaking down

¹⁷¹ See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 29; Jatlow, *supra* note 38, at 7; ROCHE, ABUSCREEN® AMPHETAMINE RIA, *supra* note 48, at 5; ROCHE, ABUSCREEN® CANNABINOID RIA, *supra* note 48, at 5.

¹⁷² Jatlow, *supra* note 38, at 7. Dr. Jatlow explains the limits of current state of the art testing. He points out that a positive urinalysis test does not indicate:

- Clinical condition or degree of intoxication of the subject at the time the specimen was obtained. . .
- Amount of drug that was used.
- When identified drug was used relative to the time of sampling, except within the crudest time window.

Id.

¹⁷³ DOT Comments (1985), *supra* note 19, 50 Fed. Reg. at 31,513.

¹⁷⁴ For example, in New Jersey, a blood alcohol concentration of 0.10% or more is considered legal intoxication. N.J. STAT. ANN. § 39:4-50(a) (West Supp. 1986). However, before administering a breathalyzer test, police officers must have prima facie indications that a defendant is under the influence of alcohol, such as defendant's demeanor, smell of alcohol, empty cans of beer, opened or empty liquor bottles, etc. See *State v. Dickens*, 130 N.J. Super. 73, 78 (App. Div. 1974); *State v. Tabisz*, 129 N.J. Super. 80, 81-82 (App. Div. 1974). In New Jersey, while lay testimony is sufficient to establish a driver's alcohol intoxication, allegations of drug intoxication must be corroborated by expert testimony. See *State v. Tiernan*, 123 N.J. Super. 322, 325-26, 302 A.2d 561, 563-64, (Law Div. 1973). It is generally felt that the effects of drugs vary widely with the substance and such testimony is not within the "common knowledge and observation" of a lay witness. *Id.*

¹⁷⁵ See 13 N.J. ADMIN. CODE § 51-3.1 to -3.6 (1982) (discussing approved instruments of breath testing).

¹⁷⁶ See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 16-17, 28-29, 32; *Challenge*, *supra* note 136, at 35; *Tiernan*, 123 N.J. Super. at 325, 302 A.2d at 564.

and excreting a drug ingested at some prior time; usually within the previous three days, but sometimes as far back as more than a month.¹⁷⁷ Habitual marijuana smokers may retain traces of 11-nor- Δ^9 -THC-carboxylic acid, the major cannabinoid metabolite,¹⁷⁸ up to six weeks after they have stopped smoking it.¹⁷⁹ Other popular drugs with long body retention times are methaqualone (two weeks), methadone (two to three weeks), and phenobarbital (two to six weeks).¹⁸⁰ In contrast, alcohol is eliminated from the system in three to ten hours.¹⁸¹ These diverse elimination patterns do not necessarily correspond to levels of impairment. There is yet no scientific proof that traces left in the urine from a drug ingested several days before the test affects the behavior of the user; conversely, just because a drug such as propoxyphene (Darvon®) may be eliminated from the system in a few hours it does not necessarily mean the behavior of the drug user is not affected.¹⁸² Only clinical research can pro-

¹⁷⁷ See Hanson, *supra* note 7, at 4; Clement, *supra* note 84, at 24.

¹⁷⁸ The marijuana parent drug, delta⁹-tetrahydrocannabinol (THC), is seldom excreted unmetabolized into the urine. The bulk of the drug passes from the blood into the body fat deposits where it is slowly broken down into more than ten different metabolites and then eliminated into the urine. Hanson, *supra* note 7, at 9.

¹⁷⁹ Clement, *supra* note 84, at 24.

¹⁸⁰ SYVA CO., QUESTIONS, *supra* note 48, at 4; Clement, *supra* note 84, at 24.

¹⁸¹ Clement, *supra* note 84, at 24. Dr. Clement provides the following table of approximate body retention times for various drugs:

Drug	Detection Period
Alcohol	3-10 hours
Amphetamine	24-48 hours
Barbiturates	
Secobarbital	24 hours
Phenobarbital	2-6 weeks
Benzodiazepines	3-5 days
Cocaine	5 hours
Benzoylecgonine (metabolite)	2-4 days
Codeine	1-2 days
Heroin	1-2 days
Hydromorphone (Dilaudid®)	1-2 days
Methaqualone (Quaalude)	2 weeks
Methadone (Dolophine®)	2-3 weeks
Morphine	1-2 days
PCP	2-8 days
Propoxyphene (Darvon®)	6 hours
Propoxyphene metabolite	6-48 hours
THC (Marijuana metabolite)	
4 times weekly	2 weeks
daily	3-6 weeks

Id.

¹⁸² See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 16, 17, 29, 32. Dr. Ronald Siegel observed that a person "can be in a virtual 'catatonic state'

vide the answer and such research is not feasible without a strong commitment of time and economic resources. It would have to be an on-going research as there seems to be an inexhaustible supply of new drugs or drug analogs constantly popping up in the street market.¹⁸³ It will also have to be a *blood/body-weight* impairment standard, because urine, unlike blood, is not a reliable source of drug quantitative measurement.¹⁸⁴ Blood testing, of course, would exacerbate the dispute over "intrusive" procedures which are believed to violate fourth amendment and privacy rights.¹⁸⁵ Whether or not such legal obstacles become a major impediment, there can still be no legal proof of what constitutes drug abuse impairment until consumption per body-weight curves are established. Once such data is compiled, the standard may shift from consumption to impairment, thereby extending proscribed abuse to mind altering prescription and over-the-counter medicines.¹⁸⁶

from use of [PCP] and yet test negative for the drug in blood and urine." *Id.* at 29. Dr. Siegel is a psychopharmacologist from the U.C.L.A. School of Medicine. *Id.* *But cf. id.* at 16 (initial use of cocaine on the job may not be noticed and some hard drug addicts can go undetected for years). *See also* Brotherhood of Maintenance of Way Employees, Lodge 16 v. Burlington N.R.R., 802 F.2d 1016, 1020 (8th Cir. 1986). "It is the insidious nature of these substances that too often the user's faculties are impaired and the damage done through a serious error on this part before he realizes that he is impaired and without any outward sign of his impairment that could lead a supervisor or other person to intervene." *Id.*

¹⁸³ *See supra* note 45 and accompanying text.

¹⁸⁴ Hanson, *supra* note 7, at 14; ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 32; McBay, Dubowski & Finkle, *Letter to the Editor*, 249 J.A.M.A., Feb. 18, 1983, at 881. *See also* Childs & McCurdy, *Evaluation of a Radioimmunoassay* (¹²⁵I) *Kit for Cannabinoid Metabolites in Urine and Whole Blood*, J. ANALYTICAL TOXICOLOGY, Sept.-Oct. 1984 at 220. Urine is a waste material which varies in chemical composition throughout the day and it is subject to interference by other waste substances. *Id.* Blood is a more reliable measuring source because it is chemically stable, which facilitates comparative measurement. *Id.*

¹⁸⁵ *See* ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 32-33; McBay, Dubowski & Finkle, *supra* note 184, at 881; Voy, *supra* note 133, at 37. *See also* Schmerber v. California, 384 U.S. 757, 761 (1966).

¹⁸⁶ Various commonly used medications can impair judgment and performance even when taken in normal dosages. Antihistaminics, for example can affect alertness and ability to drive an automobile or operate dangerous machinery. ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 15. Prescription medications are, of course, controlled substances. That is the precise reason why they must be prescribed. *See supra* note 16. However, they are often not perceived as drugs of abuse even though a person high on diazepam, commercially sold as the prescription tranquilizer Valium®, can be just as disabled and dangerous as a person high on marijuana. *Id.* *See also* DOT Comments (1987), *supra* note 16, 52 Fed. Reg. at 2,120.

B. *The Procedure*

1. Selecting the Subject

Employers generally use three basic methods of selecting employees for drug testing: universal selection within a class, selection upon suspicion of use, and random selection. In universal selection, all employees within a certain class must be tested without exception and regardless of suspicion, such as pre-employment testing of all job applicants for a certain occupation,¹⁸⁷ all employees in major modes of transportation who are involved in serious accidents,¹⁸⁸ or all customs inspectors applying for a promotion.¹⁸⁹ Although there are some complaints that pre-employment testing does not afford disqualified employees a means of redress, universal selection has so far been tolerated because usually there is adequate notice.¹⁹⁰ Furthermore, in pre-employment and pre-promotion testing, the applicant is free to decline and withdraw.¹⁹¹ Selection upon suspicion almost always requires a "reasonableness" test: absent undisputable signs of impairment or possession, a government employer must be prepared to show that the proverbial reasonable person in the same circumstances would have suspected drug use.¹⁹² As the name implies, under a random selection system employees are picked at random, either in groups or individually, without regard for probable cause or reasonable suspicion, and often with-

¹⁸⁷ See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 35, 73. The authors cite a pre-employment testing program instituted in 1984 by a steel manufacturer in Bridgeport, Conn. *Id.* at 35. In the first year, the program yielded 49 positive results out of 172 tests, showing "a veritable shopping list" of illegal drugs as well as alcohol." *Id.* The positive results came from applicants at all levels of employment, including "salaried-exempt and salaried non-exempt positions." *Id.*

¹⁸⁸ See *id.* at 35-36; DOT Comments (1985), *supra* note 19, 50 Fed. Reg. at 31,508-09; DOT Comments (1987), *supra* note 16, 52 Fed. Reg. at 2,118. See also Brotherhood of Maintenance of Way Employees, Lodge 16 v. Burlington N.R.R., 802 F.2d 1016, 1023 (5th Cir. 1986) (railway workers); Division 241 Amalgamated Transit Union v. Suscy, 508 F.2d 1264 (7th Cir.), *cert. denied*, 429 U.S. 1029 (1976) (bus drivers).

¹⁸⁹ See National Treasury Employees Union v. Von Raab, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988).

¹⁹⁰ See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 35.

¹⁹¹ See *id.*

¹⁹² See Bell v. Wolfish, 441 U.S. 520, 558-59 (1979). Under most circumstances "reasonable suspicion" must be "individualized suspicion." United States v. Martinez-Fuerte, 428 U.S. 543, 560 (1976); Amalgamated Transit, 508 F.2d at 1267; American Federation of Government Employees v. Weinberger, 651 F. Supp. 726, 733 (S.D. Ga. 1986); Turner v. Fraternal Order of Police, 500 A.2d 1005, 1007 (D.C. 1985).

out notice.¹⁹³ This is the method that has engendered the bulk of the litigation over drug testing, with both federal and state courts currently debating the constitutional issues.¹⁹⁴

2. The Sample

Once an employee has been selected for testing, he or she must provide a biological fluid specimen to be analyzed. Most commonly, the specimen is urine—although blood provides a more reliable reading.¹⁹⁵ The preference for urine is attributed to several factors: it is a waste material, easy to obtain and available in large quantities. Moreover, urine testing is a well-tryed method and tests are comparatively inexpensive and reasonably accurate.¹⁹⁶ Although urine testing seems less intrusive than blood testing in terms of the means used to obtain the sample, urinalysis is actually much more invasive because of what it may reveal about a person's habits and physical condition.¹⁹⁷

The integrity of the urine sample is at a much greater risk than a blood sample. While blood must be extracted under clinical conditions by qualified personnel, urine is provided by the individual being tested almost always in a bathroom and away from monitoring eyes. The courts are adamant about the need for privacy.¹⁹⁸ Unfortunately, privacy afforded in order to safeguard human dignity also provides an opportunity for tampering with the specimen.¹⁹⁹ Experts suggest several precautions to protect the integrity of the sample. These include not allowing pocketbooks or coats in the bathroom; no hot water taps; mixing dies into the toilet water, thereby rendering it useless as a

¹⁹³ See *McDonell v. Hunter*, 809 F.2d 1302, 1308 (8th Cir. 1987); *Capua v. City of Plainfield*, 643 F. Supp. 1507, 1516 (D.N.J. 1986); *Jones v. McKenzie*, 628 F. Supp. 1500, 1502-03 (D.D.C. 1986), *rev'd*, 833 F.2d 335 (D.C. Cir. 1987).

¹⁹⁴ See *National Treasury Employees Union v. Von Raab*, 808 F.2d 1057, 1059 n.5 (5th Cir.), *aff'd*, 107 S. Ct. 2479 (1987).

¹⁹⁵ See *supra* note 184 and accompanying text.

¹⁹⁶ See *ALCOHOL & DRUGS IN THE WORKPLACE*, *supra* note 7, at 29; Kropp, *supra* note 142, at 38.

¹⁹⁷ See *ALCOHOL & DRUGS IN THE WORKPLACE*, *supra* note 7, at 32-33. Urine testing can disclose pregnancies, as well as "a heart condition, manic-depression, epilepsy, diabetes or schizophrenia." Stille, *supra* note 8, at 22 (quoting statement of chemist Dr. Harold M. Bates, Metpath Laboratories, Teterboro, N.J.). See also *McDonell v. Hunter*, 809 F.2d 1302, 1307 (8th Cir. 1987); *Capua v. City of Plainfield*, 643 F. Supp. 1507, 1513 (D.N.J. 1986).

¹⁹⁸ See *McDonell*, 809 F.2d at 1309; *National Treasury Employees Union v. Von Raab*, 649 F. Supp. 380, 387 (E.D. La. 1986), *vacated*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988).

¹⁹⁹ See *Banzhaf*, *supra* note 9, at 13; *Lang*, *supra* note 19, at 51.

dilutant;²⁰⁰ listening for sounds of urination;²⁰¹ and making a clinical examination of the specimen for temperature and color immediately after it has been submitted by the employee.²⁰² These methods, although providing increased safeguards, are not foolproof. Short of demanding a minimum amount of urine, which is not always possible to produce, only a search of body cavities can insure that the specimen submitted is indeed that of the person being tested.²⁰³ This, of course, would never be tolerated by the courts.²⁰⁴

²⁰⁰ See *The Challenge of Substance Abuse Screening*, *supra* note 136, at 34-35; Star-Ledger, Feb. 20, 1987 at 16, col. 1 (Federal government plans to use blue toilet water and restroom monitors).

²⁰¹ *National Treasury Employees Union*, 816 F.2d at 174.

²⁰² See Clement, *supra* note 84, at 22. Dr. Clement sets out guidelines for specimen collection and provides a check-list to verify that the specimen has not been adulterated:

1. Do a urinary creatinine—average for urine 2 mg/ml.
2. Do a refractive index (Rf)—a urinary Rf should be 1.005 to 1.030. A low Rf may indicate dilution of the specimen; a high Rf may suggest the addition of foreign substances.
3. Look for a precipitate or solids in the urine. This may suggest the addition of a solid material that may interfere with selected methodologies
4. Look at the urine color. A very light yellow color may suggest dilution, while other non-yellow colors may suggest the addition of other liquids, *eg* apple juice.
5. Note the temperature of the urine collection container when received in your hand. A container holding freshly voided undiluted urine will feel warm (about 37°C).
6. Note the odor. A nonurine smell may be consistent with adulteration from "fruity liquids," perfumes or a detergent.
7. Have a urinary dip stick available for testing. A "healthy" individual produces a urine that is negative for glucose and ketone bodies and has a pH between 6 and 8. A 6-pad dip stick should be negative when used for testing fresh urine specimens from "healthy" individuals.

Id.

²⁰³ Employers often request that the employee "produce . . . urine under observation within 3 hours of the request." *Id.* This is not always feasible, and an employee who is forewarned of the possibility of a test can prepare to either adulterate or substitute the sample. Salt and detergents are sometimes added to the specimen. See Lang, *supra* note 19, at 51. Other employees use diuretics or drink large quantities of water to flush the system. *Id.* Substitution of "clean" urine is sometimes possible by women who conceal a vial in the vagina. *Id.* There is now a market developing for those who have no friends willing and able to provide "clean" urine. Byrd Laboratories of Austin, Texas, advertises "clean" urine for sale at \$49.95 per bag. See N.Y. Times, Nov. 29, 1986 at A-9, col. 4. As Dr. Clement points out, "adulteration of a urine specimen submitted for drug analysis is method dependent. However, dilution of the specimen with water from the toilet may be the single best method to produce a false-negative result." Clement, *supra* note 84, at 22.

²⁰⁴ See *Security & Law Enforcement Employees, Dist. Council 82 v. Carey*, 737

Once the employee hands over the sample, the employer must follow strict chain-of-custody procedures to insure fair results and to preserve confidentiality.²⁰⁵ Most on-site testing programs use laboratory kits consisting of tamper resistant collection bottles, seals, mailing containers, consent forms, and chain-of-custody documentation.²⁰⁶ Employees are usually required to place their signatures on the seal of the specimen bottle.²⁰⁷ This insures that the correct bottle gets to the laboratory; its does not necessarily guarantee correct attribution once the seal is broken for testing at the lab. Carelessness in handling the documentation can have grave consequences. Drug testing puts people's livelihoods and reputations at stake; given the seriousness of the matter, there is no room for error.²⁰⁸

3. The Laboratories

Methodology and procedure greatly affect the accuracy and reliability of any test. Some tests, such as the chromatographies and mass spectrometry, depend almost entirely on the technician's expertise and interpretation;²⁰⁹ but, even a highly automated immunological procedure is ultimately subject to human error and contamination.²¹⁰ Contaminants are naturally present

F.2d 187, 207-08 (2d Cir. 1984).

²⁰⁵ See *infra* notes 217-23 and accompanying text.

²⁰⁶ Clement, *supra* note 84, at 22. Dr. Clement, describing proper procedures for substance abuse testing in community hospitals, outlines the contents of a typical laboratory urine collection kit:

1. Screw-capped, self-sealing, tamper resistant urine collection bottle or a 50 ml screw-capped, plastic bottle—two containers, if a split collection is required
2. Security tapes for sealing and initialing each collection—if kit is to be mailed, outside shipping package should have flaps that can be secured with tamper-proof shipping seals
3. Instructions for specimen collection, subject consent form, and chain of possession form
4. Secure storage location

Id. See also, 23 R. KIRK & D. OTHMER, *supra* note 41, at 311-21 for proper methods of collecting and preserving samples. "The method of collecting a sample, and the container used, should preserve essential sample parameters . . . not cause the loss . . . of any substances of interest. Of practical importance, sampling should be easy to do safely, by only semiskilled personnel." *Id.* at 311.

²⁰⁷ National Treasury Employees Union v. Von Raab, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1982); ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 36.

²⁰⁸ See Jatlow, *supra* note 38, at 9; Clement, *supra* note 84 at 21-23. See *infra* note 217 and accompanying text discussing liabilities that arise from mistakes and breaches of confidentiality.

²⁰⁹ See *supra* notes 162-66 and accompanying text.

²¹⁰ See Stille, *supra* note 8, at 24. The author interviewed various chemists who

in the laboratory atmosphere, equipment, instruments and supplies; thus, care must be exercised at all times to minimize contamination.²¹¹ Laboratories should establish and adhere to clinical quality standards in equipment maintenance, procedures, and competent personnel. Unfortunately, laboratories do not need a government license to operate, and professional certification is voluntary.²¹² Consequently, there is a wide range in the quality of service and professional standards. Government studies have uncovered serious deficiencies in a substantial segment of the drug testing industry.²¹³ This problem has intensified in

pointed out the dangers of incompetent handling of the sample:

The real room for error is not with the technology but with administrative error. . . . A human being has to pick up the sample and put it in the machine. It may sound trivial but it is not. When the volume of work goes up, the error rate goes up. . . . I wouldn't want somebody taking my urine. . . . I would always be afraid that somebody might. . . mix up samples. It may only happen in one out of 100,000 cases. But I always have that fear.

Id. (quoting statement of Dr. Harold M. Bates, Metpath Laboratories, Teterboro, N.J.). Dr. Jatlow, suggesting guidelines for drug testing laboratories, stated that "as with many endeavors the human element is critical. Instruments do not perform tests, nor do they interpret test results. Those who perform the test must have skill, intellect, dedication, and must understand what they are doing. They must be provided with adequate quality control mechanisms and supervision." Jatlow, *supra* note 38, at 9.

²¹¹ 23 A. KIRK & D. OTHMER, *supra* note 41, at 322-23.

²¹² Hanson, *supra* note 7, at 12. Apparently it is quite easy to set up a drug testing operation as there are no professional prerequisites for testing facilities. Professional associations, like the American College of Pathologists, or the American Association of Bioanalysts, evaluate and issue certificates of competence to laboratories willing to submit to inspection. *Id.* In California, New Jersey, New York, and Pennsylvania, the state offers quality assessment programs where the laboratories receive pre-tested samples to evaluate the laboratory's accuracy. *Id.* All these programs are voluntary and even the best laboratories are not always willing to pay the cost. Furthermore, "many labs don't want to know how good, or bad, their work might be." *Id.* Certified labs are often more expensive, but worth the price in improved methods and diminished risk of litigation. *Id.*; see also Stille, *supra* note 8, at 24.

²¹³ See Hansen, Caudill & Boone, *Crisis in Drug Testing Results of CDC Blind Study*, 253 J.A.M.A., Apr. 26, 1985, at 2382. The authors describe a famous laboratory quality survey of 13 laboratories conducted by the Centers for Disease Control (CDC) in Atlanta, Georgia under the direction of the National Institute on Drug Abuse (NIDA), which found widespread inaccuracies in drug testing. CDC conducted the study from 1972 through 1981 using samples from 262 drug treatment facilities affiliated with NIDA. *Id.* About 10% of all samples sent from the clinics were "blind" samples which had been purposely mixed with patient samples and treated as patient samples through out the process. *Id.* at 2384. The survey found that while the identified samples tested at 98% average accuracy, the blind samples only yielded 69% average accuracy—far below the 80% minimum standard required by the CDC for a satisfactory grading. *Id.* at 2382. Most of the inaccurate results were false negatives. *Id.* at 2384. This was attributed to "less sensitive test-

recent years as the increase in drug testing keeps attracting marginally qualified newcomers to this lucrative field.²¹⁴ Often, even reputable laboratories may shortcut the standards under pressure to offer the fastest service at the lowest price in competitive bidding.²¹⁵ Employers who deal with uncertified laboratories must be prepared to inspect such laboratories periodically to insure minimum of safe standards. Otherwise they may find that what they save in drug testing costs will not compensate for the losses incurred through litigation by wronged employees.²¹⁶

ing" resulting from "methodological design, personnel problems, or the reimbursement process" which put pressure on the laboratories for a quick turn-around time. *Id.* at 2386-87. The survey found that "(1) greater care is taken with known evaluation samples than with routine samples, (2) laboratories are often unable to detect drugs at concentrations called for by their contracts, and (3) the observed underreporting of drugs may threaten the treatment process." *Id.* at 2382. *But cf.* Hanson, *supra* note 7, at 10 (greatest concern is false positives, which affect one's livelihood and reputation). There was only one lab in the study with a high incidence of error in positive results (67%). "That was only one lab and that was for methadone. Since all the samples coming to them were from methadone treatment programs, they naturally assumed the person would be on methadone. This particular lab didn't even test the samples." *Id.* (quoting Dr. Joe Boone who had conducted the NIDA study for CDC). Dr. Jatlow points out that, unlike clinical testing where there is direct observation of a patient, "independent laboratories conduct testing in a vacuum." Jatlow, *supra* note 8, at 9. "Most other clinical laboratory data is interpreted and used in conjunction with additional information such as clinical history, physical examination, and other diagnostic tests." *Id.* at 8. The independent laboratory is not privy to the additional information. Moreover, non-clinical personnel "do not always have a good understanding or real interest in the technological and biological ramifications of drug-abuse testing." *Id.* at 9. Thus, there is a need for quality control, confirmation tests and strict chain-of-custody procedures. *Id.*

²¹⁴ See Stille, *supra* note 8, at 24; Hanson, *supra* note 7, at 12 ("Anybody can buy a portable testing unit and hang up a shingle claiming to be operating a drug-testing lab."). Jatlow, *supra* note 38, at 9 ("Clearly, in our entrepreneurial society, the dramatic increase in the demand for drug-abuse screening is seen as business opportunity. The misconception appears to exist in the part of some that selection of the appropriate state-of-the-art technology is all that is necessary to go into 'business.'").

²¹⁵ Stille, *supra* note 8, at 24. Employers usually contract out drug testing services to the lowest bidder on a reimbursement basis. Hansen, Caudill & Boone, *supra* note 213, at 2386-87.

²¹⁶ See ALCOHOL & DRUG ABUSE IN THE WORKPLACE, *supra* note 7, at 30-31; Hanson, *supra* note 7, at 12. Dr. Dal Cortivo, discussing drug testing guidelines developed by the Office of the Medical Examiner, Suffolk County, New York, states:

We emphatically recommend that cost not be the principal determinant in awarding a contract to a laboratory. Rather, in rough order of their importance, the following should govern the selection process:

- reliability of work-product
- caliber of laboratory management and staff
- resources of the laboratory, e.g., equipment, space
- communication between vendor laboratory and personnel desig-

4. Reporting the Results

Proper chain-of-custody procedures also apply to laboratory reports. Liability is not restricted to mistaken identification of samples: breaches of security which result in wrongful disclosures of either medical conditions or test results may give rise to suits for defamation.²¹⁷ This is particularly applicable to collateral discoveries of physical conditions or infirmities which are either voluntarily disclosed by the employee or discovered by the laboratory in the process of testing.²¹⁸ The confidentiality issue is of prime importance with in-house laboratories where special precautions must be taken "[t]o avoid even the remotest possibility of a conflict of interest . . . or laboratory personnel bias."²¹⁹

Employers must also be cautious in their handling of employees who are confirmed positive for drug use. Where a high risk activity is involved, such as cargo or passenger carriers, there are government regulations determining the options available to employers and employees. Such regulations often involve suspension and rehabilitation.²²⁰ Absent statutory guidelines, the issue of good faith and fair dealing may arise where an employer tests employment-at-will employees without reasonable suspicion

nated by purchaser

- geographic proximity of vendor facilities to purchaser
- timeliness of reports
- cost

Dal Cortivo, *supra* note 19, at 19. He suggests that "[e]xcepting unusual circumstances, turn around time for results of tests will not exceed 96 hours (excluding weekends and holidays) from the time of specimen collection." *Id.*

²¹⁷ See *O'Brien v. Papa Gino's of America, Inc.*, 780 F.2d 1067 (1st Cir. 1986) (employee awarded \$358,000 for lost wages plus \$50,000 for defamation based on a statement by the employer disclosing the employee had been discharged for drug use); *Houston Belt & Terminal Ry. Co. v. Wherry*, 548 S.W.2d 743 (Tex. Civ. App. 1976), *cert. denied*, 434 U.S. 962 (1977) (employee awarded \$200,000 for damages suffered when employer released a written report mistakenly stating the employee was a drug user). See also Note, *Liability Waiting to Strike: Violation of an Employee's Privacy through Disclosure of Records*, 14 LOY. LA. L. REV. 385 (1981) (discussion of possible tort claims based on breach of confidentiality by leaking medical or other personal information).

As a collateral problem, an employer who in the process of testing discovers that the employee is suffering from some serious illness, may have undertaken an affirmative duty to warn the employee and failure to do so may subject the employer to tort liability. See *Union Carbide & Carbon Corp. v. Stapleton*, 237 F.2d 229 (6th Cir. 1956) (holding employer liable for failing to inform employee of tubercular condition discovered when employer undertook to have his employees examined).

²¹⁸ See *supra* note 197 and accompanying text.

²¹⁹ Dal Cortivo, *supra* note 19, at 18 (suggesting several urine-testing laboratory protocols). See *id.* at 18-19.

²²⁰ See ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, 39-46.

of drug use and discharges them on the basis of testing positive.²²¹ On the other hand, an employer who establishes or contracts with an employee assistance program (EAP)²²² and gives those employees testing positive the opportunity to undergo rehabilitation as a condition of keeping their jobs, will probably have "good cause" to discharge recalcitrant employees.²²³

III. CONSTITUTIONAL ISSUES

Opponents of workplace drug testing have been challenging this practice in court for the past decade. They claim that drug testing violates constitutional guarantees against unreasonable searches, that it denies those tested their right to due process, and that the process itself constitutes an invasion of privacy.²²⁴ Drug testing has also been challenged as discriminatory under Title VII of the Civil Rights Act of 1964,²²⁵ on the grounds that it may have disproportionate impact on certain groups, such as blacks and Hispanics.²²⁶ It has also been challenged for handicap discrimination under the Vocational and Rehabilitation Act of 1973.²²⁷ None of these theories has enjoyed much success.

²²¹ See *id.* at 39, 75-77.

²²² See *id.* at 39-58, 72. EAP's have a long history which goes back to the beginning of the twentieth century. Originally established to deal with alcoholism, they have been expanded in the middle 1960's and 1970's to include drug rehabilitation. *Id.* at 39. In recent years, EAP's have multiplied and become fairly common. As many as 57.7% of the Fortune 500 companies had EAP's by 1979. *Id.* at 40 (quoting a National Institute on Alcohol Abuse and Alcoholism survey). EAP's may be independently owned, whereby services are contracted to employers and/or unions on an exclusive basis or to several work places in the community; or they may be internal programs established by the Employer or the union themselves. *Id.* Quality, manner, and type of service vary widely. See *id.* at 40-41.

²²³ *Id.* at 72, 76.

²²⁴ See *infra* Part III of this comment.

²²⁵ See 42 U.S.C. § 2000e to e-17 (1982) (prohibiting race discrimination by employers).

²²⁶ Although, to date, there have been no judicial opinions specifically on point, some authorities maintain that "Title VII of the Civil Rights Act of 1964 could be involved in the case of a drug or alcohol policy—or any other employment policy—which [is] disproportionately applied against a protected minority group." ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 63. *Contra* New York Transit Auth. v. Beazer, 440 U.S. 568 (1979) (holding New York Transit Authority's refusal to hire individuals on methadone maintenance programs did not violate Title VII of the Civil Rights Act of 1964, even though as many as 63% of the methadone patients were black or hispanic, because such refusal promoted "general objectives of safety and efficiency").

²²⁷ The Vocational Rehabilitation Act of 1973, 29 U.S.C. §§ 701-796 (1982) protects handicapped persons from employment discrimination by federal contractors (section 503) and federal grant recipients (section 504). See 29 U.S.C. §§ 793-94 (1982), amended by Rehabilitation Act Amendments of 1986, P.L. No. 99-506,

The original judicial challenges were directed at the concept of drug testing regardless of method.²²⁸ Later, attacks have been usually directed only at mass testing or random selection.²²⁹ The constitutional analysis in this Comment will be restricted to mass or random testing programs in the public sector, including heavily regulated private enterprises.²³⁰

A. *The Fourth Amendment*

1. Probable Cause: The Reasonable Suspicion Standard

Most judicial challenges to drug testing have been made on constitutional grounds. There has been, however, considerable confusion about what may or may not be constitutionally acceptable.²³¹ The main objection against random testing is that it constitutes an "unreasonable search and seizure" because, under this system, employees are singled out for testing without first establishing a causal probability of drug use.²³² The fourth amendment to the United States Constitution²³³ protects individ-

§ 103(d)(2)(B), 100 Stat. 1807, 1810 (1986) and Civil Rights Restoration Act of 1987, P.L. No. 100-259, § 9, 102 Stat. 28 (1988). The Act clearly exempts alcoholics and drug addicts:

For purposes of sections 793 and 794 of this title as such sections relate to employment, such term does not include any individual who is an alcoholic or drug abuser whose current use of alcohol or drugs prevents such individual from performing the duties of the job in question or whose employment, by reason of such current alcohol or drug abuse, would constitute a direct threat to property or the safety of others.

29 U.S.C. § 706(7)(B). This section has been held to apply to *present* alcoholics or drug abusers only. Those who can prove they are no longer addicted, cannot be discriminated against because of past abuses. See *Whitaker v. Board of Higher Educ.*, 461 F. Supp. 99, 106-07 (E.D.N.Y. 1978); *Davis v. Bucher*, 451 F. Supp. 791, 795-96 (E.D. Pa. 1978). It must be noted that although section 504 allows private causes of action against recipients of federal grants, section 503 is restricted to federal contractors only. Private actions by employers or applicants must be brought through the Department of Labor. See ALCOHOL & DRUGS IN THE WORKPLACE, *supra* note 7, at 62 (citations omitted).

²²⁸ See *Division 241 Amalgamated Transit Union v. Suscy*, 533 F.2d 1264 (7th Cir.), *cert. denied*, 429 U.S. 1029 (1976) (testing bus drivers involved in serious accidents or who are suspected of being under the influence).

²²⁹ See *infra* notes 268-72 and accompanying text.

²³⁰ See *infra* notes 244-50 and accompanying text.

²³¹ See *National Treasury Employees Union v. Von Raab*, 808 F.2d 1057, 1059 & n.5 (5th Cir.), *aff'd*, 107 S. Ct. 2479 (1987); *Patchogue-Medford Congress of Teachers v. Board of Education*, 70 N.Y.2d 57, 64-65, 517 N.Y.S.2d 456, 459 (1987). See also *National Treasury Employees Union v. Von Raab*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988).

²³² See *supra* note 193 and accompanying text.

²³³ The fourth amendment provides:

The right of the people to be secure in their persons, houses, papers,

uals from warrantless intrusions by the sovereign and it is enforceable against the states through the fourteenth amendment.²³⁴ Although the fourth amendment clearly disallows warrantless searches and requires "probable cause" before a warrant can be issued, courts have ruled that it does not disallow all warrantless intrusions, only "unreasonable" ones.²³⁵ Since warrants can be issued only "upon probable cause," it follows that warrantless searches, even when "reasonable," should be permitted only when they meet at least the same standard as that required to issue a warrant, if not a higher standard. The Supreme Court, however, has ruled that searching an individual with less than probable cause, and occasionally no probable cause at all, may not violate the fourth amendment under certain circumstances.²³⁶

The major problem with a "probable cause" standard is that it implies a precedent knowledge about the object of the search often only available precisely through a search and seizure. To deal with this difficulty, the federal courts have instituted the "reasonable suspicion" standard which is lower than probable cause, "but something more than mere suspicion."²³⁷ Reasonable suspicion applies an objective "reasonable person" standard where, under the totality of the circumstances, most people of common sense would arrive at the same conclusion.²³⁸ Reason-

and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

U.S. CONST. amend. IV.

²³⁴ See *Mapp v. Ohio*, 367 U.S. 643 (1961).

²³⁵ *Delaware v. Prouse*, 440 U.S. 648, 653-55, 663 (1979) (the exercise of discretion by government officials must be guided by a standard of "reasonableness"); *Camara v. Municipal Court*, 387 U.S. 523, 528 (1967) (fourth amendment protects against "arbitrary invasions" by government officials).

²³⁶ *New Jersey v. T.L.O.*, 469 U.S. 325, 340 (1985). Although normally the fourth amendment mandates a warrant and probable cause, "in certain limited circumstances neither is required." *Id.* at 340. See, e.g., *Donovan v. Dewey*, 452 U.S. 594, 602-605 (1981); *United States v. Biswell*, 406 U.S. 311, 316-17 (1972); *Colonade Catering Corp. v. United States*, 397 U.S. 72, 76-77 (1970). See also *Shoemaker v. Handel*, 795 F.2d 1136 (3d Cir.), cert. denied, 107 S. Ct. 577 (1986) (discussed at length, see *infra* notes 273-301 and accompanying text, applying administrative search exception to urinalysis).

²³⁷ See *State v. Hunt*, 391 So.2d 760 (Fla. Dist. Ct. App. 1980). See also *Hunter v. Auger*, 672 F.2d 688 (8th Cir. 1982); *City of Palm Bay v. Bauman*, 475 So.2d 1322, 1325-26 (Fla. Dist. Ct. App. 1985).

²³⁸ See *New Jersey v. T.L.O.*, 469 U.S. 325, 341-43 (1985); *Illinois v. Gates*, 462 U.S. 213, 236-39 (1983); *City of Palm Bay v. Bauman*, 475 So.2d 1322, 1325-26 (Fla. Dist. Ct. App. 1980).

able suspicion is sometimes described as "founded suspicion." It may not be a generalized suspicion that something may be wrong, but must be particularized suspicion predicated upon "specific objective facts and rational inferences . . . draw[n] from th[o]se facts."²³⁹ There must be a "clear indication" that the evidence sought will be found through the search.²⁴⁰ Whether the search should be allowed, and if so, to what extent, is more difficult to determine. In *Terry v. Ohio*,²⁴¹ the United States Supreme Court indicated that a reasonable search must have been "justified at its inception" and that it must have been "reasonably related in scope to the circumstances which justified the interference in the first place."²⁴² Nevertheless, in a much quoted passage, the Court later observed: "The test of reasonableness under the Fourth Amendment is not capable of precise definition or mechanical application. In each case it requires a balancing of the need for the particular search against the invasion of personal rights that the search entails."²⁴³

In balancing needs against rights, courts have carved out some notable exceptions to probable cause or even reasonable suspicion. These exceptions are generally known as "administrative searches," a name derived from the statutory power occasionally given to some government administrators to search people or property without a warrant under some very narrow circumstances.²⁴⁴ Administrative searches without warrants or

²³⁹ *Terry v. Ohio*, 392 U.S. 1, 27 (1967). Courts have described particularized suspicion as individual suspicion regardless of the surrounding circumstances. See *United States v. Martinez-Fuerte*, 428 U.S. 543, 560-63 (1976). In the specific context of drug testing, this would mean that a general problem with drug use among the work force is not sufficient to qualify as reasonable suspicion. *Guiney v. Roache*, 654 F. Supp. 1287, 1300-02 (D. Mass.), *rev'd on other grounds*, 833 F.2d 1079 (1st Cir. 1987). *But cf. Gates*, 462 U.S. at 213 (court must examine "totality of circumstances" in deciding whether or not to issue a search warrant). See also *O'Connor v. Ortega*, 107 S. Ct. 1492 (1987) (plurality opinion) (declining to consider whether individualized suspicion is essential to reasonableness standard for searching employee office).

²⁴⁰ See *Schmerber v. California*, 384 U.S. 757, 769-70 (1966).

²⁴¹ 392 U.S. 1 (1968). In *Terry*, the Supreme Court upheld a police officer's impromptu stop and frisk of three men standing on a street corner under what the officer thought were suspicious circumstances. *Id.* at 4-7.

²⁴² *Id.* at 18-20. See also Note, *Dragnet Drug Testing in Public Schools and the Fourth Amendment*, 86 COLUM. L. REV. 852 (1986) (discussion of the implications of *Terry* on drug-related searches of students).

²⁴³ *Bell v. Wolfish*, 441 U.S. 520, 559 (1979). The Court held that in applying this balancing test, the "[c]ourts must consider the scope of the particular intrusion, the manner in which it is conducted, the justification for initiating it, and the place in which it is conducted." *Id.*

²⁴⁴ See *Camara v. Municipal Court*, 387 U.S. 523 (1967). In *Camara*, the Supreme

founded suspicion have been upheld for government inspections of coal mines,²⁴⁵ firearm and munitions dealers,²⁴⁶ retail liquor outlets,²⁴⁷ travelers and their personal effects at border crossings,²⁴⁸ and, recently, drug testing of jockeys after a horse race.²⁴⁹ Almost invariably the courts have concluded that, since these are heavily regulated activities, participants in those activities have a diminished expectation of privacy which dispenses with the notion that the search is unduly intrusive.²⁵⁰

2. Expectation of Privacy

There is a correlation between the reasonableness of the intrusion and the expectation of privacy of the citizen.²⁵¹ A search which is otherwise reasonable at its inception will be found unreasonable if the interference becomes intolerable in intensity and scope.²⁵² Every action taken by the government is a potential interference into someone's privacy. Such interferences are usually tolerated so long as they do not violate a specific right

Court for the first time allowed house inspectors to effect warrantless administrative searches of real property. The Court stated that these searches must be allowed on the grounds that it was impossible to tell the interior condition of the property from an exterior inspection and custom and public policy sanctioned the practice in the interest of public health. *Id.* at 537-38.

²⁴⁵ See *Donovan v. Dewey*, 452 U.S. 594, 602-05 (1981).

²⁴⁶ See *United States v. Biswell*, 406 U.S. 311, 316-17 (1972).

²⁴⁷ See *Colonnade Catering Corp. v. United States*, 397 U.S. 72, 76-77 (1970).

²⁴⁸ See *United States v. Montoya de Hernandez*, 473 U.S. 531, 541-42 (1985).

²⁴⁹ See *Shoemaker v. Handel*, 795 F.2d 1136, 1142 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986).

²⁵⁰ See *Marshall v. Barlow's, Inc.*, 436 U.S. 307, 313 (1978). In *Marshall*, the Supreme Court stated that if an industry has a history of heavy regulation, there is "no reasonable expectation of privacy." *Id.*

²⁵¹ *Allen v. Passaic County*, 219 N.J. Super. 352, 530 A.2d 371 (Law Div. 1986). "In order to relax the probable cause requirement the test to be applied is whether the search is reasonable and that requires a balancing of the need, supported by the promotion of a legitimate government interest, against the intrusiveness of the search relative to the individual's expectation of privacy." *Id.* at 373-74, 530 A.2d at 382. See *United States v. Brignoni-Ponce*, 422 U.S. 873, 881 (1975). See also *Capua v. City of Plainfield*, 643 F. Supp. 1507, 1514 (D.N.J. 1986). *But cf.* *O'Connor v. Ortega*, 107 S. Ct. 1492, 1513 (1987) (Blackmun, J., dissenting). In *Ortega*, Justice Blackmun stated:

Just as the elimination of the warrant requirement requires some nexus between its absence, the employee's privacy interests, and the government interests to be served by the search, so also does the formulation of a standard less than probable cause for a particular search demand a similar connection between these factors. The plurality's discussion of investigatory [and inventory] searches reveals no attempt to set forth the appropriate nexus.

Id. at 1513 (Blackmun, J., dissenting) (citation omitted).

²⁵² *Terry*, 392 U.S. at 18.

protected by the United States Constitution.²⁵³ In *Brinegar v. United States*,²⁵⁴ the Court stated that the purpose of the fourth amendment is to "safeguard citizens from rash and unreasonable interferences with privacy" by the sovereign.²⁵⁵ The fourth amendment, however, does not protect against a general right to privacy.²⁵⁶ It only protects against very narrowly defined intrusions into areas where the individual retains a "legitimate," "justifiable" or "reasonable" expectation of privacy.²⁵⁷ The emphasis must be placed on the individual. As the Court stated in *Katz v. United States*,²⁵⁸ "the Fourth Amendment protects people, not places."²⁵⁹

There is no clear standard of what constitutes a reasonable expectation of privacy in every situation.²⁶⁰ The Court has indicated that the determination must be made on a case by case basis.²⁶¹ The basic test was first articulated in *Katz* by Justice Harlan. Summarizing the Court's opinion, he stated: "My understanding of the rule that has emerged from prior decisions is that there is a two fold requirement, first that a person have exhibited an actual (subjective) expectation of privacy and, second, that the expectation be one that society is prepared to recognize as 'reasonable.'"²⁶² This "reasonable" expectation must be justified in relation to concepts outside of the fourth amendment, such as real or personal property law or widely held societal values.²⁶³ It must be, however, "more than a subjective expectation of not being discovered."²⁶⁴

²⁵³ See *Katz v. United States*, 389 U.S. 347, 350 n.5 (1967).

²⁵⁴ 338 U.S. 160 (1949).

²⁵⁵ *Id.* at 176.

²⁵⁶ See *Katz*, 389 U.S. at 350-51 (footnote omitted). The Court observed that "the protection of a person's *general* right to privacy—his right to be let alone by other people—is, like the protection of his property and of his very life, left largely to the law of the individual states." *Id.* (footnote omitted).

²⁵⁷ *Smith v. Maryland*, 442 U.S. 735, 740 (1979) (citations omitted). See also *United States v. Jacobsen*, 466 U.S. 109, 113 (1984); *Terry v. Ohio*, 392 U.S. 1, 9 (1967).

²⁵⁸ 389 U.S. 347 (1967).

²⁵⁹ *Id.* at 351.

²⁶⁰ See *Oliver v. United States*, 466 U.S. 170, 181 (1984).

²⁶¹ *Id.* See also *O'Connor v. Ortega*, 107 S. Ct. 1492, 1497 (1987) (O'Connor, J., plurality opinion).

²⁶² *Katz*, 389 U.S. 347, 361 (1967) (Harlan, J., concurring). Justice Harlan observed that although "a man's home" will normally be accorded a reasonable expectation of privacy, such is not the case with "objects, activities, or statements that he exposes to the 'plain view' of outsiders" because there is no obvious intention to keep them private. *Id.*

²⁶³ *Rakas v. Illinois*, 439 U.S. 128, 143-44 n.12 (1978).

²⁶⁴ *Id.* at 143 n.12; accord *United States v. Jacobsen*, 466 U.S. 109, 122 (1984)

The *Katz* test has been used consistently in fourth amendment analysis since it was first enunciated.²⁶⁵ Although it is generally adequate as originally stated, it could have overbroad interpretations if carried to extreme conclusions. Essentially, if expectation is based on what external sources determine as reasonable, conceivably the reasonableness of the expectation can be defeated by previous warning that such expectation is misplaced. Aware of this problem, the Supreme Court has indicated that the *Katz* test may not be used to invalidate the reasonableness of the expectation through adequate notice that certain traditionally protected areas would henceforth lack such protection.²⁶⁶ According to this reasoning, expectation of privacy as it relates to workplace urinalysis could not be defeated by pre-employment warning or implied notice through pervasive regulation. Nevertheless, the cases that have upheld compulsory drug testing have found a diminished expectation of privacy on the basis of either pre-employment awareness, or pervasive regulation, or both.²⁶⁷

("The concept of an interest in privacy that society is prepared to recognize as reasonable is, by its very nature, critically different from the mere expectation, however well justified, that certain facts will not come to the attention of the authorities.").

²⁶⁵ See *O'Connor v. Ortega*, 107 S. Ct. 1492, 1498 (1987) (O'Connor, J., plurality opinion); *id.* at 1505-06 (Scalia, J., concurring); *Smith v. Maryland*, 442 U.S. 735, 740 (1979).

²⁶⁶ *Smith*, U.S. at 740 n.5 (1978). Analyzing the *Katz* two-pronged test, the Court stated:

For example, if the Government were suddenly to announce on nationwide television that all homes henceforth would be subject to warrantless entry, individuals thereafter might not in fact entertain any actual expectation of privacy regarding their homes, papers, and effects. Similarly, if a refugee from a totalitarian country, unaware of this Nation's traditions, erroneously assumed that police were continuously monitoring his telephone conversations, a subjective expectation of privacy regarding the content of his calls might be lacking as well. In such circumstances, where an individual's subjective expectations has been "conditioned" by influences alien to well-recognized Fourth Amendment freedoms, those subjective expectations obviously could play no meaningful role in ascertaining what the scope of the Fourth Amendment protection was. In determining whether a "legitimate expectation of privacy" existed in such cases, a normative inquiry would be proper.

Id. at 740 n.5.

²⁶⁷ See *Mack v. United States*, 814 F.2d 120, 122 (2d Cir. 1987) (diminished expectation of privacy as FBI agent); *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 180 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988) (U.S. customs employees applying for promotion to sensitive positions in "drug interception know that inquiry may be made concerning their off-the-job use of drugs"); *McDonnell v. Hunter*, 809 F.2d 1302, 1306 (8th Cir. 1987) (department of corrections employees who signed pre-employment search consent forms have dimin-

3. Urinalysis as a Search

There is no question that mandatory urine testing of government employees is a warrantless search and seizure within the meaning of the fourth amendment.²⁶⁸ Consequently, all courts agree that the proper basis for allowing drug testing is reasonable suspicion. The disagreement involves whether there is a compelling reason to overcome the constitutional restrictions in the absence of founded suspicion.²⁶⁹ Some courts have upheld random testing for reasons ranging from public policy to diminished expectation of privacy in certain heavily regulated activi-

ished expectation of privacy); *Shoemaker v. Handel*, 795 F.2d 1136, 1142 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986) (jockeys who choose to become involved in pervasively regulated horse racing industry have reduced privacy expectation); *Committee for GI Rights v. Callaway*, 518 F.2d 466, 477 (D.C. Cir. 1975) (urinalysis of soldiers does not infringe upon their privacy since "inspections have been traditionally accepted and are expected of soldiers"); *Rushton v. Nebraska*, 653 F. Supp. 1510, 1524 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988) (nuclear power plant employees have diminished expectation of privacy given the pervasive regulatory scheme of the industry).

²⁶⁸ *McDonell v. Hunter*, 809 F.2d 1302, 1306 (8th Cir. 1987); *Capua v. City of Plainfield*, 643 F. Supp. 1507, 1513 (D.N.J. 1986); *Jones v. McKenzie*, 628 F. Supp. 1500, 1508-09 (D.D.C. 1986), *rev'd*, 833 F.2d 335 (App. D.C. 1987); *Allen v. City of Marietta*, 601 F. Supp. 482, 488-89 (N.D. Ga. 1985); *Storms v. Coughlin*, 600 F. Supp. 1214, 1217 (S.D.N.Y. 1984); *City of Palm Bay v. Bauman*, 475 So.2d 1322, 1325-27 (Fla. Dist. Ct. App. 1985). *Cf.* *Everett v. Napper*, 833 F.2d 1507, 1511 (11th Cir. 1987) (no search when employee refuses to be tested).

²⁶⁹ *Fraternal Order of Police, Newark Lodge No. 12 v. City of Newark*, 216 N.J. Super. 461, 471-72, 524 A.2d 430, 436 (App. Div. 1987). It has often been argued that evidence of drug use in the workplace indicates a "compelling need" sufficient to outweigh fourth and fourteenth amendment protections. *See Guiney v. Roache*, 654 F. Supp. 1287, 1300 (D. Mass.), *vacated and remanded on other grounds*, 833 F.2d 1079 (1st Cir. 1987). Courts have not been inclined to find a "compelling need" in urinalysis cases. In a case involving police officers, the United States District Court for the District of Tennessee found that two positive tests, rumors of switching specimens, a statement by the chief of police asserting the possibility of a 10% incidence of abuse in the department, tips from FBI agents about drug use, and statements by former police officers that "several officers used marijuana" were not sufficient to overcome the need for reasonable suspicion. *Penny v. Kennedy*, 648 F. Supp. 815, 816-17 (E.D. Tenn. 1986), *aff'd*, 846 F.2d 1563 (6th Cir. 1988). In a companion case, which involved fire fighters, the court found that showing drug use through several positive tests and evidence of switched samples was not sufficient to demonstrate increased drug use to the point of threat to the efficiency of the Department. *Lovvorn v. City of Chattanooga*, 647 F. Supp. 875, 882 (E.D. Tenn. 1986), *aff'd*, 846 F.2d 1539 (6th Cir. 1988). In New York, twenty-two positive tests in a police force of 26,000 officers indicated that drug use was a very infrequent problem at best. *Caruso v. Ward*, 133 Misc.2d 544, 551, 506 N.Y.S.2d 789, 795 (1986), *aff'd*, 131 A.D.2d 214, 520 N.Y.S.2d 551 (1987). Other cases have found compelling need, at least implicitly, to justify allowing random drug testing. *See infra* note 270 and cases cited therein.

ties.²⁷⁰ As of this writing the majority of the courts dealing with the issue have rejected random testing of government employees almost invariably on the basis that it is an unreasonable intrusion in violation of the fourth amendment.²⁷¹ The uncertainty, however, is far from over. The decisions do not always split along jurisdictional lines; occasionally, the split occurs *within* the jurisdiction itself. Such is the case in the Third Circuit where currently there are major differences of opinion about the constitutionality of government mandated random testing of New Jersey employees.²⁷²

a. *The Federal Courts*

The first New Jersey case to deal with random selection was *Shoemaker v. Handel*,²⁷³ which involved testing jockeys after horse races. The New Jersey Racing Commission (Commission) has the statutory power to license and regulate all persons employed in the horse racing industry.²⁷⁴ Pari-mutuel betting is an integral part of the sport and the state receives a percentage of the wagering revenue.²⁷⁵ The Commission has issued very strict guidelines which allow the State of New Jersey to exert tight regulatory controls over the sport through the Commission.²⁷⁶ In January 1985, the Commission adopted two regulations giving the State Steward the power to test jockeys for drugs and alcohol.²⁷⁷

²⁷⁰ See, e.g., *Mack v. United States*, 814 F.2d 120, 121-22 (2d Cir. 1987) (FBI agents); *McDonnell v. Hunter*, 809 F.2d 1302, 1308 (8th Cir. 1987) (prison security officers); *Shoemaker v. Handel*; 795 F.2d 1136, 1142 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986) (horse racing jockeys); *Committee for G.I. Rights v. Callaway*, 518 F.2d 466, 477 (D.C. Cir. 1975) (soldiers).

²⁷¹ See *Capua*, 643 F. Supp. at 1522; *Caruso*, 133 Misc.2d at 557-58, 506 N.Y.S.2d at 799; *Penny*, 648 F. Supp. at 816; *Turner v. Fraternal Order of Police*, 500 A.2d 1005, 1008-09 (D.C. 1985).

²⁷² See *Shoemaker v. Handel*, 795 F.2d 1136 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986) (jockeys at government owned horse track); *Capua v. City of Plainfield*, 643 F. Supp. 1507 (D.N.J. 1986) (fire fighters); *Policemen's Benevolent Association of New Jersey, Local 318 v. Township of Washington*, 672 F. Supp. 779 (D.N.J. 1987) (police officers); *Fraternal Order of Police, Newark Lodge No. 12 v. City of Newark*, 216 N.J. Super. 461, 524 A.2d 430 (App. Div. 1987) (police detectives); *Allen v. Passaic County*, 219 N.J. Super. 352, 530 A.2d 371 (Law Div. 1986) (sheriff's department officers).

²⁷³ 795 F.2d 1136 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986).

²⁷⁴ *Shoemaker*, 795 F.2d at 1137-38. The New Jersey Constitution was amended in 1939 to permit horse racing and pari-mutuel betting in the state. *Id.* at 1141 & n.3. Shortly thereafter, the Racing Commission was created and given broad regulatory powers. *Id.* at 1141. See also N.J. STAT. ANN. § 5:5-33 (West Supp. 1985).

²⁷⁵ See N.J. STAT. ANN. §§ 5:5-64, 64.1 (West Supp. 1987).

²⁷⁶ *Shoemaker*, 795 F.2d at 1138, 1141.

²⁷⁷ See N.J. ADMIN. CODE tit. 13:70, § 14A.10-11 (1985). The New Jersey Racing

Under the detailed guidelines, the State Steward was given discretionary power to order post-race breathalyzer and urine testing of all officials, jockeys, trainers and grooms involved in a particular race.²⁷⁸

Immediately after the regulations became effective, five jockeys licensed to race in New Jersey²⁷⁹ sued in Federal District Court for a preliminary injunction against the Racing Commission under 42 U.S.C. Section 1983.²⁸⁰ The jockeys claimed that the regulations violated their rights under the fourth, fifth, and ninth amendments, as well as the due process and equal protec-

Commission (Commission) has the power to "prescribe rules, regulations and conditions under which all horse races shall be conducted." N.J. STAT. ANN. 5:5-30 (West 1973).

²⁷⁸ See N.J. ADMIN. CODE tit. 13:70, § 14A.10-11 (1985) (use of controlled substances is forbidden both on and off the track). This directive is currently implemented by selecting three to five names at random after a given race. The selection may be witnessed by a representative of the Jockey's Guild, and those selected more than three times in a seven day period are excused from taking the test. Jockeys must also inform the Steward about all prescription and non-prescription drugs they are currently using. *Shoemaker v. Handel*, 619 F. Supp. 1089, 1094-95 (D.N.J. 1985), *aff'd*, 795 F.2d 1136 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986). To insure anonymity, the urine sample is identified solely by a number which correlates with the number in the certification form provided at the time of testing. *Id.* at 1095. Only the Executive Director of the Commission has access to the certifications. *Id.* The test results, however, are also available to a designee of the Executive Director, and to all the Commissioners, but may not be disclosed to enforcement agencies. N.J. ADMIN. CODE tit. 13:70, § 14A.11(e) (1985). If no violations are discovered, the test results are routinely destroyed after one year. *Id.* § 14A.11(f). Although the breathalyzer tests are administered in private, there is no comparable provision for confidentiality in preserving the results. See *Shoemaker*, 619 F. Supp. at 1094. The penalties for refusing to take the tests include fines, suspension and loss of license. See N.J. ADMIN. CODE tit. 13:70, § 14A.7 (1985).

²⁷⁹ The five jockeys were William Shoemaker, Angel Cordero, Jr., William H. McCauley, Phillip Grove, and Vincent Bracciole. See *Shoemaker*, 619 F. Supp. at 1091.

²⁸⁰ *Id.* This federal statute, originally included in the Civil Rights Act of 1871, provides a private cause of action against abuses of power by state public officials:

Every person who, under color of any statute, ordinance, regulation, custom, or usage, or any State or Territory or the District of Columbia, subjects, or causes to be subjected, any citizen of the United States or other person within the jurisdiction thereof to the deprivation of any rights, privileges, or immunities secured by the Constitution and laws, shall be liable to the party injured in an action at law, suit in equity, or other proper proceeding for redress. For the purposes of this section, any Act of Congress applicable exclusively to the District of Columbia shall be considered to be a statute of the District of Columbia.

42 U.S.C. § 1983 (1982). Although this section may have been prompted by the plight of former slaves, it was always intended for the protection of anyone victimized by persons acting under color of state law. *Owen v. City of Independence*, 445 U.S. 622, 635-636 (1980); *Robertson v. Wegmann*, 436 U.S. 584, 591-93 (1978); *Miller v. Apartments & Homes of New Jersey, Inc.*, 646 F.2d 101, 106 (3d Cir. 1981); *cf.* *City of Newport v. Fact Concerts, Inc.*, 453 U.S. 247, 268-271 (1981).

tion clauses of the fourteenth amendment to the United States Constitution.²⁸¹ The court denied the preliminary injunction in all counts.²⁸² Later, at the trial on the merits,²⁸³ the court upheld the constitutionality of requiring such tests, but directed the Commissioner to adopt confidentiality guidelines in the administration of breathalyzer tests similar to those already in place for urinalyses.²⁸⁴ On appeal, the jockeys invoked the fourth amendment guarantee against warrantless searches, the fourteenth amendment requirement of equal protection of the laws, and a general constitutional right of privacy. The Third Circuit rejected all their arguments and affirmed the district court's decision.²⁸⁵

The Third Circuit held that the urinalysis program in question fell under the administrative search exception to the fourth amendment.²⁸⁶ A warrantless administrative search exception applies to closely regulated industries provided the state has a high interest in conducting surprise searches and provided the regulatory controls have diminished the privacy expectations of those to be searched.²⁸⁷ In the court's opinion, the Commission's drug testing program met both requirements. Judge Gibbons, writing for the court, stated that there is a strong state interest in preserving public confidence in a wagering sport.²⁸⁸ He also noted that the jockeys have little expectation of privacy, not only because of the pervasive regulations, but also because of the character of the sport itself which focuses attention on the physical condition of the participants.²⁸⁹ Thus, he concluded, the jockeys could be tested without a prerequisite of individualized suspicion.²⁹⁰

Aside from the administrative search exception, the court also found that the State Steward's system of random selection may not necessarily be unreasonable. Under this system, sub-

²⁸¹ *Shoemaker v. Handel*, 608 F. Supp. 1151, 1155 (D.C.N.J. 1985).

²⁸² *Shoemaker*, 608 F. Supp. at 1155, 1161. The court, nevertheless, directed the Commission to display the word "optional" in the medical treatment disclosure form. *Id.* at 1160.

²⁸³ *Shoemaker v. Handel*, 619 F. Supp. 1089 (D.N.J. 1985), *aff'd*, 795 F.2d 1136 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986).

²⁸⁴ *Id.* at 1107.

²⁸⁵ *Shoemaker v. Handel*, 795 F.2d 1136, 1141, 1144 (3d Cir.), *cert. denied*, 107 S. Ct. 577 (1986).

²⁸⁶ *Id.* at 1142.

²⁸⁷ *Id.* (citing *Donovan v. Dewey*, 452 U.S. 594, 600 (1981)).

²⁸⁸ *Id.* at 1141-42.

²⁸⁹ *See id.* at 1142, 1144.

²⁹⁰ *Id.*

jects are selected by lot and all participants have an equal chance of being chosen.²⁹¹ The court observed that there is a constitutional distinction between random testing pursuant to a predetermined plan, and surprise testing at the discretion of a field officer. The presence or absence of limiting guidelines is a crucial element of the fourth amendment "reasonableness" requirement.²⁹² Since the State Steward does not determine who will be tested on each occasion, this system of random selection was held to meet the constitutional standard.²⁹³ As for the other constitutional arguments, the court rejected the equal protection claim on the ground that the state had an overriding interest in preserving the integrity of the sport, and concluded that the Commission's method of testing and preserving laboratory files did not infringe upon the jockey's right of privacy.²⁹⁴ Five months later, the Third Circuit decision became final when the United States Supreme Court denied certification.²⁹⁵

Clearly, the State has a high interest in preserving the integrity of horse racing. It is precisely for this reason that horse racing is such a heavily regulated sport. There is also a well established precedent for allowing warrantless searches of heavily regulated industries.²⁹⁶ This precedent, however, has usually been confined to administrative searches of *property*.²⁹⁷ What makes *Shoemaker* unique is the court's extension of the administrative search exception to a human being's body fluids without probable cause or, at least, reasonable suspicion,²⁹⁸ and without the extenuating circumstances attendant to searches at border crossings.²⁹⁹ It is true that the *Shoemaker* court restricted its decision to "voluntary participants in a highly regulated industry"

²⁹¹ *Id.* at 1143.

²⁹² *Id.* (citing *Delaware v. Prouse*, 440 U.S. 648, 661 (1979); *United States v. Brignoni-Ponce*, 422 U.S. 873, 882-84 (1975)).

²⁹³ *Id.* The court, however, did not foreclose the issue of constitutionality in reference to breathalyzer tests for alcohol abuse. *Id.* at 1143 n.6.

²⁹⁴ *Id.* at 1143-44.

²⁹⁵ *Shoemaker v. Handel*, 107 S. Ct. 577 (1986).

²⁹⁶ See *supra* notes 244-50 and accompanying text.

²⁹⁷ *Railway Labor Executives Ass'n v. Burnley*, 839 F.2d 575, 584 (9th Cir.), *cert. granted*, 108 S. Ct. 2033 (1988). *But see In re Martin*, 90 N.J. 295, 313-14, 447 A.2d 1290, 1299 (1982) (administrative search may extend to persons associated with the enterprise if they are present at the site while the search is taking place).

²⁹⁸ See *Shoemaker*, 795 F.2d at 1142. In a later decision, the Nebraska district court cited *Shoemaker* as controlling precedent for holding mandatory random drug testing of nuclear plant employees constitutional under the administrative search exception to the fourth amendment. *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510, 1524 (D. Neb. 1987), *aff'd*, 844 F. 2d 562 (8th Cir. 1988).

²⁹⁹ See *United States v. Montoya de Hernandez*, 473 U.S. 531 (1985).

who have minimal expectations of privacy.³⁰⁰ Nevertheless, this holding represented a clear departure from the general trend in drug testing cases.³⁰¹

Capua v. City of Plainfield,³⁰² decided shortly after *Shoemaker*'s appellate review, falls in line with the majority of the jurisdictions. In *Capua*, a system of ad hoc mass urinalysis of fire department employees, was declared unconstitutional.³⁰³ Without specific suspicion that any fire fighter was on drugs,³⁰⁴ the city had, on three different occasions, conducted early morning surprise inspections at the municipal fire station. After locking all the building doors, the fire fighters had been forced to produce a urine sample under direct surveillance.³⁰⁵ The city had not warned the employees about the impending urine testing program; it had not established guidelines for conducting such tests; and it had not ordered back-up tests on the samples found positive.³⁰⁶ All the fire fighters who had tested positive were summarily discharged without pay.³⁰⁷ They immediately brought action in federal court under 42 U.S.C. Section 1983³⁰⁸ claiming that Plainfield's drug testing program violated their constitutional rights under the fourth amendment.³⁰⁹ The court ordered the plaintiffs reinstated and enjoined the city from conducting any further urine tests.³¹⁰

Judge Sarokin, in a scathing opinion, denounced both the mandatory testing and the procedures used in conducting the tests.³¹¹ Noting that the "essential purpose" of the fourth amendment is to protect the "privacy and security" of the citi-

³⁰⁰ *Shoemaker*, 795 F.2d at 1142. *Accord* *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988) (random testing of public utility employees).

³⁰¹ See generally *National Treasury Employees Union v. Von Raab*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988); *American Federation of Government Employees v. Weinberger*, 651 F. Supp. 726 (S.D. Ga. 1986); *Penny v. Kennedy*, 648 F. Supp. 815 (E.D. Tenn. 1986), *aff'd*, 346 F.2d 1563 (6th Cir. 1988); *Capua v. City of Plainfield*, 643 F. Supp. 1507 (D.N.J. 1986); *Caruso v. Ward*, 133 Misc. 2d 544, 506 N.Y.S.2d 789 (1986), *aff'd*, 131 A.D.2d 214, 520 N.Y.S.2d 551 (1987) *Turner v. Fraternal Order of Police*, 500 A.2d 1005 (D.C. App. 1985).

³⁰² 643 F. Supp. 1507 (D.N.J. 1986).

³⁰³ *Id.* at 1522.

³⁰⁴ *Id.* at 1517.

³⁰⁵ *Id.* at 1511.

³⁰⁶ *Id.* at 1511-12, 1521.

³⁰⁷ *Id.* at 1512.

³⁰⁸ See *supra* note 280.

³⁰⁹ *Capua*, 643 F. Supp. at 1512.

³¹⁰ *Id.* at 1512, 1522.

³¹¹ *Id.* at 1511-20.

zens from "arbitrary invasions by government officials,"³¹² he observed that the city of Plainfield's testing methods were particularly offensive. He stated that individuals have a high expectation of privacy in the act of urination. Forcing the fire fighters to urinate under close visual supervision was a totally unreasonable intrusion, akin to a strip search.³¹³ More significantly, however, he found a further expectation of privacy in the physiological data contained in a person's urine. Observing that modern medical technology can elicit a wealth of information about a person's physical condition, he held that this program's lack of safeguards for confidentiality were completely unacceptable.³¹⁴ He was particularly concerned about the potential for misuse of such information. Carelessness in these matters, he stated, could result in embarrassment to the employees and even affect their "job assignments, security and promotion."³¹⁵ Taking pains to distinguish *Shoemaker*, Judge Sarokin pointed out that the city had conducted the tests "without notice, without standards, and without probable cause or reasonable suspicion."³¹⁶

The Plainfield testing program is, undoubtedly, an extreme example of intrusion without standards. The sweeping nature of the selection procedure and the clumsy method of implementation make it easy to distinguish this program from other programs where selection was based on reasonable suspicion.³¹⁷ This task becomes more challenging, however, when the precedent a lower court is trying to distinguish is a case on point recently decided by the circuit court with appellate jurisdiction over the lower court's district. In his efforts to distinguish *Shoemaker*, Judge Sarokin emphasized that the state of New Jersey has a strong interest in enhancing the image of the racing industry because of the state's "direct financial stake" in the sport.³¹⁸ He conceded that the general public may have an interest in preserv-

³¹² *Id.* at 1512 (quoting *Delaware v. Prouse*, 440 U.S. 648, 653-54 (1979)).

³¹³ *Id.* at 1514.

³¹⁴ *Id.* at 1515.

³¹⁵ *Id.*

³¹⁶ *Id.* at 1511.

³¹⁷ *See id.* at 1515-16. The court distinguished *Allen v. City of Marietta*, 601 F. Supp. 482 (N.D. Ga. 1985), on the grounds that the City's Board of Lights and Water employees had been tested only "upon some reasonable, individualized suspicion that the employees subjected to urinalysis were under the influence of drugs while on the job." *Capua*, 643 F. Supp. at 1516. It also distinguished *Division 241 Amalgamated Transit Union v. Suscy*, 538 F.2d 1264 (8th Cir. 1976), on the same "reasonable suspicion" grounds. *Capua*, 643 F. Supp. at 1516.

³¹⁸ *Id.* at 1519.

ing the integrity of the municipal fire brigades. Nevertheless, he stated, public confidence is not as important to the effective performance of the fire fighting forces as it is to the operation of the horse racing industry.³¹⁹ He contended that the process of selection through the civil service test and the "exhaustive training" of fire fighters should be sufficient to reassure the public of their competence.³²⁰ In addition, he found that fire fighters have a much higher expectation of privacy than jockeys, as fire fighters are not subject to pervasive regulation.³²¹ But, the "most critical distinction" between the two cases, he stated, was the lack of procedural protections in the municipal program.³²²

While the lack of notice and testing standards may distinguish *Capua* from *Shoemaker*, there is hardly a distinction on the issue of probable cause. The jockeys of *Shoemaker* must submit to urinalysis at random whether or not there is founded suspicion that any or all may be using controlled substances on or off the premises. The innocent is searched along with the guilty. In *Capua*, the same disregard for the rights of the innocent drew harsh criticism from Judge Sarokin.³²³ After condemning arbitrary drug testing as a type of Orwellian surveillance,³²⁴ he expounded at length on the constitutional right to be presumed innocent until proven guilty:

If we choose to violate the rights of the innocent in order to discover and act against the guilty, then we will have transformed our country into a police state and abandoned one of

³¹⁹ *Id.* Judge Sarokin pointed out that horse racing is particularly vulnerable to "untoward influences" associated with organized gambling. *Id.* (quoting *Shoemaker*, 795 F.2d at 1141). He stressed the *Shoemaker* court's reasoning that urinalysis "was the only 'effective' means to dispel long standing public suspicion of criminal influences" in the horse racing industry. *Id.* How urinalysis will accomplish this has not been explained in either opinion.

³²⁰ *Id.* at 1519-20. The judge observed that "it is not the demonstration of propriety that is essential but rather the determination of job-related capability." *Id.* at 1519.

³²¹ *Id.* at 1518-20.

³²² *Id.* at 1520. Judge Sarokin called particular attention to the shoddy methods employed by the city: "The harassment, coercion and tactics utilized here even if motivated by the best of intentions, should cause us all to recognize the realities of government excesses and the need for constant vigilance against intrusions into constitutional rights by its agents." *Id.* at 1511.

³²³ *See id.* at 1511, 1517. "Such an unfounded presumption of guilt is contrary to the protections against arbitrary and intrusive government interference set forth in the Constitution." *Id.* at 1517.

³²⁴ *Id.* "Drug testing is a form of surveillance, albeit a technological one. Nonetheless, it reports on a person's off-duty activities just as surely as [if] someone had been present and watching. It is George Orwell's 'Big Brother' Society come to life." *Id.*

the fundamental tenets of our free society. In order to win the war against drugs, we must not sacrifice the life of the Constitution in the battle.³²⁵

These sentiments were echoed by Judge Rodriguez in *Police-men's Benevolent Association of New Jersey, Local 318 v. Township of Washington*,³²⁶ which further widened the gap between the opinions of the district court and the Third Circuit's *Shoemaker* opinion. This case involved a proposed pre-employment and post-employment drug screening plan to test the township's police force as part of mandatory medical examinations. All employees were required to comply at least once a year, and at random on other "regularly scheduled and announced" occasions.³²⁷ Testing was to be confined to specific drugs, and the random selection of employees was to be made "by a computer programmed by an independent contractor."³²⁸ Although those selected would not have been informed until "just prior" to being tested, the testing plan could not have been activated without first giving the employees a minimum sixty days advance notice.³²⁹ The actual testing and chain-of-custody procedures, as well as provisions for back up testing and preserving confidentiality, were spelled out in minute detail.³³⁰ Before the plan went into effect, however, the local police officers' association brought an action in federal district court to enjoin the township from implementing the program.³³¹ Judge Rodriguez granted the injunction holding that universal and random urinalysis of police officers violated the fourth amendment of the United States Constitution.³³² In order to reach that conclusion, it was not only necessary for Judge Rodriguez to distinguish *Shoemaker*,³³³ but also to interpret *Capua* as intended to apply beyond the stated facts of the case.

³²⁵ *Id.*

³²⁶ 672 F. Supp. 779 (D.N.J. 1987).

³²⁷ *Id.* at 781, 794. As a condition of employment, the plan required all applicants for municipal jobs to sign forms consenting to urinalysis. *Id.* at 781. Detection of drugs or refusal to submit to testing would result in disqualification for employment. *Id.*

³²⁸ *Id.* at 781-82.

³²⁹ *Id.* at 781-82, 789.

³³⁰ *Id.* at 782.

³³¹ *Id.* at 780-81.

³³² *Id.* at 796.

³³³ *Id.* at 786-87. In addition to *Shoemaker*, 795 F.2d 1136 (horse racing jockeys), the court also distinguished *National Treasury Employees Union v. Von Raab*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988) (customs inspectors); *McDonnell v. Hunter*, 809 F.2d 1302 (8th Cir. 1987) (prison guards); *National Ass'n of Air Traffic Specialists v. Dole*, No. A87-073 (D. Alaska 1987) (flight service specialists); and *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988) (nuclear plant employees).

After the prerequisite warrantless search/reasonable suspicion fourth amendment analysis, Judge Rodriguez stated that random selection was the "heart and soul" of the township's proposed plan and the crux of the constitutional problem in this matter.³³⁴ He noted that mass-testing or random selection had only been upheld for individuals with minimum privacy expectations employed in highly regulated enterprises which were the object of a strong state interest.³³⁵ Comparing *Shoemaker* and other similar decisions to the present case, he stated that the Washington Township police force was not a highly regulated industry.³³⁶ He added that, although police officers may have a diminished expectation of privacy in their employment, "they do not surrender all their constitutional rights when they accept a public position."³³⁷ As for the state interest, Judge Rodriguez acknowledged the importance of maintaining a drug-free police force. Nonetheless, he held that absent proof of risk to the public or impaired performance due to widespread use, the state interest did not outweigh individual rights.³³⁸ Thus, he concluded, none of the compelling reasons applicable to *Shoemaker* and related holdings were present in this case.³³⁹

Citing "a plethora" of reported opinions, Judge Rodriguez held that the "overwhelming consensus" of the decisions did not allow drug testing "in the absence of a reasonable suspicion that the employee has been using illegal drugs."³⁴⁰ The defendants, however, maintained that the real reason many of these programs had been struck down was because of lack of procedural standards. One of the most notable examples, they asserted, could be found in *Capua*, a decision which Judge Rodriguez had cited throughout his opinion as controlling precedent. The defendants alleged that the township's plan had been carefully drafted to overcome the constitutional infirmities that had disqualified other programs.³⁴¹ Unlike the program in *Capua*, the defendants pointed out, the township's plan provided ample notice and detailed guidelines for selection, implementation, and confidentiality. Nothing was left to the discretion of field supervisors.³⁴² Judge Rodriguez conceded that previous decisions had emphasized the absence of well-defined

³³⁴ *Policeman's Benevolent Association*, 672 F. Supp. at 785.

³³⁵ *Id.* at 784-86.

³³⁶ *Id.* at 786-87, 793-94.

³³⁷ *Id.* at 787 (citations omitted).

³³⁸ *Id.* at 791.

³³⁹ *Id.* at 787.

³⁴⁰ *Id.* at 788.

³⁴¹ *Id.* at 789.

³⁴² *See id.* at 789, 781-83.

administrative procedures and standards. Nevertheless, he concluded, "the standard which was most significantly absent" was the one calling for individual suspicion.³⁴³ He specifically stated:

[T]his court does not find that the result in *Capua* would differ if the mass testing had been carried out in a less offensive manner. The constitutional standard enunciated in *Capua* was that mandatory department-wide urine testing was not permissible (sic) because it was not based upon "individualized, reasonable suspicion." Mass or random testing, though it might be carried out in a more civilized manner, will still fail to meet that standard.³⁴⁴

As of this writing, the last federal case heard in the district of New Jersey seems to turn the trend back towards *Shoemaker*. *Poole v. Stephens*,³⁴⁵ decided by Judge Bissell, upheld the state's right to conduct random testing of Corrections Officer Training Academy (COTA) recruits.³⁴⁶ This is not, however, a conclusive decision. In an ambivalent opinion, Judge Bissell also agreed that drug testing of *veteran* corrections officers could only be effected on the basis of individualized suspicion.³⁴⁷ Moreover, he indicated that the ultimate decision on whether or not these recruits could be subjected to random testing will rest with the New Jersey state courts.³⁴⁸

This suit was brought by COTA recruits, veteran corrections officers, and their representative union as a challenge to a memorandum issued by the Commissioner of the New Jersey Department of Corrections.³⁴⁹ The memorandum outlined a drug testing plan implemented under guidelines previously promulgated by the State Attorney General.³⁵⁰ The program required testing of all "permanently appointed" internal affairs investigators or supervisors, and corrections officers or supervisors on the basis of "individualized reasonable suspicion" of use or impairment.³⁵¹ It also required testing COTA recruits upon application for admission to the Academy and subsequently "more than once while at the COTA, without any individualized reasonable suspicion to suspect drug usage."³⁵² The plaintiffs claimed that this testing plan violated both the federal

³⁴³ *Policeman's Benevolent Ass'n*, 672 F. Supp. at 789.

³⁴⁴ *Id.* (citations omitted).

³⁴⁵ 688 F. Supp. 149 (D.N.J. 1988).

³⁴⁶ *Id.* at 158.

³⁴⁷ *Id.* at 157-58.

³⁴⁸ *Id.* at 158. See also *infra* notes 362-66 and accompanying text.

³⁴⁹ *Poole*, 688 F. Supp. at 150.

³⁵⁰ *Id.* at 159 (exhibit A).

³⁵¹ *Id.* at 151.

³⁵² *Id.* at 152.

and the state constitutions. They principally alleged violations of the fourth, ninth, and fourteenth amendments to the United States Constitution, and to article one, paragraph seven of the New Jersey constitution.³⁵³

With an economy of authority,³⁵⁴ Judge Bissell conceded that drug testing may be a "seizure," albeit not an unreasonable one.³⁵⁵ Examining recent case law on point, he unreservedly cited *Shoemaker* as controlling precedent.³⁵⁶ He quickly distinguished *Capua* by noting that, unlike the *Capua* firefighters, the COTA recruits had not been subjected to a "raid."³⁵⁷ He also disposed of *Township of Washington* by stating that the case was currently "on appeal to the United States Court of Appeals for the Third Circuit, the author of *Shoemaker*."³⁵⁸ Judge Bissell compared the situation of the COTA recruits to that of the jockeys in *Shoemaker*. He observed that the recruits, being "aware of the peculiar circumstances and demands" of their chosen profession, had reduced privacy expectations.³⁵⁹ Balancing the equities of the parties involved, he found that the methods employed by the Commissioner were "hardly onerous."³⁶⁰ Thus, he concluded, the Commissioner's plan did not violate the fourth amendment of the United States Constitution.³⁶¹

Judge Bissell specifically declined to consider the state constitutional claim on the ground that the issue, as it applied to the parties before the bench, was not yet a settled matter under state law.³⁶² He acknowledged that New Jersey state courts have repeatedly held that the New Jersey constitution affords greater protection against warrantless searches than the federal constitution.³⁶³ Moreover, the *Poole* opinion was released after one appellate state court had invalidated random testing of law enforcement officers under the New Jersey constitution.³⁶⁴ Judge Bissell, however, observed that there are major differences between testing officers and testing trainees, and as yet there had been no definitive decision on the matter of

³⁵³ *Id.* at 150.

³⁵⁴ *Id.* at 155.

³⁵⁵ *Id.*

³⁵⁶ *Id.*

³⁵⁷ *Id.*

³⁵⁸ *Id.*

³⁵⁹ *Id.*

³⁶⁰ *Id.*

³⁶¹ *Id.*

³⁶² *Id.* at 158 (citations omitted).

³⁶³ *Id.*

³⁶⁴ See *Fraternal Order of Police v. City of Newark*, 216 N.J. Super. 461, 524 A.2d 430 (App. Div. 1987). See *infra* notes 387-412 for an extended discussion of this case.

trainees.³⁶⁵ Should the state establish that random testing of recruits violated the state constitution, Judge Bissell conceded that he would probably have to revise the *Poole* decision.³⁶⁶

b. *The State Courts*

The *Poole* opinion implicitly underscores another split in the decisions: that which exists between the federal and the state courts. While the federal courts were developing precedent under the United States Constitution, the New Jersey state courts had been simultaneously considering the same issues under both the federal and the state constitutions. The first employee drug-testing case heard in state court, *Allen v. Passaic County*,³⁶⁷ was decided shortly after the federal district court had sanctioned random testing in *Shoemaker*. It concerned corrections employees from the sheriff's department.³⁶⁸

Disturbed by an investigation which had uncovered possession and drug use among corrections officers and Passaic County Jail inmates,³⁶⁹ the sheriff had issued a terse memorandum ordering drug urinalysis of all sheriff's department employees "no less than twice and no more than four times annually."³⁷⁰ The order called for "disciplinary action and/or dismissal" upon refusal to comply.³⁷¹ The memorandum did not contain instructions for carrying out the actual testing, protecting the integrity of the sample, or safeguarding confidentiality.³⁷² After submitting to urinalysis, several employees brought an action in state court to enjoin the testing program, claiming that dragnet testing violated both the United States and the New Jersey Constitutions.³⁷³ De-

³⁶⁵ *Poole*, 688 F. Supp. at 158. Judge Bissell indicated that there were presently two unreported decisions on the subject of random testing of police trainees "fast-tracked" for appeal. *Id.* (citing *Fraternal Order of Police v. City of Newark*, No. A-2998-87T5, *appeal cert.* (App. Div. March 21, 1988); *Sweeney v. County of Bergen*, No. C-475-87 (N.J. Ch. Div. Jan. 7, 1988), *appeal docketed*, No. A-2632-87T5 (App. Div. Jan. 15, 1988)).

³⁶⁶ *Poole*, 688 F. Supp. at 158.

³⁶⁷ 219 N.J. Super. 352, 530 A.2d 371 (Law Div. 1986). The court noted that this was a case of first impression in a New Jersey state court. *Id.* at 367, 530 A.2d at 379. A previous New Jersey state case, *Odenheim v. Carlstadt-East Rutherford Regional School Dist.*, 211 N.J. Super. 54, 510 A.2d 709 (Ch. Div. 1985), concerned drug testing school children, not employees. *Id.* at 55-56, 510 A.2d at 709-10.

³⁶⁸ *Allen*, 219 N.J. Super. at 354, 530 A.2d at 372.

³⁶⁹ *Id.* at 355-56, 530 A.2d at 372.

³⁷⁰ *Id.* at 383, 530 A.2d at 387 (appendix A).

³⁷¹ *Id.*

³⁷² *Id.* at 379, 530 A.2d at 385.

³⁷³ *Id.* at 356, 530 A.2d at 373.

cluding the case exclusively under federal constitutional law, Superior Court Assignment Judge Mandak held that the only appropriate standard for drug testing was reasonable suspicion.³⁷⁴

In this case, the plaintiffs had specifically argued that even if dragnet testing was found to be permissible under the federal fourth amendment, it should still be disallowed under the New Jersey constitution because the state constitution afforded "even greater protection for individual rights than provided by the Federal Constitution."³⁷⁵ Judge Mandak, however, rejected this argument stating that although there was a modern trend towards citing state constitutions as a vehicle for "expanding the protection of individual rights," prior New Jersey case law had only expanded the protection in criminal cases.³⁷⁶ As this was not a criminal matter and being an issue of first impression in the state, he felt compelled to apply federal precedent in a manner consistent with the thinking of New Jersey courts on analogous issues.³⁷⁷ On that basis, Judge Mandak stated that since both the United States and the New Jersey constitutions only forbid unreasonable searches, then if the search is reasonable, it may be conducted without a warrant or probable cause.³⁷⁸ On the other hand, he noted, it could be argued that all searches carried out without a warrant or probable cause may be *per se* unreasonable.³⁷⁹ Nevertheless, Judge Mandak rejected this position, indicating that "constitutional rights may give way when reasonableness prevails."³⁸⁰

After analyzing a line of cases which allowed searches in the absence of probable cause, he concluded that the best approach was to balance "the need for the search . . . against the invasion of privacy or the intrusion that the search entails."³⁸¹ Applying this test, he found that the request for urine samples was not "unduly repugnant" nor did it "*per se* offend the sensibilities of the average person."³⁸² He stated, however, that the request

³⁷⁴ *Id.* at 380, 530 A.2d at 385.

³⁷⁵ *Id.* at 356, 530 A.2d at 373.

³⁷⁶ *Id.* at 367, 530 A.2d at 379 (quoting *State v. Novembrino*, 200 N.J. Super. 229, 238, 491 A.2d 37, 42 (App. Div. 1985)).

³⁷⁷ *Id.* at 367-68, 530 A.2d at 379.

³⁷⁸ *See id.* at 358, 530 A.2d at 374.

³⁷⁹ *Id.* at 358-59, 530 A.2d at 374.

³⁸⁰ *Id.* at 363, 530 A.2d at 376.

³⁸¹ *Id.* at 360, 530 A.2d at 374 (citation omitted).

³⁸² *Id.* at 375, 530 A.2d at 383.

could not be made without reasonable suspicion.³⁸³ In reaching this conclusion, he distinguished the New Jersey Racing Commission's urinalysis program as described in *Shoemaker* from the county's crude efforts.³⁸⁴ He stressed that the sheriff's department was not regulated by the state, that its employees had not been forewarned of drug testing as a job requirement, and that they were not subject to "the criminal influence [as] in the gambling and horse racing industry."³⁸⁵ In addition, he found that the sheriff's plan lacked appropriate standards, not only for testing, but also for follow-up measures. "The rules should not be made up along the way," he asserted, "they should be established, complete and in place from the inception."³⁸⁶

In the next reported state case to deal with drug testing, *Fraternal Order of Police v. City of Newark*,³⁸⁷ the court avoided the issue of conflict with *Shoemaker* by basing its holding exclusively on the New Jersey constitution. This case was prompted by an order of the City of Newark Police Director requiring immediate drug testing of all members of the city's Narcotic Bureau. Declaring that "the health of the employee and the trust of the public" were of paramount importance to the police department, the Director had issued a memorandum ordering urinalysis and blood tests of detectives, both upon transfer into the bureau and subsequently at least twice a year.³⁸⁸ The first such testing was ordered without notice on the same day the memorandum was delivered to the Fraternal Order of Police (FOP).³⁸⁹ The FOP immediately brought suit in state court seeking a permanent injunction against the city under both the United States and the New Jersey constitutions.³⁹⁰ The trial court, in an unreported opinion, up-

³⁸³ *Id.* at 380, 530 A.2d at 385.

³⁸⁴ *Id.* at 376-79, 530 A.2d at 383-85.

³⁸⁵ *Id.* at 378, 530 A.2d at 385.

³⁸⁶ *Id.* at 379, 530 A.2d at 385.

³⁸⁷ 216 N.J. Super. 461, 524 A.2d 430 (App. Div. 1987).

³⁸⁸ *Id.* at 462, 524 A.2d at 431 (quoting Memorandum 85-259, issued by Police Director Knox).

³⁸⁹ *Id.* at 463, 524 A.2d at 432. The Memorandum provided in pertinent part: Effective 0001 hours, December 12th, 1985, all members of the Narcotic Bureau shall be required to take a urinalysis and blood test. Furthermore, any transfer into the Unit shall be predicated upon a successful urinalysis and blood test. Any request of transfer to the Narcotic Bureau shall be forwarded with the understanding that a urinalysis exam and blood test is required as part of the assignment, both upon transfer and at least twice a year afterwards.

Id. at 463, 524 A.2d at 431.

³⁹⁰ *Id.* at 465-66, 524 A.2d at 433.

held the city's right to conduct mass urinalyses. The court ordered, however, that the tests must be performed pursuant to the detailed chain-of-custody guidelines set forth in the judgment.³⁹¹ The FOP appealed, and the appellate court reversed the law division.³⁹² Without making any reference to the conflicting language in *Allen*, the court held that drug urinalysis testing without individual reasonable suspicion violated article one, paragraph seven of the New Jersey constitution.³⁹³

While recognizing that the federal fourth amendment may also be applicable, the court declared that the New Jersey constitution afforded greater protection to the rights of individuals.³⁹⁴

³⁹¹ *Id.* at 465, 524 A.2d at 432-33. These guidelines, which were attached as an appendix to the appellate opinion, set out in painstaking detail the methods and procedures to be followed. It provided for method of selection, sampling procedure, chain-of-custody, laboratory protocols, and confidentiality safeguards. It also required thirty days notice before implementation, and before any changes could be made in the procedure. *See id.* at 478-84, 524 A.2d at 439-41 (appendix).

³⁹² *Id.* at 478, 524 A.2d at 439.

³⁹³ *Id.* at 477, 524 A.2d at 438. The New Jersey constitutional provision on searches, which is almost identical to the fourth amendment of the Federal Constitution, provides:

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrant shall issue except upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched and the papers and things to be seized.

N.J. CONST. art. 1, para. 7.

³⁹⁴ *Fraternal Order of Police*, 216 N.J. Super. at 477-78, 524 A.2d at 438-39. In a similar New York case, the court stated *sua sponte* that "resort to the State Constitution, in addition to the Federal, is particularly apt when the result under Federal law is uncertain." *Patchogue-Medford Congress of Teachers v. Board of Educ.*, 70 N.Y.2d 57, 66, 517 N.Y.S.2d 456, 460 (1987) (drug testing of school teachers). The court, however, rendered its decision on the basis of both constitutions. *Id.* at 70, 517 N.Y.S.2d at 462. The majority's decision to include the state constitution elicited strong criticism from Judge Simons. He felt that a determination on state grounds should have waited until after the United States Supreme Court had ruled on the issue. Invoking state grounds at this stage, he declared, was being used to "preempt the Supreme Court and avoid its upsetting our interpretation of the Federal Constitution." *Id.* at 72, 517 N.Y.S.2d at 464 (Simons, J., concurring).

Viewed from the federal side, the only recent drug testing case in which a federal district court declined jurisdiction in deference to a state constitutional provision, was overruled on appeal. *Guiney v. Roache*, 833 F.2d 1079, 1080 (1st Cir. 1987). This case involved Boston police patrolmen who brought an action under the federal constitution. The court, however, decided *sua sponte* that Article 14 of the Commonwealth's constitution was "potentially dispositive" of the issue, and refused to hear the case. *See Guiney v. Roache*, 654 F. Supp. 1287, 1298 (D. Mass.), *vacated*, 833 F.2d 1079 (1st Cir. 1987). Citing *Railroad Commission of Texas v. Pullman Co.*, 312 U.S. 496 (1941), the district court observed that where there are unsettled issues of state constitutional law, the federal courts should abstain from the case, particularly if the constitutional provision in question "is substantively different from the federal provision at issue." *Guiney*, 654 F. Supp. at 1298 (cita-

Despite this assertion, the court considered and adopted a large body of precedent decided under the fourth amendment to the United States Constitution.³⁹⁵ Judge Gaulkin, writing for the appellate division, reiterated that urinalysis is a search, and as such it should not be conducted without a warrant. Citing federal precedent, he nevertheless conceded that warrantless searches may be allowed where the search falls within a specific exception to the warrant requirement or where there is probable cause to believe the search will produce evidence of the suspected violation.³⁹⁶ Otherwise, he stated, the warrantless search must be subjected to the "overall reasonableness" analysis.³⁹⁷ Citing *Capua*, among other cases, Judge Gaulkin indicated that the overwhelming majority of the reported cases equate reasonableness with individualized suspicion.³⁹⁸

Reviewing previous case law, he noted that the consensus of

tions omitted). The court pointed out, however, that where the state provision "is modeled on or substantively identical to a federal constitutional provision, there are no uniquely state interests at stake, and the policies underlying *Pullman* abstention would not be served by abstaining in order to allow a state court to interpret the . . . rule in light of the state constitution." *Id.* (citations omitted). Noting that Article 14 of the Commonwealth's constitution had been "explicitly" interpreted by the state's highest court "to be independent of the Fourth Amendment and to provide greater substantive protection than the Fourth Amendment, at least with respect to determining the existence of probable cause[.]" the court concluded that abstention was required. *Id.* at 1299. On appeal, the First Circuit vacated the district court's decision, holding that Article 14 was almost exactly parallel to the fourth amendment and thus abstention was not required. *Guiney*, 833 F.2d at 1083-84. *But see* *State v. Kirk*, 202 N.J. Super. 28, 35, 493 A.2d 1271, 1274 (App. Div. 1985) (article 1, paragraph 7 of the New Jersey constitution, although almost identical to the fourth amendment of the United States Constitution, it nevertheless has been interpreted to confer greater protection of individual rights than the parallel provision in the federal constitution). In another case, involving New Jersey corrections officer trainees, the court decided the constitutional issues under federal law and reserved decision on the state claim pending resolution of contested points of law by state courts. *See Poole v. Stephens*, 688 F. Supp. 149 (D.N.J. 1988). *See supra* notes 362-66 and accompanying text.

The United States Supreme Court has sanctioned the use of independent state grounds rather than federal grounds to resolve constitutional issues in state courts. This is only allowed, however, if the state court makes "a plain statement in its judgment or opinion that the federal cases are being used only for the purpose of guidance, and do not themselves compel the result that the court has reached." *Michigan v. Long*, 463 U.S. 1032, 1041 (1983). Moreover, the Court stressed that there must be justifiable state grounds: "If the state court decision indicates clearly and expressly that it is alternatively based on bona fide separate, adequate, and independent grounds, we, of course, will not undertake to review the decision." *Id.*

³⁹⁵ *See Fraternal Order of Police*, 216 N.J. Super. at 466-68, 470-72, 524 A.2d at 433-36.

³⁹⁶ *Id.* at 466-67, 524 A.2d at 433-34.

³⁹⁷ *Id.* at 470, 524 A.2d at 435.

³⁹⁸ *Id.* at 471, 524 A.2d at 435-36.

the opinions had found "an important and legitimate" state interest in insuring a drug-free environment.³⁹⁹ He also stated public employees have lower expectations of privacy.⁴⁰⁰ However, he added that these findings did not outweigh the need for individualized suspicion "in absence of a factual showing that drug use is widespread among the affected employees or that it presents an identifiable risk to the public."⁴⁰¹ The "reasonable suspicion standard," he concluded, fairly balances the interests of both employer and employee.⁴⁰² At the time this opinion was written, there were only four reported cases upholding government mandated random testing outside of the military. Three concerned employees on the government payroll: guards at maximum security prisons,⁴⁰³ an FBI agent,⁴⁰⁴ and nuclear plant employees.⁴⁰⁵ Judge Gaulkin explained that in these cases "the public need for such testing, although not specifically proved, was sufficiently compelling to justify the intrusion."⁴⁰⁶ The fourth case, *Shoemaker v. Handel*, he dismissed as involving "a different mix of public and private interests" inapplicable to the present case.⁴⁰⁷ Observing that *Shoemaker* was applicable only to highly regulated private industries, he stated unequivocally that the policy force is neither a "highly-regulated industry" nor a

³⁹⁹ *Id.* at 472, 524 A.2d at 436 (citations omitted).

⁴⁰⁰ *Id.* (citations omitted). However, in a case decided a few days after *Fraternal Order of Police*, the United States Supreme Court held that an employee retained a reasonable expectation of privacy in the contents of his desk and office furniture. See *O'Connor v. Ortega*, 107 S. Ct. 1492 (1987) (plurality opinion).

⁴⁰¹ *Fraternal Order of Police*, 216 N.J. Super. at 472-73, 524 A.2d at 436.

⁴⁰² *Id.* at 473, 524 A.2d at 436. In support of the court's position, Judge Gaulkin also mentioned the Law Enforcement Drug Screening Guidelines issued by the state attorney general, W. Cary Edwards, on October 22, 1986. *Id.* at 475, 524 A.2d at 438. These guidelines call for surprise mandatory testing of police recruits, but provide for drug testing of permanent officers only upon individualized reasonable suspicion. While acknowledging that these guidelines were not binding on the court, Judge Gaulkin noted that they reinforced the court's "conclusions from this record that the public interest does not require police officers to be subjected to [mass] drug testing." *Id.* at 475-76, 524 A.2d at 438.

⁴⁰³ *McDonnell v. Hunter*, 809 F.2d 1302 (8th Cir. 1987) (random testing upheld for corrections employees who came in contact with inmates).

⁴⁰⁴ *Mack v. United States*, 653 F. Supp. 70 (S.D.N.Y. 1986) (allowing testing of FBI agent without reasonable suspicion), *aff'd*, 814 F.2d 120 (2d Cir. 1987).

⁴⁰⁵ *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988) (holding that nuclear public utility employees already subject to constant surveillance, physical checks, and electronics searches for weapons and explosives have diminished privacy expectations and cannot object to random testing).

⁴⁰⁶ *Fraternal Order of Police*, 216 N.J. Super. at 473-74, 524 A.2d at 437.

⁴⁰⁷ *Id.* at 474 n.8, 524 A.2d at 437 n.8.

“commercial enterprise.”⁴⁰⁸ While he acknowledged that police officers are under strict statutory and administrative controls, he emphasized that these controls could not be equated with the “close supervision and inspection” imposed on sensitive industries.⁴⁰⁹ Furthermore, he indicated that *Shoemaker* may well be an oddity “out of step” with the trend in the law.⁴¹⁰

In his concluding remarks, Judge Gaulkin emphasized the advantages of deciding the case under the New Jersey constitution. Aside from the higher level of protection for individual rights, he also mentioned such procedural advantages as avoiding “needless review in the United States Supreme Court” which could lead to “subsequent redundant proceedings in our own courts.”⁴¹¹ Moreover, he observed that there is an urgent need for a reliable constitutional standard: “There is clearly a necessity for our giving firm guidance to our own public employers and employees and to limit the prospect of disarray in decisional treatment of the question.”⁴¹²

4. Consent

Generally, uncoerced consent to a search serves as waiver of the warrant or the probable cause requirement.⁴¹³ Certainly, employees who knowingly consent to a search give up their reasonable expectation of privacy.⁴¹⁴ They do not, however, waive all

⁴⁰⁸ *Id.* at 469, 524 A.2d at 434-35.

⁴⁰⁹ *Id.* (citing *In re Martin*, 90 N.J. 295, 312-13, 447 A.2d 1290, 1298 (1982)).

⁴¹⁰ *Id.* at 470 n.7, 524 A.2d at 435 n.7 (quoting *Caruso v. Ward*, 133 Misc.2d 544, 556, 506 N.Y.S.2d 789, 798 (1986), *aff'd*, 131 A.D.2d 214, 520 N.Y.S.2d 551 (1987)). The *Caruso* court had stated that “*Shoemaker* . . . on close examination is either not applicable to the facts in the instant proceeding, or is clearly distinguishable therefrom or simply out of step with the rest of the authorities.” *Caruso*, 133 Misc.2d at 556, 506 N.Y.S.2d at 798. This sentiment has been echoed by various other courts. See *Penny v. Kennedy*, 648 F. Supp. 815 (E.D. Tenn. 1986), *aff'd*, 846 F.2d 1563 (6th Cir. 1988); *Patchogue-Medford Congress of Teachers v. Board of Educ. of the Patchogue-Medford Union Free School Dist.*, 119 A.D.2d 35, 505 N.Y.S.2d 888 (1986), *aff'd*, 70 N.Y.2d 57, 517 N.Y.S.2d 456 (1987). See also *American Fed. of Gov't Employees v. Weinberger*, 651 F. Supp. 726, 734 (S.D. Ga. 1986) (“As to the enigmatic case of *Schoemaker v. Handel*, it has been referred to but has been rejected or distinguished by all of the courts that have dealt with the mandatory drug testing of law enforcement personnel subsequent to the *Shoemaker* decision.”).

⁴¹¹ *Fraternal Order of Police*, 216 N.J. Super. at 478, 524 A.2d at 439.

⁴¹² *Id.* at 477-78, 524 A.2d at 439.

⁴¹³ See *United States v. Mendenhall*, 446 U.S. 544, 557 (1980); *Schneckloth v. Bustamonte*, 412 U.S. 218, 248-49 (1973).

⁴¹⁴ See *Schneckloth*, 412 U.S. at 233-34; *Davis v. United States*, 328 U.S. 582, 593 (1946).

their constitutional rights by consenting to a search.⁴¹⁵ If the search is unreasonable, consent, whether express or implied, will not cure the constitutional infirmity. Requiring "advance consent to future *unreasonable* searches is not a reasonable condition of employment."⁴¹⁶

In the context of drug testing, courts have tended to find implied consent where they have found random or mass testing constitutionally acceptable. Such consent has often been called "voluntariness" and it has been explained in various ways. One court clearly defined it as "voluntarily seeking employment in a covered position knowing in advance of the urinalysis requirement."⁴¹⁷ Another described it as choosing to work in a highly regulated occupation knowing that such regulations may entail invasions of privacy.⁴¹⁸ Others identify it as simply signing a consent form.⁴¹⁹ The United States Supreme Court has defined "voluntariness" (in a criminal context) ultimately as "a question of fact to be determined from all the circumstances" surrounding a particular case.⁴²⁰ In *Shoemaker*, Judge Brotman for the district court, and later Judge Gibbons for the Third Circuit, concluded that the jockeys had given their tacit consent to urinalysis by seeking a license to race in New Jersey.⁴²¹ The other New Jersey opinions, however, did not endorse the idea that fourth amendment restrictions could be evaded through consent.⁴²² Here as in other jurisdictions, the interpretation of valid consent seems to be directly related to the court's approval or rejection of random drug testing.

⁴¹⁵ See Comment: *Random Drug Testing of Government Employees: A Constitutional Procedure*, 54 U. CHI. L. REV. 1335, 1353 (1987). In his extensive analysis of consent as a means of eliminating fourth amendment limitations, the author describes the difference between waiver and consent: "If one consents to a government investigation, it is not a search. If one waives constitutional rights, then a search occurs; one merely does not contest such activity." *Id.* at 1353 n.79.

⁴¹⁶ *McDonell v. Hunter*, 809 F.2d 1302, 1310 (8th Cir. 1987) (quoting *McDonell v. Hunter*, 612 F. Supp. 1122, 1131 (S.D. Iowa 1985)).

⁴¹⁷ *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 178 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988).

⁴¹⁸ See *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510, 1524-25 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988).

⁴¹⁹ *McDonell*, 809 F.2d at 1310.

⁴²⁰ *Schneekloth v. Bustamonte*, 412 U.S. 218, 248-49 (1973).

⁴²¹ See *Shoemaker*, 795 F.2d at 1141-42.

⁴²² *Policeman's Benevolent Ass'n*, 672 F. Supp. at 789; *Fraternal Order of Police*, 216 N.J. Super. at 466 n.4, 524 A.2d at 433 n.4. See also *Capua*, 643 F. Supp. at 1518-19; *Allen*, 219 N.J. Super. 377-79, 530 A.2d 384-85.

5. The Current State of the Law

As it now appears, the New Jersey cases show a microcosm of current fourth amendment analysis of drug testing. Although there is considerable disarray in the opinions across the nation, there remains some consensus on the basic ways to approach the problem. These "common threads" were best summarized by Judge Mandak in *Allen v. Passaic County*:

1. Whether the urinalysis is conducted as part of a criminal investigation or for some other reason such as employment is a very significant factor of consideration.

2. In order to relax the probable cause requirement the test to be applied is whether the search is reasonable and that requires a balancing of the need, supported by the promotion of a legitimate government interest, against the intrusiveness of the search relative to the individual's expectation of privacy.⁴²³

The disagreement is centered on whether random or mass-testing rises to the level of unacceptable intrusion. The cases that have upheld dragnet testing have also found an actual or implied valid consent to the test. They usually involve activities or enterprises that are either highly regulated or present a danger to the general public.⁴²⁴ But so, it could be argued, are the activities of policemen and fire fighters and yet they usually have been found deserving of a higher constitutional protection.

This is not unique to the Third Circuit.⁴²⁵ What makes the split in the New Jersey cases remarkable, is that although the first case heard and affirmed by the Third Circuit should have established the constitutionality of random testing as a binding precedent, it has generally not been followed by the other courts in the jurisdiction. The majority of the New Jersey federal courts, and all of the state

⁴²³ *Allen*, 219 N.J. Super. at 373-74, 530 A.2d at 382. Judge Mandak added two other basic points of agreement pertaining exclusively to correctional institutions:

3. Employees in penal and correctional institutions do not, by virtue of their employment, lose all of their Fourth Amendment rights.

4. Correctional facility security considerations reduce the scope of the reasonable expectation of privacy that one normally holds and makes reasonable some intrusions that would not be reasonable outside the facility.

Id. at 374, 530 A.2d at 382.

⁴²⁴ See *supra* notes 403-05.

⁴²⁵ *Everett v. Napper*, 833 F.2d 1507 (11th Cir. 1987) (fire fighter); *Penny v. Kennedy*, 648 F. Supp. 815 (E.D. Tenn. 1986), *aff'd*, 846 F.2d 1563 (5th Cir. 1988) (police officers); *Lovvorn v. City of Chattanooga*, 647 F. Supp. 875 (E.D. Tenn. 1986), *aff'd*, 846 F.2d 1539 (6th Cir. 1988) (fire fighters); *Turner v. Fraternal Order of Police*, 500 A.2d 1005 (D.C. 1985) (police officers).

courts that subsequently examined the issue, have either distinguished or side-stepped *Shoemaker*, or both. Nevertheless, the *Shoemaker* view may well be the one that ultimately prevails. After all, the Supreme Court has already tacitly endorsed the Third Circuit's opinion by refusing to grant certification.⁴²⁶

B. Other Constitutional Challenges

Although the bulk of the drug testing litigation has revolved around federal fourth amendment rights, plaintiffs have often added a few other constitutional arguments to bolster their claims. These challenges usually include the fifth amendment right against self-incrimination;⁴²⁷ the fifth and fourteenth amendment rights of due process and equal protection,⁴²⁸ and the fundamental right to privacy, sometimes brought under the ninth amendment.⁴²⁹ Some of the New Jersey cases have addressed these concerns with, again, varying results.

1. Self-incrimination

Both state and federal courts have almost unanimously agreed that while the search and seizure provisions of the fourth amendment apply to urinalysis, the fifth amendment's privilege against self-incrimination does not.⁴³⁰ The fifth amendment protects individuals accused of a crime from being compelled to disclose inculpatory information about themselves.⁴³¹ This protection is now enforceable against the states through the fourteenth amendment.⁴³² It has also been independently incorporated into the New Jersey common law.⁴³³

While the privilege against self-incrimination has been ex-

⁴²⁶ *Shoemaker*, 107 S. Ct. 577 (1986).

⁴²⁷ See *infra* notes 430-44 and accompanying text.

⁴²⁸ See *infra* notes 445-74 (due process), 475-507 (equal protection) and accompanying text.

⁴²⁹ See *infra* notes 508-35 and accompanying text.

⁴³⁰ See, e.g., *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 181 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988); *Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 611-12 (S.D.N.Y. 1988); *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510, 1527-28 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988); *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1571 (C.D. Cal. 1987); *Storms v. Coughlin*, 600 F. Supp. 1214, 1217 n.2 (S.D.N.Y. 1984) (citing *Schmerber v. California*, 384 U.S. 757 (1966)).

⁴³¹ The fifth amendment provides in pertinent part: "No person . . . shall be compelled in any criminal case to be a witness against himself . . ." U.S. CONST., amend. V., cl. 3.

⁴³² *Malloy v. Hogan*, 378 U.S. 1, 8 (1964).

⁴³³ *In re Martin*, 90 N.J. 295, 331, 447 A.2d 1290, 1309 (1982).

panded to include all jurisdictions, it has remained very narrow in scope. It can only be invoked in criminal proceedings,⁴³⁴ and it applies only to verbal communications, that is, to "evidence of a testimonial or communicative nature," not to physical evidence.⁴³⁵ The United States Supreme Court has excluded such concrete evidence as a blood specimen,⁴³⁶ a voice sample,⁴³⁷ a line-up identification,⁴³⁸ and even a handwriting exemplar,⁴³⁹ holding that these were mere indications of "physical characteristics" and not disclosures of personal knowledge by the accused.⁴⁴⁰

None of the New Jersey cases developed a full analysis of the self-incrimination implications. The only plaintiffs who even bothered to plead violation of the privilege were the jockeys in *Shoemaker*, and the district court dismissed their claim in one short paragraph. Pointing out that sanctions for drug use involved only civil administrative penalties, Judge Brotman stressed that the State Division of Criminal Justice had no intention either to seek or to use the information obtained through urinalysis for criminal prosecution.⁴⁴¹ The issue was not raised on appeal.

All the other opinions indicated in various ways that employees testing positive could be subjected to some form of disciplinary proceeding, but generally gave no indication that criminal charges would be forthcoming.⁴⁴² The only exception is found in *Capua v. City of Plainfield*, in which the fire fighter plaintiffs had been threatened with criminal prosecution.⁴⁴³ Even in *Capua* the plaintiffs did not allege violation of the privilege, preferring to base their claims entirely on the fourth amendment. Notwithstanding the complaint, Judge Sarokin held, *sua sponte*, that plain-

⁴³⁴ See *Ullman v. United States*, 350 U.S. 422, 431 (1956) (citation omitted) (self-incrimination clause does not apply absent threatened criminal actions). See also *Rushton*, 653 F. Supp. at 1528; *Shoemaker*, 619 F. Supp. at 1107.

⁴³⁵ *Schmerber v. California*, 384 U.S. 757, 761 & n.5 (1966).

⁴³⁶ *Id.*

⁴³⁷ *United States v. Dionisio*, 410 U.S. 1, 5-7 (1973).

⁴³⁸ *United States v. Wade*, 388 U.S. 218, 221-23 (1967).

⁴³⁹ *Gilbert v. California*, 388 U.S. 263, 266 (1967).

⁴⁴⁰ *Wade*, 388 U.S. at 222.

⁴⁴¹ *Shoemaker*, 619 F. Supp. at 1107.

⁴⁴² See *Policeman's Benevolent Ass'n*, 672 F. Supp. at 782 (drug testing not intended for purposes of criminal prosecution); *Fraternal Order of Police*, 216 N.J. Super. at 483, 524 A.2d at 441 (officers testing positive may be subject to disciplinary proceedings); *Allen*, 219 N.J. Super. at 369-70, 530 A.2d at 380 (urinalysis not intended as a means to gather evidence for prosecution).

⁴⁴³ *Capua*, 643 F. Supp. at 1512.

tiffs' rights against self-incrimination had been impaired, although he based his holding on the "threat of immediate discharge" and not on the danger of criminal prosecution.⁴⁴⁴ It is very doubtful, however, that urinalysis will ever be accorded fifth amendment protection. Even if positive tests were to lead to criminal charges, the Supreme Court's consistent refusal to extend the privilege beyond verbal testimonial communications makes Judge Sarokin's conclusion highly unlikely. If the results of a blood test are not considered self-incriminatory, the results of a urine test could hardly be found to be so.

2. Due Process

The constitutional right of due process of law is guaranteed by both the fifth⁴⁴⁵ and the fourteenth amendments⁴⁴⁶ to the United States Constitution. Both amendments impose equal due process constraints upon individuals acting under color of government authority. The difference lies in the origin of the power to act: the fifth amendment applies only to actions based on federal legislation, while the fourteenth amendment imposes restraints only on actions derived from state law.⁴⁴⁷ Due process is also guaranteed by many state constitutions.⁴⁴⁸

There is no exact definition of the expression "due process of law."⁴⁴⁹ It is usually defined in a functional manner within the context of the legal problem to be solved.⁴⁵⁰ Most commonly, courts simply enunciate precepts to insure that proper procedures are used before depriving citizens of their life, their liberty, or their property. Such procedures must include adequate notice

⁴⁴⁴ *Id.* at 1521. "By compelling plaintiffs to participate in the urine testing under the threat of immediate discharge, defendants effectively coerced a waiver of any rights, including the right against self-incrimination, plaintiffs may have had under the collective bargaining agreement to challenge such unilateral action." *Id.* (emphasis added).

⁴⁴⁵ The due process clause of the fifth amendment provides: "No person shall be . . . deprived of life, liberty or property, without due process of law . . ." U.S. CONST. amend. V, cl. 3.

⁴⁴⁶ The fourteenth amendment provides in pertinent part: "No State shall . . . deprive any person of life, liberty or property, without due process of law. . . ." U.S. CONST. amend. XIV, § 1, cl. 3.

⁴⁴⁷ *Hallinger v. Davis*, 146 U.S. 314, 319-20 (1892); *Hurtado v. California*, 110 U.S. 516, 535 (1884).

⁴⁴⁸ See 16 AM. JUR. 2D *Constitutional Law* § 804, & n.95 (1979).

⁴⁴⁹ See *Holden v. Hardy*, 169 U.S. 366, 389-90 (1898).

⁴⁵⁰ See *Hannah v. Larche*, 363 U.S. 420, 442 (1960); *Brock v. North Carolina*, 344 U.S. 424, 427-28 (1953).

and an opportunity to be heard through a fair contest.⁴⁵¹ However, although the phrase "due process" conjures up procedural connotations, the United States Supreme Court has also recognized the existence of "substantive" due process.⁴⁵² Generally, substantive due process purports to guarantee that a person's life, liberty or property will not be withheld for arbitrary reasons.⁴⁵³ It applies to situations where the government uses procedural sound methods to achieve unacceptable goals.⁴⁵⁴ In order to overcome the substantive due process claim the object of any legislation must be rationally related to a compelling state interest.⁴⁵⁵ Random and mass testing programs have been often challenged under both types of due process.⁴⁵⁶ The majority of these challenges have been aimed at summary discharges without notice or hearing. This discussion, however, is restricted to due process challenges relating to the *process of testing*. Claims of due process violations in the disciplinary treatment of employees *after* testing has taken place, are beyond the scope of this Comment.⁴⁵⁷

⁴⁵¹ *Mullane v. Central Hanover & Trust Co.*, 339 U.S. 306, 313-14 (1950). In 1976, the Supreme Court set forth the necessary standards for evaluating due process violations:

[O]ur prior decisions indicate that identification of the specific dictates of due process generally requires consideration of three distinct factors: First, the private interest that will be affected by the official action; second, the risk of an erroneous deprivation of such interest through the procedures used, and the probable value, if any, of additional or substitute procedural safeguards; and finally, the Government's interest, including the function involved and the fiscal and administrative burdens that the additional or substitute procedural requirement would entail.

Mathews v. Eldridge, 424 U.S. 319, 334-35 (1976) (citation omitted).

⁴⁵² See *Regents of University of Michigan v. Ewing*, 474 U.S. 214, 229-30 (1985) (Powell, J., concurring).

⁴⁵³ See *Nebbia v. New York*, 291 U.S. 502, 525, 537, 539 (1934). This doctrine, as applied to economic legislation has been greatly discredited in recent years. See *Ferguson v. Skrupa*, 372 U.S. 726, 730-32 (1963).

⁴⁵⁴ See *Gilmer v. City of Atlanta*, 774 F.2d 1495, 1500 (11th Cir. 1985), *cert. denied*, 106 S. Ct. 1970 (1986).

⁴⁵⁵ See *Kelley v. Johnson*, 425 U.S. 238, 248 (1976); *Williamson v. Lee Optical of Oklahoma, Inc.*, 348 U.S. 483, 487-88 (1955).

⁴⁵⁶ See *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 181 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988) (substantive due process); *Mack v. United States*, 814 F.2d 120, 123-24 (2d Cir. 1987) (procedural due process); *Committee for GI Rights v. Callaway*, 518 F.2d 466, 471 (D.C. Cir. 1975) (procedural due process); *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1569 (C.D. Cal. 1987) (procedural due process); *Rushton v. Nebraska Pub. Power Dist.*, 653 F. Supp. 1510 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988) (substantive and procedural due process); *Capua*, 643 F. Supp. at 1511, 1520-21 (procedural due process).

⁴⁵⁷ See Comment, *Yellow Rows of Test Tubes*, *supra* note 1, for an extensive discus-

Procedural due process challenges to the testing programs are usually based on lack of procedural safeguards.⁴⁵⁸ At least one case has found a procedural due process violation in the lack of notice inherent in surprise mass urinalysis.⁴⁵⁹ Substantive due process challenges are usually directed at the lack of reliability of the chosen testing methods and at the lack of a compelling state interest.⁴⁶⁰ Unfortunately, the courts at times seem to confuse the two types of due process.⁴⁶¹ The procedural due process claim as it refers to lack of notice is hard to defeat. One possible defense would be to insure that there is ample forewarning before a testing program is activated.⁴⁶² The absence of procedural safeguards will almost certainly defeat any government drug testing program, while their existence will not necessarily guarantee approval.⁴⁶³ In truth, there is no hard and fast guideline of what constitutes minimum standards. Courts are not always willing to supply benchmarks.⁴⁶⁴

Substantive due process claims against the reliability of tests can usually be defeated by insuring that the immunoassays are confirmed by a reliable back-up test.⁴⁶⁵ Courts have allowed disciplinary actions against *prison inmates* on the basis of double

sion of this aspect of drug testing.

⁴⁵⁸ See *Rushton*, 653 F. Supp. at 1526 (lack of safeguards).

⁴⁵⁹ See *Capua*, 643 F. Supp. at 1521 (testing without notice).

⁴⁶⁰ See *Everett v. Napper*, 833 F.2d 1507, 1512-13 (11th Cir. 1987) (compelling state interest); *National Treasury Employees Union*, 816 F.2d at 181-82 (reliability of tests); *Rushton*, 653 F. Supp. at 1525 (reliability of tests).

⁴⁶¹ See *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1569-70 (C.D. Cal. 1987). The court analyzed the "procedural" due process implications of using allegedly unreliable tests. *Id.*

⁴⁶² See *Rushton*, 653 F. Supp. at 1527. See also *Capua*, 643 F. Supp. at 1521. "Such testing was unilaterally imposed by defendants as a condition of employment without prior notice to plaintiffs and without opportunity for plaintiffs to voice objections or seek the advice of counsel." *Id.* Note, however, that in *Policeman's Benevolent Association*, Judge Rodriguez indicated that the *Capua* decision would not have been different even if all the procedural objections had been cured by the defendants. *Policeman's Benevolent Ass'n*, 672 F. Supp. at 789. See *supra* note 344 and accompanying text.

⁴⁶³ See *Egloff v. New Jersey Air Nat'l Guard*, 684 F. Supp. 1275 (D.N.J. 1988). See also *Capua*, 643 F. Supp. at 1521; *Policeman's Benevolent Ass'n*, 672 F. Supp. at 789; *Allen*, 219 N.J. Super. at 379, 530 A.2d at 385.

⁴⁶⁴ See *Egloff*, 684 F. Supp. at 1281-82; *Rushton*, 653 F. Supp. at 1526. *But cf.* *McDonell v. Hunter*, 809 F.2d 1302, 1309 (8th Cir. 1987); *Wykoff v. Resig*, 613 F. Supp. 1504, 1514 (N.D. Ind. 1985); *Fraternal Order of Police*, 216 N.J. Super. at 465, 524 A.2d at 432-33.

⁴⁶⁵ See *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 181-82 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988); *McDonell*, 809 F.2d at 1309; *Rushton*, 653 F. Supp. at 1525. See also *supra* notes 57-61 and accompanying text.

EMIT® tests (original test and confirmation),⁴⁶⁶ and even on the basis of a single test.⁴⁶⁷ There is no record of any court allowing discharge of government *employees* on the basis of EMIT® tests alone. This is not surprising considering that even the most accurate immunoassays are less than 100% reliable.⁴⁶⁸ On the other hand, at least one court had held that conclusive evidence can be less than 100% accurate. In *Peranzo v. Coughlin*,⁴⁶⁹ Judge Sand stated that 95% probability of accuracy was sufficient to meet the "beyond a reasonable doubt" standard in prisoner's drug testing accusatory proceedings.⁴⁷⁰ As for the compelling state interest, it is generally conceded that the state, as employer, may have a legitimate interest in maintaining a drug-free workplace.⁴⁷¹ Few courts, however, have found this interest compelling enough to overcome a substantive due process challenge.⁴⁷²

The Third Circuit cases mostly either ignore or barely mention due process issues. The only Third Circuit opinion to give the subject moderate consideration is *Capua v. City of Plainfield*. In *Capua*, Judge Sarokin found that both the unannounced mass testing and the lack of procedural safeguards were a "flagrant violation of the due process rights that inure to plaintiffs under both the New Jersey statutory regulations and the Fourteenth Amendment of the United States Constitution."⁴⁷³ He criticized particularly the lack of standards for protection of the fire fighters' personal physiological information which had so unexpectedly been placed in the custody of government authorities. Noting that the reliability and accuracy of the EMIT® tests were open to question, he held that "defendant's refusal to afford plaintiff a full opportunity to evaluate and review their personal

⁴⁶⁶ See *Wykoff v. Resig*, 613 F. Supp. 1504, 1512 (N.D. Ind. 1985); *Peranzo v. Coughlin*, 608 F. Supp. 1504, 1514 (S.D.N.Y. 1985). *Contra In re Brown*, 132 Misc.2d 686, 689, 505 N.Y.S.2d 743, 746 (N.Y. Sup. Ct. 1985).

⁴⁶⁷ *Higgs v. Wilson*, 616 F. Supp. 226, 230 (W.D. Ky. 1985); *Jensen v. Lick*, 589 F. Supp. 35, 39 (D.N.D. 1984). These cases fly in the face of the current admonitions of both the legal and the scientific community which call for confirmation by a different more reliable method. See *supra* notes 56-61 and accompanying text.

⁴⁶⁸ See *supra* note 56 and accompanying text.

⁴⁶⁹ 608 F. Supp. 1504 (S.D.N.Y. 1985).

⁴⁷⁰ See *id.* at 1512 (quoting *United States v. Fatico*, 458 F. Supp. 388 (E.D.N.Y. 1978), *aff'd*, 603 F.2d 1053 (2d Cir. 1979), *cert. denied*, 444 U.S. 1073 (1980)).

⁴⁷¹ See *Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 594 n.9 (S.D.N.Y. 1988); *Allen v. City of Marietta*, 601 F. Supp. 482, 491 (N.D. Ga. 1985).

⁴⁷² See, e.g., *Everett v. Napper*, 833 F.2d 1507, 1513 (11th Cir. 1987); *National Treasury Employees Union v. Von Raab*, 816 F.2d 170, 173, 181 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988).

⁴⁷³ *Capua*, 643 F. Supp. at 1521.

test results or to have their own specimens re-tested by a technician of their choice offends traditional notions of fundamental fairness and due process."⁴⁷⁴

3. Equal Protection

Drug testing programs have occasionally also been challenged on the ground of equal protection violations.⁴⁷⁵ The fourteenth amendment is the only provision in the United States Constitution which guarantees the equal protection of the laws to all inhabitants of the Union.⁴⁷⁶ It is not, however, "the exclusive fount of doctrine in this area" of the law.⁴⁷⁷ In the century-plus since its ratification the meaning of the phrase "equal protection" has gradually evolved into a major constitutional tenet. The Supreme Court has recognized that its interpretations of the amendment have "never been confined to historic notions of equality."⁴⁷⁸ The equal protection clause is merely a standard: "Unlike other provisions of the Constitution, the Equal Protection Clause confers no substantive rights and creates no substantive liberties. The function of the Equal Protection Clause, rather, is simply to measure the validity of *classifications* created by state laws."⁴⁷⁹ It protects against dissimilar treatment of individuals who are similarly situated.⁴⁸⁰ In this century, the equal protection clause has been made applicable to actions of the federal government through the due process clause of the fifth

⁴⁷⁴ *Id.*

⁴⁷⁵ See *Railway Labor Executives Ass'n v. Burnley*, 839 F.2d 575, 592 (9th Cir.), *cert. granted*, 108 S. Ct. 2033 (1988); *Everett v. Napper*, 833 F.2d 1507, 1513 (11th Cir. 1987); *Chappelle v. Rice*, No. 87 C 4494 (N.D. Ill. Apr. 20, 1988) (LEXIS, Genfed library, Dist file); *Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 601 (S.D.N.Y. 1988); *Shield Club v. City of Cleveland*, 647 F. Supp. 274, 281-87 (N.D. Ohio 1986), *rev'd*, 838 F.2d 138 (6th Cir. 1987); *Shoemaker v. Handel*, 619 F. Supp. 1089, 1105, (D.N.J. 1985) *aff'd*, 795 F.2d 1136 (3d Cir. 1986), *cert. denied*, 57 U.S. 3392 (1986).

⁴⁷⁶ The fourteenth amendment provides in pertinent part: "No State shall . . . deny to any person within its jurisdiction the equal protection of the laws." U.S. CONST. amend. XIV 1, cl. 4.

⁴⁷⁷ L. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 992 (1978).

⁴⁷⁸ *Harper v. Virginia Bd. of Elections*, 383 U.S. 663, 669 (1966). Justice Douglas, writing for the majority, clearly asserted that "the Equal Protection Clause is not shackled to the political theory of a particular era Notions of what constitutes equal treatment for purposes of the Equal Protection Clause *do change*." *Id.* (emphasis in original).

⁴⁷⁹ *San Antonio Independent School Dist. v. Rodriguez*, 411 U.S. 1, 59 (1973) (Stewart, J., concurring) (emphasis in original) (footnote omitted).

⁴⁸⁰ *Frontiero v. Richardson*, 411 U.S. 677, 683 (1973) (quoting *Reed v. Reed*, 404 U.S. 71, 77 (1971) (Brennan, J., plurality opinion); *Truax v. Corrigan*, 257 U.S. 312, 333-34 (1921).

amendment.⁴⁸¹

Originally intended as a guarantee of racial equality, this clause is now a tool for implementing not only the right of every person to be treated by the government "*as an equal*," but also, "with respect to a limited set of interests[,] for safeguarding everyone's "*right to equal treatment*."⁴⁸² Judicial review normally looks beyond the letter of the legislation to its original intent and its ultimate impact. Just like substantive due process does not allow procedurally sound means to achieve or cover-up undesirable state actions, the equal protection clause also does not condone seemingly innocent regulations which are unconstitutionally motivated and administered in a race-dependent manner, or those that have a clearly discriminatory impact.⁴⁸³

Not all discriminatory behavior is unconstitutional. Under the traditional standard for evaluating equal protection violations, the government is allowed to exercise disparate treatment of individuals so long as the government action is rationally related to a legitimate governmental interest.⁴⁸⁴ The existence of alternate, perhaps less discriminatory means will not automatically disqualify the government action. Nor is it necessary that every stated goal be attained,⁴⁸⁵ or that the classification be all-inclusive.⁴⁸⁶ It is only when the state action affects fundamental rights or when it involves certain types of classifications that higher, stricter, standards must be applied.⁴⁸⁷ Classifications in-

⁴⁸¹ *Bolling v. Sharpe*, 347 U.S. 497, 499 (1954).

⁴⁸² L. TRIBE, *supra* note 477, at 992-93 (emphasis in original) (footnote omitted).

⁴⁸³ See, e.g., *Griffin v. County School Bd. of Prince Edward County*, 377 U.S. 218, 231 (1964) (footnote omitted) ("Whatever non-racial grounds might support a State's allowing a county to abandon public schools, the object must be a constitutional one, and grounds of race and opposition to desegregation do not qualify as constitutional."); *Gomillion v. Lightfoot*, 364 U.S. 339, 347-48 (1960) ("[A] constitutional power cannot be used by way of condition to attain an unconstitutional result.") (quoting *Western Union Telegraph Co. v. Foster*, 247 U.S. 105, 114 (1918)); *Yick Wo v. Hopkins*, 118 U.S. 356, 373 (1886) (ordinances neutral on their face but administered "with a mind so unequal and oppressive as to amount to a practical denial by the State of [the] equal protection of the laws"). But see *Palmer v. Thompson*, 403 U.S. 217, 224 (1971) (illicit motivation alone is insufficient to violate the equal protection clause).

⁴⁸⁴ See *San Antonio Independent School Dist. v. Rodriguez*, 411 U.S. 1, 40 (1973).

⁴⁸⁵ *Id.* at 51.

⁴⁸⁶ *Massachusetts Bd. of Retirement v. Murgia*, 427 U.S. 307, 314, 316 (1976). "Perfection in making the necessary classifications is neither possible nor necessary." *Id.* at 314 (citing *Dandridge v. Williams*, 397 U.S. 471, 485 (1970)).

⁴⁸⁷ *San Antonio Independent School Dist.*, 411 U.S. at 60, 61 (Stewart, J., concurring). There are two higher levels of scrutiny. At the highest level are fundamental rights and "suspect" or "invidious" classifications which call for strict scrutiny and a com-

volving availability of employment have traditionally been analyzed under the rational basis standard.⁴⁸⁸

As it pertains to drug testing litigation, equal protection claims have revolved around selective targeting of certain classes of employees for random or mass testing. None of the challenges have so far been successful. Such challenges include transit union employees claiming disparate treatment of drug abusers in comparison to alcohol abusers;⁴⁸⁹ probationary police officers being subject to random urinalysis while non-probationary officers are tested only on the basis of reasonable suspicion;⁴⁹⁰ and one firefighter who was singled out for urinalysis from a group of suspected drug users.⁴⁹¹

In one unusual case, a group of black police cadets who had been subjected to urinalysis, challenged the use of immunoassays charging that the tests had a disproportionate impact on minorities. In *Shield Club v. City of Cleveland*,⁴⁹² the plaintiffs alleged "that dark skin tone 'could' affect the outcome of an EMIT, RIA or GC/MS marijuana screening test."⁴⁹³ According to some expert testimony, melanin, which is a basic component of dark pigmentation, "interfered" with the tests by tending to "hold and congregate drugs."⁴⁹⁴ This testimony was thoroughly discredited by opposing expert testimony.⁴⁹⁵ Holding that the evidence as presented was insufficient to support the melanin theory, the district court denied the plaintiffs' motion for additional discovery on the drug screening laboratory records.⁴⁹⁶ Nevertheless, the court reserved decision on the discriminatory impact allegations until further proof of the melanin theory, while conceding that, should the theory prove to be true, the tests would have to

PELLING state interest. The first and foremost suspect classification is one based on race, but in this level are also included classifications based on alienage and national origin. *Id.* A second, intermediate level calling for a less stringent judicial review and a substantial state interest, consist of classifications based on gender or illegitimacy. *See* *Craig v. Boren*, 429 U.S. 190, 197-98 (1976); *Mathews v. Lucas*, 427 U.S. 495, 510 (1976).

⁴⁸⁸ *See Murgia*, 427 U.S. at 313.

⁴⁸⁹ *See Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 602 (S.D.N.Y. 1988).

⁴⁹⁰ *See Chappelle v. Rice*, No. 87C4494 (N.D. Ill. Apr. 20, 1988) (LEXIS, Genfed library, Dist file).

⁴⁹¹ *See Everett v. Napper*, 833 F.2d 1507, 1513 (11th Cir. 1987).

⁴⁹² 647 F. Supp. 274 (N.D. Ohio 1986), *rev'd*, 833 F.2d 138 (1987).

⁴⁹³ *Id.* at 284.

⁴⁹⁴ *Id.* at 277, 284, 286.

⁴⁹⁵ *Id.* at 284, & n.5.

⁴⁹⁶ *Id.* at 285.

be found racially discriminatory.⁴⁹⁷ On appeal, the Sixth Circuit reversed the district court's decision denying plaintiffs' access to additional information, and remanded the case for further discovery on the laboratory data.⁴⁹⁸

To date, two Third Circuit cases have considered claims of violation of the equal protection clause. The jockeys in *Shoemaker* contended that they were victims of unjust discrimination because they were the only individuals in the racing industry subject to urine testing by the racing commission.⁴⁹⁹ Both the district court and the court of appeals considered and rejected this claim, but on different grounds. The district court based its decision on safety considerations. After noting that this type of government regulation need only show a "rational relationship" to a legitimate state interest, Judge Brotman stated that the jockeys were the individuals bearing the highest risk, and, as such were the natural objects of the legislation. "Safety concerns[,]” he asserted, "are greatest during the running of the race, when most serious accidents can occur."⁵⁰⁰ On appeal, the jockeys pointed out that since the drawing of the sample took place after the race, the accident prevention reasoning did not apply. Judge Gibbons, writing for the court, conceded the point, but held that the regulation was sustainable on other grounds.⁵⁰¹ Falling back, once more, on the regulated enterprise premise, he declared that the State of New Jersey had an overriding interest in projecting a clean image for the racing industry. "Substance abuse by jock-

⁴⁹⁷ *Id.* at 281, 285.

⁴⁹⁸ See *Shield Club v. City of Cleveland*, 838 F.2d 138, 140 (6th Cir. 1987). Both the lower court and the appellate court opinions were based on the interpretation of a consent decree previously signed by both the Shield Club and the City pertaining to police hiring and retention procedures. See *id.* at 139-40; *Shield Club*, 647 F. Supp. at 278-80. The lower court interpreted the decree as requiring that the city adopt procedures that were "non-discriminatory or demonstrably job related" instead of "non-discriminatory and demonstrably job related." *Shield Club*, 838 F.2d at 139 (emphasis in original). The Sixth Circuit stated that the original consent decree language called for both standards, not either/or. *Id.* On that basis, the appellate court held, "the amended consent decree automatically provides that all relevant data must be supplied by the City." *Id.* at 139-40. The Sixth Circuit, nonetheless, stressed that it did "not imply that the drug/urine test was in any way impermissible not that evidence of drug injection [sic] was not a valid, job related ground for testing the qualification of cadets." *Id.* at 140. It was rather, the court observed, that in cases such as this, it was advisable to give "broad latitude" to discovery requests. *Id.*

⁴⁹⁹ *Shoemaker*, 619 F. Supp. at 1105. The jockeys also charged that "while jockeys, trainers, officials, and groomers are subject to breathalyzer testing, only jockeys and officials are so tested." *Id.*

⁵⁰⁰ *Id.*

⁵⁰¹ *Shoemaker*, 795 F.2d at 1143-44.

eys," he stated, "who are the most visible human participants in the sport, could affect public confidence in the integrity of that sport."⁵⁰² Noting that under equal protection principles, the state could implement a policy in increments, he held that the government was constitutionally entitled to address "the phase of the problem which seems most acute to the legislative mind."⁵⁰³

Judge Bissell, in *Poole v. Stephens*, also considered and rejected an equal protection challenge.⁵⁰⁴ The *Poole* drug testing program was applicable only to a selected class of corrections employees: those who came in direct extended contact with inmates.⁵⁰⁵ As the jockeys in *Shoemaker*, the *Poole* plaintiffs claimed that such underinclusion violated the equal protection clause to the fourteenth amendment.⁵⁰⁶ Finding a reasonable state objective in limiting testing to those in the most "stressful situations," Judge Bissell held that the Commissioner could take a step at a time or restrict the program to specific classification indefinitely.⁵⁰⁷

4. Right of Privacy

Plaintiffs in drug testing cases have sometimes claimed a "right of privacy" both in the act of urination⁵⁰⁸ and in the contents of the urine.⁵⁰⁹ Protection of "privacy" is not a novel legal concept. As a common law substantive interest, it predates the federal constitution.⁵¹⁰ In modern times, the "right of privacy" has evolved into three different legal concepts: (1) a common law tort, (2) a statutory right, and (3) a constitutional fundamental right.⁵¹¹ The common law tort provides legal and equitable relief against invasions of privacy committed by private parties which affect the solitude, personhood, or reputation of individuals.⁵¹² Various state and federal statutory provisions confer a tort

⁵⁰² *Id.* at 1144.

⁵⁰³ *Id.* (quoting *Railway Express Agency, Inc. v. New York*, 336 U.S. 106, 110 (1949)).

⁵⁰⁴ *Poole v. Stephens*, 688 F. Supp. at 156-57 (D.N.J. 1988).

⁵⁰⁵ *Id.* at 159 (exhibit a).

⁵⁰⁶ *Id.* at 156.

⁵⁰⁷ *Id.* at 157.

⁵⁰⁸ See *infra* notes 527-28.

⁵⁰⁹ See *infra* notes 520-26, 531-33.

⁵¹⁰ See *Texas Department of Mental Health & Mental Retardation v. Texas State Employees Union*, 708 S.W.2d 498, 506 & n.6 (Tex. Ct. App. 1986), *rev'd on other grounds*, 746 S.W.2d 203 (Tex. 1987) (mandatory polygraph testing).

⁵¹¹ *Id.* at 505.

⁵¹² See generally, 62 AM. JUR. 2d *Privacy* §§ 1-49 (1972); Zimmerman, *Requiem for a*

right on citizens against certain invasions by the government.⁵¹³ These protections are based on clear-cut legal concepts articulated through well developed bodies of law. The constitutional right of privacy, on the other hand, is a product of Supreme Court opinions, mostly from cases decided during the past quarter of a century.⁵¹⁴

This "fundamental right" is not plainly stated in the United States constitution, but rather it is derived from various other constitutional guarantees. In *Griswold v. Connecticut*,⁵¹⁵ the Court held that a constitutional right of privacy may be implied from the Bill of Rights. The Court cited the first amendment right of association, the third amendment ban on peacetime forced quartering of soldiers in private homes, the fourth amendment prohibition against unreasonable searches and seizures, the fifth amendment protection against self-incrimination, and the ninth amendment retention of non-enumerated rights to the people. Such constitutional provisions, the Court found, create "zones of privacy" which protect the individual citizens against certain unreasonable governmental intrusions.⁵¹⁶ Eight years later, the Court held that the right of privacy was also supported by "the concept of liberty guaranteed by the first section of the Fourteenth Amendment."⁵¹⁷

Whether this new-found fundamental right of privacy is a genuine right included within the original intent of the federal constitution has been the subject of considerable controversy. It certainly does not protect against all state intrusions into the affairs of individuals.⁵¹⁸ Nevertheless, the right of privacy has now become part of the American constitutional law. Academic discussions notwithstanding, later judicial decisions have dealt not so much with the constitutional validity of the right, but with its outer limitations. Subsequent to *Griswold*, the Court suggested that the right of privacy is limited to government intrusions into

Heavyweight: A Fairwell to Warren and Brandeis's Privacy Tort, 68 CORNELL L. REV. 291, 296-97 (1983).

⁵¹³ See L. TRIBE, *supra* note 477, at 895; Annotation, *Supreme Court's Views as to the Federal Legal Aspects of the Right of Privacy*, 43 L.Ed. 2d 871, 896-97 (1976).

⁵¹⁴ See 3 G.B. TRUBOW, *PRIVACY LAW & PRACTICE* ¶¶ 19.01-19.03 (1987).

⁵¹⁵ 381 U.S. 479 (1965).

⁵¹⁶ *Id.* at 484. Justice Douglas, writing the majority opinion, stated that "specific guarantees in the Bill of Rights have penumbras, formed by emanations from those guarantees that help give them life and substance." *Id.* (citations omitted).

⁵¹⁷ *Roe v. Wade*, 410 U.S. 113, 152 (1973).

⁵¹⁸ See *Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 606 (S.D.N.Y. 1988).

non-criminal "matters relating to marriage, procreation, contraception, family relationships, and child rearing and education."⁵¹⁹ It may, however, extend to personal information. In *Whalen v. Roe*,⁵²⁰ the Supreme Court recognized "the individual interest in avoiding disclosure of personal matters" to the state.⁵²¹ This provision has been used in some cases to challenge drug testing on the ground that urinalysis may uncover all sorts of private physical information about the person being tested.⁵²²

The danger of privacy invasion is very real, but constitutionally untenable. In *Whalen*, the court determined that the individual's objection can be overcome if the purpose of the inquiry is rationally related to a legitimate government interest and if proper procedures are in place to protect confidentiality.⁵²³ In New Jersey, the state Supreme Court has also instituted "a balancing test to resolve conflicts between governmental needs for information and an individual's right of confidentiality."⁵²⁴ This test, however, must be weighted in favor of "the narrowest means which can be designed to achieve the public purpose."⁵²⁵ On this basis, barring an actual breach of confidentiality or a probability of disclosure, it is unlikely that a right of privacy violation could be sustained.⁵²⁶

Claims of *fundamental* right of privacy in the act of urination are rare.⁵²⁷ Such right has been defined as the "perceived indig-

⁵¹⁹ *Paul v. Davis*, 424 U.S. 693, 713 (1976).

⁵²⁰ 429 U.S. 589 (1977).

⁵²¹ *Id.* at 599 (footnote omitted). In this case, the United States Supreme Court upheld a New York state law requiring physicians and pharmacists to report to a "centralized computer file, the names and addresses of all persons who [had] obtained, pursuant to a doctor's prescription, certain drugs for which there is both a lawful and an unlawful market." *Id.* at 591. Writing for a unanimous Court, Justice Stevens also rejected the contention "that a constitutional privacy right emanates from the Fourth Amendment" of the federal constitution. *Id.* at 604 n.32.

⁵²² See *Jones v. McKenzie*, 833 F.2d 335, 339 (D.C. Cir. 1987); *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1571-72 (C.D. Cal. 1987); *Feliciano v. City of Cleveland*, 661 F. Supp. 578, 586 (N.D. Ohio 1987); *Rushton v. Nebraska Public Power Dist.*, 653 F. Supp. 1510, 1528 (D. Neb. 1987), *aff'd*, 844 F.2d 562 (8th Cir. 1988).

⁵²³ *Whalen*, 429 U.S. at 597-98, 601-02.

⁵²⁴ *In re Martin*, 90 N.J. 295, 318, 447 A.2d 1290, 1302 (1982).

⁵²⁵ *Id.* (quoting with approval *Lehrhaupt v. Flynn*, 140 N.J. Super. 250, 264, 356 A.2d 35, 43 (App. Div. 1976), *aff'd o.b.*, 75 N.J. 459, 383 A.2d 428 (1978)).

⁵²⁶ See *Railway Labor Executives' Ass'n v. Burnley*, 839 F.2d 575, 592 (9th Cir.), *cert. granted*, 108 S. Ct. 2033 (1988); see also *Shoemaker*, 795 F.2d at 1144; *Rushton*, 653 F. Supp. at 1528.

⁵²⁷ See, e.g., *National Treasury Employees Union v. Von Raab*, 808 F.2d 1057, 1061 (5th Cir.), *aff'd*, 107 S. Ct. 2479 (1987), (Higginbotham, J., specially concurring); *Rushton*, 653 F. Supp. at 1528.

nity of the whole process, a perceived affront to personal identity by the presence in the same room of another while engaging in a private function."⁵²⁸ Where the courts have recognized an infringement of privacy they have preferred to address it in the context of fourth amendment search and seizure protections rather than rely on "penumbral" fundamental rights.⁵²⁹ Other claims of a fundamental right to choose to use drugs during off-duty hours have been summarily dismissed by the courts.⁵³⁰

In the Third Circuit, the only plaintiffs to challenge urinalysis under a right of privacy claim were the jockeys in *Shoemaker* and the *Poole* corrections employees. The jockeys' original complaint alleged a violation both in the Commission's request for information about prescription and non-prescription drugs prior to testing, and in the possible breach of confidentiality after testing.⁵³¹ After finding a "substantial governmental interest" in promoting the "safety and integrity" of the sport, Judge Brotman held that the requested information was essential to furthering the state's purposes. Such information, he pointed out, was used in evaluating "positive" samples to determine whether the positive result may have been prescription drug induced.⁵³² Judge Brotman also found that the Commission's guidelines on chain-of-custody and confidentiality were adequate to safeguard the jockey's privacy interests.⁵³³ On appeal, the Third Circuit echoed the lower court's opinion. Judge Gibbons, however, also indicated that the right of privacy claim was actually not ripe for adjudication since as yet there had been no breach of confidentiality.⁵³⁴ In *Poole*, Judge Bissell summarily dismissed the right of privacy claim by declaring that the argument had already been properly defeated in the *Shoemaker* opinion.⁵³⁵

⁵²⁸ *National Treasury Employees Union*, 808 F.2d at 1061 (Higginbotham, J., specially concurring).

⁵²⁹ *Id.*; *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1571-72 (C.D. Cal. 1987); *Feliciano v. City of Cleveland*, 661 F. Supp. 578, 586 (N.D. Ohio 1987); see *Capua*, 643 F. Supp. 1514-15. See also *supra* notes 251-67 and accompanying text for infringement of expectation of privacy in the context of fourth amendment analysis.

⁵³⁰ See *Railway Labor Executives' Ass'n v. Burnley* 839 F.2d 575, 591 (9th Cir.), cert. granted, 108 S. Ct. 2033 (1988); see also *Amalgamated Transit Union, Local 1277 v. Sunline Transit Agency*, 663 F. Supp. 1560, 1571-72 (C.D. Cal. 1987).

⁵³¹ *Shoemaker*, 619 F. Supp. at 1105.

⁵³² *Id.* at 1106.

⁵³³ *Id.* at 1107.

⁵³⁴ *Shoemaker*, 795 F.2d at 1144.

⁵³⁵ *Poole*, 688 F. Supp. at 155 n.5.

IV. CONCLUSION

In examining the cases, it seems clear that expectation of privacy has been the key to whether or not a person should be required to submit to random testing. Plaintiffs challenging random or mass testing have prevailed only on search and seizure claims and only where courts found high privacy expectations in the testing subjects. None of the other constitutional claims have survived judicial scrutiny. Despite the abundance of case law across the nation, the decisions still rest on a poorly defined legal basis. Expectation of privacy is a subjective concept which can be stretched or shrunken to meet a particular judge's standards. Absent a clear national standard, each circuit, indeed each district judge, can reinterpret and distinguish precedent almost at will. Such situation has led to some startlingly incongruous results.

It can be argued that there is something amiss with a system which puts the confidence of the wagering public on the outcome of a horse race ahead of the confidence of all the citizenry on the integrity and competence of police officers and firefighters. Furthermore, since many of these constitutional restraints apply only to the public sector, the result is a double standard which demands squeaky clean factory workers but tolerates possibly impaired law enforcement officers. Under current case law, we may be protecting the individual rights of people in occupations vital to the survival of the community at the expense of the community itself, simply because these individuals happen to be working for the government. The same police officers who cannot be tested on a random basis by a municipality, would have to submit or lose their jobs if they were employed by a private security service. Yet, under both employers, the officer may be carrying the same type of gun capable of inflicting the same damage. Moreover, as a public law enforcement employee, a police officer has considerably more power and discretion than a private security employee.⁵³⁶ Such result makes a travesty of constitutional

⁵³⁶ The United States supreme Court has stressed the importance of maintaining a reliable work force. This concern has been articulated recently by Justice O'Connor in a case involving the workplace warrantless search of a federal employee's desk:

Public employers have an interest in ensuring that their agencies operate in an effective and efficient manner, and the work of these agencies inevitably suffers from the inefficiency, incompetence, mismanagement or other work-related misfeasance of its employees. Indeed, in many cases, public employees are entrusted with tremendous responsibility,

guarantees. The framers of the Constitution intended to protect individuals from the actions of the state as a governing entity, not as an employer.

Although it is generally true that fundamental rights cannot be waived through consent, expectations of privacy are perforce based on notice. Any man or woman going into the military knows—and if not, is soon appraised of the fact—that there is little or no privacy in the armed forces. None is expected, therefore none can be claimed. However, not all the situations where random testing would be justified necessarily involve a natural lesser expectation of privacy. There is a profound logic in excepting from the reasonable suspicion requirement individuals in critical positions. Where people are appraised well in advance of the possibility of being subjected to random searches, random selection should be available. The question then comes down to which areas of human enterprise are so important to society at large as to warrant a restricted expectation of privacy.

The Supreme Court has found administrative searches of food facilities, gun manufacturers and liquor retailers sufficiently critical to the well being of society to allow unannounced searches. It has also indirectly endorsed warrantless searches in the horse racing industry. In all cases it has been argued that the deterrent effect is so significant, and the potential damage to society so great, that suspension of some constitutional rights is allowed. Based on this premise, random testing should be implemented for activities which allow no room for error. Thus, any occupation that potentially affects life and limb of a human being should be a natural candidate for random selection. Such a list would certainly include policemen, fire fighters, airline pilots, but drivers, train conductors, crane operators, etc. Additionally, occupations that affect the survival of the nation should also be included.

The low expectation of privacy standard, of course, could not always be imposed overnight. The present workforce in many of these categories can credibly argue that it came into such jobs with a high expectation of privacy. On the other hand, it has been suggested that, under the “regulated enterprise” principle, no government employee would be exempted as the government

and the consequences of their misconduct can be severe.

O'Connor v. Ortega, 107 S. Ct. 1492, 1502 (1987) (O'Connor, J., plurality opinion).

itself is the ultimate regulated enterprise.⁵³⁷ Be that as it may, reasonable suspicion could be the only constitutional standard for the period of time necessary to put everyone concerned on notice, or until the present individuals leave their occupations. All new personnel coming into these positions would do so with the understanding that their privacy would be curtailed.

Correspondingly, the subject of impairment must be addressed. If a national standard allowing some type of random testing is established, the litigation will almost surely shift to determine standards of impairment. Because some prerogatives would be abrogated, a positive/negative standard might no longer be sufficient. It would then be necessary to establish appropriate benchmarks to determine impairment, while dismissal or other corrective measures could not be imposed unless there was clear evidence of impairment on the job. An impairment standard will probably require re-examination of the constitutional safeguards against blood testing. On the other hand, it will protect an employee's off-duty behavior. The current basic measure in drug testing is consumption, much like the basic criminal offense is possession, not ingestion. However, some people may be "lawfully" impaired on over-the-counter medication, while others who test positive for controlled substances during long periods of time after consumption, could be totally competent. There is no question that an impairment standard would be more fair to the employees targeted for testing.

So far, impairment litigation is still in the future. The subject has only been discussed in a tangential basis by the cases. The pressing problem at the moment is to find a common expectation of privacy standard. The United States Supreme Court has agreed to hear at least two cases.⁵³⁸ Hopefully, the Court will issue clear guidelines that will end the confusion in federal courts. It might, however, not be sufficient to settle all disputes. If the latest trend toward utilizing the broad provisions of state constitutions continue, a national federal standard allowing random testing may have a limited impact. The ultimate battle for state employees will probably be fought in state courts which may

⁵³⁷ See *Burka v. New York City Transit Auth.*, 680 F. Supp. 590, 608 n.30 (S.D.N.Y. 1988) ("In a sense, government employees aren't intensely regulated; rather, as workers for the government, they are in essence totally regulated . . .").

⁵³⁸ See, *National Treasury Employees Union v. Von Raab*, 816 F.2d 170 (5th Cir. 1987), *cert. granted*, 108 S. Ct. 1072 (1988) (U.S. Customs' employees); *Railway Labor Executives Ass'n v. Burnley*, 839 F.2d 575 (9th Cir.), *cert. granted*, 108 S. Ct. 2033 (1988) (railroad employees).

keep state employers to a more restricted standard than the federal courts might be willing to impose.

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