RANDOX
TESTING SERVICES

# COMPLETE DRUG & ALCOHOL TESTING SOLUTIONS

# Contents



All information correct at time of print

# ABOUT US

Randox Testing Services is part of the Randox Laboratories group, a global market leader in the diagnostics industry with over 40 years' experience. Founded in 1982 by the current Managing Director, Dr Peter FitzGerald CBE FREng DL, Randox is dedicated to accurate and sensitive sample testing. The organisation employs over 2,000 people globally, with offices and distribution in over 145 countries. The ethos within Randox is to produce quality products, supported by continual investment in research and development.

## "THE VISION OF RANDOX IS ONE OF AMBITION, INNOVATION AND COMMITMENT TO IMPROVING HEALTH WORLDWIDE"

We firmly believe that the healthcare of tomorrow depends on the innovations developed today. From quality control solutions, forensic toxicology to food diagnostics, workplace drug & alcohol testing to general health, Randox cultivates lasting relationships to improve lives. It is this approach that led to the creation of revolutionary Biochip Array Technology (BAT).

This technology has changed the way we think about drugs of abuse testing; allowing us to test for up to 49 analytes from a single sample. Not only are the results highly accurate and reliable, but are also extremely cost-effective.

## "RANDOX IS DEDICATED TO ACCURATE & SENSITIVE SAMPLE TESTING"

# WHY CHOOSE US

ACCURATE AND RELIABLE
TESTING METHODS

EXPERIENCE ACROSS A WIDE
RANGE OF INDUSTRIES

GLOBAL NETWORK OF TRAINED
COLLECTION SPECIALISTS

FREE FIT FOR PURPOSE SUBSTANCE
MISUSE POLICY SERVICE

CUSTOMISED TRAINING
AND EDUCATION SEMINARS

DEDICATED ACCOUNT
MANAGEMENT

# COMPLETE DRUG & ALCOHOL TESTING

Randox Testing Services is a specialist in the drug and alcohol testing industry. Our expertise is relied upon by a range of leading safety-critical companies as well as the medico-legal sector. Through utilising innovative multiplex drug and alcohol screening methods as well as mass spectrometry confirmatory analysis our complete service guarantees accurate and reliable results.

**"OUR COMPLETE SERVICE GUARANTEES ACCURATE & RELIABLE RESULTS"**

It is this accuracy and reliability that has led us to supplying drug and alcohol testing services to a range of companies in various industries; in the UK, Ireland and internationally.

With a variety of testing methods that utilise various sample types and with a UK, Ireland and global network of trained collection officers, we give confidence to our customers by ensuring our complete service meets all their needs.

Randox Testing Services is committed to using it's recognised, market-leading expertise to improve workplace safety in a range of industries domestically and internationally.

# WORKPLACE DRUG & ALCOHOL TESTING

With the widespread availability of drugs and alcohol, there is an increased risk of substance abuse in the workplace leading to significant ramifications for a business and its employees. Jeopardising the safety of not only the user, but also their co-workers and in some cases the general public, it affects the whole business environment and puts those present at serious risk of harm.

Substance misuse (or abuse) is defined as the sustained use of any mind-altering substance. This includes legal substances like solvents, alcohol and prescription drugs in addition to illegal drugs. Substance misuse impairs an individual's ability to perform normal, routine tasks, as well as affecting their ability to interact socially. Altering their behaviour, it can have a damaging effect on all areas of their life, with their workplace being no exception.

## IS THIS A COMMON PROBLEM?

# 1 IN 20 PEOPLE

aged between **15-64** used an illicit drug in the past year

Even more concerning is that 10% of these people are considered to be problem drug users. In the UK it is estimated that £7.3 billion is lost each year due to the amount of lost work and productivity through alcohol abuse alone. It is an issue that must be on the radar of all responsible employers.

## WHAT CAN EMPLOYERS DO?

To counteract the negative effects substance misuse can have on a company, many organisations implement a policy that outlines their expectations concerning working whilst under the influence of alcohol and the presence/impact and drugs. This can often be referred to as a substance misuse policy and it enables employers to implement workplace drug and alcohol testing processes. Employers hold the responsibility to ensure employees are fully aware of the company's rules, regulations, testing and disciplinary procedures. The policy itself is of vital importance, providing employees with the knowledge of the standards expected of them.

## OUR EXPERTISE

As workplace testing becomes more common it is important that drug and alcohol testing service providers are equipped to meet the varying demands of different industries. At Randox Testing Services we possess a wealth of experience and knowledge that enables us to offer holistic packages to meet the needs of the customer, regardless of their location or industry. To ensure the highest standards of accuracy and reliability, our testing processes comply with *ISO/IEC 17025**, the internationally recognised standard for the competence of testing and calibration laboratories. This accreditation, which is the most appropriate for UK drug and alcohol testing laboratories, allows RTS to conduct testing on samples collected from anywhere in the world.

## "WE PRIDE OURSELVES ON HELPING OUR CUSTOMERS IMPROVE THE HEALTH & SAFETY OF THEIR WORKING ENVIRONMENT"

We pride ourselves on helping our customers improve the health and safety of their working environment through helping them implement a comprehensive substance misuse policy. Our expertise within this industry allows us to craft customised packages to meet the drug and alcohol testing needs of any workplace. Our methods are flexible to adapt to any changes and our testing processes are accurate, to guarantee reliable results.

# MEDICO-LEGAL TESTING

Medico-legal testing for drugs and alcohol may be required by various professional bodies involved in child custody cases, care proceedings or child protection cases. In cases regarding divorce and children, a dispute may arise during the process of discussions involving the custody of children. In these cases drug and alcohol testing may be sought if there has been a substance abuse claim against a parent fighting for custody or visitation. In cases relating to child protection, social services may seek drug and alcohol testing if child welfare claims have been made regarding suspected substance misuse. Normally in medico-legal cases a hair sample would be tested as it provides the longest detection window.

**"DOING THE RIGHT THING BY THE CHILD IS THE MAIN PRIORITY"**

## WHY TEST?

Drug and alcohol testing is important to ensure child protection from the detrimental effects of parental substance misuse and to ensure they have a quality of life they deserve. In addition it is also important to enable parents the opportunity to get the help and support they need and begin rehabilitation treatment.
Doing the right thing by the child is the main priority, and where possible parent and child relationships are sought to be maintained. Drug and alcohol testing assists in these efforts and in such cases abstinence monitoring testing may be required to assess a parent's recovery e.g if a visitation case is being reassessed.

## OUR EXPERTISE

At Randox Testing Services we provide drug and alcohol testing to all professionals within the and medico-legal sector. Our hair drug testing service utilises *ISO/IEC 17025** accredited testing methods and is made cost-effective through the testing methods we have developed.
We understand the impact a positive result can have on a parent, child, and extended family and ensure results of the highest precision and accuracy. Our drug and alcohol testing solutions are flexible and can be tailored to our customer needs with a choice of testing methods. We offer a comprehensive drugs of abuse test menu and our service also includes expert witness reporting where applicable.

# REASONS TO TEST

## PRE-EMPLOYMENT

This is the most popular type of workplace testing especially in industries which have safety critical roles. This type of testing is an essential part of a company's recruitment process and clearly states the company's position on drug and alcohol misuse for any potential employee.

## RANDOM

A popular type of testing within workplaces as it acts as a deterrent to drug and alcohol abuse. A company's drug and alcohol testing policy should clearly outline that they carry out random workplace testing ensuring employees do not know when the event is planned.

## WITH-CAUSE

Performed when a company is suspicious that an employee may be currently under the influence of alcohol or misusing drugs. This suspicion is normally raised if an employee is acting out of character and there has been observed different behaviours.

## POST-INCIDENT

Used to determine if drugs or alcohol may have contributed to an accident/incident in the workplace. This type of testing can be an effective tool in accident investigations and it is our recommendation that should an incident occur, all employees involved should be tested.

## ABSTINENCE MONITORING

Conducted as a follow up on a confirmed positive drug or alcohol test.
If an employer provides support to an employee who has had a confirmed positive drug or alcohol test, this type of testing may be used to help with rehabilitation and to ensure they remain abstinent from drug or alcohol misuse.

# DETECTION WINDOWS

A detection window is the time frame in which a drug can be detected within a biological sample. A cut-off level is applied which allows results to be classified as either positive or negative. The detection window is the period of time in which the level of drug can be identified as being above or below this cut-off.

## URINE

Urine is the most common sample type for drug testing and offers a longer detection window than oral fluid for drugs.

Detection Window:
Drugs: 12 hours -12 days *(drug dependent)*
Alcohol: Maximum of 24 hours (dependent on quantity ingested)

## ORAL FLUID

Oral fluid testing analyses a saliva sample for parent drugs and their metabolites, providing analysis of short-term drug abuse.

Detection Window:
Drugs: Up to 24-48 hours after consumption *(drug dependent)*

## HAIR

A hair drugs test offers a longer window of detection than alternative testing and can provide a detailed view or overall picture of drug or alcohol use.

Detection Window: *(based entirely on hair length)*
Head hair: 1cm is equal to a detection window of approximately 1 month
Body hair: Can be used to provide an extended window of up to 1 year

## BREATH


Breath can be tested for alcohol using hand-held devices which provide immediate results. These devices can gauge blood alcohol content (BAC) by measuring deep lung air.

Detection Window:
Alcohol: Maximum of 24 hours *(dependent on quantity ingested)*

# DRUG DETECTION LIST

| | URINE | ORAL FLUID | HAIR | BREATH |
|---|---|---|---|---|
| Alcohol/Markers | ● | | ● | ● |
| Amphetamines | ● | ● | ● | |
| Barbiturates | ● | | | |
| Benzodiazepine | ● | ● | ● | |
| Buprenorphine | ● | ● | ● | |
| Cannabis | ● | ● | ● | |
| Cocaine | ● | ● | ● | |
| Fentanyl | ● | | | |
| Ketamine | ● | | ● | |
| MDMA | ● | ● | ● | |
| Methadone | ● | ● | ● | |
| Methadone metabolite (EDDP) | ● | | ● | |
| Methamphetamine | ● | ● | ● | |
| Opiates | ● | ● | ● | |
| Oxycodone | ● | ● | | |
| Phencyclidine (PCP) | ● | ● | ● | |
| Propoxyphene (PPX) | ● | | | |
| Tramadol | ● | ● | ● | |

# POLICY REVIEW, TRAINING & EDUCATION

## SUBSTANCE MISUSE POLICY REVIEW

To ensure our customers are in a position to implement a comprehensive workplace substance misuse testing policy we conduct a full review of any relevant policies that are already in place. We offer an initial Fit For Purpose check free of charge to all customers. This is the first step in our process and checks that all wording and descriptions are relevant and accurate.
Once the policy has been reviewed and if necessary amended, recommendations can be made as to how the changes can be implemented. In some cases a presentation from a Randox Testing Services representative may be necessary to explain the changes and what they mean to all staff.

## TRAINING

Our workplace drug and alcohol training courses provide employers with the confidence and competence to effectively implement and enforce testing policies. Available both in-person and online, our fully documented and regularly reviewed courses include an effectiveness assessment to ensure high standards. Attendees receive a certificate of completion for each course.

We offer a range of specialist training, including Point of Contact Training, Results Interpretation Training, and Employee Briefing Sessions, alongside Management Awareness and Competency Training for breath alcohol and drug testing.

## EDUCATION

Educational seminars offer a chance for the topic of drugs and alcohol to be discussed. This opens up a learning experience for employers and their employees and can be beneficial for not only the workplace but each individual taking part.

## OUR TRAINING AND EDUCATIONAL COURSES INCLUDE:

- **DRUG AND ALCOHOL MANAGEMENT AWARENESS TRAINING**
  Aims to provide managers and supervisors with an understanding of drugs and alcohol
  and a practical knowledge of substance abuse in the workplace.

- **CHAIN OF CUSTODY TRAINING**
  Empowers employers to conduct their own sample collections on-site with the same accuracy and precision as a Randox Testing Services collector, ensuring the integrity, confidentiality and traceability of samples is maintained.

# ACCOUNT MANAGEMENT

## "ASSIGNING A DEDICATED ACCOUNT MANAGER IS JUST ONE OF THE WAYS IN WHICH WE GO THE EXTRA MILE"

At Randox Testing Services each of our customers is assigned a dedicated Account Manager who manages the entire process of implementing drug and alcohol testing. They are at hand to make informed recommendations and to ensure the smooth introduction of any policy changes.

Assigning a dedicated Account Manager is just one of the ways in which we go the extra mile to offer added value to our customers. In addition to this we also provide regular, in-depth management information reports which include result analysis. This enables our customers to identify trends within their workplace.

Should customers need immediate access to results, or need to review results retrospectively, we also have a secure online portal which can be accessed at any time (by authorised users) so they can view their organisation's test results.

# POINT OF COLLECTION TESTING KITS

Our range of point of collection testing products enable users to conduct on-site drug and alcohol testing for instant results. Our products are specifically designed to screen for the presence of drugs or alcohol and include a selection of user friendly devices and instant kits.

## URINE

Our instant urine drug testing kits consist of integrated test panels, from 8 to 14 drug classes, complete with collection cup. They can screen urine samples for a variety of drugs of abuse and provide instant results at the point of sample collection.

### Features of Instant Urine Test Kits

- Screens for 8 to 14 drugs of abuse
- Tamper-proof strip insert
- Robust cup with a wide aperture and secure lid
- Individual chambers eliminate drug interpretation confusion
- Available with adulterant test strips
- Results in as little as 5 minutes

## ORAL FLUID

Our instant oral drug testing kits can be used to screen for a variety of drugs of abuse, our oral fluid kits enable you to collect and analyse samples on-site for instant results at the point of collection.

### Features of Instant Oral Fluid Test Kits

- Can screen for up to 11 drugs of abuse from a single sample.
- Provides clear results rapidly, ensuring quick decision-making in workplace drug testing.
- Simple oral swab collection with no need for specialist equipment, making it ideal for on-site drug screening
- Includes an internal control line to verify test validity and ensure accurate, legally defensible results.
- Results in as little as 10 minutes

## BREATH

We provide Home Office approved breathalysers for detecting the presence of alcohol in breath samples. Our breathalysers are designed to meet the requirements of evidential breath testing to ensure accurate results. In addition, we offer a full in-house annual calibration service to ensure accuracy and reliability.

# SAMPLE COLLECTION & CHAIN OF CUSTODY

## "CHAIN OF CUSTODY REFERS TO THE SYSTEM OF CONTROLS GOVERNING THE COLLECTION, PROCESSING & STORAGE OF SAMPLES"

With a global network of trained collection specialists, we can guarantee through strict chain of custody procedures, the integrity of all collected samples. Chain of custody refers to the system of controls governing the collection, processing and storage of samples and involves the following:

- Chain of custody form with barcodes that link the specimen to the paperwork
- Donor consent and collector's signature on every form
- Tamper evident seals on the specimen containers that show if any attempt has been made to remove them
- Secure packaging to protect the specimens in transit to the laboratory
- Laboratory checks on arrival to confirm the chain of custody is intact

These procedures ensure that the results reported by the laboratory originated from a particular donor and that the reported results relate, beyond doubt, to the donor's sample.

# REPORTING SERVICES

## EXPERT WITNESS SERVICES

An Expert Witness Report is an interpretation of the results of a drug or alcohol test. It provides a detailed explanation of whether or not substances tested for were detected as well as information regarding chain of custody compliance and testing procedures.

As trusted industry experts, our staff are trained to act as Expert Witnesses in legal cases involving drug and alcohol testing. Our experienced team of Reporting Scientists have undergone extensive Expert Witness training to provide professional witness statements or fully written reports for use as evidence in a court of law or industrial tribunals.

Where required, a Senior Toxicologist from Randox Testing Services can attend legal proceedings in person to provide Expert Witness testimony.

## MEDICAL REVIEW SERVICES

Our Medical Review Service offers expert and independent and examination of positive results under medical confidentiality.

A positive result from a drug and alcohol analysis is a cause for concern. However, there are some cases when there is a legitimate medical reason for the result. Our Medical Review Service allows for an independent and confidential review to determine the cause of a positive result. For example: if an employee is taking prescription medication.

The Medical Review Officer (MRO) assesses a positive result in the light of the donor's medical background to determine if there is a legitimate medical reason for the result. The MRO helps protect both the rights of the employee being tested and the employer requiring the testing.

**"AN INDEPENDANT & CONFIDENTIAL REVIEW TO DETERMINE THE CAUSE OF A POSITIVE RESULT"**

# TESTIMONIALS

## US MEN'S NATIONAL SOCCER TEAM

The US Men's National Soccer Team used Randox Testing Services for our COVID-19 testing.

The service and professionalism provided by Randox Testing Services was exceptional and I would highly recommend their services to anyone. RTS was able to provide exactly what we needed as a team with easy at-home testing and quick turnaround times for our test results.

**"THE STAFF WERE EXTREMELY KIND, IT WAS A PLEASURE WORKING WITH RTS."**

## SOILFIX

**"THE WHOLE EXPERIENCE HAS BEEN SEAMLESS AND VERY PROFESSIONAL"**

From introduction to Randox at an exhibition, to meeting our account manager, Sarah and then having the collections completed on our sites, the whole experience has been seamless and very professional.
So far we have had 2 sets of compliance based collections completed and a round of "for cause" testing, which were all completed efficiently and in line with Soilfix policies. The for cause testing was particularly impressive with a response time from enquiry to the collection officer's arrival on site less than 1.5 hours!
Randox are now our exclusively chosen partner in supporting Soilfix with its commitment to maintaining a safe and healthy work place environment.

## MCLAUGHLIN & HARVEY

McLaughlin & Harvey have engaged Randox Testing Services for our Random, With-Cause & Post Incident Drugs & Alcohol employee and contractor screening throughout UK & Ireland since 2017.

We have found RTS to be professional, reliable and highly competent in support of our drugs & alcohol testing programme. RTS have provided excellent on-site testing, customer service and reliable laboratory results when required.

**"I WOULD HAVE NO HESITATION IN RECOMMENDING THEM FOR DRUG & ALCOHOL TESTING SERVICES."**

# TESTIMONIALS

## SPEEDY SERVICES

Randox Testing Services provide services that support all of our Drug & Alcohol testing needs. The size of our business is such that we use their services extensively for random, with cause, abstinence, rail and other specific industry testing requirements.

The Collection and Laboratory Teams providing this service are truly exceptional, providing outstanding support in a very professional, efficient, friendly and helpful manner. They are very responsive to urgent requirements and diligent when dealing with long-term programmes. Their advice, when dealing with expected feedback from "positive" donors is always detailed and professional.

Regular meetings with our dedicated Customer Relations Manager ensure that any issues are dealt with efficiently, appropriately and discreetly (where necessary). Issues are very few and far between.

**"AN OUTSTANDING COMPANY TO WORK WITH, FANTASTIC CUSTOMER SERVICE."**

## MACFARLANE PACKAGING

In 2018, I was tasked with trialling new providers for our Drug and Alcohol testing for our Group. It was apparent quite early on that compared to some of the other leading providers we also tested, that Randox Testing Services outshone the rest.

The service has always been personal to our needs and consistent, which assists us in managing our responsibilities with confidence.

Along with the Drug and Alcohol Testing we have recently acquired a sample of COVID 19 testing kits to trial.

I would have no hesitation in recommending Randox Testing Services to others.

**"THE SERVICE HAS BEEN PROMPT AND EFFICIENT THROUGHOUT THE PROCCESS."**

# DRUG CLASSIFICATION BY EFFECT

Different drugs affect the user in different ways dependent upon their mode of action. Drugs can be broadly categorised into 4 groups relating to the type of effects they may exert upon the user; stimulants, empathogens, hallucinogens and sedatives.

## STIMULANTS

Stimulants (uppers) are a class of psychotropic drug that stimulate the central nervous system (CNS) and increase activity in the brain. The user may experience euphoria and feelings of empowerment. Some clinical symptoms may include tachycardia (fast heart rate), hypertension (high blood pressure), dilated pupils, sweating, loss of appetite, sleeplessness, tremors and speech difficulties.

Stimulants may help maintain alertness for a short period of time; however, eventually the user will become fatigued. Abuse of stimulants may result in the following primary effects: disinhibition, feelings of empowerment and confidence and increased risk-taking behaviour. Late phase effects may include depression, exhaustion, dysphoria (feelings of unhappiness and dissatisfaction) and irritability.

Drug stacking of short-action stimulant-type drugs refers to the ingestion of single doses of drugs consecutively as effects begin to wane, similar to cocaine or methamphetamine binges. Such extensive or binge use usually occurs over weekends, and can result in exhaustion, apathy, depression, irritability, and insomnia and muscle tension early the next week (often referred to as “terrible Tuesdays”).

## EMPATHOGENS

Empathogens are a class of psychotropic drug that produce experiences of emotional communion, emotional openness, empathy or sympathy. They often also produce stimulant and/or hallucinogenic behaviour to varying degrees. For this reason, such drugs are popular in the dance club party scene.

## HALLUCINOGENS

Hallucinogens are a class of psychotropic drug that affect perception of reality (space, colour, sound, time, etc), resulting in delusions, hallucinations or temporary psychosis.

The effects are unpredictable and will depend on the dose ingested, the user’s personality and mood, expectations and the surroundings. “Bad trips” may consist of severe, terrifying thoughts and feelings, fear of losing control and despair.

## SEDATIVES

Sedatives are a class of psychotropic drug that depress the central nervous system or brain activity. The user may experience feelings of calmness, and sedation through to drowsiness. Clinical symptoms are those typically defined by respiratory depression and may include bradycardia (slow heart rate) and hypotension (low blood pressure).

Clinical use of some sedatives may combat anxiety, spasm/seizures or insomnia. Abuse may result in apathy, lethargy, drowsiness, inability to concentrate and in extreme cases of abuse, coma and death. Many sedatives are also narcotics (i.e.. mode of action involves binding to receptors in the brain to block feelings of pain-analgesia). Some are powerfully addictive.

Some drugs may exert a combination of effects and so may span across two or three category types (see Figure 1).

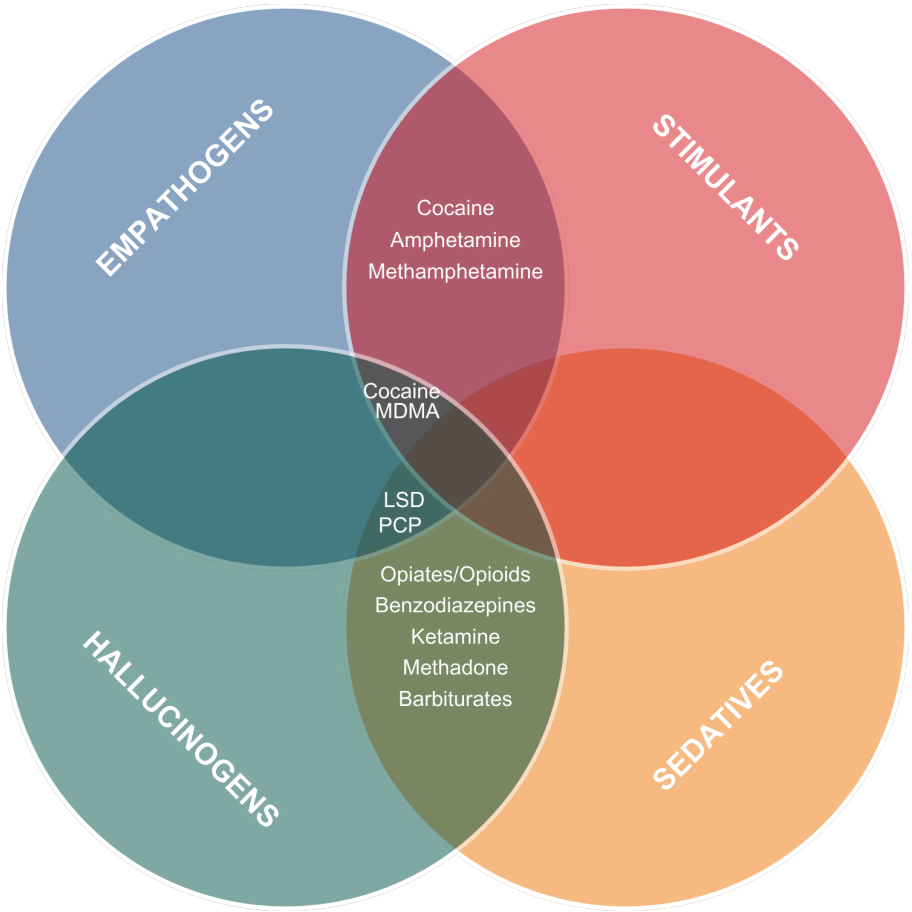


**FIGURE 1:**
**VENN DIAGRAM REPRESENTATION OF DRUG EFFECTS**

# ROUTES OF DRUG ADMINISTRATION

Most drugs may be taken in a number of ways. The route of administration dictates how quickly the drug is absorbed into the body and therefore how quickly the drug has an effect.

Intravenous injection, smoking (inhalation) or snorting (insufflation) may result in almost instant effects (within minutes). Stimulants like cocaine or amphetamine may be rubbed around the gums for quick absorption but normally oral ingestion of a drug results in considerably slower absorption and effects may take over an hour to peak.

The quicker the drug is absorbed into the blood stream, the quicker and more intense the effect. The user may take multiple consecutive doses of the drug to prolong the experience (drug stacking).

# FREQUENTLY ASKED QUESTIONS

## Q. What is a drug screen?

A. The process of drug screening typically involves two steps. Firstly, an initial test is performed to identify negative specimens, which do not require further analysis. Any specimens that are not negative are classified as 'presumptive positive' and require confirmatory testing. Screening can be conducted on-site using a point-of-collection (POC) testing device or sent to a laboratory for more detailed analysis.

## Q. What is a screening cut-off?

A. A cut-off is a threshold concentration of a drug in the specimen. If the drug is not detected or measured below the cut-off, the sample is reported as negative. At RTS, we apply cut-offs in accordance with EWDTS (European Workplace Drug Testing Society Guidelines) for urine or other recognised cut-offs specfic to certian industries.

The initial drug screen uses immunoassay technology, an efficient high-throughput screening technique, to identify negative specimens from those requiring a second confirmatory test.

A specimen may be flagged as 'presumptive positive' if the total concentration of a number of related drugs or drug metabolites (drug breakdown products in the body) in the urine specimen exceeds the screening cut-off limit.

## Q. What action should be taken if I receive `presumptive positive' result?

A. RTS advise that a confirmatory test should be carried out to confirm or negate the screen result.
RTS do not advise disciplinary action before the screen result has been confirmed.

## Q. What is a confirmatory test?

A. Any specimen that flags 'presumptive positive' on a screen test undergoes secondary analysis using mass spectrometry. This is called a confirmatory test. This method is much more specific than the screening test and can identify and measure a single drug in the specimen. For example, a confirmatory test is required to distinguish between the use of the over-the-counter opiate painkiller, codeine from the use of the illicit opiate, heroin.

EWDTS and other regulatory bodies requires the presence of a single specific drug (or metabolite) at a concentration greater than the confirmatory cut-off concentration before it can be reported as a positive result. A confirmatory test is legally defensible.

## Q. How are the cut-offs set?

A. The cut-offs are set by the EWDTS and/or other regulatory bodies to distinguish passive use or environmental exposure to a drug over actual active ingestion.

# FREQUENTLY ASKED QUESTIONS

## Q. Why was the screen test positive but the confirmation test negative?

A. Screening tests detect a broad range of substances and may cross-react with similar compounds, leading to a presumptive positive. Confirmatory tests, like GC-MS or LC-MS, are highly specific and only detect exact drugs at set thresholds. A negative confirmation can occur due to cross-reactivity, low drug concentration, metabolite differences, or sample variability.

## Q. What does the reported drug concentration in urine mean?

A. When someone takes a drug or medication, the concentration of that drug circulating in the blood is directly related to the effect of that drug on the person. However, after the blood is filtered by the kidneys, the drug (and its metabolites/breakdown products) ends up in the urine collecting in the bladder. The effect of metabolism and accumulation of the drug as it pools in the bladder means that there can be little significance given to the measured concentration of the drug in urine, other than if it exceeds the EWDTS/other regulatory body cut-off or not. It is not possible to tell how much drug a person has taken or when they have taken it from a single urine test.

## Q. If I arrange a second drug test, can I tell if someone has taken a drug since the previous test?

A. Some customers provide their employee an opportunity to 'get clean' and monitor their abstinence with subsequent drug tests. We recommend further tests for such purposes a week or two apart. In most, cases, if the employee has abstained, they will pass the second test. However, some drugs can persist in the body for more than a week (in particular cannabis), but we would still expect to find the drug concentration to be significantly lower in the urine on the re-test.

SHOULD YOU STILL HAVE ANY QUESTIONS, PLEASE DON'T HESITATE TO CONTACT YOUR ACCOUNT MANAGER OR THE RTS LABORATORY

# GLOSSARY - COMMON DRUGS OF ABUSE

## AMPHETAMINES

Amphetamines are a group of stimulant drugs comprised of amphetamine itself, methamphetamine, MDMA (ecstasy) and MDA.

### AMPHETAMINE *(SPEED)*

Amphetamine may be used clinically in the treatment of ADD (attention deficit disorder), obesity, narcolepsy and hypotension as dexamphetamine (Dexedrine). Amphetamine is also subject to abuse due to its euphoric stimulant effects. Street preparations are most commonly encountered as an off-white or cream coloured powder, although tablets are occasionally encountered. Amphetamine is most commonly taken orally but it may also be taken by nasal insufflation "snorting" or dissolved for intravenous injection.

Use of amphetamines can give rises to two phases of use, firstly the early phase where the stimulatory effects are experienced. This is followed by late phase effects where the come down effects are experienced.

Some early phase symptoms include: reduced fatigue and alertness, feelings of increased energy and strength, fidgeting and elevated mood such as mild euphoria, increased selfconfidence and greater sociability. Persons under the influence of amphetamine may exhibit increased risk-taking behaviour. Some late phase symptoms "come down" effects include: fatigue, drowsiness, anxiety, agitation, irritability, restlessness and depression. Regular chronic amphetamine use can lead to behavioural issues and psychotic illness, particularly in individuals predisposed to such conditions.

### ECSTASY *(MDMA/MDA)*

MDMA, (ecstasy, XTC) is an illicit psychotropic amphetamine derivative widely recreationally used as a party, rave or dance drug for its stimulant, mild hallucinogenic, and empathogenic properties. MDMA metabolises to MDA (methylenedioxyamphetamine) in the body.

MDA itself is an illicit psychotropic drug with similar hallucinogenic effects to MDMA. Low to moderate doses produce mild intoxication,relaxation, a calm euphoria and changes in perception. The empathogenic properties of the drug produce feelings of peace and well-being and increased sociability and closeness.

At higher doses, agitation, panic attacks, and illusory or hallucinatory experiences may occur. Physiological effects include mild visual disturbances (blurred or double vision, increased light sensitivity), dilated pupils, dry mouth, sweating, ataxia, muscle tension, and involuntary jaw clenching.

Subjects may experience late-phase effects such as fatigue, depression, sleep problems, drug craving, severe anxiety, paranoia, impaired coordination, attention dysfunction (difficulty to maintain attention during complex tasks).

# GLOSSARY - COMMON DRUGS OF ABUSE

## AMPHETAMINES

### METHAMPHETAMINE (CRYSTAL METH)

Methamphetamine is a central nervous system stimulant with a high potential for misuse and dependence. A synthetic drug, it is closely relate chemically to amphetamine "speed" but produces greater effects on the central nervous system (more potent).

Methamphetamine takes the form of a white odourless and bitter tasting crystalline powder, readily soluble in water or alcohol, and can also be produced in tablet or powder form. It can be smoked, injected, snorted or consumed orally. In contrast to cocaine, the hydrochloride salt of methamphetamine can itself be smoked.

Methamphetamine has no legitimate medical use in the UK. Recreationally, methamphetamine is abused to increase alertness, relieve fatigue, control weight, and for its intense euphoric effects.

Methamphetamine is subject to abuse due to its immediate, intense euphoric, stimulant effects, reportedly similar to, but more intense and longer lasting than those of cocaine. Because the pleasure also fades quickly, users often take repeated doses, in a "binge and crash" pattern.

Use of methamphetamines can give rises to two phases of use: firstly the early phase where the stimulatory effects are experienced. This is followed by late phase effects where the come down effects are experienced.

Some early phase symptoms include: euphoria, rapid speech, motor restlessness, hallucinations, delusions, psychosis, insomnia, reduced fatigue or drowsiness, increased alertness, feelings of increased physical strength, and poor impulse control.

Some late phase symptoms "come down" effects include: fatigue, drowsiness, anxiety, agitation, irritability, restlessness and depression. Depending on dose, feelings of dysphoria, paranoia, violence, aggression, pseudohallucinations, delusions, psychosis, and drug craving may also be apparent.

People who use methamphetamine long-term may experience anxiety, confusion, insomnia, and mood disturbances and display violent behaviour. They may also show symptoms of psychosis, such as paranoia, visual and auditory hallucinations, and delusions.

# GLOSSARY - COMMON DRUGS OF ABUSE

## BENZODIAZEPINES

Benzodiazepines encompass a large group of chemically-related psychoactive drugs with sedative, hypnotic, anticonvulsant and anxiolytic properties. They are commonly prescribed to treat anxiety, insomnia, seizures, nausea and depression. Among the most frequently-encountered benzodiazepines are diazepam (and its metabolites (breakdown products) nordiazepam, temazepam and oxazepam) and lorazepam. Other members of the benzodiazepine group of drugs include alprazolam, clonazepam, nitrazepam, phenazepam and chlordiazepoxide.

Common physiological effects of benzodiazepine use include drowsiness, sedation, muscle weakness, and ataxia. Less frequent effects include vertigo, headache, confusion, depression, slurred speech, changes in libido, tremor and visual disturbances. Some patients may have a paradoxical excitation, which may lead to hostility, aggression, and disinhibition.

The sedative effects are most marked during the first few days of use and can cause drowsiness and muscle weakness and impair concentration and alertness. Licensed product information for benzodiazepines advise affected patients to avoid potentially hazardous tasks such as driving or operating machinery and to avoid alcohol.

### DIAZEPAM *(VALIUM)*

Diazepam is a typical long-acting benzodiazepine used for the treatment of anxiety, insomnia, withdrawal symptoms and seizures. Diazepam is metabolised in the body to produce nordiazepam, oxazepam and temazepam, so often some or all of these drugs are detected in combination.

### LORAZEPAM

Lorazepam is a short-acting benzodiazepine similar to oxazepam and temazepam, used as an antianxiety agent. Lorazepam is also a metabolite of diclazepam, a designer benzodiazepine which has been recently reported as the subject of abuse.

### NORDIAZEPAM *(DESMETHYLDIAZEPAM)*

Nordiazepam is a long-acting benzodiazepine with the general properties of diazepam. Although it is not prescribed in the UK, it commonly appears in urine toxicology reports as the principle active metabolite of several benzodiazepines (most commonly diazepam and chlordiazepoxide).

### OXAZEPAM

Oxazepam is a short-acting benzodiazepine with general properties similar to those of diazepam. It is used in the short-term management of anxiety disorders, insomnia and alcohol withdrawal. It is also a metabolite of diazepam and temazepam.

### TEMAZEPAM

Temazepam is a short-acting benzodiazepine with general properties similar to those of diazepam. It is used as a hypnotic in the short-term management of insomnia and for premedication before surgical or investigative procedures. It is also a metabolite of diazepam.

# GLOSSARY - COMMON DRUGS OF ABUSE

## CANNABIS

### CANNABIS/ CANNABIS OIL/ CBD/ HEMP - IT'S NOT JUST IN THE NAME

Cannabis, Cannabis Oil, CBD and Hemp Oil are all naturally produced from the plant, Cannabis sativa, but each is distinctly different both in terms of use, availability and legality. Confusion arises because their names are often interchanged, misunderstood and mistaken for each other. The cannabis plant uniquely contains more than a hundred chemical compounds called cannabinoids; the two most well-known are THC (tetrahydrocannabinol) and CBD (cannabidiol). THC is the psychoactive ingredient of cannabis for which it is abused. CBD is not psychoactive but is reported to be beneficial to health.

### CANNABIS

Cannabis is the UK's most popular illicit recreational drug. It is the name given to the dried herbal matter of the cannabis plant containing THC, which is typically smoked. Cannabis is a controlled substance and its use, possession and sale in the UK is illegal.

### CBD *(CANNABIDIOL)*

CBD (Cannabidiol) is derived from a specific variety of the Cannabis sativa plant species known as hemp, which is high in CBD and low in THC.The use of CBD oil is becoming widespread for its reported health-giving benefits. Commercial products must be tested to demonstrate they contain negligible amounts (less than 0.2%) of THC. For this reason, it is not psychoactive and is 100% legal and will not lead to a positive cannabis drug test.

However, it is also sometimes (mistakenly) referred to as 'cannabis oil' which causes confusion.

### CANNABIS OIL

Cannabis Oil is an extract from the Cannabis sativa plant that is rich in THC. It is sometimes referred to as hash oil or hashish (a resin). It is typically smoked in a pipe, bong, vaporiser or joint.

From the 1st of November 2018, cannabis oil and other cannabis preparations may be prescribed in the UK to alleviate epileptic seizures and pain in some specific medical conditions, such as spasticity due to MS. It is prescribed by expert doctors under regulated conditions and must be supported by medical documentation. The first cannabis-derived medicinal product to be licensed in the UK, Sativex, is a mouth spray but other products may be licensed as oils or capsules.

A claim that a positive cannabis drug test is the result of the legitimate use of medicinal cannabis should not be discounted, but medical proof should be requested.

# GLOSSARY - COMMON DRUGS OF ABUSE

## CANNABIS

### HEMP

Hemp is a fast-growing strain of Cannabis sativa specically bred for its fibre (for industrial textile use), oils (including CBD oil) and nutritional benefits among its ever-expanding range of uses.

However, hemp is bred to be low in THC. Hemp seed oil is acquired by pressing the hemp seeds only and contains neither THC nor CBD. Hemp oil is perfectly legal and you may find it in some health food products or even beauty products.

### IT'S NOT MY FAULT!

Use of cannabinoids (the group term for these substances) should be considered carefully and legally purchased products chosen wisely. If the user of a supposed CBD preparation is subsequently found to be positive for THC on a drug test, then ignorance of the law is not a defence.

In the same way as professional athletes may fall foul of accidental use of a banned substance due to a change in supplement supplier, an employee claiming that a positive cannabis drug test is the result of use of CBD will not constitute a water-tight defence.

The use of a legally available over-the-counter CBD or hemp product will not result in a positive THC urine, oral fluid or hair drug test. This can only be the result of illicit use of cannabis or the use of medicinal cannabis products, but not from consuming legally sold CBD products. Employers should ensure appropriate actions are taken while awaiting a confirmed laboratory result.

# GLOSSARY - COMMON DRUGS OF ABUSE

## COCAINE

### COCAINE

Cocaine is one of the oldest and most potent of the naturally-occurring central nervous system stimulants. Benzoylecgonine is the primary metabolite of cocaine, and therefore acts a marker in drug testing to indicate cocaine use.

The stimulant effects usually appear within a few minutes following nasal insufflation (snorting) and almost immediately if the drug is smoked (in the form of "crack" cocaine). The leaves of the coca plant may also be brewed to make 'Peruvian or Bolivian tea'. The effects of cocaine last for about half an hour to one hour, after which there may be a strong desire to use more of the drug.

The stimulant effects of cocaine may include increased self-confidence and talkativeness, increased energy and alertness, increased strength, an increase in risk-taking behaviour and feelings of intense euphoria. Large doses of cocaine may cause the user to become hyperactive, paranoid and anxious and may lead to violence and aggression. Clinical symptoms may include dilated pupils.

As the stimulant effects of cocaine subside, the user begins to experience the come-down effects of the drug, which may include anxiety, irritability, drowsiness and agitation.

Benzoylecgonine can persist in urine at detectable concentrations from 2-4 days following recreational use. Chronic, heavy use of cocaine can result in detectable amounts of benzoylecgonine in urine for up to 10 days following a binge.

### COCAINE IN DENTISTRY

Due to its toxicity and risk of addiction, the use of cocaine in dentistry has been replaced by modern less harmful alternatives (eg. lidocaine, benzocaine). The use of such alternative topical/ local anaesthetics will not result in the detection of cocaine or benzoylecgonine in a toxicology test.

Although the clinical use of cocaine is not common-place, it may still be prescribed for use as an anaesthetic in eye, ear, nose or throat surgery as a local or topical anaesthetic and vasoconstrictor.

# GLOSSARY - COMMON DRUGS OF ABUSE

# METHADONE

## METHADONE

Methadone is a synthetic opioid used in the treatment of moderate to severe pain and in the management of heroin addiction. EDDP is the primary metabolite of methadone; therefore the detection of either or both in drug testing indicates the use of methadone.

Recreationally methadone is abused for its sedative and analgesic effects.

Some effects associated with methadone use may include: drowsiness, sedation, dizziness, light-headedness, mood-swings (euphoria to dysphoria), depressed reflexes, altered sensory perception, stupor, and coma.

Although reported to be less sedating than morphine, repeated doses of methadone may result in marked sedation due to accumulation of the drug. Long-term users may become tolerant to the sedative effects of the drug.

# GLOSSARY - COMMON DRUGS OF ABUSE

## OPIATES AND OPIOIDS

All opioids function as narcotic analgesics by binding to specific receptors in the brain and central nervous system. Opiates are a subclass of opioids derived naturally from opium (the sap from the opium poppy seed pod). Opium is refined to yield the opiates morphine, and codeine. Morphine is chemically processed to produce heroin (an opioid).

All opioids can be abused for the feelings of euphoria they induce at high doses.

Adverse effects experienced with use/abuse of opioids are dose dependent and include apathy, a lack of concentration and alertness, impaired coordination, lethargy, sedation and drowsiness. Drowsiness may affect the ability to perform skilled tasks, so those affected should not drive or operate machinery. Opioids can produce physical and psychological dependence and are subject to abuse.

Tolerance to the effects of opioids can rapidly develop with continued use although increasing dosages can cause reoccurrence/worsening. With most prescribed drugs, careful monitoring of possible adverse effects is recommended, especially during the early stages of use.

Clinical symptoms of opiate abuse include constricted pupils, respiratory depression (slow heart rate and low blood pressure) and depending on level of developed tolerance and potency and dose of the opiate/ opioid taken, potentially coma and death.

### CODEINE *(OPIATE)*

Codeine is an opiate analgesic less potent than morphine with relatively mild sedative effects. Codeine is also found in numerous proprietary preparations in combination with non-narcotic analgesics, antihistamines and other drugs. Codeine is broken down in the body to produce morphine, hydrocodone and to a lesser extent, dihydrocodeine.

### DIHYDROCODEINE *(OPIATE)*

Dihydrocodeine is a semi-synthetic opioid analgesic. It is related to codeine and has similar analgesic activity. Dihydrocodeine is used for the relief of moderate to severe pain, often in combination preparations with paracetamol. It has also been used as a cough suppressant. The presence of dihydrocodeine in a urine specimen may also result from the metabolism of codeine in the body.

### OXYCODONE *(OPIOID)*

Oxycodone is an opioid analgesic equipotent with morphine. Oxycodone hydrochloride is given orally or by subcutaneous or intravenous injectionfor the relief of moderate to severe pain.

### OXYMORPHONE *(OPIOID)*

Oxymorphone is reported to be 7-10 times more potent than morphine. It produces all the signs of classic opiate intoxication.

# GLOSSARY - COMMON DRUGS OF ABUSE

## OPIATES AND OPIOIDS

### HEROIN *(OPIATE)*

Heroin (diamorphine) is the semisynthetic diacetyl derivative of morphine. It is a potent pain-killing drug administered for the treatment of severe pain. It occurs as a white powder but is typically administered by injection in solution.

Illicit heroin may vary in colour from white to dark brown due to impurities, or may appear as a black tar-like material. Heroin is a drug of addiction that is normally abused by either injection, smoking or the inhalation of the fumes produced when it is heated (chasing the dragon).

Following an intravenous dose of heroin, the user generally feels an intense surge of euphoria "rush" accompanied by a warm flushing of the skin, dry mouth, and heavy extremities. The user then alternates between a wakeful and drowsy state where the following symptoms may be evident: apathy, a lack of concentration and alertness, impaired coordination, lethargy, sedation and drowsiness.

Heroin is rapidly metabolised in the body to 6-monoacetylmorphine (6-MAM), which in turn is further metabolised to morphine at a somewhat slower rate. 6-MAM is a unique metabolite to heroin and therefore its presence confirms the administration of heroin.

Heroin has a high physical and psychological dependence. With regular use, tolerance develops early to the duration and intensity of euphoria and analgesia, requiring the user to increase the dose taken to achieve the desired effect.

Overdose may result in respiratory depression, coma, convulsions, cardiovascular collapse and death.

### DIHYDROCODEINE *(OPIOID)*

Dihydrocodeine is a semi-synthetic opioid analgesic. It is related to codeine and has similar analgesic activity. Dihydrocodeine is used for the relief of moderate to severe pain, often in combination preparations with paracetamol.

It has also been used as a cough suppressant. The presence of dihydrocodeine in a urine specimen may also result from the metabolism of codeine in the body.

### HYDROMORPHONE *(OPIOID)*

Hydromorphone (Palladone) is a semi-synthetic narcotic analgesic reportedly 7-10 times more potent than morphine with similar liability for addiction. Hydromorphone can also be found in the body due to the metabolism of morphine.

### MORPHINE *(OPIATE)*

Morphine is an opiate analgesic prescribed for the relief of moderate to severe pain in both acute and chronic management. It occurs as a white powder but is typically administered in solution either orally or by injection.

Morphine may be abused for the feelings of euphoria it produces at high dose and can be highly addictive. Morphine may also be detected in drug tests as a result of the metabolism of codeine and heroin in the body. It is also possible for the consumption of poppy seeds (for example found in some speciality bread products) to lead to a positive morphine result in a urine drug test.

# DRUG TRADE AND SLANG NAMES

| | TRADE / BRAND NAMES | SLANG / STREET NAME |
|---|---|---|
| AMPHETAMINES | | |
| Amphetamine | Adderall, Benzedrine, Dexedrine | Whizz, Speed, Phet, Dexies, Pep pills |
| MDMA / MDA | 3,4-Methylenedixymethamphetamine (MDMA), 3,4-Methylenedioxyamphetamine (MDA) | Ecstasy, XTC, Adam, X, E, Molly |
| Methamphetemine | l-desoxyephedrine (ingredient of Vicks Inhaler) | Crystal Meth, Chalk, Crank, Glass, Meth, Ice, Tina |
| BENZODIAZEPINES | | |
| Benzodiazepines | | Benzos, Nerve Pills, Downers, |
| Diazepam | Valium, Valrelease | Vs, Blue Vs (10mg valium), Yellow Vs (5mg Valium), Dead Flower Powers, Foofoo, Howards, Sleep Away |
| Lozaepam | Ativan | Control, Silence, Downers, Trances |
| Nordiazepam | Nordazepam, Nordaz, Stilny, Madar, Vegesan, and Calmday; Desmethyldiazepam (DMD) | n/a |
| Oxazepam | Serax | n/a |
| Temazepam | Normison, Restoril | Jellies |
| CANNABIS | | |
| Cannabis | Cannabis sativa, Marijuana, Tetrahydrocannabinol (THC), Dronabinol, Marinol and Nabilone | Dope, Doobie, MJ, Mary Jane, Grass, Pot, Roach, Skunk, Weed |
| COCAINE | | |
| Cocaine | n/a | Cocaine: Charlie, Coke, Blow, Snow, Line, Rail<br>Crack cocaine: Rock Candy, Rocks, Nuggets |

# DRUG TRADE AND SLANG NAMES

| | TRADE / BRAND NAMES | SLANG / STREET NAME |
|---|---|---|
| METHANDONES | | |
| Methadone | Dolophine, Methadose | Dollies, Mud, Red Rock, Tootsie Roll, Amidone, Fizzies, Balloons, Breaze, Buzz Bomb, Cartridges, Jungle Juice, Junk |
| OPIATES / OPIOIDS | | |
| Opiates / Opiods | Opium | Big O, God's Own Drug, Gum |
| Codine | n/a | As a cough syrup: Sizzurp, Promethazine, Syrup, Drank, Purple, Lean |
| Dihydrocodine | 6-α-hydrocodol, Drocode, DHCplus, Synalgos-DC, Remedeine | n/a |
| Hydromorphone | Dilaudid | Dust, Juice, Smack, D, Footballs, Dilly, Dill, Dillies, Big D, Hydro, Super 8, M-2, M-80s, Hospital Heroin, Moose, White Triangles |
| Morphine | Astramorph, Avinza, Duramorph, Kadian, Kapanol, Oramorph, Liosomal, Roxanol | Aunt Emma, Mister Blue, Morpho, Dreamer, New Jack Swing, Unkie, C&M, Emsel |
| Oxymorphone | Opana | n/a |
| Heroin | Diamorphine, Diacetylmorphine, Heroin Hydrochloride | Smack, H, Brown, Horse, Junk, Skag, Dope, China White, Black Tar |

# REFERENCES

*ISO/IEC 17025**

*RTS is fully accredited to ISO/IEC 17025:2017 for workplace and medico-legal drug analysis via the United Kingdom Accreditation Service (UKAS), Laboratory identification: 4348.*
*RTS may utilise the services of suitably accredited and approved sub-contractor laboratories for analytical methods we cannot conduct under accreditation ourselves.*
*The laboratory conducing the analysis will be identified on every certificate of analysis.*

# NOTES

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TESTING SERVICES

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