

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <b>10308</b>  Accredited to <b>ISO/IEC 17025:2005</b>	<b>Key Forensic Services Ltd</b>	
	<b>Issue No: 008    Issue date: 09 August 2019</b>	
	<b>University of Warwick Science Park</b> <b>Sir William Lyons Road</b> <b>Coventry</b> <b>West Midlands</b> <b>CV4 7EZ</b>	<b>Contact: Karen Smith</b> <b>Tel: +44 (0)7772294487</b> <b>Fax: +44 (0)2476 323398</b> <b>E-Mail: qms.team@keyforensic.co.uk</b> <b>Website: www.keyforensic.co.uk</b>

**Testing performed by the Organisation at the locations specified below**

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<b>Address</b> University of Warwick Science Park Sir William Lyons Road Coventry West Midlands CV4 7EZ	<b>Local contact</b> Karen Smith Tel: +44 (0) 7772294487 Fax: +44 (0)2476 323398 E-Mail: qms.team@keyforensic.co.uk Website: www.keyforensic.co.uk	Forensic Analysis Quality Management  A
<b>Address</b> 207B and C Cavendish Place Birchwood Park Warrington WA3 6WU	<b>Local contact</b> Karen Smith Tel: +44 (0) 7772294487 Fax: +44 (0)2476 323398 E-Mail: info@keyforensic.co.uk Website: www.keyforensic.co.uk	Forensic Analysis  B
<b>Address</b> 4 Penfold Drive Wymondham Norfolk NR18 OWZ	<b>Local contact</b> Karen Smith Tel: +44 (0) 7772294487 Fax: +44 (0)2476 323398 E-Mail: qms.team@keyforensic.co.uk Website: www.keyforensic.co.uk	Forensic Analysis DNA Profiling  C



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	<u>Forensic Testing</u>	The organisation has demonstrated adherence to the relevant requirements of the Forensic Science Regulators Code of Practice and Conduct in relation to their Forensic Activities	A, B, C
ALCOHOL BEVERAGES	<u>Forensic Analysis</u>  Detection and quantitation of alcohol content in submitted beverages	Documented in house method using GC-FID	A
BODY FLUIDS and TISSUES	<u>Forensic Analysis</u>		
Blood - Whole - Stains	Short Tandem Repeat (STR)/Y Chromosome DNA profiling for forensic analysis of:	Documented In-House Methods using manual extraction (KFSP124 & 154)	C
Semen - Whole - Azoospermic	- Low Template DNA (pre and post PCR enhancement)	- Qiagen - SwabSolution™ SwabSolution™ (reference buccal swabs only)	
Faeces	- Elimination Database samples (VED, SED, PED)	Documented In-House Methods using Manual quantification (KFSP132 & 187)	
Saliva - Whole - Stains - Swabs (buccal cells)	- Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database	- Pico Green - Plexor HY - ABI 7500	
Hair	- Subject Samples (PACE and Volunteer) meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database	Documented In-House Methods using Manual amplification (PCR) and the following chemistry:	
Cellular Material	- Environmental Monitoring Samples	- ESI 17 - NGM Select - Powerplex Y23 (Y chromosome only) - SwabSolution™ (reference buccal swabs only)	
Body Tissue - Nail - Bone - Teeth		Documented In-House Methods using Electrophoresis (KFSP219 & 186)  Applied Biosystems 3130XL Genetic Analyser©	C



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd)  - Muscle	<u>Forensic Analysis</u> (cont'd)  Short Tandem Repeat (STR) DNA profiling for forensic analysis of: Crime Scene Samples Subject Samples	Documented In-House Methods using manual extraction - Qiagen	C
	Crime Scene Samples Subject Samples	Documented In-House Methods using Manual quantification (KFSP187)  - Plexor HY - ABI 7500	C
		Documented In-House Methods using Manual amplification (PCR) and the following chemistry:  - ESI 17 - NGM Select - Powerplex Y23 (Y chromosome only)	C
		Documented In-House Methods using Electrophoresis (KFSP219 & 186) - Applied Biosystems 3130XL Genetic Analyser©	C
	<u>Related Opinions and Interpretation</u>  Interpretation of DNA profiles generated internally from crime stains (single source/major-minor mixtures/complex mixtures) and reference samples  Statistical analysis and comparison of DNA profiles generated from crime stains with compatible reference DNA profiles (internally generated or from other accredited laboratories)	Documented In-House methods (KFSP217 & 218 – GMIDX, KFSP268, 271, 272 – STR Mix, KFSP228 - YHRD) - Genetic Characterisation <ul style="list-style-type: none"> <li>o GMIDX (B and C only)</li> <li>o STRMix</li> <li>o Y HRD (C only)</li> </ul>	A, B, C



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<p><b>BODY FLUIDS and TISSUES (cont'd)</b></p> <p>Saliva</p> <ul style="list-style-type: none"> <li>- Swabs (buccal cells)</li> <li>- Whole</li> <li>- FTA (Fast Technology for Analysis of nucleic acids) paper for saliva</li> </ul> <p>Blood</p> <ul style="list-style-type: none"> <li>- FTA (Fast Technology for Analysis of nucleic acids) paper for blood</li> <li>- Whole</li> <li>- Swabs</li> </ul> <p>Semen</p> <ul style="list-style-type: none"> <li>- Whole</li> <li>- Azospermic</li> </ul> <p>Cellular Material</p> <ul style="list-style-type: none"> <li>- Surrogate reference samples (e.g. toothbrushes and razors)</li> </ul> <p>Hair</p> <p>Body Tissue</p> <ul style="list-style-type: none"> <li>- Nail</li> <li>- Bone</li> <li>- Teeth</li> </ul> <p>Muscle</p>	<p><u>Relationship Analysis</u></p> <p>Short Tandem Repeat (STR) /Y Chromosome DNA profiling for relationship testing for:</p> <ul style="list-style-type: none"> <li>- Paternity</li> <li>- Maternity</li> <li>- Sibling</li> <li>- Extended relationships (Aunt/Uncle, Niece/Nephew, Grandparent, Grandchild and cousins)</li> </ul>	<p>Documented In-House Methods (KFSP124, 139, 133, 199, 210) using Manual extraction</p> <ul style="list-style-type: none"> <li>- QiaAMp</li> <li>- SwabSolution (Saliva Swabs, buccal cells only)</li> </ul> <p>Documented In-House Method (KFSP133) using Manual amplification and the following chemistry:</p> <ul style="list-style-type: none"> <li>- Fusion</li> <li>- SwabSolution (Saliva Swabs, buccal cells only)</li> <li>- Powerplex Y23</li> <li>- ESI 17</li> </ul> <p>Documented In-House Method (KFSP186) using Electrophoresis Applied Biosystems 3130xl Genetic Analyser©</p>	C
	<p><u>Related Opinions and Interpretation</u></p> <p>Comparison, interpretation and statistical analysis of DNA profiles against compatible DNA Profile information from within submitted cases</p>	<p>Documented In-House method (KFSP210, 214 and 228) Genetic Characterisation using</p> <ul style="list-style-type: none"> <li>- GMID-X</li> <li>- GenoProof v3</li> <li>- Y HRD</li> </ul>	A, B, C



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BODY FLUIDS and TISSUES (cont'd) Any material	<u>Forensic Analysis</u> (cont'd) Searching for - Semen - Saliva - Blood - hairs	Documented in house methods KFSP140, 142 and 145 using - visual examination - low power microscopy - high power microscopy - chemical testing (see below)	A, B, C
Any material	Recovery and preparation, including for contingency purposes, for subsequent DNA analysis by an ISO/IEC 17025 accredited laboratory of the following from searched materials and swabs: - semen - Saliva - Blood - cellular material - hairs	Documented in house methods KFSP 255, 115, 140, 142, 143, 144 and 145 142 and 159 using - cutting, - swabbing of stains - extraction of stained materials - extraction of swabs, - minitaping as appropriate	A, B, C
Blood	Presumptive testing for Blood via detection of: - Peroxidase - Human Haemoglobin	Documented in house method KFSP 142 using - Visual Examination - LMG (Leucomalachite green) - KM (Kastle Meyer)	A, B, C
Blood	<u>Related Opinions and Interpretations</u> Identification, interpretation and recording of blood patterns (BPA) on clothing and other items examined at the laboratory	Documented In-House Method KFSP 142 & 172 using: - visual examination - low power microscopy	A, B, C
Semen	<u>Forensic Analysis</u> Presumptive testing for seminal fluid, via detection of: - Acid Phosphatase - Choline	Documented In-House Methods KFSP 255 and 144 using: - Visual Examination - Alternative light sources - Acid phosphatase detection (colour reaction) - Choline detection by Florence Iodine test	A, B, C



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BODY FLUIDS and TISSUES (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Semen	Confirmatory testing for seminal fluid via identification of: - Spermatozoa	Documented In-House Methods KFSP 255 and 144 using: - High power microscopy - Haematoxylin and Eosin staining	A, B, C
Saliva	Presumptive testing for saliva via detection of: - Amylase	Documented In-House Method KFSP 143 using: - Visual examination - Phadebas paper	A, B, C
TOXICOLOGY BODY FLUIDS Blood/Urine (Preserved, Unpreserved)	<u>Forensic Analysis</u> Detection and quantification of alcohol in relation to the Road Traffic Act (>20-400mg/100ml)	Documented in house method KFSP090 using - GC-FID	A
Blood (preserved)	Detection and quantification of drugs in relation to S5A of the Road Traffic Act 1988 (as amended) and the Drug Driving (Specified Limits) (England and Wales) Regulations 2014: <u>(Limit) and (Calibration Range):</u>  Amphetamine (250µg/l) (25-1250 µg/l) Benzoyllecgonine (50µg/l) (25-1000 µg/l) Clonazepam (50µg/l) (20-400 µg/l) Cocaine (10µg/l) (5-500 µg/l) Diazepam (550µg/l) (100-2000 µg/l) Flunitrazepam (300µg/l) (100-2000 µg/l) Ketamine (20µg/l) (10-1000 µg/l) Lorazepam (100µg/l) (20-400 µg/l) Lysergic Acid Diethylamide (LSD) (1µg/L) (0.5-10 µg/l) Methadone (500µg/L) (10-2500 µg/l) Methylamphetamine (10µg/l) (5-1000 µg/l)	Documented in house method KFSP 238 using: Protein precipitation and LC-MS-MS	B



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TOXICOLOGY BODY FLUIDS (cont'd) Blood (preserved)	<u>Forensic Analysis</u> (cont'd)  Detection and quantification of drugs in relation to S5A of the Road Traffic Act 1988 (as amended) and the Drug Driving (Specified Limits) (England and Wales) Regulations 2014: <u>(Limit) and (Calibration Range):</u>  Methylenedioxymethamphetamine (MDMA) (10µg/l) (5-1000 µg/l) 6-Monoacetylmorphine (5µg/l); (2.5-75 µg/l) Morphine (80µg/l) (25-1000 µg/l) Oxazepam (300µg/l) (100-2000 µg/l) Temazepam (1000µg/l) (100-2000 µg/l)	Documented in house method KFSP 238 using: Protein precipitation and LC-MS-MS	B
Blood (preserved)	Detection and quantification of drugs in relation to S5A of the Road Traffic Act 1988 (as amended) and the Drug Driving (Specified Limits) (England and Wales) Regulations 2014: <u>(Limit) and (Calibration Range):</u>  Delta-9-Tetrahydrocannabinol (THC) (2 µg/L); (0.5-15 µg/l)	Documented in house methods (ref KFSP236) using liquid-liquid extraction and:  - Liquid chromatography tandem mass-spectrometry (LC-MS/MS)	B
Blood (Preserved/Unpreserved)	Presumptive screening for the presence of the following drug (s) or drug group(s) (cut-off limit)  Amphetamines (25 µg/l) Methamphetamines (50 µg/l) Cocaine metabolite (25 µg/l) Cannabinoids (10 µg/l) Methadone (25 µg/l) Opiates (25 µg/l) Benzodiazepines (50 µg/l) Ketamine (10 µg/l) Buprenorphine (0.5 µg/l)	Documented in house method (ref KFSP232) using:  - Liquid enzyme immunoassay (EIA) / Enzyme-linked immunosorbent (ELISA)	B



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TOXICOLOGY BODY FLUIDS (cont'd) Blood (Preserved/Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Quantitative analysis of the following drugs (concentration range):	Documented in house method (ref KFSP238) using protein precipitation and:  - Liquid chromatography tandem mass-spectrometry (LC-MS/MS)	B
Blood (Preserved/Unpreserved)	<b>Amphetamines Group:</b> Amphetamine (25-1250 µg/l) Methylamphetamine (5-1000 µg/l) Methylenedioxyamphetamine (MDMA) (5-1000 µg/l) Methyldioxyamphetamine (MDA) (5-1000 µg/l) Methylenedioxyethylamphetamine (MDEA) (5-1000 µg/l)		B
	<b>Benzodiazepines Group:</b> Alprazolam (100-2000 µg/l) Clonazepam (20-400 µg/l) Chlordiazepoxide (100-2000 µg/l) Diazepam (100-2000 µg/l) Flunitrazepam (100-2000 µg/l) Lorazepam (20-400 µg/l) Midazolam (100-2000 µg/l) Nitrazepam (100-2000 µg/l) Nordiazepam (100-2000 µg/l) Oxazepam (100-2000 µg/l) Phenazepam (100-2000 µg/l) Temazepam (100-2000 µg/l)		B
	<b>Cocaine Group:</b> Cocaine (Preserved only) (5-500ng/ml) Benzoylecgonine (25-1000ng/ml) Cocaethylene (Preserved only) (5-500ng/ml)		B





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TOXICOLOGY BODY FLUIDS (cont'd) Blood (Preserved/Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Quantitative analysis of the following drugs (concentration range):	Documented in house method (ref KFSP238) using protein precipitation and:  - Liquid chromatography tandem mass-spectrometry (LC-MS/MS)	B
	<b>Opioids Group:</b> Codeine (25-1000 µg/l) Dihydrocodeine (25-1000 µg/l) Morphine (25-1000 µg/l) 6-monoacetylmorphine (6-MAM) (2.5-75 µg/l) Methadone (100-2500 µg/l)		B
	<b>Z Drugs group:</b> Zopiclone (5-500 µg/l) Zaleplon (5-500 µg/l) Zolpidem (5-500 µg/l)		B
	Ketamine (10-1000 µg/l) Norketamine (10-1000 µg/l)  Lysergic Acid Diethylamide (LSD) (0.5-10 µg/l)		B  B
Blood (Preserved/Unpreserved)	Quantitative analysis of the following drugs (concentration range):	Documented in house method KFSP 236 using: Protein precipitation and LC-MS-MS	B
	<b>Cannabinoids Group:</b> Delta-9-tetrahydrocannabinol (THC) (0.5-15 µg/l) 11-hydroxy-Delta-9-tetrahydrocannabinol (11-OH-THC) (0.5-15 µg/l) 11-nor-Delta-9-tetrahydrocannabinol-9-carboxylic acid (11-COOH-THC) (5-150 µg/l)		B



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TOXICOLOGY BODY FLUIDS (cont'd) Blood (Preserved/Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Quantitative analysis of the following drugs (concentration range): (cont'd)  <b>Cathinones Group:</b> Mephedrone (4-methylmethcathinone) (50-1000µg/l) 4-MEC (4-methylethcathinone) Methylone (50-1000 µg/l) Naphyrone (50-1000 µg/l) Butylone (50-1000 µg/l) MDPV (3,4-methylenedioxyprovalerone) (50-1000 µg/l ) Cathinone (50-1000 µg/l ) Methcathinone (50-1000 µg/l) Methedrone (50-1000 µg/l) Pentylone (50-1000 µg/l)  <b>Piperazines Group:</b> BZP (1-benzylpiperazine) (50-1000 µg/l) TFMPP (1-[3-Trifluoromethyl]phenyl]piperazine) (50-1000 µg/l) m-CPP (meta-chlorophenylpiperazine) (50-1000µg/l)	Documented in house method KFSP 239 using: Protein precipitation and LC-MS-MS	B
Urine (Preserved/Unpreserved)	Presumptive screening for the presence of the following drug (s) or drug group(s) (cut-off limit)  Amphetamines (150 µg/l) Methamphetamines (150 µg/l) Cocaine metabolite (50 µg/l) Cannabinoids (10 µg/l) Methadone (40 µg/l) Opiates (100 µg/l ) Benzodiazepines (50 µg/l) Ketamine (10 µg/l) Buprenorphine (5 µg/l)	Documented in house method (ref KFSP232) using:  - Liquid enzyme immunoassay (EIA) / Enzyme-linked immunosorbent (ELISA)	B



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TOXICOLOGY BODY FLUIDS (cont'd) Urine (Preserved/Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) of the following drugs (cut-off limit):		
	<b>Cannabinoids Group:</b> 11-nor-Delta-9-tetrahydrocannabinol-9-carboxylic acid (11-COOH-THC) – (0.1µg/l)	Documented in house method KFSP 236 using: - Protein precipitation and LC-MS-MS	B
	<b>Cocaine Group:</b> Cocaine (1.05 µg/l) Benzoylecgonine (1.36 µg/l) Cocaethylene (0.73 µg/l)	Documented in house method KFSP 237 using: - Protein precipitation and LC-MS-MS	B
	<b>Opiates/Opioids Group:</b> 6-monoacetylmorphine (6-MAM) (1.5 µg/l) Morphine (0.74 µg/l) Dihydrocodeine (1.04 µg/l) Methadone (0.99 µg/l) Codeine (2.66 µg/l)		B
	<b>Benzodiazepines:</b> Diazepam (0.97 µg/l) Nordiazepam (1.34 µg/l) Oxazepam (4.86 µg/l) Temazepam (0.91 µg/l) Alprazolam (2.06 µg/l) Phenazepam (2.77 µg/l)		B
	Ketamine (1.47 µg/l)		B
<b>Amphetamine and related compounds:</b> Amphetamine (1.86 µg/l) Methylamphetamine (2.72 µg/l) Methylenedioxymethylamphetamine (MDMA) (1.66 µg/l) Methyldioxyamphetamine (MDA) (3.71 µg/l) Methylenedioxyethylamphetamine (MDEA) (2.44 µg/l)		B	



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TOXICOLOGY BODY FLUIDS (cont'd) Urine (Preserved/Unpreserved)	<u>Forensic Analysis</u> (cont'd)  Confirmation (above specified cut-off limit) of the following drugs (cut-off limit): (cont'd)  <b>Cathinones Group:</b> Mephedrone (4-methylmethcathinone) (1.32 µg/l) 4-MEC (4-methylethcathinone) (2.04 µg/l) Methylone (0.63 µg/l) Naphyrone (0.41 µg/l) Butylone (1.40 µg/l) MDPV (3,4-methylenedioxypropylone) (0.76 µg/l) Cathinone (1.27 µg/l) Methcathinone (0.76 µg/l) Methedrone (0.49 µg/l) Pentylone (0.92 µg/l)  <b>Piperazines Group:</b> BZP (1-benzylpiperazine) (0.52µg/l) TFMPP (1-[3-Trifluoromethyl]phenyl]piperazine) (0.79 µg/l) m-CPP (meta-chlorophenylpiperazine) (1.09µg/l)	Documented in house method KFSP 239 using: - Protein precipitation and LC-MS-MS	B
Blood and urine (Preserved/Unpreserved)	Detection and quantitation of fluoride	Documented in house (ref KFSW 267) using Ion selective electrode	B
DAMAGE  Damage (Clothing and Fabric material)	<u>Forensic Analysis</u>  <u>Related Opinions and Interpretations</u>  Examination, assessment and evaluation of a damage item, comparison of damage with suspected instrument (excluding firearms) to determine the likelihood the suspected instrument caused the damage.	Documented In-House Methods KFSP098 using: - visual examination - microscopy	A, B



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DOCUMENTS	<u>Forensic Analysis</u> (cont'd)		
Handwriting (Roman script)	The examination of submitted items to compare handwriting from known and suspect sources to establish links and/or authorship	Documented in house method KFSP109 using - visual examinations - microscopy	A
Signatures	The examination of submitted items to compare signatures from known and suspect sources to establish links and/or authorship	Documented in house method KFSP110 using - visual examinations - microscopy	A
Paper	Detection and enhancement of indented marks made by handwriting	Documented in house method (ref KFSP111) using - oblique lighting - ESDA	A
DRUGS (and materials suspected of containing drugs)	<u>Legal classification of controlled drugs (Misuse of Drugs Act 1971)</u>		
	Identification of cannabis, cannabis resin and cannabis products	Documented in house method KFSP 203 using : - Microscopy - TLC - GC-MS	A
	Identification of cannabis plants	Documented in house method KFSP 203 using - Microscopy	A
	Identification of: - Opiates - Cocaine - Amphetamine - Ecstasy - LSD (by TLC only) - Psilocybin/Psilocin (by TLC only)	Documented in house method KFSP 203 using - spot tests(Marquis Reagent and Cobalt Thiocyanete Reagent) (KFSP194) - microscopy - TLC (KFSP202) - FTIR (KFSP193) - GC-MS (KFSP190)	A
	Identification of : - Mephedrone - Methylethcathinone - TFMP - Methylamphetamine Temazep	Documented In house method KFSP 190 using - GC-MS	A



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DRUGS (cont'd) (and materials suspected of containing drugs)	<u>Legal classification of controlled drugs (Misuse of Drugs Act 1971)</u> (cont'd)		
	Identification of : - Buprenorphine - Ketamine - Tramadol - Zolpidem	Documented In house method KFSP 190 using GC-MS	A
	The identification of additives and diluents commonly associated with drugs: - Caffeine - Lignocaine - Phenacetin - Levamisole - Benzocaine - Paracetamol	Documented in house method KFSP 190 using - GC-MS	A
	Quantification of : - Amphetamine - Cocaine - Diamorphine - MDMA	Documented in house methods KFSP 076 and KFSP 204 using - HPLC	A



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

**Key Forensic Services Ltd**  
Issue No: 006 Issue date: 11 April 2019

**Testing performed by the Organisation at the locations specified**

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FIBRES	<u>Forensic Analysis</u> (cont'd)		
	Recovery of fibres for contingency purposes from clothing and objects	Documented in house method KFSP037 using <ul style="list-style-type: none"> <li>- visual examination</li> <li>- low power microscopy</li> <li>- taping</li> <li>- Mounting</li> </ul>	A, B
Natural and man made fibres	Search and recovery of fibres from clothing and objects for analysis	Documented in house method KFSP037 using <ul style="list-style-type: none"> <li>- Visual Examination</li> <li>- Low power microscopy</li> <li>- taping</li> </ul>	A, B
Natural and man-made fibres	Identification of fibre type	Documented in house method KFSP037 using <ul style="list-style-type: none"> <li>- FTIR</li> <li>- polarised light microscopy</li> </ul>	A
Natural and man made fibres	Comparison of fibres	Documented in house method KFSP037 using <ul style="list-style-type: none"> <li>- comparison microscopy</li> <li>- TLC</li> </ul>	A, B
Natural and man made fibres	Spectroscopic analysis of fibres in the visible range for the purpose of comparison of fibres	Documented in house method KFSP037 using <ul style="list-style-type: none"> <li>- microspectrophotometry (visible light)</li> </ul>	A,
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching features between the suspect and reference/control fibre to determine the likelihood of the suspect fibre coming from a specific source	Documented in house method	A, B



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FIREARMS	<u>Forensic Analysis</u> (cont'd)			
	Examination of discharged ammunition components to determine the number of guns used.	Documented In house methods KFSP263 using: - comparison microscopy	B	
	Examination of cartridges to determine if ammunition has been loaded into a firearm	Documented In house methods KFSP263 using : - Microscopy - comparison microscopy	B	
	Comparison of spent ammunition to suspect guns	Documented In house methods KFSP263 using: - comparison microscopy	B	
	Ammunition	Ammunition and component identification and legal classification	Documented In house method KFSP069 using : - Weighing - length measurement - use of known samples or standard reference data.	B
	Firearms	Firearm and firearm component part identification and legal classification (Firearms Act 1968)	Documented in house method KFSP069 using - visual examination - physical properties and features - use of reference sources and publications	B
		Trigger pull measurement	Documented in house method KFSP070 using - weights	B
	Range of fire determination	Documented in house method KFSP072 and KFSP087 using - appropriate weapon/ ammunition combination & target material to assess range of fire - Comparison of test patterns to exhibits	B	
	Test Firing to assess the functionality of weapons and/or ammunition.	Documented In house method KFSP068 using suspect or reference guns and ammunition	B	





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FIREARMS (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Firearms (cont'd)	Determination of Kinetic Energy of projectiles	Documented In house method (KFSP073) using SKAN chronograph and balance	B
	Test Firing to generate test samples of ammunition for comparison to exhibits	Documented In house method KFSP068 using suspect or reference guns and ammunition	B
	Test Firing to generate test samples of ammunition for inclusion in the NABIS database	Documented In house methods KFSP068 meeting the requirements of NABIS	B
GUN SHOT RESIDUE (GSR / FDR)	<u>Forensic Analysis</u>		
	Recovery of in-organic gun shot residues (primer)	Documented in house method KFSP080 using - carbon coated aluminium stubs	A
Recovered Material	Identification of in-organic gun shot residues (primer)	Documented in house method KFSP034 using - SEM/EDS	A



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GLASS	<u>Forensic Analysis</u> (cont'd)		
	Search and Recovery of glass fragments from clothing and objects	Documented in house method KFSP047 using <ul style="list-style-type: none"> <li>- visual examination microscopy</li> <li>- appropriate recovery:</li> <li>- Shaking</li> <li>- Brushing</li> <li>- Direct removal</li> </ul>	A
	Characterisation of glass fragments	Documented in house method KFSP047 & KFSP036 using <ul style="list-style-type: none"> <li>- refractive index determination by oil immersion (GRIM),</li> <li>- low power microscopy and UV illumination,</li> <li>- elemental analysis by SEM-EDX</li> </ul>	A
	Comparison of recovered glass fragments to control samples recovered from crime scenes	Documented in house method KFSP047 and KFSP036	A
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching features between the suspect and reference/control glass to determine the likelihood of the suspect glass coming from a specific source	Documented in house method KFSP047	A



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LACHRYMATORS	<u>Forensic Analysis</u> (cont'd)		
	<u>Recovery of lachrymators material</u>	Documented in house methods KFSP180 using <ul style="list-style-type: none"> <li>- Activation</li> <li>- Direct sampling</li> </ul>	B
	Identification of <ul style="list-style-type: none"> <li>- Ortho-chlorobenzalmalonitrile (CS)</li> <li>- Alpha-chloroacetophenone (CN)</li> <li>- Pelargonic acid vanillylamide (PAVA)</li> <li>- Capsaicin (Pepper Spray)</li> </ul>	Documented in house method KFSP180 using <ul style="list-style-type: none"> <li>- GCMS</li> </ul>	A
	Legal Classification of devices (Firearms Act 1968)		B
	Analysis to determine the nature of the contents, functionality of device and whether the item fits the description of a Prohibited Weapon		B
MARKS AND IMPRESSIONS	<u>Forensic Analysis</u>		
Footwear	Coding of Custody prints taken from suspect footwear using gross features	Documented in house method KFSP067	A
	Enhancement of footwear marks recovered from scenes	Documented in house method KFSP032 & KFSP019 using <ul style="list-style-type: none"> <li>- low powered microscope</li> <li>- lighting techniques</li> <li>- powders</li> <li>- ESLA</li> <li>- gel lifting</li> <li>- gel scanner</li> </ul> digital capture photography	A



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MARKS AND IMPRESSIONS (cont'd)	<u>Forensic Analysis</u> (cont'd)		
Footwear (cont'd)	Production of test marks from suspect footwear	Documented in house method KFSP019 using <ul style="list-style-type: none"> <li>- powders</li> <li>- gel lifting</li> <li>- gel scanner</li> <li>- digital capture photography</li> </ul>	A
Footwear mark (physically or image)	Assessment, Comparison and evaluation of footwear with scene marks	Documented In-House methods KFSP019 using visual examination and low power microscopy and dimensional measurements	A
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching features between the suspect and reference/control footwear marks to determine the likelihood of the suspect mark coming from a specific footwear	Documented In-House methods KFSP019 using <ul style="list-style-type: none"> <li>- Personal experience</li> </ul>	A
Marks in blood	Location and enhancement of marks in blood from items recovered from crime scenes	Documented in house method using <ul style="list-style-type: none"> <li>- luminol</li> <li>- leuco-crystal violet (LCV)</li> </ul>	B
Packaging (Plastic bags and clingfilm typically associated with drugs packaging)	Examination to determine the presence of striation marks and manufacturing features	Documented in house method KFSP205 using <ul style="list-style-type: none"> <li>- dimensional measurement</li> <li>- visual comparison</li> <li>- polarised light</li> <li>- shadowgraph</li> </ul>	A
	<u>Opinions and Interpretation</u> The evaluation of the significance of any matching features between the recovered packaging to determine if they are from the same source	Documented In-House method	A

END