Schedule of Accreditation

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Orchid Cellmark Ltd (trading as Cellmark)

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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
Address Unit 16 Blacklands Way Abingdon Business Park Abingdon Oxfordshire OX14 1DY	**Local contact** Mr Peter Harper Tel: +44 (0)1235 528609 Fax: +44 (0)1235 554428 E-Mail: pharper@cellmark.co.uk Websites: www.cellmarkforensics.co.uk www.cellmark.co.uk	Forensic Testing; Paternity and Relationship testing; Forensic and Veterinary and Forensic Analysis	A
Address Unit 1 Buckshaw Link Ordnance Road Buckshaw Village Chorley Lancashire PR7 7EL	**Local contact** Mr Peter Harper Tel: +44(0)1235 528609 Fax: +44(0)1235 554428 E-Mail: pharper@cellmark.co.uk Websites: www.cellmarkforensics.co.uk www.cellmark.co.uk	Forensic Analysis	B
Address The Arrow Centre Annesley Road Hucknall Nottinghamshire NG15 8AY	**Local contact** Mr Peter Harper Tel: +44(0)1235 528609 Fax: +44(0)1235 554428 E-Mail: pharper@cellmark.co.uk Websites: www.cellmarkforensics.co.uk www.cellmark.co.uk	Forensic Analysis	C

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Forensic Testing	The organisation has demonstrated compliance to the Forensic Science Regulator Code of Practice in relation to the Forensic Activities listed below.	A, B, C
BODY FLUIDS and TISSUES	Forensic Analysis		
Blood - Whole - Stains - FTA cards Semen - Whole - Azoospermic Faeces Saliva - Whole - Stains - FTA Cards - Swabs (buccal cells) Hair Cellular Material	DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of: - Low Template DNA (SGM Plus and NGM SElect)) - Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database - Subject Samples (PACE and Volunteer) meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database - Elimination Database samples (VED/SED and PED) - Environmental Monitoring Samples (NGM SElect only)	Documented In-House Methods using manual/automated extraction - Thermofisher Automate Express (FSP0124) - Qiagen (EZ1) (FSP0050) Modified organic (FSP0038) - Qiagen (EZ2) (FSP0151) - Alkali Lysis extraction (FSP0033) - Fast differential semen DNA extraction (FSP0087) - Direct semen extraction (FSP0102) - QIAamp Fast Stool DNA Minikit (FSP0073 - DNA IQ (STR0119) Documented In-House Methods using manual and automated quantification - Pico Green - Oli Green (QC0005/STR0161) Real Time Quantification using Quantiplex ProDual RT-PCR (FOR0017)	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - Stains Saliva - Stains - Swabs Hair Cellular Material	<u>Forensic Analysis</u> (cont'd) DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of: - Crime Scene Samples meeting the requirements of the Custodian for the Purpose of Supply to the National DNA Database - Environmental Monitoring Samples <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 using manual/automated extraction - Qiagen (EZ1) (FSP0050) Documented In-House Methods using manual quantification - Real Time Quantification using Thermo Fisher 7500 Documented In-House Methods (FSP0156) using manual amplification (PCR) and the following chemistry: - NGM SElect Express Documented In-House Methods (FSP0170) using Electrophoresis - Applied Biosystems 3500xl Genetic Analyser© Documented In-House methods (FRP0166,FRP0114, FRP0117 FRP0139 FRP0151 FRP0162,FRP0124/ TG0025/FSP0021/ FRP0152, FOR0123,FOR0126) - Genetic Characterisation o GMID 3.2.1 o GeneMapper IDX v1.5 o Expert systems: ▪ DNA Resolve ▪ ReliCalc ▪ STRMix (v2.5 &v2.10.0)	C A A,B,C A, B A, B A, B A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - FTA cards Saliva - FTA Cards	<u>Forensic Analysis</u> (cont'd) <u>Forensic Testing</u> DNA Profiling: Short Tandem Repeat (STR) DNA profiling for forensic analysis of: Subject Samples for input into population databases.	Documented In-House Methods (STR0202) & manufacturer specifications using FTA purification (STR0187) and amplification (PCR) using the following chemistry: - PowerPlex® Fusion 6C Documented In-House Methods (STR0218) using Electrophoresis: - Applied Biosystems 3500xl Genetic Analyser© Genetic characterisation using documented in-house methods (STR0219): - GeneMapper IDX v1.4	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - Whole - Stains - FTA cards Semen - Whole - Azoospermic Saliva - Whole - Stains - FTA Cards - Swabs (buccal cells) Hair Cellular Material Body Tissue - Nail - Muscle - Bone - Teeth - Products of conception	<u>Forensic Analysis</u> (cont'd) Massive Parallel Sequencing based Autosomal Short Tandem Repeat (STR)/Y-STR/X-STR/Identity SNP/Phenotypic SNP/Biogeographical ancestry SNP DNA profiling for forensic analysis of: - Crime Scene/ Missing persons Samples - Subject Samples (PACE and Volunteer)	Documented In-house Methods for Massive Parallel Sequencing Sample Amplification, Enrichment, Library Preparation, Purification and Normalisation using -Verogen ForenSeq™ DNA -Signature Prep Kit VER0001	A
	<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 for Massive Parallel Sequencing of pooled libraries using - Illumina MiSeq FGx & MiSeq FGx Control Software (MCS)VER0002 Documented In-House Methods - Genetic Characterisation Verogen Forenseq™Universal Analysis Software (Windows) VER0003/VER0004/VER0005/FOR0024/FOR0100/FOR0101	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - Whole - Stains - FTA cards Semen - Whole - Azoospermic Saliva - Whole - Stains - FTA Cards - Swabs (buccal cells) Faeces Urine Stomach Contents Hair Cellular Material Body Tissue - Nail - Muscle - Bone - Teeth - Amniotic Fluid - Products of conception	<u>Forensic Analysis</u> (cont'd) DNA Profiling: Short Tandem Repeat (STR)/Mitochondrial/Y Chromosome DNA profiling for forensic analysis of: - Low Template DNA (elevated cycle number and post PCR enhancement) - Crime Scene Samples	Documented In-House Methods using manual/automated extraction - Automate Express (FSP0124) - Modified organic(FSP0038) - Qiagen EZ1 (FSP0050) Documented In-House Methods using Manual quantification - Real Time Quantification using Quantiplex ProRT-PCR (FOR0017) Mini-gel Documented In-House Methods using Manual amplification (PCR) and the following chemistry:) - NGM Select(FSP0156) - Identifiler(FSP0156) - mtDNA (MIT0004) - Minifiler (FSP0156) - Powerplex Y23 (FSP0149) Documented In-House Methods (FSP0028/FSP0170,FSP017,FSP0053,FOR0109/FOR0110) using Electrophoresis - Applied Biosystems 3130xl Genetic Analyser© - Applied Biosystems 3500xl Genetic Analyser© for crime scene samples following NGM SElect and PPY23 amplification	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd)	Forensic Analysis (cont'd)		
	Related Opinions and Interpretation Interpretation of DNA profiles generated internally from crime stains (single source/major-minor 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 (FRP0153,FSP0172, FSP0174 FRP0123, MIT0006, MIT0009, MIT0011, FSP0080//FRP0135) Genetic Characterisation - GMID 3.2.1 - GeneMapper IDX v 1.4 and 1.5 - Expert systems: - Sequencher	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - Whole - Serum - Stains Semen - Whole - Azoospermic Saliva - Whole - Swabs (buccal cells) Faeces Hair Body Tissue - Nail - Muscle - Bone - Teeth - Amnoitic Fluid - Products of conception	<u>Relationship Analysis</u> Short Tandem Repeat (STR)/Mitochondrial/Y Chromosome DNA profiling for relationship testing for: - Paternity - Maternity - Sibling - Familial Searching - Extended relationship (Aunt/Uncle, Niece/Nephew, Grandparent, Grandchild, Cousin)	Documented In-House Methods using Manual/Automated extraction - Automate Express (FSP0124) - FTA Purification (STR0187) Documented In-House Methods (FSP0054) using Manual quantification - Qiagen manual QIAamp (STR0043) Real Time Quantification using Quantiplex PRORT-PCR (FOR0017) Documented In-House Methods using Manual amplification and the following chemistry: - NGM Select (STR0161) - Powerplex Fusion (STR0187) - Powerplex Y23 (FSP0149) Documented In-House Methods using Electrophoresis (FSP0170/STR 0218) - Applied Biosystems 3500 Genetic Analyser©	A
	<u>Related Opinions and Interpretation</u> Comparison, interpretation and statistical analysis of DNA profiles against compatible DNA Profile information from within submitted cases	Documented In-House methods (STR0084/STR0099/STR0219/ STR0208/STR0220/FSP0174) - Genetic Characterisation o GMID 3.2 o GeneMapper IDX v1.4 and 1.5	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd) Blood - Whole - Serum - Stains Semen - Whole - Azoospermic Saliva - Whole - Swabs (buccal cells) Faeces Hair Body Tissue - Nail - Muscle - Bone - Teeth - Amniotic Fluid Products of conception	<u>Forensic Analysis</u> Massive Parallel Sequencing based Autosomal Short Tandem Repeat (STR)/Y-STR/X-STR/Identity SNP/Phenotypic SNP/Biogeographical ancestry SNP DNA profiling for relationship testing for: - Paternity - Maternity - Sibling - Familial Searching - Extended relationship (Aunt/Uncle, Niece/Nephew, Grandparent, Grandchild, Cousin) <u>Related Opinions and Interpretation</u> Comparison, interpretation, and statistical analysis of DNA profiles against compatible DNA Profile information from within submitted cases	Documented In-house Methods for Massive Parallel Sequencing Sample Amplification, Enrichment, Library Preparation, Purification and Normalisation using -Verogen ForenSeq™ DNA -Signature Prep Kit VER0001 Documented In-house Methods for Massive Parallel Sequencing of pooled libraries using - Illumina MiSeq FGx & MiSeq FGx Control Software VER0002 Documented In-house Methods forMassive Parallel Sequencing of pooled libraries using - Illumina MiSeq FGx & MiSeq FGx Control Software (MCS)VER0002 In-House Methods - Genetic Characterisation Verogen Forenseq™Universal Analysis Software (Windows VER0003/VER0004/VER0005/ STR0234	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd)	Forensic Analysis (cont'd)		
ANY MATERIAL	Searching for: - Blood - Semen - Saliva - Urine - Hairs	Documented In-House Methods (FSP0027/ FOR0010, FSL0071, FSL0005, FOR0015, FSL0070, FSL0010) using: - visual examination - white light - low power microscopy - high power microscopy - chemical testing (see below)	 A, B, C A, B A, B, C A, B A, B, C
	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: - Blood - Semen - Saliva - Hairs - Cellular Material	Documented In-House Methods (FOR0034, FOR0010, FOR0037, FSL0014, FOR0003, FSL0040, FSL0083, FOR0001, FSL0010) using: - cutting - swabs and swabbing - taping - mini-taping - extraction of stained materials - extraction of swabs	 A, B, C A, B, C A, B,C A, B, C A, B A, B
Blood	Presumptive testing for blood via detection of: - Peroxidase - Human Haemoglobin	Documented In-House Methods (FOR0009) using: - KM (Kastle Meyer) - Luminol - Hydrogen Peroxide - OBTI	 A, B,C A, B A,B A,B
	Related Opinions and Interpretations		
	Identification, interpretation and recording of blood patterns (BPA) on clothing and other items examined at the laboratory	Documented In-House Methods (FSL0044/TG0010) using: - visual examination - low power microscopy	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd)	Forensic Analysis (cont'd)		
Semen	Presumptive testing for seminal fluid, via detection of: - Acid Phosphatase - Choline	Documented In-House Methods (FSL0005, FSL0007) using: - Acid phosphatase reagent - Choline detection by Florence Iodine test	A, B
	Confirmatory testing for seminal fluid via identification of spermatozoa	Documented In-House Methods (FOR0148) using: - High power microscopy - Christmas Tree staining - Haematoxylin and Eosin staining	A, B
Saliva	Presumptive testing for saliva via detection of: - Amylase	Documented In-House Methods (FOR0015 and FOR0001) using: - Phadebas paper - Phadebas tube test	A, B
Urine	Presumptive testing for urine via detection of: - Urea	Documented In-House Methods (FSL0060) using: - DMAC	A, B
Hairs	Differentiation of human and animal hairs	Documented In-House Methods (FSL0068) using: - visual examination - low power microscopy - high power microscopy	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES (cont'd)	Forensic and Veterinary		
FTA Cards	Analysis of Canine Short Tandem Repeat (STR) loci	Documented In-House Methods (DOGID0002/DOGID0003/DOGID0004) defining extraction, amplification, electrophoresis and profile designation of Canine samples Thermo Scientific™ Canine Genotypes Panel 2.1 kit by ABI 3500xL Genetic Analyser and GeneMapper ID-X v1.4	A
Blood Body Tissue DNA FTA Cards	Analysis of Bovine Short Tandem Repeat (STR) loci	Documented In-House Methods (BOVSTR0001 BOVSTR0011/BOVSTR0013/BOVSTR0014 and BOVSTR0014) defining extraction, amplification, electrophoresis and profile designation of Bovine samples using Bovine Genotypes™ Panel 1.2 kit by ABI 3500xL Genetic Analyser and GeneMapper ID-X v1.4	A
Forensic samples and meat products	Related Opinions and Intepretations Identification of animal species by sequencing of the 12S rRNA mitochondrial gene from DNA extracts	Documented In-House Methods (SID0004) defining extraction, amplification, sequencing and analysis and comparison with reference sequences and analysis (SID0001-05). In house methods for relationship analysis BOVSTR0006/BOVSTR0007)	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES – TOXICOLOGY (cont'd)	Forensic Analysis		
Hair	Confirmation (above specified cut-off limit) and Quantit ative Analysis of the following drugs (cut-off limit) (Concentration Range):	Documented in house method (TOX0013) using liquid-liquid extraction and LC-MS/MS	A
	Amphetamine Group : Amphetamine (0.025ng/mg); (0.025-2.5ng/mg) Methamphetamine (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxyamphetamine MDA (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxymethamphetamine MDMA (0.025 ng/mg); (0.025-2.5ng/mg) Methylenedioxyethylamphetamine MDEA (0.025 ng/mg); (0.025-2.5ng/mg) Methylbenzodioxolylbutanamine MBDB (0.025 ng/mg); (0.025-2.5ng/mg)		A
	Cathinone Group: Mephedrone (0.025 ng/mg); (0.025-2.5ng/mg)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Hair (cont'd)	Confirmation (above specified cut-off limit) and Quantitative Analysis of the following drugs (cut-off limit); (Concentration Range): Cocaine Group : Cocaine (0.025 ng/mg); (0.025-2.5ng/mg) Cocaethylene (0.025 ng/mg); (0.025-2.5ng/mg) Benzoylecgonine (0.025 ng/mg); (0.025-2.5ng/mg)) Norcocaine (0.025 ng/mg); (0.025-2.5ng/mg) Anhydroecgonine methyl ester (AEME) (0.025 ng/mg); (0.025-2.5ng/mg) Ecgonine methyl ester (EME) (0.025 ng/mg); (0.025-2.5ng/mg)	Documented in house method (TOX0013) using liquid-liquid extraction and LC-MS/MS	A
	Opioid Group : Methadone (0.025 ng/mg); (0.025-2.5ng/mg) 2-Ethylidene-1,5-dimethyl-3, 3 diphenylpyrrolidine EDDP (0.025 ng/mg); (0.025-2.5ng/mg) Morphine (0.025 ng/mg); (0.025-2.5ng/mg) Codeine (0.025 ng/mg); (0.025-2.5ng/mg) 6-Monoacetylmorphine (6-MAM) (0.025 ng/mg); (0.025-2.5ng/mg) Heroin (0.025 ng/mg); (0.025-2.5ng/mg) 6–Acetylcodeine (0.025 ng/mg); (0.025-2.5ng/mg) Dihydrocodeine (0.025 ng/mg); (0.025-2.5ng/mg)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Hair (cont'd)	Benzodiazepines Group: Diazepam (0.025 ng/mg); (0.025-2.5ng/mg) Temazepam (0.025 ng/mg); (0.025-2.5ng/mg) Oxazepam (0.025 ng/mg); (0.025-2.5ng/mg) Chlordiazepoxide (0.025 ng/mg); (0.025-2.5ng/mg) Desmethyldiazepam (0.025 ng/mg); (0.025-2.5ng/mg)	Documented in house method (TOX0013) using liquid-liquid extraction and LC-MS/MS	A
Hair	Confirmation (above specified cut-off limit) and Quantitative Analysis of the following drugs (cut-off limit); (Concentration Range):		
	Miscellaneous Group: Ketamine (0.1 ng/mg); (0.1-25 ng/mg)	Documented in house method (TOX0014) using liquid-liquid extraction and LC-MS/MS	A
	Ethyl Glucoronide (EtG) (0.02 ng/mg); (0.02- 0.5 ng/mg)	Documented in house method (TOX0015) using solid phase extraction and GC-MS/MS	A
	Cannabis Group : 11-Hydroxy- Delta-9-THC -THC-OH (0.0002 ng/mg); (0.0002-0.005ng/mg) Delta-9-Tetrahydrocannabinol - THC (0.02 ng/mg); (0.02-0.5ng/mg) Trans-11-Nor-9-carboxy- Delta-9-THC - THC-COOH (0.0002 ng/mg); (0.0002-0.005ng/mg)	Documented in house method (TOX0011) using solid-phase extraction and GC-MS/MS	A
Hair	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit)		A
	Cannabis Group : Cannabidiol (0.02 ng/mg) Cannabinol (0.02 ng/mg)	Documented in house method (TOX0011) using solid-phase extraction and GC-MS/MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Whole Blood (Preserved)	Detection and quantitation 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 (Amended) (Cut-Off Limit):	-	A
	Delta-9-tetrahydrocannabinol (THC) (2 µg/L)	Documented in house (TOX0024) using: - Solid phase extraction - GC-MS-MS	A
Blood / Urine (Preserved, Unpreserved)	Detection and quantitation of alcohol in relation to Section 5 of the Road Traffic Act 1988 (as amended) and other sample types over the concentration range 10 to 500 mg/100mL for legal limits of 20mg/100 ml (aviation) and 80 mg/100mL (Section 5) in blood 27 mg/100ml(aviation and 107mg/100ml in urine	Documented in house (TOX0029) using : HS-GC-FID	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Whole Blood (Preserved)	The Confirmation and quantitation 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 (Cut-off); [Concentration Range]: Amphetamine (250 µg/L); [100-1500 µg/L] Benzoylecgonine (50 µg/L); [20-300 µg/L] Clonazepam (50 µg/L); [20-300 µg/L] Cocaine (10 µg/L); [4-60 µg/L] Diazepam (550 µg/L); [100-1500 µg/L] Flunitrazepam (300 µg/L); [100-1500 µg/L] Ketamine (20 µg/L); [8-120 µg/L] Lorazepam (100 µg/L); [40-600 µg/L] Lysergic Acid Diethylamide – LSD (1µg/L); [0.4-6.0 µg/L] Methadone (500 µg/L); [100-1500 µg/L] Methylamphetamine (10 µg/L); [4.0-60 µg/L] Methylenedioxymethamphetamine – MDMA (10 µg/L); [4.0-60 µg/L] 6-Monoacetylmorphine (5 µg/L); [2-30 µg/L] Morphine (80 µg/L); [30-450 µg/L] Oxazepam (300 µg/L); [100-1500 µg/L] Temazepam (1000 µg/L); [100-1500 µg/L]	Documented in house method TOX0051 by Protein precipitation and liquid chromatography with triple quadrupole mass spectrometry (LC-QQQ	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of drugs (cut-off limit):	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A
	Cathinone Group: 4-methylethcathinone - 4-MEC (0.08 µg/L) Mephedrone - 4-Methylmethcathinone (0.15 µg/L)		A
	Cocaine Group: Benzoylecgonine (0.09 µg/L) Cocaethylene (0.12 µg/L) Cocaine (0.03 µg/L) Ecgonine methyl ester - EME (0.53 µg/L) Norcocaine (0.21 µg/L)		A
	Opioid Group: 2-ethylidene-1,5-dimethyl-3, 3 diphenylpyrrolidine - EDDP (0.06 µg/L) 6-Acetylcodeine (0.14 µg/L) 6-Monoacetylmorphine - 6-MAM (0.13 µg/L) Buprenorphine (0.09 µg/L) Codeine (0.51 µg/L) Dihydrocodeine (0.66 µg/L) Methadone (0.03 µg/L) Morphine (0.91 µg/L)		A
	Piperazine Group: 3-Trifluoromethylphenylpiperazine - TFMPP (0.19 µg/L) Benzylpiperazine - BZP (0.33 µg/L) meta-Chlorophenylpiperazine - m-CPP (0.27 µg/L)		A
	Miscellaneous Group: Ketamine (0.2 µg/L) Lysergic Acid Diethylamide - LSD (0.01 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY Blood (Preserved, Unpreserved) (cont'd)	<u>Forensic Analysis</u> (cont'd) Confirmation (above specified cut-off limit) of the following drugs (cut-off limit): Amphetamines: Amphetamine (0.47 µg/L) Butylone (0.1 µg/L) Methamphetamine (0.1µg/L) Methylenedioxyamphetamine (MDA) (0.34 µg/L) Methylenedioxymethamphetamine (MDMA) (0.05 µg/L) Methylenedioxypyrovalerone (MDPV) (0.03 µg/L) Methylone (0.11 µg/L) Naphyrone (0.26 µg/L) Benzodiazepines: Alprazolam (0.1 µg/L) Clonazepam (1.3 µg/L) Desmethyldiazepam (0.66 µg/L) Diazepam (0.1 µg/L) Flunitrazepam (0.7 µg/L) Lorazepam (1.86 µg/L) Oxazepam (0.13 µg/L) Phenazepam (0.74 µg/L) Temazepam (0.18 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A A A
Blood (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range): Amphetamine Group: Amphetamine (10-1000 µg/L) Butylone (5-500 µg/L) Methylamphetamine (1-100 µg/L) Methylenedioxyamphetamine - MDA (10-1000 µg/L) Methylenedioxymethamphetamine - MDMA (1-100 µg/L) Methylenedioxypyrovalerone - MDPV (10-1000 µg/L) Methylone (10-1000 µg/L) Naphyrone (10-1000 µg/L)	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range):	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A
	Benzodiazepine Group: Alprazolam (2-100 µg/L) Clonazepam (10-1000 µg/L) Desmethyldiazepam (10-1000 µg/L) Diazepam (10-1000 µg/L) Flunitrazepam (10-1000 µg/L) Lorazepam (5-500 µg/L) Oxazepam (15-1500 µg/L)) Temazepam (15-1500 µg/L)		A
	Cathinone Group: - Mephedrone (10-1000 µg/L)		A
	Cocaine Group: Benzoylecgonine (10-1000 µg/L) Cocaethylene (10-1000 µg/L) Cocaine (1-100 µg/L) Norcocaine (10-1000 µg/L)		A
	Opioid Group: 2-ethylidene-1,5-dimethyl-3, 3-diphenylpyrrolidine - EDDP (5-500 µg/L) 6-Acetylcodeine (1-100 µg/L) 6-Monoacetylmorphine - 6-MAM (1-100 µg/L) Buprenorphine (1-100 µg/L) Codeine (10-1000 µg/L) Dihydrocodeine (10-1000 µg/L) Methadone (15-1500 µg/L) Morphine (10-1000 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range):	Documented in house (TOX0026) using: - Protein Precipitation - LC-MS/MS	A
	Miscellaneous Group: Ketamine (10-1000 µg/L) Lysergic Acid Diethylamide - LSD (0.5-50 µg/L)		A
	Piperazine Group: 3-Trifluoromethylphenyl-piperazine - TFMPP (10-1000 µg/L) Benzylpiperazine - BZP (5-500 µg/L) meta-Chlorophenylpiperazine - m-CPP (5-500 µg/L)		A
Whole Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood urine): Cannabis Group : 11-Hydroxy-- Delta-9-THC - THC-OH (0.0278 µg/L; 5 µg/L) Cannabidiol (0.0347 µg/L; 0.5 µg/L) Cannabinol (0.0138 µg/L; 0.5 µg/L) Delta-9-Tetrahydrocannabinol - THC (0.0350 µg/L; 0.5 µg/L) Trans-11-Nor-9-carboxy- Delta-9-THC - THC-COOH (0.0280 µg/L; 5 µg/L)	Documented in house (TOX0024) using: - Solid phase extraction - Gas chromatography tandem mass spectrometry (GC-MS/MS)	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES – TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved (cont'd)	Quantitative analysis of the following drugs (concentration range): Cannabis Group : 11-Hydroxy-Δ^{9}-THC - THC-OH (5-250 µg/L) Cannabidiol (0.5-25 µg/L) Cannabinol (0.5-25 µg/L) Delta-9-Tetrahydrocannabinol - THC (0.5-25 µg/L) Trans-11-Nor-9-carboxy-Δ^{9}-THC - THC-COOH (5-250 µg/L)	Documented in house (TOX0024) using: - Solid phase extraction - Gas chromatography tandem mass spectrometry (GC-MS/MS)	
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine): Amphetamines group: Amphetamine (0.75 µg/L; 0.75 µg/L) Butylone (0.25 µg/L; 5 µg/L) Methamphetamine (0.25 µg/L; 0.25 µg/L) Methylenedioxyamphetamine (MDA) (0.5 µg/L;0.5 µg/L) Methylenedioxymethamphetamine (MDMA) (0.5 µg/L;0.25 µg/L) Methylenedioxypyrovalerone (MDPV) (0.25 µg/L; 0.25 µg/L) Methylone (0.25 µg/L; 0.25 µg/L) Naphyrone (0.25 µg/L; 0.5 µg/L) PMA (para-Methoxyamphetamine (0.5 µg/L; 0.5 µg/L) PMMA (para-Methoxymethamphetamine) (0.25 µg/L; 0.5 µg/L) Methylphenidate (0.05 µg/L; 0.05 µg/L)	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Benzodiazepines group: 7-Aminoclonazepam (1µg/L; 0.5µg/L) 7-Aminoflunitrazepam (0.5 µg/L; 0.5 µg/L) 7-Aminonitrazepam (1 µg/L; 1 µg/L) Alprazolam (0.5 µg/L; 0.5 µg/L) Clonazepam (1 µg/L; 1 µg/L) Chlordiazepoxide (0.75 µg/L; 0.75 µg/L) Diazepam (1.5 µg/L; 1.5 µg/L) Desmethyldiazepam (1 µg/L; 1 µg/L) Flunitrazepam (1 µg/L; 1 µg/L) Lorazepam (5 µg/L; 5 µg/L) Midazolam (0.1 µg/L; 0.1 µg/L) Nitrazepam (1 µg/L; 5 µg/L) Oxazepam (1.5 µg/L; 1.5 µg/L) Phenazepam (1 µg/L; 1 µg/L) Temazepam (0.75 µg/L; 0.75 µg/L) Triazolam (0.1 µg/L; 0.1 µg/L)		A
	Cathinone Group: Cathinone (0.5 µg/L; 0.5 µg/L) Mephedrone (0.25 µg/L; 0.25 µg/L) Methylethcathinone - 4-MEC (0.25 µg/L; 0.25 µg/L) Norpseudoephedrine - Cathine (1 µg/L; 1 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urin) Cont'd:	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Cocaine Group : Benzoylecgonine (0.75 µg/L; 0.75 µg/L) Cocaethylene (0.25 µg/L; 0.25 µg/L)		A
	Cocaine (0.25 µg/L; 0.25 µg/L) Ecgonine methyl ester (EME) (5 µg/L; 5 µg/L) Norcocaine (1 µg/L; 1 µg/L)		A
	Opioids Group: 6-Acetylcodeine (0.1 µg/L; 0.1 µg/L) Buprenorphine (0.5 µg/L; 0.5 µg/L) 6-Monoacetylmorphine (6-MAM) (0.5 µg/L; 0.5 µg/L) Codeine (0.5 µg/L; 0.5 µg/L) Dihydrocodeine (0.5 µg/L; 0.5 µg/L) Morphine (0.5 µg/L; 0.25 µg/L) Methadone (0.75 µg/L; 0.75 µg/L) 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP) (0.5 µg/L; 0.5 µg/L) Pethidine (0.25 µg/L; 0.25 µg/L)		A
	Piperazines Group: Benzylpiperazine (BZP) (0.5 µg/L; 0.25 µg/L) Meta-Chlorophenylpiperazine (m-CPP) (5 µg/L; 0.5 µg/L) 3-Trifluoromethylphenyl piperazine (TFMPP) (0.25 µg/L; 0.25 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - SPE - LC-MS/MS	A
	Erectile Dysfunction Group : Tadalafil (1 µg/L; 1 µg/L) Vardenafil (0.1 µg/L; 0.1 µg/L) Sildenafil (0.5 µg/L; 0.5 µg/L)		A
	Beta-Blocker Group : Propranolol (0.25 µg/L; 0.25 µg/L) Atenolol (3.75 µg/L; 3.75 µg/L) Metoprolol (0.5 µg/L; 0.25 µg/L)		A A
	Miscellaneous Group: Ketamine (0.25 µg/L; 0.25 µg/L) Lysergic Acid Diethylamide - LSD (0.05; 0.025 µg/L) Norketamine (0.25 µg/L; 0.25 µg/L) Procyclidine (0.5 µg/L; 0.5 µg/L)		A
	Analgesic and Anti-inflammatory group : Tramadol (0.25 µg/L; 0.25 µg/L) Fentanyl (0.05 µg/L; 0.05 µg/L) Oxycodone (0.5 µg/L; 1 µg/L) Dextropropoxyphene (0.25 µg/L; 0.25 µg/L) Gabapentin (15 µg/L; 7.5 µg/L) Pregabalin (15 µg/L; 15 µg/L)		A
	Anti-convulsant Group: Carbamazepine (7.5 µg/L; 7.5 µg/L) Lamotrigine (3.75 µg/L; 3.75 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction LC-MS/MS	A
	Antidepressant group: Dothiepin/Dosulepin (1 µg/L; 1 µg/L) Amitriptyline (1 µg/L; 1 µg/L) Nortriptyline (1 µg/L; 1 µg/L) Citalopram (0.25 µg/L; 0.25 µg/L) Duloxetine (5 µg/L; 5 µg/L) Venlafaxine (0.25 µg/L; 0.25 µg/L) Paroxetine (1 µg/L; 0.5 µg/L) Fluoxetine (1 µg/L; 1 µg/L) Fluvoxamine (1 µg/L; 1 µg/L) Sertraline (1 µg/L; 1 µg/L) Trazodone (3.75 µg/L; 3.75 µg/L) Mirtazapine (0.25 µg/L; 0.25 µg/L)		A
	Anti-Histamine Group: Diphenhydramine (0.25 µg/L; 0.25 µg/L) Chlorphenamine (0.05 µg/L; 0.05 µg/L) Promethazine (0.5 µg/L; 0.1 µg/L) Hydroxyzine (0.25 µg/L; 0.25 µg/L) Cyclizine (0.25 µg/L; 0.25 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Anti-psychotic Group: Quetiapine (0.25 µg/L; 0.25 µg/L) Risperidone (0.1 µg/L; 0.1 µg/L) Olanzapine (5 µg/L; 0.25 µg/L) Chlorpromazine (5 µg/L; 1 µg/L) Clozapine (0.25 µg/L; 0.25 µg/L) Haloperidol (0.1 µg/L; 0.5 µg/L)		A
	Z Drugs Group: Zolpidem (0.25 µg/L; 0.25 µg/L) Zopiclone (0.25 µg/L; 0.25 µg/L) Zaleplon (0.1 µg/L; 0.1 µg/L)		A
Blood (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range):	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Amphetamine Group: Amphetamine (15-3000 µg/L) Butylone (5-1000 µg/L) Methylamphetamine (5-1000 µg/L) Methylenedioxyamphetamine - MDA (5-1000 µg/L) Methylenedioxymethamphetamine MDMA (5-1000 µg/L) Methylenedioxypyrovalerone - MDPV (5-1000 µg/L) Methylone (5-1000 µg/L) Methylphenidate (0.5-100 µg/L) Naphyrone (5-1000 µg/L) para-Methoxyamphetamine - PMA (5-1000 µg/L) para-Methoxymethamphetamine - PMMA (5-1000 µg/L)		

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range):	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Analgesic and Anti-inflammatory Group: Dextropropoxyphene (5-1000 µg/L) Fentanyl (0.5-100 µg/L) Gabapentin (150-15000 µg/L) Oxycodone (5-1000 µg/L) Pregabalin (75-15000 µg/L) Tramadol (5-1000 µg/L)		A
	Anticonvulsant Group: Carbamazepine (225-15000 µg/L) Lamotrigine (75-15000 µg/L)		A
	Antidepressant group: Amitriptyline (5-1000 µg/L) Citalopram (5-1000 µg/L) Dothiepin/Dosulepin (10-1000 µg/L) Duloxetine (5-1000 µg/L) Fluoxetine (10-1000 µg/L) Mirtazapine (5-1000 µg/L) Nortriptyline (5-1000 µg/L) Paroxetine (10-1000 µg/L) Sertraline (5-1000 µg/L) Trazodone (75-15000 µg/L) Venlafaxine (5-1000 µg/L)		A
	Antihistamine Group: Chlorphenamine (0.5-100 µg/L) Cyclizine (5-1000 µg/L) Diphenhydramine 5-1000 µg/L) Hydroxyzine (5-1000 µg/L) Promethazine (0.5-100 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range): (cont'd)	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Antipsychotic Group: Chlorpromazine (10-1000 µg/L) Clozapine (5-1000 µg/L) Haloperidol (0.5-100 µg/L) Olanzapine (10-1000 µg/L) Quetiapine (5-1000 µg/L) Risperidone (0.5-100 µg/L)		A
	Benzodiazepine Group: 7-Aminoclonazepam (5-1000 µg/L) 7-Aminoflunitrazepam (5-1000 µg/L) 7-Aminonitrazepam (5-1000 µg/L) Alprazolam (5-1000 µg/L) Clonazepam (5-1000 µg/L) Chlordiazepoxide (15-3000 µg/L) Desmethyldiazepam (10-1000 µg/L) Diazepam (15-3000 µg/L) Flunitrazepam (5-1000 µg/L) Lorazepam (10-1000 µg/L) Midazolam (1-100 µg/L) Nitrazepam (10-1000 µg/L) Oxazepam (15-1500 µg/L) Phenazepam (5-1000 µg/L) Temazepam (15-3000 µg/L) Triazolam (1-100 µg/L)		A
	Beta-Blocker Group: Atenolol (75-15000 µg/L) Metoprolol (5-1000 µg/L) Propranolol (5-1000 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range): (cont'd)	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Cathinone Group: Cathinone (5-1000 µg/L) Mephedrone (5-1000 µg/L) Methylethcathinone - 4-MEC (5-1000 µg/L)		A
	Cocaine Group: Benzoylecgonine (15-3000 µg/L) Cocaethylene (5-1000 µg/L) Cocaine (5-1000 µg/L) Ecgonine methyl ester - EME (5-1000 µg/L) Norcocaine (5-1000 µg/L)		A
	Erectile Dysfunction Group: Sildenafil (1-100 µg/L) Vardenafil (1-100 µg/L)		A
	Miscellaneous Group: Ketamine (5-1000 µg/L) Lysergic Acid Diethylamide - LSD (0.5-100 µg/L) Procyclidine (5-1000 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range): (cont'd)	Documented in house (TOX0040) using: - Protein Precipitation - Solid Phase Extraction - LC-MS/MS	A
	Opioid Group: 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine - EDDP (5-1000 µg/L) 6-Acetylcodeine (0.5-50 µg/L) 6-Monoacetylmorphine (6-MAM) (1-50 µg/L) Buprenorphine (1-100 µg/L) Codeine (5-1000 µg/L) Dihydrocodeine (5-1000 µg/L) Methadone (15-1500 µg/L) Morphine (5-1000 µg/L) Pethidine (5-1000 µg/L)		A
	Piperazine Group: 3-Trifluoromethylphenylpiperazine - TFMPP (5-1000 µg/L) Benzylpiperazine - BZP (5-1000 µg/L) meta-Chlorophenylpiperazine - m-CPP (5-1000 µg/L)		A
	Z Drugs Group: Zaleplon (1-100 µg/L) Zolpidem (5-1000 µg/L) Zopiclone (5-1000 µg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Confirmation (above specified cut-off limit) of the following drugs (cut-off limit Blood; Urine):	Documented in house (TOX0041)– using - Liquid/liquid extraction - GC-MS/MS	A
	Analgesic and Anti-inflammatory group : Salicylic acid (1.25 mg/L; 1.25 mg/L) Ibuprofen (1.25 mg/L; 1.25 mg/L) Paracetamol (1.25 mg/L; 1.25 mg/L)		A
	Anti-convulsant Group Valproic Acid (5 mg/L; 5 mg/L) Phenytoin (0.25 mg/L; 0.25 mg/L) Primidone (1 mg/L; 0.5mg/L)		A
	Barbiturates Group: Phenobarbital (1 mg/L; 0.25 mg/L) Amobarbital (0.5 mg/L; 0.25 mg/L) Pentobarbital (0.5 mg/L; 0.25 mg/L) Secobarbital (0.5 mg/L; 0.25 mg/L)		A
	Anti-narcoleptic/Drugs of Abuse : GHB (gamma-hydroxybutyrate) (4.1mg/L;4.1mg/L)		
	Miscellaneous: BHB (Beta-hydroxybutyrate) (5 mg/L; 5 mg/L)		

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range; *urine range if different to blood):	Documented in house (TOX0041)– using - Liquid/liquid extraction - GC-MS/MS	A
	Analgesic and Anti-inflammatory Group: Paracetamol (5-300 mg/L) Salicylic acid (5-300 mg/L)		A
Blood (Preserved, Unpreserved) Urine (Preserved, Unpreserved) (cont'd)	Quantitative analysis of the following drugs (concentration range; *urine range if different to blood):	Documented in house (TOX0041)– using - Liquid/liquid extraction - GC-MS/MS	A
	Anticonvulsant Group Phenytoin (1-60 mg/L) Valproic Acid (10-300 mg/L); (*80-300 mg/L)		
	Barbiturates Group: Amobarbital (1-60 mg/L) Pentobarbital (1-60 mg/L) Phenobarbital (1-60 mg/L) Secobarbital (1-60 mg/L)		A
	Anti-narcoleptic/Drugs of Abuse Group: Gamma-hydroxybutyrate - GHB (8.3-247.8 mg/L)		A
	Miscellaneous Group: Beta-hydroxybutyrate - BHB (10-300 mg/L) (*5-300 mg/L)		A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BODY FLUIDS and TISSUES - TOXICOLOGY (cont'd)	Forensic Analysis (cont'd)		
Urine (Preserved, Unpreserved)	Quantitative analysis of the following drugs (concentration range; Ibuprofen (5-300 mg/L) Primidone (1-60 mg/L)	Documented in house (TOX0041)– using - Liquid/liquid extraction GC-MS/MS	A
NOXIOUS SUBSTANCES	Forensic Analysis (cont'd)		
(Acids, Bases and Bleaches)	Qualitative Identification of - Acid - Bases - Bleaches	Documented in house method (COR0001) using -Volumetric analysis using chemical indicators, spot plates and a pH meter.	A, B
DAMAGE	Forensic Analysis		
Damage (Clothing and Fabric material)	Related Opinions and Interpretations		
	Examination, assessment and evaluation of a damage item, comparison of damage with suspected instrument to determine the likelihood the suspected instrument caused the damage.	Documented In-House Methods (FSL0003) using: - visual examination - microscopy - dimensional measurement - Physical fit (FSL0075/FSL0039)	A, B
FIBRES	Recovery of fibres for contingency purposes from clothing and objects	Documented in house method (FSL0010/FSL0055) using - visual examination - low power microscopy - taping - forceps	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FIBRES (cont'd)	Forensic Analysis (cont'd)		
	Search and recovery of fibres from clothing and objects for analysis (including tapings)	Documented in house method (FSL0010/FSL0055) using - visual examination, - low power microscopy and screening - fibre recovery (taping) - mounting	B
	Identification of fibre type	Documented in house method (FRP0085/ FSL0087/FSL0089) using - polarised light microscopy - FTIR	B
	Spectroscopic analysis of fibres in the visible range for the purpose of comparison of fibres	Documented in house method (FSL0112) using - visible microspectrophotometry - ultraviolet-visible microspectrophotometry	
	Comparison of fibres	Documented in house method (FRP0085/ FSL0087/FSL0089) using - stereo microscopy - polarised light microscopy - comparison microscopy - FTIR - MSP	B
	Opinion and Interpretation 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		B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FLAMMABLE LIQUIDS (FIRE ACCELERANTS)	Forensic Analysis		
Debris and materials recovered from fires and suspected fire scenes	Recovery of potential fire accelerants	Documented in-house method using - Direct sampling - Headspace sampling	A, B
Common fire accelerant liquids	Recovery of potential fire accelerants	Documented in-house method (ACCEL0002) using - Direct sampling - Headspace sampling	A, B
	Examination and analysis of the following flammable liquids - Petrol - Paraffin - Turpentine substitute - White spirit - Diesel - Alcohols (methanol/ethanol)	Documented in house method (ACCEL0003) using - TENAX - ATD-GCMS	B
Material Recovered from and associated with Fire Scenes	Analysis and identification of common fire accelerants : - Petrol - Paraffin - Turpentine substitute - White spirit - Diesel - Alcohols (methanol/ethanol) - Lighter Fuels	Documented in house method (ACCEL0003) using - TENAX - ATD-GCMS	B
	Comparison of common fire accelerants	Documented in house method (ACCEL0004) using - ATD-GCMS	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GLASS	Forensic Analysis Cont'd		
	Search and recovery of glass fragments from clothing and objects	Documented In-House Methods (FOR0015 / FOR0134) using visual examination and low power microscopy	A, B
	Preparation of glass fragments for SEM Analysis	Documented In-House Method (FSL0066) involving stub preparation.	A, B
	Characterisation of glass fragments	Documented In-House methods (FSL0035/FSL0036/FSL0037) using	A, B
		- refractive index determination by oil immersion (GRIM 3)	A, B
		- low power and interference microscopy	A
		- re-annealing by tube furnace	A, B
	Opinion and Interpretation		A, B
	The evaluation of the significance of matching and non-matching features between the suspect and reference/control samples	Documented in house method using: - Database (FCD001)	
GUN SHOT RESIDUE (GSR / FDR)	Forensic Analysis		
Any Material	Recovery of in-organic gun shot residues (primer)	Documented in house method (FSL0078) using - carbon coated aluminium stubs - Wipes - Swabbing	A, B
Recovered Material	Identification of in-organic gun shot residues (primer)	Documented in house method (GSR0002/GSR0010/GSR0031/ GSR0032) using SEM/EDX	A
	Opinions and Interpretations Identification (type) and comparison of recovered GSR particles, including with a suspected source	Documented in house methods as above using: - Personal experience - Reference Collections	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
LACHRYMATORS	Forensic Analysis		
Submitted devices and material recovered from clothing	Identification of: - Ortho-chlorobenzalmalonitrile (CS) - Alpha-chloroacetophenone (CN) - Pelargonic acid vanillylamide (PAVA) - Capsaicin (Pepper Spray) & (Dihydrocapsaicin)	Documented in house method (TOX0002) using GC-MS	A
	Legal Classification of devices (Firearms Act 1968) and Article 45 of the Firearms (N.I.) Order 2004) Analysis to determine the nature of the contents of a device, and whether the item fits the description of a Prohibited Weapon		A
LUBRICANTS	Forensic Analysis		
(Aqueous / non aqueous lubricants, condom / personal lubricant products)	Sampling and extraction of Silicone, Glycerine, propylene glycol based lubricants from swabs– preparation for analysis	Documented in house method (FSL0114) using - solvent extraction	B
	Analysis of silicone, glycerine, PEG and propylene-glycol based lubricants	Documented in house method (FSL0114) using - FTIR	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MARKS AND IMPRESSIONS	<u>Forensic Analysis</u>		
Footwear	Enhancement of footwear marks recovered from scenes	Documented in house method (FSL0026/FSL0090) using - lighting techniques - ESLA - gel lifting - digital capturephotography - digital scanner	A, B
	Production of test marks from suspect footwear	Documented in house method (FSL0025/ FSL0090) using - casting (dental stone/bio foam) - powders (Bristol black/aluminium/light mineral oil/magnetic powder) - digital capture photography	A, B
Footwear mark (physically or image)	Assessment, comparison and evaluation of footwear with scene marks	Documented In-House methods (FSL0025) using visual examination, low power microscopy and dimensional measurements	A, B
	<u>Opinion and Interpretation</u> The evaluation of the significance of any matching and non-matching features between the footwear scene impression and reference/control footwear marks	Documented In-House methods(FSL0025) using - Personal experience - Database (FCD0005) - NFRC system for coding of marks (FCD0003)	A, B
Toolmarks	Enhancement of toolmarks	Documented in house method (FSL0057) using - lighting technique - casting - digital capture/photography	B
	Production of test marks from suspect items	Documented in house method (FSL0057) using - casting - digital capture/photography	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MARKS AND IMPRESSIONS (cont'd)	Forensic Analysis (cont'd)		
Toolmarks (cont'd)	Comparison of submitted marks or marks made from suspect items with marks left at scene	Documented In-House methods (FSL0057) using visual examination, low power microscopy, comparison microscopy, dimensional measurements and photography	B
	Opinion and Interpretation The evaluation of the significance of any matching and non-matching features between the tool scene impression and reference/control toolmarks	Documented In-House methods (FSL0057) using - Personal experience	B
Marks in blood	Location and enhancement of marks in blood from items recovered from crime scenes	Documented in house method (FSL0026/FSL0070) using - Sulphosalicylic acid Hydrogen Peroxide - methanol and heat fixing acid black 1 and leuco crystal violet	B
PAINT	Forensic Analysis		
	Search and recovery of paint and paint fragments from clothing and objects	Documented in house method (FSL0115 / FOR0134) using - visual examination - low power microscopy	A, B
	Comparison of recovered and control samples	Documented in house method (FSL0061/FSL0062/FSL0064/FSL00113) using - spot tests - fluorescence - high power microscopy - FTIR	A, B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
PAINT (cont'd)	Forensic Analysis (cont'd) Opinion and Interpretation		
	The evaluation of the significance of any matching and non-matching features between the suspect and reference/control paint samples	Documented in house method FOR0052	A, B
ALCOHOL TECHNICAL DEFENCE			
Alcohol Technical Defence (in relation to RTA) for sample matrix including Blood/urine/breath	Estimation of alcohol consumption and elimination with respect to validity of drinking patterns: 1) Effect of alleged post accident alcohol consumption on measured breath/body fluids alcohol levels 2) Effect of alleged spiked drink 3) Back calculations of breath/blood/urine alcohol levels to the time of accident or other incident from 8.3 µg% / 20mg% / 27mg% and above	Documented in house method TOX 0031 using mathematical calculations	A
END			