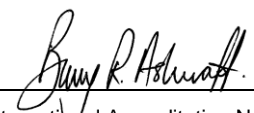


# Laboratory Accreditation Programmes

Schedule to <b>CERTIFICATE OF ACCREDITATION</b>	
Hill Laboratories	<b>Client No: 590</b>
Private Bag 3205, Waikato Mail Centre, Hamilton, 3240 1 Clyde Street, Hamilton East, Hamilton, 3216	
<b>Telephone:</b> 07 858-2000 <b>Fax:</b> 07 858-2001	<b>www.hill-labs.co.nz</b>
<b>Authorised Representative:</b> Ms Gillian Lees Quality Manager	
<b>Programme</b> Chemical Testing Laboratory	
<b>Accreditation Number:</b> 365	<b>Date of Accreditation:</b> 15 April 1988
<b>Conformance Standard</b> NZS ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories	
<b>Testing Services Summary</b>	
<b>Plants and Soils</b>	
2.36	Agricultural Products and Agricultural Materials
<b>Water and Environmental</b>	
2.41	Waters
2.58	Environmental Monitoring
<b>ICP</b>	
2.31	Foods
2.36	Agricultural Products and Agricultural Materials
2.41	Waters
2.58	Environmental Monitoring
2.61	Biological Specimens
2.70	Instrumental Techniques
<b>Organics</b>	
2.31	Foods
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2.58	Environmental Monitoring
2.70	Instrumental Techniques
<b>Food and Stockfood</b>	
2.31	Foods
2.36	Agricultural Products and Agricultural Materials

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### Air Quality

2.58  
2.70

Environmental Monitoring  
Instrumental Techniques

### Key Technical Personnel

#### Plants and Soils

Ms Fiona Calvert	2.36
Mr Stephen Haylett-Petty	2.36
Dr Roger Hill	2.36
Ms Wendy Homewood	2.36
Dr Gordon Rajendram	2.36

#### Water and Environmental

Mr Graham Corban	2.41, 2.58
Mr Jon Harris	2.41, 2.58
Miss Ara Heron	2.41, 2.58
Mrs Karen Nichol	2.41, 2.58
Dr Peter Robinson	2.41, 2.58
Mrs Carole Rodgers-Caroll	2.41, 2.58
Dr Jane Sherrard	2.41, 2.58

#### ICP

Mrs Thiru Malar Sriitharan	2.31
Mr Richard Schriener	2.31, 2.36(h)(i), 2.41, 2.58, 2.61, 2.70(c)
Mr Mark Bryant	2.31, 2.58(d)
Ms Fiona Calvert	2.36
Mr Stephen Haylett-Petty	2.36
Dr Roger Hill	2.36
Ms Wendy Homewood	2.36
Dr Gordon Rajendram	2.36
Mr Graham Corban	2.41, 2.58
Mr Jon Harris	2.41, 2.58
Miss Ara Heron	2.41, 2.58
Mrs Karen Nichol	2.41, 2.58
Dr Peter Robinson	2.41, 2.58
Mrs Carole Rodgers-Caroll	2.41, 2.58
Dr Jane Sherrard	2.41, 2.58

#### Organics

Ms Helen McGowan	2.31(n; selected tests)
Mr Graham Corban	2.31(n; selected tests), 2.41, 2.58, 2.70(d)
Dr Peter Robinson	2.31(n; selected tests), 2.41, 2.58, 2.70(d)(f)
Mr Jason Clague	2.31(n; selected tests), 2.61 (b)(c)
Mr Shaun Clay	2.31(n; selected tests), 2.61 (b)(c), 2.70(d)(f)(g)
Dr Bruce Morris	2.31(n; selected tests), 2.70(d)
Miss Ara Heron	2.41, 2.58
Mrs Karen Nichol	2.41, 2.58; selected tests
Mrs Carole Rodgers-Caroll	2.41, 2.58; selected tests
Mr Alistair Boyd	2.41, 2.58(c), 2.70(d)(f)(g)

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Dr Jonathan Hill	2.41(selected tests), 2.58(a, c; selected tests), 2.70(f)(g)
Mr Richard Schriener	2.70(f)(g)

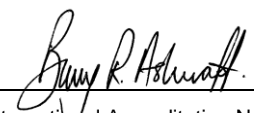
### Food and Stockfood

Mr Mark Bryant	2.31(selected tests), 2.36(c; selected tests)
Mrs Thiru Malar Sriitharan	2.31(selected tests), 2.36(c; selected tests)
Mr Richard Schriener	2.31(j)(k)
Mr Derek Yang	2.31(k; selected tests)
Ms Fiona Calvert	2.36(c; selected tests)
Mr Stephen Haylett-Petty	2.36(c; selected tests)
Dr Roger Hill	2.36(c; selected tests)
Ms Wendy Homewood	2.36(c; selected tests)
Dr Gordon Rajendram	2.36(c; selected tests)

### Air Quality

Dr Ian Graves	2.58
Miss Ara Heron	2.58
Mr Graham Corban	2.58, 2.70(d)
Dr Peter Robinson	2.58, 2.70(d)

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**Plants and Soils**

**2.36 Agricultural Products and Agricultural Materials**

In accordance with in-house test methods except where otherwise indicated.

**(g) Soils**

- pH of soils and soil extracts
- Cation exchange capacity
- Lime requirement
- Total soluble salts
- Resin extractable phosphorus
- Phosphate retention
- Organic matter (Dumas combustion, calculation)
- Total carbon (Dumas combustion)
- Available nitrogen
- Total nitrogen (Dumas combustion)
- Sulphate-sulphur (ion chromatography)
- Reserve magnesium
- Reserve potassium
- Volume weight
- Extractable chloride (CaSO<sub>4</sub>, water extracts)
- Hot water extractable boron
- Extractable organic sulphur

Base saturation levels (percent saturation) of:

Calcium	Magnesium	Potassium	Sodium
Extractable:			
Aluminium	Cadmium	Calcium	Cobalt
Copper	Iron	Magnesium	Manganese
Phosphorus	Potassium	Sodium	Zinc

**(h) Plants**

- Nitrate (nitrogen)
- Total nitrogen (Dumas combustion)
- Crude protein (Dumas combustion, calculation)
- Sulphate-sulphur
- Chloride
- Iodine
- Neutral detergent fibre (Ankom fibre instrument)
- Acid detergent fibre (Ankom fibre instrument)

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Soluble sugars (colorimetric method)  
 Ash AOAC 942.05  
 Residue Moisture NFTA 2.1.4 (3hrs @ 105°C)

**(i) Other agricultural products and related materials**

**Nutrient solutions:**

Nitrate (nitrogen)  
 Ammonium (nitrogen)  
 Chloride  
 Conductivity  
 pH

**Growing media (potting mix, composts):**

pH  
 Conductivity  
 Nitrate (nitrogen)  
 Ammonium (nitrogen)  
 DTPA extraction for metals  
 Nitrogen drawdown index

**Water and Environmental**

**2.41 Waters**

- (a) Potable waters**
- (b) Non-potable waters**
- (c) Sewage**
- (d) Effluents and trade wastes**
- (h) Boiler waters**

The following tests are in accordance with APHA "Standard Methods for the Examination of Water and Wastewater" (21<sup>st</sup> Edition) except where otherwise indicated.

Colour	2120 B
Turbidity	2130 B
Acidity	2310 B (modified)
Alkalinity	2320 B
Alkalinity	2320 B (modified)
Langelier saturation index (LSI)	2330 B
Ryzner index (RI)	2330 B
Hardness	2340 B
Conductivity	2510 B

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Total solids	2540 B
Total dissolved solids	2540 C (modified)
Suspended solids	2540 D
Mercury	3112 B (AAVG)
Mercury	USEPA 245.7 (CVAF)
Chromium (VI)	3500-Cr B (modified, discrete analyser)
Chloride	4500-Cl B (modified, discrete analyser)
Chloride	4500-Cl E (modified, discrete analyser)
Chlorine	4500-Cl G
Chloramines	4500-Cl G
Cyanide	4500-CN C
Cyanide	4500-CN E
Cyanide	4500-CN E (modified, discrete analyser)
Cyanide	4500-CN I (modified)
Cyanide	4500-CN N (modified)
Bicarbonate	4500-CO <sub>2</sub> D
Carbonate	4500-CO <sub>2</sub> D
Free carbon dioxide	4500-CO <sub>2</sub> D
Fluoride	4500-F C
pH	4500-H B
Ammonium (nitrogen)	4500-NH <sub>3</sub> H
Ammonium (nitrogen)	4500-NH <sub>3</sub> F (modified, discrete analyser)
Ammonium (nitrogen)	In-house method
Nitrate (nitrogen)	4500-NO <sub>3</sub> I (modified)
Nitrite (nitrogen)	4500-NO <sub>2</sub> B
Nitrite (nitrogen)	4500-NO <sub>3</sub> I (modified)
Total Kjeldahl nitrogen	4500-N <sub>org</sub> D (modified)
Total Kjeldahl nitrogen	4500-N <sub>org</sub> B (modified, discrete analyser)
Total phosphorus	4500-P B (modified, discrete analyser)
Total phosphorus	4500-P E (modified, discrete analyser)
Total phosphorus	4500-P H (modified)
Total phosphorus	NWASCO Miscellaneous Publication No. 38 (1982)
Dissolved reactive phosphorus	4500-P E (modified, discrete analyser)
Dissolved reactive phosphorus	4500-P G
Reactive silica	4500-SiO <sub>2</sub> F (modified, discrete analyser)
Reactive silica	4500-SiO <sub>2</sub> F (modified)
Sulphide	4500-S <sub>2</sub> I (modified, microdistillation)
Unionised hydrogen sulphide (calculation)	4500-S <sub>2</sub> H
Sulphite	4500-SO <sub>3</sub> B
Biochemical oxygen demand	5210 B (modified)
Chemical oxygen demand	5220 D
Total and nonpurgeable organic carbon	5310 B (modified)
Phenols	5530 B
Phenols	5530 C
Phenols	5530 D
Phenols	Auto analyser
Tannins and lignins	5550 B
Ultraviolet absorption	5910 B

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Fluoride (potable water only)	4110 B
Fluoride (potable water only)	USEPA 300.1
Volatile Fatty Acids	In-house by IC

The following in accordance with 4110 B (Ion chromatography):

Bromide	Chloride	Nitrate	Nitrite
Phosphate	Sulphate		

The following in accordance with USEPA 300.1 (Ion chromatography):

Bromate	Bromide	Chlorate	Chloride
Chlorite	Nitrate	Nitrite	Phosphate
Sulphate			

**2.58 Environmental Monitoring**

**(c) Soils and sludges**

Mercury Cold vapour AAS

**ICP**

**2.31 Foods**

**(f) Dairy products**

The following elements in accordance with ICP-OES methodology:

Calcium	Iron	Magnesium	Phosphorus
Potassium	Sodium	Sulphur	Zinc

The following elements in accordance with ICP-MS methodology:

Antimony	Aluminium	Arsenic	Boron
Bismuth	Cadmium	Cobalt	Chromium
Copper	Iodine	Lithium	Lead
Manganese	Mercury	Molybdenum	Nickel
Selenium	Silver	Tin	Zinc

**(g) Meat, poultry and derived products**

The following elements in accordance with ICP-MS methodology:

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Arsenic Selenium	Cadmium	Lead	Mercury
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**2.36 Agricultural Products and Agricultural Materials**

**(g) Soils**

The following elements in accordance with ICP-OES methodology:

Total phosphorus	Total sulphur
------------------	---------------

The following elements in accordance with ICP-MS methodology:

Total selenium

**(h) Plants**

The following elements in accordance with ICP-OES methodology:

Aluminium	Boron	Calcium	Copper
Iron	Magnesium	Manganese	Phosphorus
Potassium	Sodium	Sulphur	Zinc

The following elements in accordance with ICP-MS & OES methodology:

Cobalt	Molybdenum	Selenium
--------	------------	----------

**(i) Other agricultural products and related materials**

Molybdenum (by ICP-MS)

The following elements in accordance with ICP-OES methodology:

Boron	Calcium	Copper	Iron
Magnesium	Manganese	Phosphorus	Potassium
Sodium	Sulphur	Zinc	

**2.41 Waters**

- (a) Potable waters**
- (b) Non-potable waters**
- (c) Sewage**
- (d) Effluents and trade wastes**
- (h) Boiler waters**

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The following analytes in accordance with in-house ICP-MS methods:

Aluminium	Antimony	Arsenic	Bismuth
Boron	Cadmium	Calcium	Chromium
Cobalt	Copper	Iodine	Iron
Lead	Lithium	Magnesium	Manganese
Mercury	Molybdenum	Nickel	Phosphorus
Potassium	Selenium	Silver	Sodium
Sulphur	Tin	Zinc	

**2.58 Environmental Monitoring**

**(a) Waters**

The following in accordance with APHA and USEPA digestion procedures and analysis by the techniques indicated.

Detection limits for potable and non-potable water depend in the technique used e.g. ICP-MS or ICP-OES and are available from the laboratory on request.

Aluminium	Antimony	Arsenic	Barium
Beryllium	Bismuth	Boron	Cadmium
Caesium	Calcium	Chromium	Cobalt
Copper	Gallium	Iron	Lanthanum
Lead	Lithium	Magnesium	Manganese
Molybdenum	Nickel	Phosphorus	Potassium
Rubidium	Selenium	Silicon	Sulphur
Silver	Sodium	Strontium	Tellurium
Thallium	Tin	Uranium	Vanadium
Zinc			

**(c) Soils and sludges**

Acid extractable and TCLP/SPLP extractable metals by ICP-MS:

Detection limits depend on the matrix tested e.g. soils or marine sediments and are available from the laboratory on request.

Antimony	Arsenic	Barium	Bismuth
Boron	Cadmium	Caesium	Chromium
Cobalt	Copper	Lanthanum	Lead
Mercury	Molybdenum	Nickel	Rubidium
Selenium	Silver	Strontium	Thallium
Tin	Uranium	Zinc	

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**(d) Other materials (fish and shellfish)**

By acid digestion followed by analysis by the following techniques:

Detection limits depend on the technique used e.g. ICP-MS or ICP-OES and are available from the laboratory on request.

By ICP-MS:

Aluminium	Arsenic	Cadmium	Chromium
Cobalt	Copper	Lead	Manganese
Mercury	Nickel	Zinc	

By ICP-OES:

Aluminium	Calcium	Chromium	Copper
Iron	Magnesium	Manganese	Potassium
Sodium	Zinc		

**2.61 Biological Specimens**

Acid extractable metals by digestion and analysis by ICP-MS.

**(a) Residues in specified human specimens (human hair)**

Aluminium	Antimony	Arsenic	Barium
Bismuth	Boron	Cadmium	Caesium
Calcium	Chromium	Cobalt	Copper
Gallium	Iron	Lanthanum	Lead
Lithium	Magnesium	Manganese	Mercury
Molybdenum	Nickel	Phosphorus	Potassium
Rubidium	Selenium	Silver	Sodium
Sulphur	Strontium	Tellurium	Thallium
Tin	Uranium	Zinc	

**(b) Residues in specified veterinary specimens (Tissue, urine, serum, and whole blood including meat and meat fat)**

Aluminium	Antimony	Arsenic	Barium
Bismuth	Boron	Cadmium	Caesium
Chromium	Cobalt	Copper	Gallium
Iron	Lanthanum	Lead	Lithium
Manganese	Mercury	Molybdenum	Nickel
Rubidium	Selenium	Silver	Strontium

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Tellurium  
Zinc

Thallium

Tin

Uranium

## 2.70 Instrumental Techniques

### (c) Inductively Coupled Plasma-Mass Spectrophotometry

All techniques pertain to classes of test 2.31, 2.36, 2.41, 2.58, 2.61 as detailed above.

Explanatory Note:

This 2.70 class of test allows specifically approved senior analysts to develop, validate and use a new test method by the specified instrumental technique for a non-routine analysis in the classes of tests specified. The report over the analyst's personal signature may be endorsed with the IANZ logo. Should the method become routine, an IANZ technical assessment is required before the method can appear on the laboratory's scope of routine accredited tests.

#### References:

APHA APHA "Standard Methods for the Examination of Water and Wastewater" 21<sup>st</sup> Edition  
 USEPA United States Environmental Protection Agency

## Organics

### 2.31 Foods

Testing is carried out at the Clyde Street site unless otherwise stated:

#### (n) Residues in foodstuffs

In accordance with validated in-house methods in selected matrices by the techniques specified.

Volatile chlorinated hydrocarbons (organic solvents) in dry dairy products by an in-house head space by GCMS method.

### 2.41 Waters

- (a) Potable waters
- (b) Non-potable waters
- (c) Sewage
- (d) Effluents and trade wastes
- (h) Boiler waters

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The following tests are in accordance with USEPA methods except where otherwise indicated.

Acrylamide	LC-MSMS (in-house)
Epichlorohydrin	In-house by SPME-GCMS
Halogenated volatile disinfection By-products (HVDB)	In-house by GCMS (M15232)
Halogenated volatile disinfection By-products (HVDB)	In-house by SPME-GCMS
Halogenated acetic acid (HAA)	LLE-GCMS
Semivolatiles	LLE-GCMS
Pesticides	SPE-GCMS
Formaldehyde	In-house HPLC-UV
Formaldehyde	LC-MSMS
Oryzalin (drinking water)	LC-MSMS
Oxamyl (drinking water)	LC-MSMS
Isoproturon (drinking water)	LC-MSMS
Primisulfuron Methyl (drinking water)	LC-MSMS
Thiabendazole (drinking water)	LC-MSMS
Aldicarb including Sulfoxide & Sulphone (drinking water)	LC-MSMS
Polyaromatic hydrocarbons (PAH)	SPE-GCMS
Polychlorinated biphenyls (PCB)	SPE-GCMS
Organochlorine pesticides (OC)	SPE-GCECD
Pentachlorophenol (PCP)	LC-MSMS
Oil and grease	1664 (modified)
Oil and grease	APHA 5520 D
Total petroleum hydrocarbons (TPH)	In-house
EDTA & NTA (potable waters only)	GCMS

Semivolatile organic compounds (SVOC) including:	
Polyaromatic hydrocarbons (PAH)	SPE-GCMS
Organochlorine pesticides (OC)	SPE-GCMS

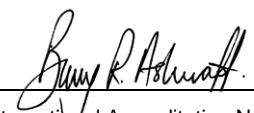
Acid herbicides (by SPE and micro LLE)	In-house by GCMS
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TBT Compounds:	
• Mono-butyltin	In-house
• Di-butyltin	In-house
• Tri-butyltin	In-house
• Triphenyltin	In-house

Volatile organic compounds (VOC) including:	542.2 (modified)
• BTEX	
• Trihalomethanes	

Lists of available VOC, SVOC, PAH, PCB and OC compounds available on request.

Acid Herbicides	LC-MSMS
Sulfonylureas	LC-MSMS
AlkylQuats	LC-MSMS
Methoprene	LC-MSMS

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Multiresidue pesticides LC-MSMS

Gases in ground water GC-FID

**2.58 Environmental Monitoring**

**(a) Waters**

The following tests by solid phase extraction followed by GC/GC-MSD:

- Semivolatile organic compounds (SVOC)
- Polychlorinated biphenyls (PCB)
- Organonitrogen pesticides (ONP)
- Organophosphorus pesticides (OPP)
- Organochlorine pesticides (OCP)

Lists of available SVOC, PCB, ONP, OPP and OCP compounds and detection limits are available on request.

The following tests by LC-MS/MS:

- Glufosinate
- Glyphosate
- Metabolite AMPA
- Acid Herbicides
- Sulfonylureas
- AlkylQuats
- Methoprene
- Multiresidue pesticides
- Formaldehyde

Gases in ground water GC-FID


**(c) Soils and sludges**

In accordance with methods based on those from the USEPA except where otherwise indicated:

Polyaromatic hydrocarbons (PAH)	GCMS
Polychlorinated biphenyls (PCB)	GCMS
Organochlorine pesticides (OCP)	GCECD
Pentachlorophenol (PCP)	In-house
Oil and grease	APHA 5220 E
Total petroleum hydrocarbons (TPH)	In-house

TBT Compounds:

- Mono-butyltin In-house

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- Di-butyltin In-house
- Tri-butyltin In-house
- Triphenyl tin In-house

Acid herbicides in soil GCMS, LCMSMS

Volatile organic compounds (VOC) including:

- BTEX GCMS
- Trihalomethanes GCMS

Semivolatile organic compounds (SVOC) including:

- Polyaromatic hydrocarbons (PAH) GCMS
- Organochlorine pesticides (OCP) GCECD

Lists of available VOC, SVOC, PAH, PCB and OC compounds and detection limits available on request.

Sulfonylureas LC- MSMS  
 Imidacloprid LC- MSMS

**(d) Fish and shellfish**

In accordance with methods based on those from the USEPA except where otherwise indicated:

- Mono-butyltin In-house
- Di-butyltin In-house
- Tri-butyltin In-house
- Triphenyl tin In-house

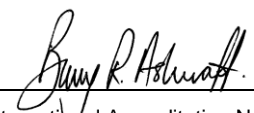
**2.70 Instrumental Techniques**

- (d) Gas chromatography, including MSD (2.31, 2.36, 2.41, 2.58)**
- (f) High performance liquid chromatography (2.31)**
- (g) Liquid chromatography – mass spectrophotometry (2.31, 2.41, 2.58, 2.61)**

All techniques pertain to classes of test shown in parenthesis detailed above.

Explanatory Note:

This 2.70 class of test allows specifically approved senior analysts to develop, validate and use a new test method by the specified instrumental technique for a non-routine analysis in the classes of tests specified. The report over the analyst's personal signature may be endorsed with the IANZ logo. Should the method become routine, an IANZ technical assessment is required before the method can appear on the laboratory's scope of routine accredited tests.

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Testing is carried out at the Innovation Park Site for the following 2.31, 2.61 unless otherwise stated:

**2.31 Foods**

**(n) Residues in foodstuffs and crops**

In accordance with validated in-house methods in selected matrices except by the techniques specified.

Multi-residue screening	HPLC
Multi-residue screening	GC
Multi-residue screening	LC-MS
Multi-residue screening	LC-MSMS
Carbendazim	HPLC
Dodines (fruit, vegetables)	LC-MS
Acid herbicides	GC-MS
Dithiocarbamate	GC-MS
4,4'-DDE in raw milk	SPME-GC-ECD (by an in-house headspace)
p-Dichlorobenzene (honey, propolis, bee's wax)	SPME-GC-MS

Mycotoxins (grain and grain products):

• Fumonisin	LC-MSMS
• Trichothecenes	LC-MSMS
• Zearalenone	LC-MSMS or HPLC-FLD
• Ochratoxin A	LC-MSMS or HPLC-FLD

The following pesticides in meat and meat fat by GC-NPD/ECD screens and confirmation by GC-MSD:

- Organochlorine pesticides (OC)
- Organonitrogen pesticides (ON)
- Organophosphorous pesticides (OP)
- Synthetic pyrethroid pesticides (SP)

MGO (honey)	SPME-GC
Ochratoxin (wine)	HPLC
Aflatoxins (peanut & barley)	AOAC 991.31
HMF (honey)	JOAC:2005, p121-127 (modified)
Tutin (honey: water extraction)	LCMS-MS
Tutin (honey: aceto-nitrile extraction)	LCMS-MS

**2.32 Drugs and Pharmaceuticals**

**(e) Hormones and their preparations**

Progesterone in powder	HPLC (in-house)
Progesterone in silicone implants	HPLC (in-house)

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**2.61 Biochemical Tests**

**(b) Tissue, urine, serum and whole blood (including meat and meat fat)**

The following are analysed using the methods stated:

Macrocyclic lactone	HPLC-fluorescence
Levamisole and benzimidazoles	HPLC-UV
Praziquantel	HPLC-UV
Praziquantel	HPLC-LC-MS
Morantel	LC-MS

**(c) Milk**

Aflatoxin M1	HPLC-fluorescence
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**References:**

- AOAC Official Methods of Analysis of AOAC International (18<sup>th</sup> Edition)
- USEPA United States Environmental Protection Agency
- APHA APHA "Standard Methods for the Examination of Water and Wastewater" (21<sup>st</sup> Edition)

**Food and Stockfood**

**2.31 Foods**

Testing is carried out at Innovation Park site unless otherwise specified.

- (a) Cereals and cereal products**
- (b) Edible oils, fats and their products**
- (c) Nuts, fruits and vegetables and derived products**
- (d) Sauces, herbs, spice and condiments**
- (f) Dairy products**
- (g) Meat, poultry and derived products**
- (h) Fish and fish products**
- (i) Eggs and egg products**
- (k) Non-alcoholic beverages**
- (o) Other prepared foods**

The following tests in selected matrices in accordance with validated in-house methods except where otherwise indicated:

Nitrogen (protein)*	AOAC 968.06 (modified)
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Patulin (in clear apple juice)	In-house based on AOAC 2002.02
Ash	AOAC 942.05
Ash	AOAC 920.153
Moisture	AOAC 934.01

**(j) Alcoholic beverages**

The following tests in wine in accordance with the requirements for NZFSA Recognised Export Wine Laboratories.

Actual Alcoholic Strength	OIV MA-E-AS312-01-TALVOL
Total Alcoholic Strength	By calculation
Total Acidity	OIV MA-E-AS313-01-ACITOT
Volatile Acidity	OIV MA-E-AS313-02-ACIVOL
Total Dry Extract	OIV MA-E-AS2-03-EXTSEC
Total Sugars	In-house method
Total Sulphur Dioxide	OIV MA-E-AS323-04-DIOSOU (modified)
Citric Acid	Dionex method Application Note 143 (modified)

The following tests in wine in accordance with the following methods.

Specific Gravity/Density	OIV MA-E-AS2-01-MASVOL
Sorbic and benzoic acid	AOAC 994.1 (modified)

**2.36 Agricultural Products and Agricultural Materials**

**(c) Stockfoods**

Ash	AOAC 942.05 (modified)
Moisture	AOAC 934.01 (modified)
Crude fat	AOAC 960.39
Crude fat*	AOAC 991.36 (modified)
Crude fibre*	AOAC 962.09 (modified)
Protein*	AOAC 968.06 (modified)

\*Testing is carried out at Clyde Street.

**References:**

BS British Standard  
BS EN British / European Standard  
AOAC Official Methods of Analysis of AOAC International (18<sup>th</sup> Edition)  
OJEC Official Journal of European Communities

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## Air Quality

### 2.58 Environmental Monitoring

Testing performed at 25 Te Aroha Street unless otherwise specified:

#### (b) Air

The following tests in accordance with validated in-house methods except where otherwise indicated.

Determination of vinyl chloride from charcoal tubes by GC-FID/FID in-house method based on NIOSH method 1007 (1994).

Determination of alcohols IV from charcoal tubes by GC-FID/FID in-house method based on NIOSH method 1403 (alcohols IV) 2003.

Determination of mono aromatic hydrocarbons from charcoal tubes and badges by GC-FID/FID in-house method based on NIOSH method 1501 (hydrocarbons, aromatic) 2003.

Determination of suspended particulate matter - PM<sub>10</sub> low volume sampler - Gravimetric method; AS/NZS 3580.9.9:2006 (modified)

Determination of aldehydes from DNPH impregnated silica tubes or badges for analysis by HPLC in-house method based on:

- NIOSH method 2016 (formaldehyde) 2003.
- NIOSH method 2532 (gluteraldehyde) 1994.
- USEPA method TO-11A (formaldehyde in ambient air – HPLC)

Determination of suspended particulate matter - Total suspended particulate matter (TSP) - High volume sampler gravimetric method - AS/NZS 3580.9.3:2003

Determination of suspended particulate matter - PM<sub>10</sub> High volume sampler with size selective inlet - gravimetric method - AS/NZS 3580.9.6:2003

Determination of Volatile Compounds in Ambient Air using active sampling onto Sorbent Tubes - USEPA Compendium TO-17

**The following tests for which the instrumental analysis is performed at Clyde Street:**

Determination of mono aromatic hydrocarbons from charcoal tubes and badges by GC-MS in-house method based on NIOSH method 1501 (hydrocarbons, aromatic) 2003.

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NIOSH National Institute for Occupational Safety and Health  
 USEPA United States Environmental Protection Agency

**2.70 Instrumental Techniques**

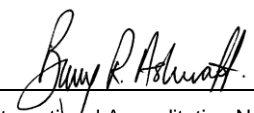
**(d) Gas chromatography, including MSD**

All techniques pertain to classes of test 2.58 as detailed above.

Explanatory Note:

This 2.70 class of test allows specifically approved senior analysts to develop, validate and use a new test method by the specified instrumental technique for a non-routine analysis in the classes of tests specified. The report over the analyst's personal signature may be endorsed with the IANZ logo. Should the method become routine, an IANZ technical assessment is required before the method can appear on the laboratory's scope of routine accredited tests.

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