Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories **Client No:** 590

Private Bag 3205, Waikato Mail Centre, Hamilton, 3240
1 Clyde Street, Hamilton East, Hamilton, 3216

Telephone: 07 858-2000 **www.hill-labs.co.nz**
Fax: 07 858-2001

Authorised Representative:
Ms Gillian Lees
Quality Manager

Programme
Chemical Testing Laboratory

Accreditation Number: 365 **Date of Accreditation:** 15 April 1988

Conformance Standard
NZS ISO/IEC 17025:2005
General requirements for the competence of testing and calibration laboratories

Testing Services Summary

Plants and Soils

2.36	Agricultural Products and Agricultural Materials

Water and Environmental

2.41	Waters
2.58	Environmental Monitoring

ICP

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

Organics

2.31	Foods
2.41	Waters
2.58	Environmental Monitoring
2.70	Instrumental Techniques

Food and Stockfood

2.31	Foods
2.36	Agricultural Products and Agricultural Materials

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Air Quality

2.58	Environmental Monitoring
2.70	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 Sritharan	2.31
Mr Richard Schriner	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)

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to
CERTIFICATE OF ACCREDITATION

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

Food and Stockfood

Mr Mark Bryant	2.31(selected tests), 2.36(c; selected tests)
Mrs Thiru Malar Sritharan	2.31(selected tests), 2.36(c; selected tests)
Mr Richard Schriner	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)

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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 ($CaSO_4$, 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)

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to
CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

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" (21st 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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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_2 D
Carbonate	4500-CO_2 D
Free carbon dioxide	4500-CO_2 D
Fluoride	4500-F C
pH	4500-H B
Ammonium (nitrogen)	4500-NH_3 H
Ammonium (nitrogen)	4500-NH_3 F (modified, discrete analyser)
Ammonium (nitrogen)	In-house method
Nitrate (nitrogen)	4500-NO_3 I (modified)
Nitrite (nitrogen)	4500-NO_2 B
Nitrite (nitrogen)	4500-NO_3 I (modified)
Total Kjeldahl nitrogen	4500-N_{org} D (modified)
Total Kjeldahl nitrogen	4500-N_{org} 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_2 F (modified, discrete analyser)
Reactive silica	4500-SiO_2 F (modified)
Sulphide	4500-S_2 I (modified, microdistillation)
Unionised hydrogen sulphide (calculation)	4500-S_2 H
Sulphite	4500-$S0_3$ 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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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:

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

Arsenic	Cadmium	Lead	Mercury
Selenium			

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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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	

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

(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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Tellurium Thallium Tin Uranium
Zinc

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" 21st 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

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

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
TBT Compunds:	
• Mono-butyltin	In-house
• Di-butyltin	In-house
• Tri-butyltin	In-house
• Triphenyltin	In-house
Volatile organic compounds (VOC) including: • BTEX • Trihalomethanes	542.2 (modified)

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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to
CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

• 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.

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

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):

• Fumonisins	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)

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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

References:

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

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory — Accreditation No 365
SCOPE OF ACCREDITATION

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 (18th Edition)
OJEC	Official Journal of European Communities

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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_{10} 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_{10} 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.

References:

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz

Schedule to

CERTIFICATE OF ACCREDITATION

Hill Laboratories
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation No 365

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.

International Accreditation New Zealand - Private Bag 28 908 - Remuera - Auckland
Telephone 09-525 6655 - Facsimile 09-525 2266
www.ianz.govt.nz