Laboratory Accreditation Programmes

Schedule to

CERTIFICATE OF ACCREDITATION

ESR (Institute of Environmental Science & Research Ltd) **Client Number 195**
Christchurch Science Centre

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27 Creyke Road, Ilam, Christchurch, 8041

Telephone **03 351-6019** **www.esr.cri.nz**

Authorised Representative
Ms Maxie Christison
Quality Director

Programme
Chemical Testing Laboratory

Accreditation Number 256 **Initial Accreditation Date** 22 January 1985

Conformance Standard
ISO/IEC 17025:2017
General requirements for the competence of testing and calibration laboratories

Laboratory Services Summary

Food and Water Chemistry

2.31	Foods
2.41	Waters
2.70	Instrumental Techniques
2.71	Non-Instrumental Techniques

National Centre for Radiation Science

2.31	Foods
2.41	Waters
2.58	Environmental Monitoring

Key Technical Personnel

Food and Water Chemistry

Mr Andrew Chappell	2.31; selected, 2.41; selected, 2.70 (a2)(a3)(d2)
Ms Tiffany Li	2.31; selected
Dr Glenn Rowland	2.31; selected, 2.70 (a2)(a3)(b)(d2)(k), 2.71
Mr Seamus Watson	2.31; selected, 2.41; selected

National Centre for Radiation Science

Dr Levi Bourke	2.31, 2.41, 2.58
Dr Alex Chapman	2.31, 2.41, 2.58
Ms Oksana Golovko	2.31, 2.41, 2.58

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Dr Michael Lecherman	2.31, 2.41, 2.58

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ESR (Institute of Environmental Science & Research Ltd)
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation Number 256

Food and Water Chemistry

2.31 Foods

(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
(e) Sugars and sugar confectionery
(f) Dairy products
(g) Meat, poultry and derived products
(h) Fish and fish products
(i) Eggs and egg products
(j) Alcoholic beverages
(k) Non-alcoholic beverages
(l) Food additives and supplements
(m) Essential nutrients, including vitamins
(n) Residues in foodstuffs
(o) Other specified foods

The following tests in accordance with AOAC International: Standard Methods of Analysis of the Association of Official Analytical Chemists (19th Edition), except where otherwise indicated.

Aflatoxin detection in nuts	J Chrom. 624 (1992) 341-352 (modified)
Aflatoxin detection in nuts	LCMS
Benzoic and sorbic acid	JAOAC (1979) 6:1011-1019 (modified), 967.15
Histamine in fish	HPLC by J Chrom. 389 (1987) 267 (modified)
Ochratoxin	HPLC: AOAC 49.6.02A (modified)
pH	Pearson's p15, BS 4401.9:1975
Sulphur dioxide	Pearson's 9th Edition p69, 962.16, 963.20
Water activity	Operations Manual Aqualab Water Activity Meter, Version 1.1
4-ethylguaiacol in wine	J Chrom. A, 786 (1997) 293-298 (modified)
4-ethylphenol in wine	J Chrom. A, 786 (1997) 293-298 (modified)

2.41 Waters

(a) Potable waters

Performance checks of portable Free Available Chlorine (FAC) meters as required by the New Zealand Drinking Water Standards 2005 (Revised 2018), in accordance with APHA 4500-Cl F and in-house procedures.

(d) Effluents and trade wastes

Fluorescent whiteners	Chemistry in New Zealand (Oct 2006) M.Devan et al.

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Fluorescent whiteners	Environ.Sci.Technology 30(1996)2220-2226

2.70 Instrumental Techniques

(a2) Gas Chromatography/Mass Spectrometry (GC-MS)
(a3) Gas Chromatography/Mass Spectrometry (GC-MS/MS)
(b) High Performance Liquid chromatography (HPLC)
(d2) Liquid Chromatography/Mass Spectrometry (LC-MS/MS)
(k) UV-Visible Spectroscopy (UV-VIS)

All techniques pertain to class of test 2.31 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.

2.71 Non-Instrumental Techniques

The following class of test provides for the performance of classical, non-instrumental validated methodology sourced from the following references, and conducted on samples from classes of test 2.31 above.

1. AOAC International, Official Methods of Analysis, including test kits approved by AOAC Research Institute
2. American Oil Chemists Society (AOCS)
3. Pearson's Chemical Analysis of Foods (9th Edition)
4. International Standards Organisation (ISO)
5. Fully validated In-house methods
6. Food (Safety) Regulations 2002, NZ Food Safety Authority
7. Codex Alimentarius Commission
8. European Commission Directives

National Centre for Radiation Science

This accreditation replaces previously held accreditations by this laboratory in the following IANZ Laboratory Accreditation Programmes.

IANZ Laboratory Accreditation Programme	Accreditation Number	Date of Initial Accreditation

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Chemical Testing Laboratory	848	2/04/2003

2.31 Foods

(n) Residues in foodstuffs

Radiochemical assay for gamma nuclides (including but not limited to I-131, Cs-134, Cs-137) in foodstuffs by gamma spectrometry

Americium-241	in milk powder	In-house based on Anal. Chim. Acta, 281 (1993) 361-372
Americium-241	in milk powder	In-house based on Anal. Chem, 55 (1983) 2460-2461
Plutonium-238	in milk powder	In-house based on Anal. Chim. Acta, 281 (1993) 361-372
Plutonium-238	in milk powder	In-house based on Anal. Chem, 55 (1983) 2460-2461
Plutonium-239	in milk powder	In-house based on Anal. Chim. Acta, 281 (1993) 361-372
Plutonium-239	in milk powder	In-house based on Anal. Chem, 55 (1983) 2460-2461
Strontium-90	in milk powder	In-house based on Eichrom Technologies method SRW01 Rev 1.4

2.41 Waters

(a) Potable waters

Strontium-90
Eichrom Technologies method SRW01 Rev 1.4

Tritium
In-house

Uranium
Pilviö, R. and Bickel, M. Separation of actinides from a bone ash matrix with extraction chromatography J.Alloys Comp. 271-273 (1998) 49-53

Radium-226
Parsa, B. et al. Concurrent determination of 224 Ra, 226 Ra, 229 Ra, and unsupported 212 Pb in a single analysis for drinking water and wastewater: dissolved and suspended fractions. Health Physics 86, 145-149

Radium-228
Parsa, B. et al. Concurrent determination of 224 Ra, 226 Ra, 229 Ra, and unsupported 212 Pb in a single analysis for drinking water and wastewater: dissolved and suspended fractions. Health Physics 86, 145-149

(a) Potable waters
(b) Non-potable waters

Radiochemical assay for the following nuclides in accordance with the methods indicated:

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Radon-222 by liquid scintillation counting
Health Phys, 33 (1997) 577-581

Total alpha and total beta concentration by liquid scintillation counting
Health Phys, 68(5) (1995) 674-682

Gamma nuclides
USEPA 901.0 (1980)

2.58 Environmental Monitoring

Radiochemical assay for the following nuclides in accordance with the methods indicated:

(a) Waters, rain water

Radon-222 by liquid scintillation counting
Health Phys, 33 (1977) 577-581

Total alpha and total beta concentration by liquid scintillation counting
Health Phys, 68(5) (1995) 674-682

Gamma nuclides
USEPA 901.1 (1980)

(c) Soils, sediments

Radium-226 and other natural gamma radionuclides
J. Radioanal.Nucl.Chem., 115 (1987) 263

Gamma nuclides
Gamma spectrometry

(d) Other materials

Surface swabs
(Wipe Test)

Radionuclide contamination of surfaces
In-house (Wipe Test)

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