

Accreditation Certificate

TE Laboratories Ltd.

Loughmartin Business Park, Tullow, Co. Carlow.

Testing Laboratory

Registration number: 106T

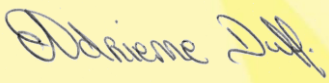
is accredited by the Irish National Accreditation Board (INAB) to undertake testing as detailed in the Schedule bearing the Registration Number detailed above, in compliance with the International Standard **ISO/IEC 17025:2005 2nd Edition** “*General Requirements for the Competence of Testing and Calibration Laboratories*”
(This Certificate must be read in conjunction with the Annexed Schedule of Accreditation)

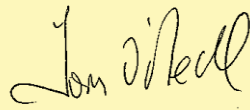
Date of award of accreditation: **15:02:2002**

Date of last renewal of accreditation: **18:01:2016**

Expiry date of this certificate of accreditation: **18:01:2021**

This Accreditation shall remain in force until further notice subject to continuing compliance with INAB accreditation criteria, ISO/IEC 17025 and any further requirements specified by the Irish National Accreditation Board.

Manager: 
Dr Adrienne Duff

Chairperson: 
Mr Tom O'Neill

Issued on 18 January 2016

Organisations are subject to annual surveillance and are re-assessed every five years. The renewal date on this Certificate confirms the latest date of renewal of accreditation. To confirm the validity of this Certificate, please contact the Irish National Accreditation Board.
The INAB is a signatory of the European co-operation for Accreditation (EA) Testing Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement.

Schedule of Accreditation



(Annex to Accreditation Certificate)

Permanent Laboratory:

Category A

TE LABORATORIES LTD.

Chemical Testing Laboratory

Initial Registration Date : 26-May-1999
Postal Address: Loughmartin Business Park
(Address of other locations as they apply) Tullow
Co. Carlow
Telephone: +353 (059) 9152881
Fax: +353 (059) 9152886
E-mail: info@tellab.ie
Contact Name: lab@tellab.ie
Facilities: Public testing service

Schedule of Accreditation



Permanent Laboratory:
Category A

THE IRISH NATIONAL ACCREDITATION BOARD (INAB) is the Irish body for the accreditation of organisations including laboratories.

Laboratory accreditation is available to testing and calibration facilities operated by manufacturing organisations, government departments, educational institutions and commercial testing/calibration services. Indeed, any organisation involved in testing, measurement or calibration in any area of technology can seek accreditation for the work it is undertaking.

Each accredited laboratory has been assessed by skilled specialist assessors and found to meet criteria which are in compliance with ISO/IEC 17025 or ISO 15189 (medical laboratories). Frequent audits, together with periodic inter-laboratory test programmes, ensure that these standards of operation are maintained.

Testing and Calibration Categories:

- Category A:** Permanent laboratory calibration and testing where the laboratory is erected on a fixed location for a period expected to be greater than three years.
- Category B:** Site calibration and testing that is performed by staff sent out on site by a permanent laboratory that is accredited by the Irish National Accreditation Board.
- Category C:** Site calibration and testing that is performed in a site/mobile laboratory or by staff sent out by such a laboratory, the operation of which is the responsibility of a permanent laboratory accredited by the Irish National Accreditation Board.
- Category D:** Site calibration and testing that is performed on site by individuals and organisations that do not have a permanent calibration/testing laboratory. Testing may be performed using
- portable test equipment
 - a site laboratory
 - a mobile laboratory or
 - equipment from a mobile or site laboratory

Standard Specification or Test Procedure Used:

The standard specification or test procedure that is accredited is the issue that is current on the date of the most recent visit, unless otherwise stated.

Glossary of Terms

Facilities:

- Public calibration/testing service:** Commercial operations which actively seek work from others.
- Conditionally available for public calibration/testing:** Established for another primary purpose but, more commonly than not, is available for outside work.
- Normally not available for public calibration/testing:** Unavailable for public calibration/testing more often than not.

Laboratory users wishing to obtain assurance that calibration or test results are reliable and carried out to the Irish National Accreditation Board criteria should insist on receiving an accredited calibration certificate or test report. Users should contact the laboratory directly to ensure that this scope of accreditation is current. INAB will, on request, verify the status and scope.

Scope of Accreditation



TE LABORATORIES LTD.

Chemical Testing Laboratory

Permanent Laboratory:

Category A

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i> .01 Waters for potable and domestic purposes	pH 2-12 Trace elements (dissolved) Chromium 0.05 - 50 mg/L Copper 0.05 - 50 mg/L Iron 0.05-50mg/L Zinc 0.01- 10 mg/L Manganese 0.03 - 20 mg/L	Documented in house methods: TP 003 (Electrometry) based on APHA 22 nd Edition 4500H ⁺ B (2012) TP001 (Direct Aspiration Flame AAS Perkin Elmer 1100) based on APHA 22 nd Edition 3111B (2012)
766 Waters .99 Other waters <i>Effluents</i> .01 Waters for potable and domestic purposes	Trace elements (dissolved) Cobalt 0.12 - 30 mg/L	Documented in house methods: TP001 (Direct Aspiration Flame AAS Perkin Elmer 1100) based on APHA 22 nd Edition 3111B (2012)

Scope of Accreditation



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Chemical Testing Laboratory

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Category A

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i>	Trace elements (dissolved) Lead 0.20 - 90 mg/L Nickel 0.10 - 20 mg/L Cadmium 0.03 - 20 mg/L	Documented in house methods: TP001 (Direct Aspiration Flame AAS Perkin Elmer 1100) based on APHA 22 nd Edition 3111B (2012)
766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i> .01 Waters for potable and domestic purposes	Anions (dissolved) Chloride 0.5-5000 mg/L Nitrate 0.11 - 1129 mg/L as N Orthophosphate 0.33 - 81.6 mg/L as P Sulphate 0.25 - 10,000 mg/L Fluoride 0.1- 50 mg/L Nitrite 0.06 - 250 mg/L as N	Documented in house methods: TP002 (Ion Chromatography Dionex IC DX-120) based on USEPA 300.0 (1993)

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766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i> .01 Waters for potable and domestic purposes	Total Oxidized Nitrogen (Calculated from the sum of nitrate and nitrite) 0.17 - 1205 mg/L as N	Documented in house methods: TP002 (Ion Chromatography Dionex IC DX-120) based on APHA 22 nd Edition 4110B (2012)
766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i> .01 Waters for potable and domestic purposes	Cations Calcium 2.5 - 10,000 mg/L Magnesium 1 - 625 mg/L Sodium 1-10,000 mg/L Potassium 1-2,500 mg/L Hardness by calculation of magnesium and calcium values	Documented in house methods: TP 004 (Ion Chromatography) based on ISO 14911:2008

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766 Waters .99 Other waters <i>Ground waters</i> <i>Surface waters</i> <i>Effluents</i> <i>Leachates</i> .01 Waters for potable and domestic purposes	Conductivity 5 - 12,500 $\mu\text{S}/\text{cm}$	Documented in house methods: TP005 based on APHA 22 nd Edition 2510B (2012)
.04 Sewage .05 Trade wastes .07 Bore waters .99 Other waters - Surface waters	COD 0 - 150 mg/l 0 - 5000 mg/l Total Phosphorous 0.05 - 50 mg/l as P	TP006 based on APHA 22nd Edition 5200D closed reflux colorimetric (2012). HACH Digestion + Spectrophotometric determination TP011 based on APHA 22nd Edition 4500P-E (2012) and HACH method 8190 Edition 8, 04/2013 HACH Digestion + Spectrophotometric determination

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Category A

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters		Documented in house methods:
.04 Sewage	Ammonia 0.10 - 50 mg/l as NH ₄	TP12 based on APHA 22nd Edition 4500-NH ₃ F (2012) (Phenate Method) Spectrophotometric
.05 Trade wastes		
.07 Bore waters	Suspended Solids	TP015 based on APHA 22nd Edition 2540D (2012) (Total Suspended Solids Dried at 103 - 105 ° C) Gravimetric determination at 103 - 105 ° C
.99 Other waters - Surface waters	1 - 1000 mg/l	