

# Accreditation Certificate

## OMAC Laboratories Ltd trading as ALS Loughrea

IDA Business Park, Dublin Road, Loughrea, Co Galway.

### Testing Laboratory

Registration number: 173T

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 2<sup>nd</sup> Edition** “*General Requirements for the Competence of Testing and Calibration Laboratories*”  
***(This Certificate must be read in conjunction with the Annexed Schedule of Accreditation)***

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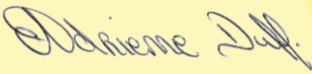
Date of award of accreditation: **27:06:2006**

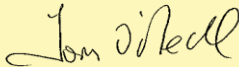
Date of last renewal of accreditation: **04:05:2016**

Expiry date of this certificate of accreditation: **04:05:2021**

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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 04 May 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

**Omac Laboratories Ltd**

**T/A Als Loughrea**

**Chemical Testing Laboratory**

**Initial Registration Date: 27- June -2006**

<b>Postal Address:</b>	OMAC Laboratories IDA Business Park Dublin Road Loughrea Co. Galway
<b>Telephone:</b>	+353 (091) 841741
<b>Fax:</b>	+353 (091) 842146
<b>E-mail:</b>	Louise.clarke@ALSGlobal.com
<b>Contact Name:</b>	Ms Louise Clarke
<b>Facilities:</b>	Public testing service

# Schedule of Accreditation



DETAILED IN SCOPE REG NO.173T  
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/IEC 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
- (a) portable test equipment
  - (b) a site laboratory
  - (c) a mobile laboratory or
  - (d) 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



## Omac Laboratories Ltd T/A ALS Loughrea 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
<b>703 Ores and Minerals</b> .99 Geochemical samples for trace elements  Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.	<b>Chemical Analysis</b> Ultra trace level gold analysis by aqua regia digestion with ICP-MS determination.  Working ranges: 0.0001-0.1 ppm ( $\mu\text{g/g}$ ) of Au.  0.001-1 ppm ( $\mu\text{g/g}$ ) of Au.  0.01-100 ppm ( $\mu\text{g/g}$ ) of Au.	Geochem Gold by Aqua Regia Digestion  Au-ST43 (25g)/Au-ST44 (50g). Au-TL43(25g)/AuTL44(50g)  Au-OG43(25g)/Au-OG44(50g)
.02 Copper ores	Trace level gold analysis by lead fire assay and AA determination.  Working ranges: 0.005-10 ppm ( $\mu\text{g/g}$ ) of Au 0.01- 100 ppm ( $\mu\text{g/g}$ ) of Au	Geochem Gold Fire Assay using Lead Collection and AA Finish. In-House Method.  Au-AA23(30g)/Au-AA24(50g) Au-AA25(30g)/Au-AA26(50g).
.05 Lead ores		
.06 Zinc ores		
.07 Nickel ores		
.18 Precious metal ores		
.19 Other ores		
.30 Silicate rocks		
.39 Other minerals		

# Scope of Accreditation



## Omac Laboratories Ltd T/A ALS Loughrea Chemical Testing Laboratory

Permanent Laboratory:  
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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<b>703 Ores and Minerals</b> .99 Geochemical samples for trace elements  Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.	Trace level to ore grade analysis for gold, platinum and palladium by lead fire assay and combination AA/ICP-AES determination. Working ranges: Au 0.001 - 10 ppm Pt 0.005 - 10 ppm Pd 0.001- 10 ppm	PGM-ICP23 (30g)/PGM-ICP24 (50g). Fire Assay Analysis for gold, platinum and palladium. In-House Method.
.02 Copper ores	Trace Level to Low Grade Gold analysis by lead fire assay and ICP-AES determination. Working Range: Au 0.001 - 10 ppm	Au-ICP21(30g)/Au-ICP22(50g)-Fire Assay Fusion -ICP-AES Finish
.05 Lead ores		
.06 Zinc ores		
.07 Nickel ores		
.18 Precious metal ores		
.19 Other ores		
.30 Silicate rocks		
.39 Other minerals		

# Scope of Accreditation



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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703</b> Geochemical samples .99 for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p>	<p>Determination of ore grade gold and silver by fire assay gravimetric finish</p> <p>Working Range: Au 0.05 - 10000 ppm Au 0.05 - 1000 ppm Ag 5 - 10000 ppm</p>	<p>Fire Assay Fusion with Gravimetric Finish</p> <p>Au-GRA21 (30g)/Au-GRA22 (50g) Ag-GRA21 (30g)/Ag-GRA22 (50g)</p>
.02 Copper ores		
.05 Lead ores		
.06 Zinc ores		
.07 Nickel ores		
.18 Precious metal ores		
.19 Other ores		
.30 Silicate rocks		
.39 Other minerals		

# Scope of Accreditation



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Permanent Laboratory:  
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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703 Ores and Minerals</b></p> <p>.99 Geochemical samples for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p> <p>.02 Copper ores</p> <p>.05 Lead ores</p> <p>.06 Zinc ores</p> <p>.07 Nickel ores</p> <p>.18 Precious metal ores</p> <p>.19 Other ores</p> <p>.30 Silicate rocks</p> <p>.39 Other minerals</p>	<p>Multi-element ICP-AES analysis following aqua regia digestion.</p> <p>Elements (low reporting limit/upper limit)-units are ppm (<math>\mu\text{g/g}</math>) unless indicated otherwise:</p> <p>Ag (0.2/100), Al (0.01/25.00%), As (2/10000), B (10/10000), Ba (10/10000), Be (0.5/1000), Bi (2/10000), Ca (0.01/25.0%), Cd (0.5/1000), Co (1/10000), Cr (1/10000), Cu (1/10000), Fe (0.01/50.0%), Ga (10/10000), Hg (1/10000), K (0.01/10.0%), La (10/10000), Mg (0.01/25.0%), Mn (5/50000), Mo (1/10000), Na (0.01/10.00%), Ni (1/10000), P (10/10000), Pb (2/10000), S (0.01/10.0%), Sb (2/10000), Sc (1/10000), Sr (1/10000), Th (20/10000), Ti (0.01/10), Tl (10/10000), U (10/10000), V (1/10000), W (10/10000), Zn (2/10000)</p>	<p>Combination of in-house methods:</p> <p>a) GEO-AR01. Aqua Regia Digestion for ICP and AA analysis.</p> <p>and</p> <p>b) ME-ICP41. Multi Element Analysis of Geochemical Samples By Atomic Emission Method With Inductively-Coupled Plasma (ICP-AES)</p>

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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<b>703 Ores and Minerals</b> .99 Geochemical samples for trace elements  Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.  .02 Copper ores .05 Lead ores .06 Zinc ores .07 Nickel ores .18 Precious metal ores .19 Other ores .30 Silicate rocks .39 Other minerals	Multi-element ultra trace ICP-MS and ICP-AES analysis following aqua regia digestion. Elements (low reporting limit/upper limit)-units are ppm ( $\mu\text{g/g}$ ) unless indicated otherwise: Ag (0.01/100), Al (0.01/25.0 %), As (0.1/10000), Au (0.2/25), B (10/10000), Ba (10/10000), Be (0.05/1000), Bi (0.01/10000), Ca (0.01/25.0 %), Cd (0.01/1000), Ce (0.02/500), Co (0.1/10000), Cr (1/10000), Cs (0.05/500), Cu (0.2/10000), Fe (0.01/50.0%), Ga (0.05/10000), Ge (0.05/500), Hf (0.02/500), Hg (0.01/10000), In (0.005/500), K (0.01/10.0%), La (0.2/10000), Li (0.1/10000), Mg (0.01/25.0%), Mn (5/50000), Mo (0.05/10000), Na (0.01/10%), Nb (0.05/500), Ni (0.2/10000), P(10/10000), Pb (0.2/10000), Rb (0.1/10000), Re (0.001/50), S (0.01/10.0%). Sb (0.05/10000), Sc (0.1/10000), Se (0.2/1000), Sn (0.2/500), Sr (0.2/10000), Ta (0.01/500), Te (0.01/500), Th (0.2/10000),	Combination of in-house methods: a) GEO-AR01. Aqua Regia Digestion for ICP and AA analysis.  b) ME-ICP41. Multi Element Analysis of Geochemical Samples by Atomic Emission Method with Inductively-Coupled Plasma (ICP-AES)  c) ME-MS41. Multi Element Analysis of Geochemical Samples by Mass Spectrometric Method with Inductively-Coupled Plasma (ICP-MS).



# Scope of Accreditation



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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703</b>    <b>Ores and Minerals</b> .99    Geochemical samples for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p> <p>.02    Copper ores .05    Lead ores .06    Zinc ores .07    Nickel ores .18    Precious metal ores .19    Other ores .30    Silicate rocks .39    Other minerals</p>	<p>Continued from Page 8</p> <p>Ti (0.005/10%, Tl (0.02/10000), U (0.05/10000), V (1/10000) W (0.05/10000), Y (0.05/500) Zn (2/10000), Zr (0.5/500)</p>	<p>Combination of in-house methods:</p> <p>a) GEO-AR01. Aqua Regia Digestion for ICP and AA analysis.</p> <p>b) ME-ICP41. Multi Element Analysis of Geochemical Samples by Atomic Emission Method with Inductively-Coupled Plasma (ICP-AES)</p> <p>c) ME-MS41. Multi Element Analysis of Geochemical Samples by Mass Spectrometric Method with Inductively-Coupled Plasma (ICP-MS).</p>

# Scope of Accreditation



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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703</b>    <b>Ores and Minerals</b></p> <p>.99    Geochemical samples for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p> <p>.02    Copper ores</p> <p>.05    Lead ores</p> <p>.06    Zinc ores</p> <p>.07    Nickel ores</p> <p>.18    Precious metal ores</p> <p>.19    Other ores</p> <p>.30    Silicate rocks</p> <p>.39    Other minerals</p>	<p>ME-OG46</p> <p>Digestion of Base Metal Ores using Aqua Regia (Test Tube - Hotblock Digestion). Elements (low reporting limit/upper limit)-units are % unless indicated otherwise:</p> <p>Ag (1/1500 ppm), As (0.01/60), Cd (0.001/10), Co (0.001/20), Cu (0.001/40), Fe (0.01/100), Mn (0.01/50), Mo (0.001/10), Ni (0.001/10), Pb (0.001/20), S (0.01/10), Zn (0.001/30)</p>	<p>Combination of In house Methods:</p> <p>(a) ASY-AR01. Aqua Regia Digestion for ICP-AES analysis</p> <p>(b) ME-OG46. Multi Element Analysis of Low Grade Ore Samples or Rock Samples with some mineralisation with Inductively Coupled Plasma (ICP-AES)</p>

# Scope of Accreditation



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<p><b>703 Ores and Minerals</b></p> <p>.99 Geochemical samples for trace elements</p> <p>Analysis of samples from the mining and mineral exploration industry including rocks, drill core soils, stream sediments and powder pulps.</p> <p>.02 Copper ores</p> <p>.05 Lead ores</p> <p>.06 Zinc ores</p> <p>.07 Nickel ores</p> <p>.18 Precious metal ores</p> <p>.19 Other ores</p> <p>.30 Silicate rocks</p> <p>.39 Other minerals</p>	<p>Multi-element ICP-AES analysis following 4-acid digestion.</p> <p>Elements (low reporting limit/upper limit) -units are ppm (µg/g) unless indicated otherwise: Ag (0.5/100), Al (0.01/50.00%), As (5/10,000), Ba (10/10000), Be (0.5/1000), Bi (2/10000), Ca (0.01/50.0%), Cd (0.5/1000), Co (1/10000), Cr (1/10000), Cu (1/10000), Fe (0.01/50.0%), Ga (10/10000), K (0.01/10.0%), La (10/10000), Mg (0.01/50.0%), Mn (5/100000), Mo (1/10000), Na (0.01/10.00%), Ni (1/10000), P (10/10000), Pb (2/10000), S (0.01/10.0%), Sb (5/10000), Sc (1/10000), Sr (1/10000), Th (20/10000), Ti (0.01/10%), Tl (10/10000), U (10/10000), V (1/10000), W (10/10000), Zn (2/10000)</p>	<p>Combination of in-house methods:</p> <p>a) GEO-4ACID. 4 Acid Digestion for ICP and AA analysis.</p> <p>and</p> <p>b) ME-ICP61. Multi Element Analysis Of Geochemical Samples By Atomic Emission Method With Inductively-Coupled Plasma (ICP-AES)</p>

# Scope of Accreditation



## Omac Laboratories Ltd T/A ALS Loughrea Chemical Testing Laboratory

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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703 Ores and Minerals</b></p> <p>.99 Geochemical samples for trace elements.</p> <p>Analysis of samples from the mining and mineral exploration industry including rocks, drill core, soils, stream sediments and power pulps.</p> <p>.02 Copper ores</p> <p>.05 Lead ores</p> <p>.06 Zinc ores</p> <p>.07 Nickel ores</p> <p>.18 precious metal ores</p> <p>.19 Other ores</p> <p>.30 Silicate rocks</p> <p>.39 Other minerals</p>	<p>Multi-element ultra trace ICP-MS and ICP-AES analysis following 4-acid digestion. Elements (low reporting limit/upper limit)-units are ppm(<math>\mu\text{g/g}</math>) unless indicated otherwise:Ag (0.01/100), Al (0.01/50.0%), As (0.2/10000), Ba (10/10000), Be (0.05/1000), Bi (0.01/10000), Ca (0.01/50.0%), Cd (0.02/1000), Ce (0.01/500), Co (0.1/10000), Cr (1/10000), Cs (0.05/500), Cu (0.2/10000), Fe (0.01/50.0%), Ga (0.05/10000), Ge (0.05/500), Hf (0.1/500), In (0.005/500), K (0.01/10.0%), La (0.5/10000), Li (0.2/10000), Mg (0.01/50.0%), Mn (5/100000), Mo (0.05/10000), Na (0.01/10.00%), Nb (0.1/500), Ni (0.2/10000), P (10/10000), Pb (0.5/10000), Rb (0.1/10000), Re (0.002/50), S (0.01/10.0%), Sb (0.05/10000), Sc (0.1/10000), Se (1.0/1000), Sn (0.2/500), Sr (0.2/10000), Ta (0.05/100), Te (0.05/500), Th (0.2/10000), Ti (0.005/10.0 %), Tl (0.02/10000), U (0.1/10000), V (1/10000), W (0.1/10000)</p>	<p>Combination of in-house methods:</p> <p>a) GEO-4ACID. 4 Acid Digestion for ICP and AA analysis.</p> <p>b) ME-ICP61. Multi Element Analysis of Geochemical Samples by Atomic Emission Method with Inductively-Coupled Plasma (ICP-AES)</p> <p>c) MS-MS61. Multi Element Analysis of Geochemical Samples by Mass Spectrometric Method with Inductively-Coupled Plasma (ICP-MS).</p>

# Scope of Accreditation



## Omac Laboratories Ltd T/A ALS Loughrea 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
<b>703 Ores and Minerals</b>	Continued from Page 12	Combination of in-house methods:
.99 Geochemical samples for trace elements.  Analysis of samples from the mining and mineral exploration industry including rocks, drill core, soils, stream sediments and power pulps.	Y (0.1/500), Zn (2/10000) Zr (0.5/500)	a) GEO-4ACID. 4 Acid Digestion for ICP and AA analysis.  b) ME-ICP61. Multi Element Analysis of Geochemical Samples by Atomic Emission Method with Inductively-Coupled Plasma (ICP-AES)
.02 Copper ores		c) MS-MS61. Multi Element Analysis of Geochemical Samples by Mass Spectrometric Method with Inductively-Coupled Plasma (ICP-MS).
.05 Lead ores		
.06 Zinc ores		
.07 Nickel ores		
.18 precious metal ores		
.19 Other ores		
.30 Silicate rocks		
.39 Other minerals		

# Scope of Accreditation



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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703 Ores and Minerals</b></p> <p>.99 Geochemical samples for trace elements.</p> <p>Analysis of samples from the mining and mineral exploration industry including rocks, drill core, soils, stream sediments and power pulps.</p> <p>.02 Copper ores</p> <p>.05 Lead ores</p> <p>.06 Zinc ores</p> <p>.07 Nickel ores</p> <p>.18 precious metal ores</p> <p>.19 Other ores</p> <p>.30 Silicate rocks</p> <p>.39 Other minerals</p>	<p>ME-OG62</p> <p>Digestion of Base Metal Ores using Four Acids-Ore Grade Analysis (Teflon Test Tube - Hotblock Digestion). Elements (low reporting limit/upper limit)-units are % unless indicated otherwise:</p> <p>Ag (1/1500 ppm), Al (0.01/50), As (0.001/30), Bi (0.001/30), Ca (0.01/50), Cd (0.001/10), Co (0.001/20), Cr (0.002/30), Cu (0.001/40), Fe (0.01/100), K (0.01/30), Li (0.01/10), Mg (0.01/50), Mn (0.01/50), Mo (0.001/10), Na (0.01/30), Ni (0.001/30), P (80/200000ppm), Pb (0.001/20), S (0.01/50), Sb (0.002/100), Sc (1/10000), Sr (0.01/20), U (50/10000), V (0.01/30), W (80/10000ppm), Zn (0.001/30)</p>	<p>Combination of In house Methods:</p> <p>(a) ASY-4A01. Four Acid Digestion for ICP-AES analysis</p> <p>(b) ME-OG62. Multi Element Analysis of Base Metal Ores with Inductively Coupled Plasma (ICP-AES)</p>

# Scope of Accreditation



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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703 Ores and Minerals</b></p> <p><b>.99 Geochemical samples for trace elements</b></p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p> <p><b>.02 Copper ores</b></p> <p><b>.05 Lead ores</b></p> <p><b>.06 Zinc ores</b></p> <p><b>.07 Nickel ores</b></p> <p><b>.18 Precious metal ores</b></p> <p><b>.19 Other ores</b></p> <p><b>.30 Silicate rocks</b></p> <p><b>.39 Other minerals</b></p>	<p>Ore grade analysis for base metals and associated elements by ICP-AES, following a strong oxidizing acid digestion. Elements (low reporting limit/upper limit) -units are % unless indicated otherwise:</p> <p>Ag (1/1500 ppm (µg/g)), As (0.005/30.0), Bi (0.005/30.00), Ca (0.01/50.0), Cd (0.001/10.0), Co (0.001/20.0), Cu (0.005/40.0), Fe (0.01/100.0), Hg (8/10000 ppm (µg/g)), Mg (0.01/50.0), Mn (0.005/50.0), Mo (0.001/10.0), Ni (0.001/30.0), P (0.01/20.0), Pb (0.01/30.0), S (0.05/50.0), Sb (0.005/100.0), Tl (0.005/1.0), Zn (0.01/100.0)</p>	<p>Combination of in-house methods:</p> <p>a) ASY-ORE. ICP Assay for Base Metal Ores.</p> <p>and</p> <p>b) ME-ICPORE. Multi Element Analysis Of Base Metal Ores and Mill Products By Atomic Emission Spectrometry Using Inductively Coupled Plasma Spectrometer</p>

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INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
<p><b>703</b>     <b>Ores and Minerals</b></p> <p>.99     Geochemical samples for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p>	<p>Whole rock (Major Oxides) ICP-AES analysis following Lithium Borate Fusion plus Loss on Ignition (LOI). Elements (low reporting limit/upper limit)-units are %:</p> <p>Al<sub>2</sub>O<sub>3</sub> (0.01/100), CaO (0.01/100), Cr<sub>2</sub>O<sub>3</sub> (0.01/100), Fe<sub>2</sub>O<sub>3</sub> (0.01/100), K<sub>2</sub>O (0.01/100), MgO (0.01/100), MnO (0.01/100), Na<sub>2</sub>O (0.01/100), P<sub>2</sub>O<sub>5</sub> (0.01/100), SiO<sub>2</sub> (0.01/100), TiO<sub>2</sub> (0.01/100), LOI (0.01/100)</p>	<p>Combination of in-house methods:</p> <p>a) FUS-LI01: Lithium Metaborate Fusion for ICP and AA analysis.</p> <p>b) ME-ICP06. Whole Rock Analysis by Atomic Emission Method with Inductively-Coupled Plasma (ICP-AES).</p> <p>c) OA-GRA05. Loss on Ignition at 1000 deg C</p>
<p>.02     Copper ores</p> <p>.05     Lead ores</p> <p>.06     Zinc ores</p> <p>.07     Nickel ores</p> <p>.18     Precious metal ores</p> <p>.19     Other ores</p> <p>.30     Silicate rocks</p> <p>.39     Other minerals</p>	<p>Refractory and Rare Earth elements (low reporting limit/upper limit)- units are ppm:</p> <p>Ba (0.5/1000), Ce (0.5/10000), Dy (0.5/1000), Er (0.3/1000), Eu (0.3/1000), Ga (0.1/1000), Gd (0.5/1000), Hf (0.2/10000), Ho (0.1/1000), La (0.5/10000), Lu (0.01/1000), Nb (0.2/5000), Nd (0.1/10000), Pr (0.03/1000), Rb (0.2/10000), Sm (0.03/1000), Sn (1/10000), Sr (0.1/10000), Ta (0.1/2500), Tb (0.01/1000), Th (0.05/1000)</p>	<p>Combination of in-house methods:</p> <p>a) FUS-L101 Lithium Metaborate Fusion for ICP and AA analysis</p> <p>b) ME-MS81 Multi-element Analysis of Geochemical Samples by Atomic Emission Spectrometry using ICP Spectrometer</p>



# Scope of Accreditation



## Omac Laboratories Ltd T/A ALS Loughrea 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
<p><b>703</b>    <b>Ores and Minerals</b></p> <p>.99    Geochemical samples for trace elements</p> <p>Analysis of samples from the mining exploration industry including rocks, drill core soils, steam sediments and power pulps.</p> <p>.02    Copper ores</p> <p>.05    Lead ores</p> <p>.06    Zinc ores</p> <p>.07    Nickel ores</p> <p>.18    Precious metal ores</p> <p>.19    Other ores</p> <p>.30    Silicate rocks</p> <p>.39    Other minerals</p>	<p>Refractory and Rare Earth elements (low reporting limit/upper limit)- units are ppm:</p> <p>Continued from Page 16</p> <p>Tm (0.01/1000), U (0.05/1000), V (5/10000), W (1/10000), Y (0.5/10000), Yb (0.03/1000), Zr (2/10000)</p>	<p>Combination of in-house methods:</p> <p>a) FUS-L101 Lithium Metaborate Fusion for ICP and AA analysis</p> <p>b) ME-MS81 Multi-element Analysis of Geochemical Samples by Atomic Emission Spectrometry using ICP Spectrometer</p>

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.02 Copper ores		
.05 Lead ores	ME-XRF12 n/u:	
.06 Zinc ores	$Al_2O_3$ (0.01/100), $CaO$ (0.01/40),	
.07 Nickel ores	$Co$ (0.001/7), $Cr_2O_3$ (0.005/10),	
.18 Precious metal ores	$Cu$ (0.001/1.6), $Fe_2O_3$ (0.01/100),	
.19 Other ores	$K_2O$ (0.01/6.3), $MgO$ (0.01/50),	
.30 Silicate rocks	$MnO$ (0.005/30),	
.39 Other minerals	$Na_2O$ (0.01/5.3), $Ni$ (0.005/7.8), $P_2O_5$ (0.005/23), $Pb$ (0.005/1.8), $SiO_2$ (0.05/100%), $TiO_2$ (0.01/30), $Zn$ (0.001/1.6), Total (0.01/110)	

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.02 Copper ores	Fe-VOL05	Fe-VOL05
.05 Lead ores	Determination of Ferrous Fe by Acid Decomposition and Titration with Potassium Dichromate.	Ferrous Iron by H2SO4/HF acid digestion and titrimetric finish (WEI-FeVOL5)
.06 Zinc ores	Working Range 0.01 - 100%	
.07 Nickel ores		
.18 Precious metal ores		
.19 Other ores		
.30 Silicate rocks		
.39 Other minerals		

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