



# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **AGQ LAMBDA S.A.**

50 MTS NORTE Y 75 MTS OESTE DE LA ESCUELA REPÚBLICA DOMINICANA  
SAN FRANCISCO DE DOS RÍOS, SAN JOSÉ, 10106, REPUBLIC OF COSTA RICA

### **Testing Laboratory TL-1036**

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date April 12, 2023



A handwritten signature in black ink, reading 'Rey Nathan'.

**President**

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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## AGQ LAMBDA S.A.

[www.agqlabs.cr](http://www.agqlabs.cr)

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*Accredited to ISO/IEC 17025:2017*

*Effective Date April 12, 2023*

| FIELDS OF TESTING | MATERIAL/ MATRIX  | DETERMINANT(S)/ ANALYTE(S)                                       | METHOD REFERENCE   |          |                                      |
|-------------------|---|--|--|----------|--------------------------------------|
| FOOD-MICROBIOLOGY | Food, feed and surfaces   | Escherichia coli   | IT-345 Based on AOAC 991.14, AOAC 998.08, AOAC 986.33, AOAC 989.10 |          |                                      |
|                   |   | Total coliforms  | IT-345 Based on AOAC 991.14, AOAC 998.08, AOAC 986.33, AOAC 989.10 |          |                                      |
|                   |   | Fecal coliforms  | IT-345 Based on AFNOR 3M01/2-09/89C                                |          |                                      |
|                   |   | Staphylococcus aureus  | IT-343 Based on AOAC 2003.07, AOAC 2003.08, AOAC 2003.11           |          |                                      |
|                   |   | Aerobic plate count  | IT-344 Based on AOAC 990.12  |          |                                      |
|                   |   | Yeast and molds  | IT-342 Based on AOAC 997.02  |          |                                      |
|                   |   | Salmonella spp.  | IT-392 Based on Vidas @ UP Salmonella SPT                          |          |                                      |
|                   |   | Listeria spp.<br>Listeria monocytogenes                          | IT-393 Based on Vidas @ UP Listeria LPT                            |          |                                      |
|                   | Granular and liquid sugar. -OR- Granular and liquid sucrose and treated simple syrup. | Mesophilic Total Count   | IT-416 ICUMSA GS2/3-41   |          |                                      |
|                   |   | Yeast and Mold   | IT-415 ICUMSA GS 2/3-47  |          |                                      |
|                   |   | Thermophilic Acidophilic Bacteria (TAB) & Guaiacol Producing TAB | IT-417 SM-PR-687   |          |                                      |
|                   |   | FOOD-INORGANIC   | Food, feed   | Ash      | IT-328 Based on ISO 936, AOAC 942.05 |
|                   |   |  |  | Moisture | IT-333 Based on AOAC 925.45          |
| Crude Protein     | IT-335 Combustion method Based on AOAC 990.3, AOAC 992.15                             |  |  |          |                                      |
| Total Fat         | IT-332 Based on ISO 1443  |  |  |          |                                      |
| Total dietary     | IT-330 Based on AOAC 993.21   |  |  |          |                                      |
| Total sugar       | IT-327 Based on BOE- A - 1979-21118   |  |  |          |                                      |

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|---|---|---|---|
| FOOD-INORGANIC<br>(cont'd.)             | Food, feed<br>(cont'd.)   | Carbohydrates (US & EU)<br>– by calculation   | IT-414 REGLAMENTO (EU)<br>No1169/2011 UE, Food<br>labeling guide FDA -<br>Carbohydrates (US) and (EU)   |
|   |   | Energy (Calories and<br>kilojoules) (US, EU and<br>MX) - by calculation   | IT-414 Based on<br>REGLAMENTO (EU)<br>No1169/2011 EU, Food<br>labeling guide FDA  |
|   |   | Nutritional and heavy<br>metals:<br>Li, Be, B, Na, Mg, Al, Si, P,<br>S, K, Ca, Ti, V, Cr, Mn, Fe,<br>Co, Ni, Cu, Zn, Se, Sr, Mo,<br>Ag, Sn, Sb, Ba, Tl, As, Cd,<br>Hg, Pb | IT-334 Metals by ICP-MS<br>Based on AOAC Official<br>Method 2015.01 Heavy Metals<br>in Food, Codex Alimentarius<br>CAC/GL 41, Codex<br>Alimentarius Stan 193-1995 |
|   | Granular and liquid<br>sugar. -OR-<br>Granular and liquid<br>sucrose and treated<br>simple syrup. | Chloride  | IT-418 by ion chromatography  |
|   |   | Sensory analysis<br>(Appearance, Odor, Odor<br>after acidification, taste)  | IT-419<br>SM-PR-420)  |
|   |   | Assay (Purity)  | IT-420  |
|   |   | Quaternary Ammonium<br>Compounds (QAC)  | IT-427 SM-PR-470 by<br>spectrophotometry  |
|   |   | Moisture by Loss on Drying  | IT-426 ICUMSA GS 2-15<br>(2007)   |
|   |   | Day Acid Beverage Floc<br>Test  | IT-424 ICUMSA GS40 (2011)   |
|   |   | Insoluble Matter  | IT-428 ICUMSA GS2-19 (2007)   |
|   |   | Reducing Sugars   | IT-425 ICUMSA GS2-5(2011)<br>by the Knight and Allen EDTA<br>Method   |
|   |   | Colour  | IT-423 ICUMSA GS 2-10<br>(2011)   |
|   |   | Turbidity   | IT-430 ICUMSA GS 2-18<br>(2013)   |
| Conductivity Ash                        | IT-421 ICUMSA GS2-17 (2011)   |   |   |
| Refractometric Dry<br>Substance (RDS %) | IT-422 ICUMSA GS 4-13<br>(2009)   |   |   |
| Sulphite                                | IT-429 ICUMSA GS 2-33<br>(2011) by the Rosaniline<br>Colorimetric Method                          |   |   |
| ENVIRONMENTAL-INORGANIC                 | Ground waters,<br>surface waters,<br>drinking waters,   | Metals: Al, Sb, As, Ba, B,<br>Ca, Cd, Cr, Cu, Pb, Fe, Mg,<br>Mn, Hg, Sn, Ni, Se, Ag, K,<br>Na, Zn   | IT-399 Metals by ICP-MS<br>Based on SMEWW-APHA-<br>AWWA-WEF 3125 B.; U.S.   |

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|---|---|---|---|---|
| <b>ENVIRONMENTAL-INORGANIC</b><br>(continued) | wastewaters, seawaters  | By calculation: Calcium Hardness, Magnesium Hardness<br>Total Hardness                    | EPA Method 6020B (SW-846) and 200.8.  |   |
|   | Soils, sediments, sludges and residues                                | Metals: Al, Sb, As, Ba, B, Ca, Cd, Cr, Cu, Pb, Fe, Mg, Mn, Hg, Sn, Ni, Se, Ag, K, Na, Zn. | IT-399 Metals by ICP-MS Based on SMEWW-APHA-AWWA-WEF 3125 B.; U.S. EPA Method 6020B (SW-846) and 200.8. |   |
|   | Ground waters, surface waters, drinking waters, wastewaters, seawater | Total Suspended Solids  |   | IT-371: SMEWW-APHA-AWWA-WEF 2540 D: Gravimetry  |
|   |   | Total Solids  |   | IT-368: SMEWW-APHA-AWWA-WEF 2540 B: Gravimetry  |
|   |   | Total Dissolved Solids  |   | IT-369: SMEWW-APHA-AWWA-WEF 2540 C Gravimetry   |
|   |   | Settleable Solids by  |   | IT-370: SMEWW-APHA-AWWA-WEF 2540 F: Volumetry   |
|   |   | Turbidity   |   | IT-376: SMEWW-APHA-AWWA-WEF 2130 B: Nephelometry  |
|   |   | Anionic surfactants as MBAS   |   | IT-375: SMEWW-APHA-AWWA-WEF 5540 C: Spectrophotometry   |
|   |   | Sulfide   |   | IT-440. DETERMINATION OF SULFIDE IN WATERS - Rev.1 - Feb.2023 / SM 4500 Sulfide. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023. 4500 Sulfide./ USEPA Methylene Blue Method. Ed11. Method 8131.HACH. 2018 |
|   |   | Apparent and true Color   |   | IT-373. DETERMINATION OF COLOR IN WATERS - Rev.3 - Feb.2023 - Visual Comparison Method / SM 2120 B. COLOR. Visual Comparison Method Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023.                       |
|   | Electric conductivity   |   | IT-372. DETERMINATION OF THE ELECTRICAL   |   |





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|--|---|---|--|
|  | drinking waters, wastewaters, seawater (continued)                  |   | Water and Wastewater, 24th Edition, 2023.  |
|  |   | Transmittance 254   | IT-439. ORGANIC CONSTITUENTS THAT UV ABSORB - Transmittance 254 - Rev.1 - Feb.2023/ SM 5910 B. UV-ABSORBING ORGANIC CONSTITUENTS. Ultraviolet Absorption Method. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023.                             |
|  |   | UV 254  | IT-439. ORGANIC CONSTITUENTS THAT UV ABSORB - UV 254 - Rev.1 - Feb.2023 / SM 5910 B. UV-ABSORBING ORGANIC CONSTITUENTS. Ultraviolet Absorption Method. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023.                                       |
|  | Ground waters, surface waters, wastewaters, seawater                | Total COD & Dissolved COD   | IT-367: SMEWW-APHA-AWWA-WEF 5220 D: Closed reflux, colorimetry   |
|  |   | Oils & Grease   | IT-374: SMEWW-APHA-AWWA-WEF 5520 B: Liquid-Liquid partition-Gravimetry   |
|  | <b>ENVIRONMENTAL-INORGANIC</b><br>Field sampling and Monitoring     | Ground waters, surface waters, drinking waters, wastewaters, seawater | Sampling (Grab and composite):   |
| pH   |   |   | IT-378: SMEWW-APHA-AWWA-WEF 4500 H+ B: Electrometry  |
| Temperature                                      |   |   | IT-377: SMEWW-APHA-AWWA-WEF 2550   |
| <b>ENVIRONMENTAL-MICROBIOLOGY</b>                | Recreational waters, ground waters, surface waters, drinking waters | Fecal Coliforms, Total Coliforms, Escherichia coli                    | IT-340: SMEWW-APHA-AWWA-WEF 9222, Membrane Filter Technique for Members of the Coliform Group K; ISO 9308-1:2014 Water quality — Enumeration of Escherichia coli and coliform bacteria — Part 1: Membrane filtration method for waters with low bacterial background flora |
| <b>ENVIRONMENTAL-MICROBIOLOGY</b><br>(continued) |   |   |  |

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|-------------------------------|--|---------------------------------------|---|
|                               | Ground waters, surface waters, drinking waters, wastewaters, seawater                            | Total heterotroph count               | IT-338. BACTERIA PLATE COUNT HETEROTROPHIC - Rev.1 - Feb.2023/SM 9215 B. HETEROTROPHIC PLATE COUNT. Pour Plate Procedure. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023.   |
|                               | Ground waters, surface waters, drinking waters, recreational waters                              | Pseudomonas                           | IT-339. PSEUDOMONAS AERUGINOSA BY MEMBRANE FILTRATION - Rev.1 - Feb.2023<br><br>Based on: SM 9213 E. RECREATIONAL WATERS. Membrane filter technique for Pseudomonas aeruginosa. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023.   |
| <b>ENVIRONMENTAL-SAMPLING</b> | Soil, Sediment, Sludge (Biosolids)   | Chemistry and Microbiology parameters | PICR-211: U.S. EPA. Soil Sampling. Laboratory Services and Applied Science Division. Athens, Georgia, 2020 U.S. EPA. Sediment Sampling. Laboratory Services and Applied Science Division. Athens, Georgia, 2020. U.S. Environmental Protection Agency. POTW Sludge Sampling and Analysis Guidance Document EPA 833-B-89-100, 1989 |
| <b>FOOD-SAMPLING</b>          | Food, Feed, Surfaces   | Microbiology parameters               | PICR-212: ISO 18593:2018, BAM Cap1, CODEX-ALIMENTARIUS (CAC/GL 21-1997, CAC/GL50-2004)  |
| <b>ENVIRONMENTAL-ORGANIC</b>  | Ground waters, surface waters, drinking waters, wastewaters, seawater, Soils, sediments, sludges | Volatile organic compounds (VOCs)     | IT-383. DETERMINATION OF COMPOUNDS VOLATILE ORGANICS (VOC's) IN WATER AND SOILS - Rev.1 - Nov.2021 /SW-846 Test Method 8260D. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS). 2018.   |



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|-------------------|---|---|--|
|                   |   | Polycyclic aromatic hydrocarbons (PAHs) | IT-382. DETERMINATION OF HYDROCARBONS POLYCYCLIC AROMATICS (PAHs) IN WATER, SOIL, SEDIMENT AND WASTE BY GAS CHROMATOGRAPHY - Rev.1 - Feb.2023 / SM 6440 Polynuclear Aromatic Hydrocarbons. Standard Methods for Examination of Water and Wastewater, 24th Edition, 2023 / Method 8270E (SW-846): Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS). 2014 |
|                   |   | Pesticides residues (PRs)               | IT-447. DETERMINATION OF RESIDUES OF PESTICIDES IN WATER, SOIL AND SEDIMENTS BY CHROMATOGRAPHY OF GASES - Rev.1 - Feb.2023/ Method 8270E (SW-846): Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS). 2014   |
|                   | Ground waters, surface waters, drinking waters, wastewaters, seawater, Soils, sediments, sludges and residues | Polychlorinated biphenyls (PCBs)        | IT-446. DETERMINATION OF BIPHENYLS POLYCHLORINATED (PCBs) IN WATER, SOILS, SEDIMENTS AND RESIDUES BY GAS CHROMATOGRAPHY - Rev.1 - Feb.2023 / SW-846 Test Method 8082A: Polychlorinated Biphenyls (PCBs) by Gas Chromatography. 2007  |