



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CHEMICAL

Valid To: February 28, 2021

Certificate Number: 5669.10

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on: leachates waters (raw, effluent, leachate and groundwater), waste waters (untreated and treated domestic and industrial waste water), saline waters, potable water:

| Test(s): | Test Method(s): |
|---|---|
| Leachates waters, waste waters, saline waters ICP-MS techniques (Al, As, Ag, Ba, Be, B, Cd, Ca, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb *, Se, Sb, Si, Sn, Sr, Ti, Tl, U, V *, Zn) | USEPA 3050B, 3125; EMT-M-OP-CH-AKB-MD133 |
| Leachates Waters – Potable ICP-MS techniques (Al, As, Ag, Ba, Be, B, Cd, Ca, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb *, Se, Sb, Si, Sn, Sr, Ti, Tl, U, V *, Zn) | EMT-M-OP-CH-AKB-MD131 by ICP-MS |
| Ion Chromatography – Determination of Anions: Fluoride, Chloride, Bromide, Nitrate, Nitrite, Sulphate, Ortho-phosphate (waters – potable) | EMT-M-OP-CH-AKB-MD322 |
| Ion Chromatography – Determination of Bromate (waters – potable) | EMT-M-OP-CH-AKB-MD320B |
| FTIR – Oil and Grease (waters – potable) | ASTM D7678; EMT-M-OP-CH-AKB- MD414 |
| Oil and Grease (waters – saline) | APHA 5220B (Gravimetric); EMT-M-OP- CH-AKB-MD414A by Gravimetric |

| Test(s): | Test Method(s): |
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| <p>GC-MS (waters – potable, saline waters & soils) Semi Volatile Organic Compounds (SVOC's) and Polycyclic Aromatic Hydrocarbon (PAH) including: Azobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobenzene Nitrobenzene 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Chlorophenol 2,4-Dichlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol o-Cresol p-Cresol 2-Nitrophenol 2,4-Dimethylphenol 4-Chloro-3-methylphenol Dimethyl phthalate Diethyl phthalate Bis(2-ethylhexyl)phthalate Butyl benzylphthalate Di-n-butylphthalate Di-n-octylphthalate 4-Chlorodiphenylether 4-Bromophenyl phenylether Dibenzofuran Isophorone Hexachloroethane n-nitrosodi-n-propylamine Bis(2-chloroisopropyl) ether Bis 92-chloroethyl)ether n-nitrosodimethylamine bis(2-chloroethoxy)metyhane 4-Chloroaniline 2-Nitroaniline Hexachlorobutadiene Hexachlorocyclopentadiene Naphthalene 2-Methylnaphthalene 2-Chloronaphthalene Naphthalene Acenaphthene Acenaphthylene Anthracene Carbazole Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)preylene Benzo(a)pyrene Chrysene Fluorene Fluoroanthene Dibenze(a,h)anthracene Ideno(1,2,3-c,d)Pyrene Phenathrene Pyrene</p> | <p>EMT-M-OP-CH-AKB-MD406 for SVOC's; EMT-M-OP-CH-AKB-MD403B for PAH in Soils; EMT-M-OP-CH-AKB-MD403A for PAH in Water;</p> |



| Test(s): | Test Method(s): |
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| GC-FID -Extractable Petroleum Hydrocarbons (EPH) and Total Petroleum Hydrocarbons (TPH) (>C10 to C40) (waters – potable, saline waters & soils) | EMT-M-OP-CH-AKB-MD401 |
| GC-MS Headspace -Volatile Organic Compounds (VOC'S) including: Dichlorodifluoromethane; Vinyl Chloride; Bromomethane; Chloroethane; Trichlorofluoromethane; 1,1-Dichloroethane; Methylene Chloride; Methyl Tert-butyl ether (MTBE); trans-1,2 Dichloroethene; 1,1-Dichloroethane; cis-1,2-Dichloroethane; 2,2-Dichloropropane; Bromochloromethane; Chloroform; Carbon tetrachloride; 1,1,1-Trichloroethane; 1,1-Dichloropropene; Benzene; 1,2-Dichloroethane; tert-Amylmethylether (TAME); Trichloroethene; 1,2-Dichloropropane; Bromodichloromethane; Dibromomethane; Toluene; cis-1,3-Dichloropropene; trans-1,3-Dichloropropene; 1,1,2-Trichloroethane; Tetrachloroethene; Chlorodibromomethane; 1,2-Dibromoethane; 1,3-Dichloropropane; Ethylbenzene; 1,1,1,2-Tetrachloroethane; Chlorobenzene; m,p—Xylene; o-Xylene; Bromoform; Styrene; Isopropylbenzene; Bromobenzene; n-Propylbenzene; 1,1,2,2-Tetrachloroethane; 1,2,3-Trichloropropane; 1,3,5-trimethylbenzene; 2-Chlorotoluene; 4-Chlorotoluene; tert-Butylbenzene; 1,2,4-Trimethylbenzene; sec-Butylbenzene; 4-Isopropyltoluene; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; n-Butylbenzene; 1,2-Dibromo-3-Chloropropane; 1,2-Diclorobenzene; 1,2,4-Trichlorobenzene; Hexachlorobutadiene; Naphthalene; 1,2,3-Trichlorobenzene (waters – potable, effluent, saline waters & soils) | EPA 8260; EMT-M-OP-CH-AKB-MD404 |

| Test(s): | Test Method(s): |
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| GC-FID Headspace – Volatile Petroleum Hydrocarbons C5 – C10 (VPH) MTBE, Benzene, Toluene, Ethylbenzene, m-Xylene, o-Xylene and p- Xylene (waters – potable, effluent, saline waters & soils) | EPA 8015B; EMT-M-OP-CH-AKB-MD405 |
| <u>Waters:</u> | |
| Conductivity | APHA 2150B (Electrode); EMT-M-OP-CH- AKB-MD201 |
| Alkalinity | APHA 2320 (Titration); EMT-M-OP-CH- AKB-MD210 |
| Hardness | APHA 2340B (ICP-MS and Calculation); EMT-M-OP-CH-AKB-MD211; APHA 2340C (Titration) |
| TDS | APHA 2540C (Electrode / Gravimetric); EMT-M-OP-CH-AKB-MD208 |
| TSS | APHA 2540D (Gravimetric); EMT-M-OP-CH-AKB-MD209 |
| pH | APHA 4500 H + B (Electrode); EMT-M-OP-CH-AKB-MD301 |
| Residual Chlorine | APHA 4500Cl (Spectrophotometer); Hach 8167 (Total Chlorine); Hach 8021 (Free Chlorine) |
| TOC | APHA 5310B (OX-IR); MT-M-OP-CH-AKB-MD319 |
| <u>Soils:</u> | |
| Chloride | BS 1377-3 (Titration) |
| Total Sulfate | BS 1377-3 (Gravimetric) |
| ICP-MS – (Al, As, Ag, Ba, Be, B, Cd, Co, Cr, Cu, Fe, Hg, Li, Mn, Mo, Na, Ni, Pb, Se, Sb, Sn, Sr, Ti, Tl, U, V, Zn) | APHA 3125 (ICP-MS); EMT-M-OP-CH-AKB-MD112 |
| pH | BS 1377-3 (Electrode) |
| Elemental Analysis: OES using Direct Reading Optical Emission Spectrometry techniques | EMT-M-OP-CH-AKB-MD101 |

* excluded from SALINE WATERS



Accredited Laboratory

A2LA has accredited

ELEMENT SAUDI ARABIA COMPANY LIMITED

Dammam, Saudi Arabia

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 4th day of November 2019

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5669.10
Valid to February 28, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Chemical Scope of Accreditation.