

	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02</b> <b>Issue Date: 18/08/2020</b> <b>Rev. No: 09</b> <b>LAB 023</b>
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**Accreditation No: LAB 023**

**Awarded to**

**Chemical & Environmental Laboratory  
SGS Pakistan (Pvt.) Limited**

**Plot # 04, Sector 24, Korangi Industrial Area, Near Shan Chowrangi  
Karachi, Pakistan.**

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **06-06-2005** by Pakistan National Accreditation Council.

The laboratory complies with the requirements of **ISO/IEC 17025:2017**

The accreditation requires regular surveillance, and is valid until **05- 01 -2025**.

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

**PAKISTAN NATIONAL ACCREDITATION COUNCIL**

**07-11-2024**  
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SD  
Director General

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### Testing Laboratory.

Accreditation Scope of Chemical & Environmental Lab. SGS Pakistan (Pvt.) Ltd. Karachi,  
Pakistan, Plot # 04, Sector 24, Korangi Industrial Area, Near Shan Chowrangi, Karachi. Tel #  
Tel # 021-35121388-97.

Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Chrome ore	Chemical Testing	Chromium	MNTP/SOP-CCO/01 Non-Standard Method, Based on ISO 6331
Chrome ore	Chemical Testing	Alumina	MNTP/SOP-ACO/04 MNTP/SOP-ACO/04-A ISO Non-Standard Method, based on 6331 & IS 4737
Chrome ore	Chemical Testing	Silica	MNTP/SOP-SCO/02 Non-Standard Method, Based on ISO 5997
Chrome ore	Chemical Testing	Iron	Non-Standard Method, Based on ISO 6130 MNTP/SOP-ICO/03 Non-Standard Method, Based on ISO 6130 MNTP/SOP-ACO/09
Chrome ore	Chemical Testing	MgO	Based on ISO 6331
Chrome ore	Chemical Testing	CaO	Based on ISO 6331
Iron Ore	Chemical Testing	Iron	MNTP/SOP-IIO/05 ISO 2597-1(E)
Iron Ore	Chemical Testing	Silica	MNTP/SOP-SIO/06 ISO 2598-1 (E)
Iron Ore	Chemical Testing	Alumina	MNTP/Al <sub>2</sub> O <sub>3</sub> /07 ISO 4688-1 (E)
Iron ore	Chemical Testing	Calcium Oxide (CaO)	MNTP/SOP-Ca/ MgO/41 ISO 10203(E)
Iron ore	Chemical Testing	Magnesium Oxide (MgO)	MNTP/SOP-Ca/MgO/41 ISO 10204(E)
Iron ore	Chemical Testing	Phosphorous (P)	MNTP/SOP-PIO/43 Non-Standard Method, Based on ISO 4687-1 & ICP-OES
Iron ore	Chemical Testing	Manganese Oxide (MnO)	MNTP/SOP-MnO/44 ISO 9682-1

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Iron ore	Chemical Testing	Potassium Oxide (K <sub>2</sub> O)	MNTP/SOP-Na,KIO/42 ISO 13312
Iron ore	Chemical Testing	Sodium Oxide (Na <sub>2</sub> O)	MNTP/SOP-Na, KIO/42 ISO 13313
Iron Ore	Chemical Testing	Loss on Ignition	MNTP/2009/SOP-LOI/00                      ISO-11536
Fertilizer	Chemical Testing	Nitrogen	MNTP/SOP-NDU/10, AOAC. 955.04, 978.02 & 970.02, 21st Edition (2019)
Fertilizer	Chemical Testing	Total Phosphate	MNTP/SOP-TPF/11 AOAC. 962.02, 21st Edition (2019)
Fertilizer	Chemical Testing	Water soluble Phosphate	MNTP/SOP-WPF/12 AOAC. 962.03, 21st Edition (2019)
Fertilizer	Chemical Testing	K <sub>2</sub> O	Based on AOAC 955.06
Coal	Chemical Testing	Inherent Moisture	ISO 11722 ISO 589 ASTM D 3302/D3302, D 3173
Coal & Coke	Chemical Testing	Calorific Value	MNTP/SOP-CVCC/16 ASTM – D 5865 & ISO 1928
Coal & Coke	Chemical Testing	Total Moisture in Coal	MNTP/SOP-TMC/17 ASTM – D3173, D 3302/D3302M& ISO 589
Coal & Coke	Chemical Testing	Total Sulfur	MNTP/SOP-TSCC/13 ASTM D3177 & ASTM D 4239
Coal & Coke	Chemical Testing	Total Moisture in Coke	MNTP/SOP-TMC/15 ASTM –D3173 & ISO 579
Coal & Coke	Chemical Testing	Net Calorific Value	ISO 1928 & ASTM – D 5865
Coal & Coke	Chemical Testing	Carbon	ISO 2954, ASTM D 5373
Coal & Coke	Chemical Testing	Hydrogen	ISO 2954, ASTM D 5373
Coal & Coke	Chemical Testing	Nitrogen	ISO 29541, ASTM D 5373
Coal & Coke	Chemical Testing	Oxygen	ISO 1170:2013(E), ASTM D3176

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Coal & Coke	Physical Testing	Hardgrove Grindability Index (HGI)	ISO 5074:2015, ASTM D409/D409M
Coal Ash	Chemical Testing	SiO <sub>2</sub>	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	Al <sub>2</sub> O <sub>3</sub>	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	MgO	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	CaO	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	Fe <sub>2</sub> O <sub>3</sub>	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	P <sub>2</sub> O <sub>5</sub>	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	Na <sub>2</sub> O	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	K <sub>2</sub> O	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	TiO <sub>2</sub>	Based on ASTM D6349-13 & D 3682
Coal Ash	Chemical Testing	SO <sub>3</sub>	ASTM D 5016
Fluorspar	Chemical Testing	CaF <sub>2</sub>	Based on ASTM E-815
Fluorspar	Chemical Testing	SiO <sub>2</sub>	ASTM E 1506
Ores, Rocks and Minerals	Chemical Testing	Copper	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Zinc	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Cobalt	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Nickel	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Silver	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott

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Ores, Rocks and Minerals	Chemical Testing	Sample Preparation	MNTP/2009/SOP-SPGC/31 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Aluminum	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Arsenic	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Barium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Calcium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Cadmium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Chromium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Iron	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Lithium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Magnesium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Manganese	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Molybdenum	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Antimony	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Strontium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott
Ores, Rocks and Minerals	Chemical Testing	Vanadium	MNTP/SOP-MAMAD/30 Nonstandard method, based on Analysis of ores, rocks & minerals by Scott

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Manganese ore	Chemical Testing	Manganese content	MNTP/2010/SOP-J-Mn/40 MNTP/2010/SOP-AAS-Mn/39 Non-standard method JIS M8232-1982 & F.A. Julian, J. Am. Chem. Soc., 15, 113
Cement	Chemical Testing	Calcium Oxide	MNTP/2010/SOP-CMC/35 BS EN 196-2:2013 ASTM C 114
Cement	Chemical Testing	Silicon di Oxide	MNTP/2010/SOP-SiC/33 BS EN 196-2: 2013 ASTM C 114
Cement	Chemical Testing	Aluminum Oxide	MNTP/2010/SOP-MC/34 BS EN 196-2: 2013 ASTM C 114
Cement	Chemical Testing	Iron (III) Oxide	MNTP/2010/SOP-MC/34 BS EN 196-2: 2005 ASTM C 114
Cement	Chemical Testing	Magnesium Oxide	MNTP/2010/SOP-CMC/35 BS EN 196-2: 2005 ASTM C 114
Cement	Chemical Testing	Loss on Ignition	MNTP/2010/SOP-LOIC/36 BS EN 196-2: 2013 ASTM C 114
Cement	Chemical Testing	Sulfate	MNTP/2010/SOP-SC/38 BS EN 196-2: 2013 ASTM C 114
Cement	Chemical Testing	Alkali content (Na <sub>2</sub> O & K <sub>2</sub> O)	MNTP/2010/SOP-AC/37 BS EN 196-2: 2013 ASTM C 114
Cement	Physical Testing	Compressive Strength	BS EN 196-1, ASTM C109 / C109M PS-232:2008, ISO 679- Tested at 20°C & 27 °C
Cement	Physical Testing	Setting Time	BS EN 196-3: 2005 & ASTM C191
Cement	Physical Testing	Soundness	BS EN 196-3
Cement	Physical Testing	Fineness	BS EN 196-6 & ASTM C204
Cement	Physical Testing	Autoclave Expansion	ASTM C151
Copper ore	Chemical Testing	Cu	ISO 10258, Multi Acid digestion AAS/ICP-OES

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Lead ore	Chemical Testing	Pb	ISO 13545, Multi Acid digestion AAS/ICP-OES
Zinc Ore	Chemical Testing	Zn	ISO 13658, Multi Acid digestion AAS/ICP-OES
Sodium Chloride	Chemical Testing	NaCl	Based on ISO 9297/AAS/ICP-OES
Antimony ore	Chemical Testing	Sb	In-House titrimetric Based on Furman N.H Scott's Standard Method Fusion/Multi Acid digestion ICP-OES
Barite ore	Chemical Testing	Water soluble Calcium	API 13A
Barite Ore	Chemical Testing	Density	API 13A
Water	Chemical Testing	Aluminum	MNTP/SOP-MW/08 ASTM –D857-2007 APHA 3111 D & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Manganese	MNTP/SOP-MW/08 ASTM –D858-2007, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Iron	MNTP/SOP-MW/08 ASTM –D1068-2010, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition APHA 3111 B & 3120A
Water	Chemical Testing	Chromium	MNTP/SOP-MW/08 ASTM –D1687-2007, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Copper	MNTP/SOP-MW/08 ASTM –D1688-2007, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Zinc	MNTP/SOP-MW/08 ASTM –D1691-2007, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Nickel	MNTP/SOP-MW/08 ASTM –D1886-2008, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Cadmium	MNTP/SOP-MW/08 ASTM –D3557-2007, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Water	Chemical Testing	Lead	MNTP/SOP-MW/08 ASTM –D3559-2008, APHA 3111 B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Alkalinity	MNTP/SOP-AW/18 APHA – 2320B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Biochemical Oxygen Demand	MNTP/SOP-BOD/24 APHA 5210 D/B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Chlorides	MNTP/SOP-CW/19 APHA – 4500 B/C/D Cl <sup>-</sup> 23 <sup>rd</sup> Edition APHA – 4110 C 23 <sup>rd</sup> Edition
Water	Chemical Testing	Chemical Oxygen Demand	MNTP/SOP-COD/20 APHA – 5220 B 23 <sup>rd</sup> Edition MNTP/SOP-COD/25 APHA – 5220 D 23 <sup>rd</sup> Edition
Water	Chemical Testing	Ca and Mg	MNTP/SOP-CMW/26 (AAS) APHA – 3500-Ca B 23 <sup>rd</sup> Edition APHA – 3500-Mg B 23 <sup>rd</sup> Edition APHA –3110 ,3111-B & D 23 <sup>rd</sup> Edition APHA –3111-B & 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	pH Value	MNTP/SOP-pH/27 APHA – 4500-H <sup>+</sup> B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Total Dissolved Solid	MNTP/SOP-TDS/22 APHA – 2540 C 23 <sup>rd</sup> Edition
Water	Chemical Testing	Total Hardness	MNTP/SOP-THW/28 APHA – 2340 B & C 23 <sup>rd</sup> Edition
Water	Chemical Testing	Total Suspended Solid	MNTP/SOP-TSS/23 APHA – 2540D 23 <sup>rd</sup> Edition
Water	Chemical Testing	Sulphate	MNTP/SOP-SW/29 APHA – 4500 C/E SO <sub>4</sub> <sup>-2</sup> 23 <sup>rd</sup> Edition
Water	Chemical Testing	Lead	MNTP/SOP-MW/08 APHA 3120 B/3111 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Cobalt	MNTP/SOP-MW/08 APHA 3120 B/3111 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Sodium	MNTP/SOP-CMW/26 APHA 3120 B/3111 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Potassium	MNTP/SOP-CMW/26 APHA 3120 B/3111 B 23 <sup>rd</sup> Edition

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Water	Chemical Testing	Fluoride	APHA 4110 C & APHA 4500 F C 23 <sup>rd</sup> Edition
Water	Chemical Testing	Nitrate	APHA 4110 C / 4500 NO <sub>3</sub> B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Nitrite	APHA 4110 C/ 4500 NO <sub>2</sub> B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Phosphorous/ Total Phosphorous	APHA 4110 C/ 4500 P B/C & 3120 B 23 <sup>rd</sup> Edition, USEPA 6010C
Water	Chemical Testing	Benzene	USEPA 5030 & 8260
Water	Chemical Testing	Toluene	USEPA 5030 & 8260
Water	Chemical Testing	Ethyl Benzene	USEPA 5030 & 8260
Water	Chemical Testing	O – Xylene	USEPA 5030 & 8260
Water	Chemical Testing	M / P - Xylene	USEPA 5030 & 8260
Water	Chemical Testing	Arsenic (As)	MNTP/SOP-MW/08 APHA 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Antimony (Sb)	MNTP/SOP-MW/08 APHA 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Mercury (Hg)	MNTP/SOP-MW/08 APHA 3120 B/3112 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	Hexavalent Chromium (Cr-VI)	<ul style="list-style-type: none"> <li>• APHA 3500 Cr B 23<sup>rd</sup> Edition</li> <li>• ISO 18412:2005 (except for estuarine water and sea water)</li> </ul>
Water	Chemical Testing	Color	APHA 2120 C 23 <sup>rd</sup> Edition
Water	Chemical Testing	Cyanide (CN)	APHA 4500 CN E 23 <sup>rd</sup> Edition
Water	Chemical Testing	Phenolic Compound/Total Phenols	APHA 5530 B/C/D 23 <sup>rd</sup> Edition

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Water	Chemical Testing	Sulfide (S <sup>2-</sup> )	APHA 4500 S F/D 23 <sup>rd</sup> Edition
Water	Chemical Testing	Ammonia-N (NH <sup>3</sup> -N)	APHA 4500 NH3 B, C/D 23 <sup>rd</sup> Edition
Water	Chemical Testing	Silver (Ag)	MNTP/SOP-MW/08 APHA 3120 B 23 <sup>rd</sup> Edition
Water	Chemical Testing	1,2-Dichloro benzene	USEPA 5030 & 8260
Water	Chemical Testing	1,3-Dichlorobenzene	USEPA 5030 & 8260
Water	Chemical Testing	1,4-Dichlorobenzene	USEPA 5030 & 8260
Water	Chemical Testing	1,2,4-Trichlorobenzene	USEPA 5030 & 8260
Water	Chemical Testing	1,3,5-Trichlorobenzene	USEPA 5030 & 8260
Water	Chemical Testing	2-Chlorotoluene	USEPA 5030 & 8260
Water	Chemical Testing	3-Chlorotoluene	USEPA 5030 & 8260
Water	Chemical Testing	4-Chlorotoluene	USEPA 5030 & 8260
Water	Chemical Testing	Chloroform	USEPA 5030 & 8260
Water	Chemical Testing	Tetrachloromethane (Carbon tetrachloride)	USEPA 5030 & 8260
Water	Chemical Testing	1,1,2-Trichloroethane	USEPA 5030 & 8260
Water	Chemical Testing	1,1-Dichloroethane	USEPA 5030 & 8260
Water	Chemical Testing	1,2-Dichloroethane	USEPA 5030 & 8260

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Water	Chemical Testing	Trichloroethylene	USEPA 5030 & 8260
Water	Chemical Testing	Perchloroethylene (Tetrachloroethene)	USEPA 5030 & 8260
Water	Chemical Testing	1,1,1-Trichloroethane	USEPA 5030 & 8260
Water	Chemical Testing	1,1,1,2-Tetrachloroethane	USEPA 5030 & 8260
Water	Chemical Testing	1,1,2,2-Tetrachloroethane	USEPA 5030 & 8260
Water	Chemical Testing	1,1-Dichloroethylene	USEPA 5030 & 8260
Water	Chemical Testing	Styrene	USEPA 5030 & 8260
Water	Chemical Testing	1,2,3-Trichloropropane	USEPA 5030 & 8260
Water	Chemical Testing	Di-Butyl Phthalate (DBP)	USEPA 3510 & 8270
Water	Chemical Testing	Di (2-Ethyl Hexyl) Phthalate(DEHP)	USEPA 3510 & 8270
Water	Chemical Testing	Benzyl Butyl Phthalate (BBP)	USEPA 3510 & 8270
Water	Chemical Testing	Di-N-Octyl Phthalate (DNOP)	USEPA 3510 & 8270
Water	Chemical Testing	Di-Iso-Butyl Phthalate (DIBP)	USEPA 3510 & 8270
Water	Chemical Testing	Di-N-Hexyl Phthalate (DNHP)	USEPA 3510 & 8270
Water	Chemical Testing	Bis(2-methoxyethyl) phthalate (DMEP)*	USEPA 3510 & 8270
Water	Chemical Testing	D-nonyl Phthalate (DNP)*	USEPA 3510 & 8270

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Water	Chemical Testing	Diethyl Phthalate (DEP)*	USEPA 3510 & 8270
Water	Chemical Testing	Di-cyclohexyl Phthalate (DCHP)*	USEPA 3510 & 8270
Water	Chemical Testing	Bis-(2-butoxyethyl phthalate)	USEPA 3510 & 8270
Water	Chemical Testing	Bis-(2-Etoxyethyl phthalate)	USEPA 3510 & 8270
Water	Chemical Testing	Di-pentyl phthalate	USEPA 3510 & 8270
Water	Chemical Testing	Dimethyl phthalate	USEPA 3510 & 8270
Water	Chemical Testing	Acenaphthene	USEPA 3510 & 8270
Water	Chemical Testing	Acenaphthylene	USEPA 3510 & 8270
Water	Chemical Testing	Fluorene	USEPA 3510 & 8270
Water	Chemical Testing	Phenanthrene	USEPA 3510 & 8270
Water	Chemical Testing	Anthracene	USEPA 3510 & 8270
Water	Chemical Testing	Fluoranthene	USEPA 3510 & 8270
Water	Chemical Testing	Pyrene	USEPA 3510 & 8270
Water	Chemical Testing	Benzo[a]anthracene	USEPA 3510 & 8270
Water	Chemical Testing	Chrysene	USEPA 3510 & 8270
Water	Chemical Testing	Benzo[b]fluoranthene	USEPA 3510 & 8270

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Water	Chemical Testing	Benzo[k]fluoranthene	USEPA 3510 & 8270
Water	Chemical Testing	Benzo[a]pyrene	USEPA 3510 & 8270
Water	Chemical Testing	Indeno [1,2,3-cd] pyrene	USEPA 3510 & 8270
Water	Chemical Testing	Dibenzo [a, h] anthracene	USEPA 3510 & 8270
Water	Chemical Testing	Benzo[ghi]perylene	USEPA 3510 & 8270
Soil/Sludge	Chemical Testing	Arsenic	USEPA 3050B/6010B
Soil/Sludge	Chemical Testing	Cadmium	USEPA 3050B/6010B
Soil/Sludge	Chemical Testing	Hexavalent Chromium, (Cr-VI)	USEPA 3060A/7196A
Soil/Sludge	Chemical Testing	Lead	USEPA 3050B/6010B
Soil/Sludge	Chemical Testing	Mercury (Hg)	USEPA 6010B/7471B
Soil/Sludge	Chemical Testing	1,2-Dichloro benzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,3-Dichlorobenzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,4-Dichlorobenzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,2,4-Trichlorobenzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,3,5-Trichlorobenzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	2-Chlorotoluene	USEPA 5035 & 8260

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Soil/Sludge	Chemical Testing	3-Chlorotoluene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	4-Chlorotoluene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Chloroform	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Tetrachloromethane (Carbon tetrachloride)	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1,2-Trichloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1-Dichloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,2-Dichloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Trichloroethylene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Perchloroethylene (Tetrachloroethene)	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1,1-Trichloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1,1,2-Tetrachloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1,2,2-Tetrachloroethane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,1-Dichloroethylene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Styrene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	1,2,3-Trichloropropane	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Di-Butyl Phthalate (DBP)	USEPA 3540 & 8270

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Soil/Sludge	Chemical Testing	Di (2-Ethyl Hexyl) Phthalate(DEHP)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzyl Butyl Phthalate (BBP)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Di-N-Octyl Phthalate (DNOP)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Di-Iso-Butyl Phthalate (DIBP)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Di-N-Hexyl Phthalate (DNHP)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Bis(2-methoxyethyl) phthalate (DMEP)*	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	D-nonyl Phthalate (DNP)*	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Diethyl Phthalate (DEP)*	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Di-cyclohexyl Phthalate (DCHP)*	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Bis-(2-butoxyethyl phthalate)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Bis-(2-Etoxyethyl phthalate)	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Di-pentyl phthalate	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Dimethyl phthalate	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Acenaphthene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Acenaphthylene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Fluorene	USEPA 3540 & 8270

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Soil/Sludge	Chemical Testing	Phenanthrene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Anthracene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Fluoranthene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Pyrene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzo[a]anthracene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Chrysene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzo[b]fluoranthene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzo[k]fluoranthene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzo[a]pyrene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Indeno [1,2,3-cd] pyrene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Dibenzo [a, h] anthracene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzo[ghi]perylene	USEPA 3540 & 8270
Soil/Sludge	Chemical Testing	Benzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Toluene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	Ethyl Benzene	USEPA 5035 & 8260
Soil/Sludge	Chemical Testing	O - Xylene	USEPA 5035 & 8260

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Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing) testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference used
Soil/Sludge	Chemical Testing	M / P - Xylene	USEPA 5035 & 8260
Water	Chemical Testing	Colour	ISO 7887:2011(E)
Water	Chemical Testing	Total Nitrogen	USEPA 351.2
Water	Chemical Testing	Oil & Grease	Based on USEPA 1664
Water	Chemical Testing	Sulfite (SO <sub>3</sub> )	Based on APHA 4500 SO <sub>3</sub> B/C 23rd Edition
Water	Chemical Testing	Boron (B)	USEPA 3005A, 200.7 & 6010C
Water	Chemical Testing	Barium (Ba)	USEPA 3005A, 200.7 & 6010C
Water	Chemical Testing	Selenium (Se)	USEPA 3005A, 200.7 & 6010C
Water	Chemical Testing	Tin (Sn)	USEPA 3005A, 200.7 & 6010C
Water	Chemical Testing	Glycols / Glycol Ethers	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 an alternative method of solvent extraction and derivatizations are included

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Water	Chemical Testing	Triclosan	USEPA 8270E Solvent extraction, derivatisation with KOH, acetic anhydride followed by GC-MS BS EN 12673-1999 an alternative method of solvent extraction and derivatizations are included
Water	Chemical Testing	Permethrin	USEPA 8270E Solvent extraction, followed by GC-MS ISO 14154:2005 An alternate method, without derivatization +K16 and determination by LCMS/LCMSMS is also possible
Water	Chemical Testing	UV Absorbers	USEPA 8270 ISO 22032, USEPA 527 and USEPA 8321B. Dichloromethane extraction GC-MS or LC-MS(-MS)
Water	Chemical Testing	AEEA [2-(2-aminoethylamino) ethanol	Liquid extraction, LC-MS
Water	Chemical Testing	Bisphenol A	Liquid extraction, LC-MS
Water	Chemical Testing	Thiourea	Liquid extraction, LC-MS
Sludge/Soil	Chemical Testing	Solids	USEPA 160.3
Sludge/Soil	Chemical Testing	pH	USEPA 9045D

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Sludge/Soil	Chemical Testing	Paint Filter Test	USEPA 9095B
Leachate	Chemical Testing	Toxicity Characterization Leachate Procedure (TCLP)	Based on APHA 3120 B/USEPA 6010C/ 1311
Sludge/Soil	Chemical Testing	Cyanide	USEPA 9013 & 9014
Sludge/Soil	Chemical Testing	Antimony	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Chromium - total	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Barium	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Cobalt	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Copper	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Nickel	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Selenium	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Silver	USEPA 3050 & 6010B & D
Sludge/Soil	Chemical Testing	Zinc	USEPA 3050 & 6010B & D

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