

Water (Inorganic) Reactive Silica - Water (008) AMSIO2E1; modified from SM 4500-Si E COLORIMETRIC Reactive Silica	OSDWA †
Water (Inorganic) Solids - Water (014) AMSOLWE1; modified from SM 2540 B GRAVIMETRIC Total Dissolved Solids Total Suspended Solids	OSDWA †
Water (Inorganic) Sulphide - Water (084) AMS2-CE1; SM 4500 S2- D COLORIMETRIC Sulphide	OSDWA †
Water (Inorganic) Tannin and Lignin - Water (058) AMTNLNE1; modified from SM 5550 B COLORIMETRIC Tannin and Lignin	OSDWA †
Water (Inorganic) Total Kjeldahl Nitrogen (TKN) - Water (086) AMTKNME1; modified from SM 4500-Norg B, D, EPA 351.2 SALICYLATE COLORIMETRIC DETERMINATION Total Kjeldahl Nitrogen	OSDWA †
Water (Inorganic) Total Kjeldahl Nitrogen (TKN) (High Range) - Water (101) AMTKNHX8; modified from SM 4500-Norg B TITRIMETRIC - DISTILLATION Total Kjeldahl Nitrogen	
Water (Inorganic) Total Metals - Water (005) AMAMFAE8; modified from SM 3111 B AA FLAME Calcium Magnesium Potassium Sodium	OSDWA †
Water (Inorganic) Total Phosphorus - Water (013) AMTPMDE1; modified from SM 4500 - P E COLORIMETRIC - DIGESTION Total Phosphorus	OSDWA †
Water (Inorganic) Turbidity - Water (046) AMTURBE1; modified from SM 2130 B TURBIDIMETRIC Turbidity	OSDWA †

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Water (Inorganic) UV Absorbance/Transmittance - Water (083) AMUVABE1; SM 5910 B SPECTROPHOTOMETRIC UV Absorbance UV Transmittance	OSDWA †
Water (Microbiology) Coliforms - Water (075) AMBCOLM1; modified from MOE LSB E3407 MEMBRANE FILTRATION (DC) Background Counts Escherichia coli (E. coli) Total Coliforms	OSDWA †
Water (Microbiology) Escherichia coli (E. coli) - Water (098) AMBCOLM1; modified from LEY ET AL. 1988, CAN. J. MICRO 34=690-693 MEMBRANE FILTRATION (mFC-BCIG) Escherichia coli (E. coli)	OSDWA †
Water (Microbiology) Fecal (Thermotolerant) Coliforms - Water (080) AMBCOLM1; modified from SM 9222 D MEMBRANE FILTRATION (mFC) Fecal (Thermotolerant) Coliforms	OSDWA †
Water (Microbiology) Fecal Streptococci - Water (048) AMBCOLM1; modified from SM 910B 16TH ED. MEMBRANE FILTRATION (KF) Faecal Streptococci	OSDWA †
Water (Microbiology) Heterotrophic Plate Count (HPC) - Water (049) AMBCOLM1; modified from SM 9215 D MEMBRANE FILTRATION Heterotrophic Plate Count (HPC)	OSDWA †
Water (Microbiology) Total Coliforms - Water (033) AMBCOLM1; modified from SM 9222 B MEMBRANE FILTRATION (mENDO) Background Counts Total Coliforms	OSDWA †
Water (Organic) Carbamates - Water (071) AMCADIE1; modified from EPA 532 HPLC - AQUEOUS INJECTION Aldicarb Diuron	OSDWA †
Water (Organic) Diquat and Paraquat - Water (070) AMPQDQE1; modified from EPA 549.2 HPLC - AQUEOUS INJECTION Diquat Paraquat	OSDWA †

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Water (Organic) Glyphosate - Water (068) AMGLYPE1; modified from EPA 547 HPLC - AQUEOUS INJECTION Glyphosate	OSDWA †
Water (Organic) Haloacetic Acids (HAA) - Water (099) AMHALOAE1; modified from US EPA 552.2 GC/ECD Bromochloroacetic Acid Dibromoacetic Acid Dichloroacetic Acid Monobromoacetic Acid Monochloroacetic Acid Trichloroacetic Acid	OSDWA †
Water (Organic) Pesticides and Polychlorinated Biphenyls (PCB) - Water (017) AMOCPCE1; modified from EPA 8081, 8082 GC/ECD - EXTRACTION A -BHC a - Chlordane Aldrin Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260 beta-BHC delta-BHC Dieldrin Endosulfan I Endosulfan II Endrin g - Chlordane Heptachlor Heptachlor Epoxide Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Lindane (gamma-BHC) Mirex o,p' - DDT oxychlordane p,p' - DDT p,p' Methoxychlor p,p'-DDD p,p'-DDE Total PCB	OSDWA †
Water (Organic) Pesticides, Herbicides and Carbamates - Water (064) AMNPPHE1; modified from EPA 8270/8141 GC/MS - EXTRACTION Alachlor Atrazine	OSDWA †

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Atrazine + N-dealkylated metabolites
 Azinphos-methyl
 Bendiocarb
 Carbaryl
 Carbofuran
 Chlorpyrifos (ethyl)
 Cyanazine
 De-ethylated atrazine
 Diazinon
 Diclofop-methyl (as free acid)
 Dimethoate
 Malathion
 Metolachlor
 Metribuzin
 Parathion (ethyl)
 Phorate
 Prometryne
 Simazine
 Temephos
 Terbufos
 Triallate
 Trifluralin

Water (Organic)

OSDWA †

Petroleum Hydrocarbons (PHC) - Water (095)
 AMCCME2; modified from MOE E3421
 GC/FID - EXTRACTION
 F2: C10-16
 F3: C16-C34
 F4: C34-C50

Water (Organic)

OSDWA †

Petroleum Hydrocarbons (PHC) - Water (096)
 AMCCME2; modified from MOE E3421
 GC/FID - PURGE AND TRAP
 F1: C6-C10

Water (Organic)

OSDWA †

Petroleum Hydrocarbons (PHC) - Water (097)
 AMCCME2; modified from MOE E3421
 GRAVIMETRIC
 F4G (Gravimetric Heavy Hydrocarbons)

Water (Organic)

OSDWA †

Phenols - Water (066)
 AMPHENE1; modified from EPA 8270
 GC/MS - EXTRACTION
 2-Chlorophenol
 2-methylphenol
 2-nitrophenol
 2,3,4 - trichlorophenol
 2,3,4,6-tetrachlorophenol
 2,3,5 - trichlorophenol
 2,3,5,6- and 2,3,4,5-tetrachlorophenol
 2,4-dichlorophenol
 2,4-dimethylphenol
 2,4-dinitrophenol

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2,4,5 - trichlorophenol
2,4,6-trichlorophenol
2,6-dichlorophenol
3- and 4-methylphenol
4-nitrophenol
4,6-dinitro-o-cresol
p-chloro-m-cresol
Pentachlorophenol
Phenol

Water (Organic)

OSDWA †

Phenoxyacid Herbicides - Water (065)

AMPOXE1; modified from EPA 8151

SOLID PHASE EXTRACTION, METHYLATION AND GC/MS

2,4-dichlorophenoxyacetic acid
2,4,5-trichlorophenoxyacetic acid
Bromoxynil
Dicamba
Dinoseb
Picloram

Water (Organic)

OSDWA †

Polycyclic Aromatic Hydrocarbons (PAH) - Water (018)

AMPAMSE8, AMBAPE1; modified from EPA 8270

GC/MS - EXTRACTION

1-methylnaphthalene
1,3-Dinitropyrene
1,6-Dinitropyrene
1,8-Dinitropyrene
2-methylnaphthalene
Acenaphthene
Acenaphthylene
Anthracene
Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene
Benzo (k) fluoranthene
Chrysene
Dibenzo (a,h) anthracene
Fluoranthene
Fluorene
Indeno (1,2,3 - cd) pyrene
Naphthalene
Phenanthrene
Pyrene

Water (Organic)

Semi-Volatile Organic Compounds - Water (116)

AMBNASE1; modified from U.S. EPA SW846# 8270

GC/MS - EXTRACTION

1,1-biphenyl
1,2,4-trichlorobenzene
2,4-dinitrotoluene
2,6-dinitrotoluene
3,3'-dichlorobenzidine

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bis(2-chloroethyl)ether
 bis(2-chloroisopropylether)
 bis(2-ethylhexyl)phthalate
 diethyl phthalate
 hexachlorobenzene
 hexachlorobutadiene
 hexachloroethane
 p-chloroaniline

Water (Organic)

OSDWA †

Total Petroleum Hydrocarbons (TPH) - Water (037)
 AMCCME2; modified from EPA 3510
 GC/FID
 Diesel Range Hydrocarbons C10-C24

Water (Organic)

OSDWA †

Total Petroleum Hydrocarbons (TPH) - Water (074)
 AMCCME2; modified from EPA 3510
 GC/MS - PURGE AND TRAP
 Gasoline Range Hydrocarbons c5-c9

Water (Organic)

OSDWA †

Volatile Organic Compounds (VOC) - Water (036)
 AMVOMSE8; modified from EPA 8260
 GC/MS - PURGE & TRAP

1,1-Dichloroethane
 1,1-dichloroethylene
 1,1,1-Trichloroethane
 1,1,1,2-tetrachloroethane
 1,1,2-Trichloroethane
 1,1,2,2-Tetrachloroethane
 1,2-dichlorobenzene
 1,2-dichloroethane
 1,2-Dichloropropane
 1,3-Dichlorobenzene
 1,3,5-Trimethylbenzene
 1,4-dichlorobenzene
 1,4-dioxane
 2-hexanone (MBK)
 Acetone (2-Propanone)
 Benzene
 Bromodichloromethane
 Bromoform
 Bromomethane
 c-1,2-Dichloroethylene
 c-1,3-Dichloropropylene
 Carbon Tetrachloride
 Chlorobenzene
 Chlorodibromomethane
 Chloroethane
 Chloroform
 Chloromethane
 Dichlorofluoromethane
 Dichloromethane
 Diethyl ether
 Ethylbenzene

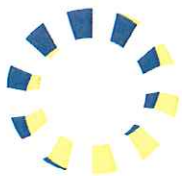
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Ethylene Dibromide
Hexane
m/p-xylene
Methyl Ethyl Ketone
Methyl isobutyl Ketone
Methyl t-butyl ether
o-xylene
Styrene
t-1,2-Dichloroethylene
t-1,3-Dichloropropylene
Tetrachloroethylene
Toluene
Trichloroethylene
Trichlorofluoromethane
Vinyl Chloride

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CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 1719

Laboratory Name: ALS Environmental (Vancouver)

Parent Institution: ALS Canada Ltd.

Address: 8081 Lougheed Highway Suite 100 Burnaby BC V5A 1W9

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Standard: Conforms with requirements of ISO/IEC 17025

Clients Served: All Interested Parties

Revised On: January 7, 2013

Valid To: May 3, 2015

Scope of Accreditation

Air (Inorganic)

Dustfall - Air (227)

VA-TM-1039; BCLM PARTICULATE & ASTM D1739-98

GRAVIMETRIC

Total Dustfall

Total Insoluble Dustfall

Total Soluble Dustfall

Air (Inorganic)

Major Ions - Air Filter (125)

WQSP-03, NA-TM-1001; modified from NIOSH 7903 AND ASTM D4856-88

IC - EXTRACTION

Bromide

Chloride

Fluoride

Nitrate

Sulfate

Air (Inorganic)

Mercury - Dustfall (223)

VA-TM-1039; modified from BCLM PARTICULATE & EPA 245.7

CVAFS - DIGESTION

Mercury

Air (Inorganic)

Metals - Air Filter (050)

VA-TM-1075; modified from NIOSH 7303 AND EPA 200.7

ICP/OES - DIGESTION

Aluminum

Antimony

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Arsenic
Barium
Beryllium
Bismuth
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Vanadium
Zinc

Air (Inorganic)

Metals - Dustfall (224)

VA-TM-1039; modified from BCLM PARTICULATE & EPA 200.8

ICP/MS - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Potassium
Selenium
Silver
Sodium

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Strontium
Thallium
Tin
Uranium
Vanadium
Zinc

Air (Inorganic)

Metals - Dustfall (226)

VA-TM-1039; modified from BCLM PARTICULATE & EPA 200.7

ICP/OES - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silicon
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Vanadium
Zinc

Air (Inorganic)

Total Particulates - Air Filter (035)

VA-TM-1041; modified from BCWCB 1150 & ASTM D2009-65

GRAVIMETRIC

Respirable Dust

Total Particulate

Air (Organic)

Volatile Organic Compounds (VOC) - Air (206)

VA-TM-1109; modified from EPA TO-17

GC/MS

1,1-biphenyl
1,1-Dichloroethane

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1,1-Dichloroethylene
 1,1-Dichloropropylene
 1,1,1-Trichloroethane
 1,1,1,2-Tetrachloroethane
 1,1,2-Trichloroethane
 1,1,2-trichlorotrifluoroethane (Freon 113)
 1,1,2,2-Tetrachloroethane
 1,2-Dibromo-3-chloropropane
 1,2-Dibromoethane
 1,2-Dichlorobenzene
 1,2-Dichloroethane
 1,2-Dichloropropane
 1,2,3-Trichlorobenzene
 1,2,3-Trichloropropane
 1,2,4-Trichlorobenzene
 1,2,4-Trimethylbenzene
 1,3-Butadiene
 1,3-Dichlorobenzene
 1,3-Dichloropropane
 1,3,5-Trimethylbenzene
 1,4-Dichlorobenzene
 2-butanone (MEK)
 2-Chlorophenol
 2-Chlorotoluene
 2-Hexanone
 2-propanol
 2,2-Dichloropropane
 4-Chlorotoluene
 4-Isopropyltoluene
 4-methyl-2-pentanone (MIBK)
 Acetone
 Benzene
 Bromobenzene
 Bromochloromethane
 Bromodichloromethane
 Bromoform
 Bromomethane
 Carbon Disulfide
 Carbon Tetrachloride
 Chlorobenzene
 Chloroethane
 Chloroform
 Chloromethane
 cis-1,2-Dichloroethylene
 cis-1,3-Dichloropropylene
 cyclohexane
 Decane
 Dibromochloromethane
 Dibromomethane
 Dichlorodifluoromethane
 Dichloromethane (Methylene Chloride)
 ethylacetate
 Ethylbenzene

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Hexachlorobutadiene
Isopropylbenzene
meta- & para-Xylene
Methyl t-butyl ether (MTBE)
Methylcyclohexane
n-Butylbenzene
n-Heptane (nC7)
n-Hexane (nC6)
n-Octane (nC8)
n-Propylbenzene
Naphthalene
ortho-Xylene
sec-Butylbenzene
Styrene
tert-Butylbenzene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropylene
Trichloroethylene
Trichlorofluoromethane
Vinyl Chlorine

Air (Organic)

Volatile Organic Compounds (VOC) - Air (207)

VA-TM-1109; modified from EPA TO-17

GC/FID

F1 (C6-C10)

F2 (C10-C16)

TVOC (>C10-C12)

TVOC (>C12-C16)

TVOC (>C6-C8)

TVOC (>C8-C10)

VHv (C6-C13)

Oil (Organic)

Total PCBs - Oil (080)

VA-TM-1118; modified from ASTM D4059-86, EPA 3500/3620/8082

GC/ECD

Total PCB

Seawater (Inorganic)

Dissolved Metals - Seawater (204)

TMSM07_01/NA-TP-2002; modified from APHA 3030 B AND EPA 200.8

H⁺ RESOLUTION ICP/MS

Aluminum

Antimony

Arsenic

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Cesium

Chromium

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Cobalt
Copper
Gallium
Indium
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Rhenium
Rubidium
Scandium
Selenium
Silicon
Silver
Sodium
Strontium
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Yttrium
Zinc
Zirconium

Seawater (Inorganic)

Total Metals - Seawater (205)

TMSM07_01/NA-TP-2001; modified from APHA 3030 E AND EPA 200.8

HI RESOLUTION ICP/MS

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Cesium
Chromium
Cobalt
Copper
Gallium
Indium
Iron
Lead

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Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Rhenium
Rubidium
Scandium
Selenium
Silicon
Silver
Sodium
Strontium
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Yttrium
Zinc
Zirconium

Seawater (Inorganic)

Total Metals - Seawater (222)

VA-TM-1076/NA-TP-2001; modified from PUGET SOUND PROTOCOLS & EPA 200.8

ICP/MS - EXTRACTION/DIGESTION

Aluminum
Cadmium
Cobalt
Copper
Iron
Lead
Manganese
Nickel
Uranium
Zinc

Soil (Inorganic)

Acid Volatile Sulfide (AVS) - Soil (230)

VA-TM-1021; modified from EPA-821-R-91-100

COLORIMETRIC - EXTRACTION

Acid Volatile Sulfides

Soil (Inorganic)

Cyanide - Soil (213)

VA-TM-1043; modified from ONT MOE E3015, ISO 14403 & APHA-CN I

AUTO COLOR - DISTILLATION-EXTRACTION

Cyanide (SAD)

Cyanide (WAD)

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Soil (Inorganic)

Cyanide - Soil (214)

va-tm-1043; modified from ONT MOE E3015 & ASTM 7237

AUTO COLOR/GAS DIFFUSION-EXTRACTION

Cyanide (Free)

Soil (Inorganic)

Simultaneously Extracted Mercury (SEM) - Soil (228)

VA-TM-1021; modified from EPA 821-R-91-100/245.7

CVAFS - SEM EXTRACTION

Mercury

Soil (Inorganic)

Simultaneously Extracted Mercury (SEM) - Soil (229)

VA-TM-1021; EPA 821-R-91-100/200.7

ICP/OES - SEM EXTRACTION

Arsenic

Cadmium

Copper

Lead

Nickel

Zinc

Solids (Inorganic)

Anions - Soil (148)

VA-TP-2066 AND NA-TM-1001; SSMA CHAPTER 15 AND modified from APHA 4110 B & EPA 300.1

IC-SATURATED EXTRACTION

Chloride

Nitrate

Nitrite

Sulfate

Solids (Inorganic)

Conductivity - Soil (147)

VA-TP-2066; modified from SSMA CHAPTER 15 AND APHA 2510 B

METER - SATURATION EXTRACTION

Conductivity

Solids (Inorganic)

Leachable Mercury - Solids (165)

VA-TM-1071; BC EMA/HWR - MLEP AND modified from EPA 245.7

CVAFS - MLEP EXTRACTION

Mercury

Solids (Inorganic)

Leachable Mercury - Solids (166)

VA-TM-1070; EPA 1311 AND modified from EPA 245.7

COLD VAPOUR ATOMIC FLUORESCENCE

Mercury

Solids (Inorganic)

Leachable Metals - Solids (121)

VA-TM-1071; BC EMA/HWR - MLEP & modified from EPA 200.7

ICP/OES- MLEP EXTRACTION

Arsenic

Barium

Boron

Cadmium

Chromium

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Copper
Lead
Selenium
Silver
Uranium
Zinc

Solids (Inorganic)

Leachable Metals - Solids (122)

VA-TM-1070; EPA 1311 & modified from EPA 200.7

ICP/OES - EXTRACTION - TCLP

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Nickel
Selenium
Silver
Thallium
Uranium
Vanadium
Zinc
Zirconium

Solids (Inorganic)

Mercury - Soil (138)

VA-TM-1061; modified from EPA 200.2/EPA 245.7 AND BCLM SALM IN SOIL

CVFAS - DIGESTION

Mercury

Solids (Inorganic)

Metals - Soil (045)

VA-TM-1066/NA-TP-2004; modified from EPA 200.2/200.7 & BCLM SALM IN SOIL

ICP/OES - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron

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Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Vanadium
Zinc

Solids (Inorganic)

Metals - Soil (152)

NA-TM-1002 & NA-TP-2004; modified from EPA 200.2/200.8 & BCLM SALM IN SOIL
ICP/MS - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Molybdenum
Nickel
Potassium
Selenium
Silver
Sodium
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc

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Solids (Inorganic)

Metals - Soil (153)

VA-TP-2066 & VA-TM-1072; modified from SSMA CHAPTER 15 & EPA 200.7

ICP/OES - SATURATION EXTRACTION

Calcium

Magnesium

Potassium

Sodium

Solids (Inorganic)

Methyl Mercury - Soil (173)

VA-TM-1062; modified from EPA 1630

P&T - GC - CVAFS - EXTRACTION

Methyl Mercury

Solids (Inorganic)

Moisture % - Soil (089)

VA-TM-1069; modified from ASTM D2974-00

GRAVIMETRIC

Moisture %

Solids (Inorganic)

pH - Soil (120)

VA-TP-2066; modified from SSMA CHAPTER 15 AND modified from APHA 4500-H B

METER - SATURATION EXTRACTION

pH

Solids (Inorganic)

pH - Soil (169)

VA-TM-1078; modified from "SSMA" CHAPTER 15, BCLM, and APHA 4500-H B

METER - FIXED RATIO EXTRACTION

pH

Solids (Inorganic)

Saturated Paste - Soil (149)

VA-TP-2066; modified from SSMA CHAPTER 15

SATURATION EXTRACTION

Saturation Percentage (%)

Solids (Inorganic)

Waste Oil - Solids (123)

VA-TM-1111; BCLM OIL AND GREASE (MINERAL) BY PETROLEUM ETHER

GRAVIMETRIC - EXTRACTION

Waste Oil Content

Solids (Organic)

Extractable Hydrocarbons - Soil (184)

NA-TM-1106/VA-TM-1116; BCLM EPH IN SOLIDS AND SILICA GEL CLEANUP OF SOLIDS. modified from EPA 3570.

GC/FID - EXTRACTION (COLD SHAKE)

EPH 10-19

EPH 19-32

EPH 19-32 (sg)

EPH10-19 (sg)

Solids (Organic)

Glycols - Soil (156)

VA-TM-1113; modified from EPA 8015 B

GC/FID - EXTRACTION

1,2-Propylene Glycol

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Diethylene Glycol
Ethylene Glycol
Triethylene Glycol

Solids (Organic)

Organochlorine Pesticides (OCP) - Soil (079)

VA-TM-1121; modified from EPA 3540/3610/3630/3660/8081

GC/ECD - EXTRACTION

2,4'-DDD

2,4'-DDE

2,4'-DDT (o,p'-DDT)

4,4'-DDD

4,4'-DDE

4,4'-DDT (p,p'-DDT)

Aldrin

alpha-BHC

beta-BHC

cis-Chlordane (alpha)

cis-Nonachlor

delta-BHC

Dieldrin

Endosulfan I

Endosulfan II

Endosulfan Sulfate

Endrin

gamma-BHC (Lindane)

Heptachlor

Heptachlor Epoxide

Methoxychlor

Mirex

Oxychlordane

trans-Chlordane (gamma)

trans-Nonachlor

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (189)

NATM1100; modified from CCME DEC 2000 NO. 1310; ALBERTA ENVIRONMENT INTERPRETATION, SEPT 2003

GC/FID - TUMBLER EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (190)

NATM1100; modified from CCME DEC 2000 NO. 1310; ALBERTA ENVIRONMENT INTERPRETATION, SEPT 2003

GRAVIMETRIC - TUMBLER EXTRACTION

F4: Gravimetric

F4G-Sq

Solids (Organic)

Phenols - Soil (071)

VA-TM-1122; modified from EPA 3570/8270, Knapp 1979

GC/MS - EXTRACTION

2-Chlorophenol

2,3-Dichlorophenol

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2,3,4-Trichlorophenol
 2,3,4,5-Tetrachlorophenol
 2,3,4,6-Tetrachlorophenol
 2,3,5-Trichlorophenol
 2,3,5,6-Tetrachlorophenol
 2,3,6-Trichlorophenol
 2,4-Dichlorophenol / 2,5-Dichlorophenol
 2,4-Dimethylphenol
 2,4,5-Trichlorophenol
 2,4,6-Trichlorophenol
 2,6-Dichlorophenol
 3-Chlorophenol
 3,4-Dichlorophenol
 3,4,5-Trichlorophenol
 3,5-Dichlorophenol
 4-Chloro-3-Methylphenol
 4-Chlorophenol
 m-cresol
 o-cresol
 p-cresol
 Pentachlorophenol
 Phenol

Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Soil (185)

NA-TM-1106; modified from EPA 3570/8270

GC/MS - EXTRACTION (COLD SHAKE)

2-Methylnaphthalene
 Acenaphthene
 Acenaphthylene
 Anthracene
 Benzo (a) anthracene
 Benzo (a) pyrene
 Benzo (b) fluoranthene
 Benzo(b&i)fluoranthene
 Benzo (g,h,i) perylene
 Benzo (k) fluoranthene
 Chrysene
 Dibenzo (a,h) anthracene
 Fluoranthene
 Fluorene
 Indeno (1,2,3 - cd) pyrene
 Naphthalene
 Phenanthrene
 Pyrene
 Quinoline

Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Soil (203)

NA-TM-1105; modified from EPA 3570/8270

GC/MS - EXTRACTION (SHORT COLD SHAKE)

2-Methylnaphthalene
 Acenaphthene
 Acenaphthylene
 Anthracene

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Benzo (a) anthracene
Benzo (a) pyrene
Benzo (b) fluoranthene
Benzo (g,h,i) perylene
Benzo (k) fluoranthene
Chrysene
Dibenzo (a,h) anthracene
Fluoranthene
Fluorene
Indeno (1,2,3 - cd) pyrene
Naphthalene
Phenanthrene
Pyrene

Solids (Organic)

Total PCBs - Soil (112)
VA-TM-1119; modified from EPA 3500, 3620, 3630, 3660, 3665, 8082
GC/ECD - EXTRACTION
Total PCB

Solids (Organic)

Volatile Hydrocarbons (VH) - Soil (202)
NA-TM-1103; modified from EPA 5021 A AND 8260B
GC/FID - HEADSPACE
F1: C6-C10
VH: (C6-C10)

Solids (Organic)

Volatile Organic Compounds (VOC) - Soil (201)
NA-TM-1102, NA-TM-1103, NA-TP2102; modified from EPA 5021A AND 8260B
GC/MS - HEADSPACE
1,1-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
1,1,1,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Benzene
Bromodichloromethane
Bromoform
Carbon Tetrachloride
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethylene
cis-1,3-Dichloropropene
Dichloromethane
Ethylbenzene
m/p-xylene

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Methyl t-butyl ether
o-xylene
Styrene
Tetrachloroethylene
Toluene
trans-1,2-Dichloroethylene
trans-1,3-Dichloropropene
Trichloroethylene
Trichlorofluoromethane
Vinyl Chloride

Tissue (Inorganic)

Methyl Mercury - Biological Tissue (172)
VA-TM-1062; modified from EPA 1630
P&T - GC - CVAFS - DIGESTION
Methyl Mercury

Tissue (Inorganic)

Moisture Percent - Biological Tissue (090)
VA-TM-1069; modified from PUGET SOUND PROTOCOLS
GRAVIMETRIC
Moisture %

Tissue (Inorganic)

Total Mercury - Biological Tissue (140)
VA-TM-1061; modified from EPA 200.3/245.7 & 1631
CVAFS - DIGESTION
Mercury

Tissue (Inorganic)

Total Metals - Biological Tissue (051)
VA-TM-1066/NA-TP-2003; modified from EPA 200.3/200.7
ICP/OES - DIGESTION
Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Selenium
Sodium
Strontium
Sulfur

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Thallium
Tin
Titanium
Vanadium
Zinc

Tissue (Inorganic)

Total Metals - Biological Tissue (100)

NA-TM-1002/NA-TP-2003; modified from EPA 200.3/200.8

ICP/MS - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Uranium
Vanadium
Zinc

Tissue (Inorganic)

Total Metals - Biological Tissue (200)

TMSM07_01/NA-TP-2003; modified from EPA 200.8

H⁺ RESOLUTION ICP/MS - DIGESTION

Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Cesium
Chromium
Cobalt
Copper
Gallium

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Indium
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel
Phosphorus
Potassium
Rhenium
Rubidium
Scandium
Selenium
Silver
Sodium
Strontium
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Uranium
Vanadium
Yttrium
Zinc
Zirconium

Water (Inorganic)

Acidity - Water (219)

VA-TM-1001; modified from APHA 2310

TITRIMETRIC

Acidity (pH 8.3)

Water (Inorganic)

Alkalinity - Water (001)

VA-TM-1002; modified from APHA 2320-B

TITRIMETRIC

Alkalinity (pH 4.5)

Alkalinity-Bicarbonate

Alkalinity-Carbonate

Alkalinity-Hydroxide

Water (Inorganic)

Alkalinity - Water (002)

WQSM01_02_02; modified from EPA 310.2

COLORIMETRIC

Alkalinity (pH 4.5)

Alkalinity-Bicarbonate

Alkalinity-Carbonate

Alkalinity-Hydroxide

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Water (Inorganic)

Ammonia - Water (208)

VA-TM-1024; IN-HOUSE

AUTO-FLUORESCENCE

Ammonia

Water (Inorganic)

Anions - Water (026)

NA-TM-1001; modified from EPA 300.1

IC

Bromide

Chloride

Fluoride

Nitrate

Nitrate plus Nitrite

Nitrite

Sulfate

Water (Inorganic)

Biochemical Oxygen Demand (BOD) - Water (027)

VA-TM-1032; modified from APHA 5210-B

D.O. METER

BOD (5 day)

CBOD (5 day)

Soluble BOD

Water (Inorganic)

Carbon - Water (091)

WQSM05_07_01; modified from APHA 5310 B

IR - COMBUSTION

Dissolved Organic Carbon

Organic Carbon

Total Carbon

Water (Inorganic)

Chemical Oxygen Demand (COD) - Water (028)

VA-TM-1033; modified from APHA 5220-D

COLOR - DIGESTION

COD

Water (Inorganic)

Chloride - Water (003)

VA-TM-1014; modified from APHA 4500-Cl -E

COLORIMETRIC

Chloride

Water (Inorganic)

Chlorophyll-a - Water (220)

VA-TM-1038; modified from EPA 445.0

FLUORIMETRY

Chlorophyll a

Water (Inorganic)

Colour - Water (015)

VA-TM-1004; modified from BCLM AND APHA 2120-C

COLORIMETRIC

Apparent Color

True Colour

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