



CALA

Canadian Association for
Laboratory Accreditation Inc.

CALA Directory of Laboratories

Membership Number: 3573

Laboratory Name: AGAT Laboratories (Grande Prairie)

Parent Institution: AGAT Laboratories Ltd.

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Standard: Conforms with requirements of ISO/IEC 17025

Clients Served: All Interested Parties

Revised On: March 6, 2018

Valid To: September 3, 2020

Scope of Accreditation

Soil (Inorganic)

Atterberg Limits and Plasticity Index - Soil (077)

GSL-0651; modified from ASTM D4318-10

LIQUID LIMIT MACHINE

Liquid Limit

Plastic Index

Plastic Limit

Solids (Inorganic)

Anions - Soil (048)

GIN-0150, GSL-0140; modified from SM 4110 B and MCKEAGUE 3.21

IC - EXTRACTION

Bromide

Chloride

Fluoride

Nitrate

Nitrite

Sulphate

Solids (Inorganic)

Anions - Solid Waste (058)

GIN-0150, GSL-0650; modified from SCHED 1-4, BC HAZARDOUS WASTE REGULATIONS

IC - EXTRACTION

Fluoride

Nitrate

Nitrite

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Solids (Inorganic)

Boron - Soil (033)

GIN-0140, GSL-0270; modified from SSMA CARTER 2008 and SM 3120 B and SW 846-3050 B

ICP/OES - EXTRACTION

Boron

Solids (Inorganic)

Cations - Soil (064)

GSL-0140, GIN-0140; modified from MCKEAGUE 3.2

ICP/OES - EXTRACTION

Calcium

Magnesium

Potassium

Sodium

Soluble Boron

Solids (Inorganic)

Conductivity - Soil (003)

GMM-0205/GSL-0140; modified from MCKEAGUE 4.13 and MCKEAGUE 3.2

CONDUCTIVITY METER

Conductivity

Solids (Inorganic)

Extractable Barium - Soil (065)

GSL-0610, GIN-0140; modified from AB SOIL QUALITY GUIDELINE and BC ME METHOD 9

ICP/OES - EXTRACTION

Extractable Barium -0.1M CaCl₂

Extractable Barium -1.0M CaCl₂

Solids (Inorganic)

Flashpoint - Soil (001)

GTO-2210; modified from ASTM D93-02A

PENSKY MARTENS CLOSED CUP

Flashpoint

Solids (Inorganic)

Free Liquid - Soil (055)

GSL-0580; modified from EPA SW-846 9095

PAINT FILTER TEST

Free Liquid

Solids (Inorganic)

Hexavalent Chromium - Soil (047)

GSL-0600; modified from SSSA PART 3 CH 25 and SM 3500 B

SPECTROPHOTOMETRY - EXTRACTION

Hexavalent chromium

Solids (Inorganic)

Leachable Metals - Solid Waste (053)

GIN-0140, GSL-0420; IN-HOUSE LEACHATE

ICP/OES - EXTRACTION

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

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Copper
Iron
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Uranium
Vanadium
Zinc
Zirconium

Solids (Inorganic)

Leachable Metals - Solid Waste (056)

GIN-0140, GSL-0650; modified from SCHED 1-4, BC HAZARDOUS WASTE REGULATIONS
ICP/OES - EXTRACTION

Arsenic
Barium
Boron
Cadmium
Chromium
Copper
Lead
Mercury
Selenium
Silver
Uranium
Zinc

Solids (Inorganic)

Mercury - Soil (035)

GIN-0161, GSL-0390; modified from SM 3112 B and EPA SW-846 3050B
COLD VAPOUR AA

Mercury

Solids (Inorganic)

Metals - Soil (066)

GIN-0141, GSL-0390; modified from SM 3125 B and EPA SW-846 3050B
ICP/MS - DIGESTION

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Manganese
Mercury
Molybdenum
Nickel
Selenium

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Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc

Solids (Inorganic)

Oil and Grease - Soil (006)
GMM-0330; modified from SM 5520 D
SOXHLET EXTRACTION - GRAVIMETRIC
Oil and Grease

Solids (Inorganic)

Oil and Grease - Soil (060)
GMM-3500; modified from BCMOE D219, BC REGULATIONS
GRAVIMETRIC - SWOG
Oil and Grease

Solids (Inorganic)

Particle Size Analysis (PSA) - Soil (049)
GSL-0540; modified from SHELDRIK, B.H. & WANG, C, CARTER MO ED 2007
SIEVE ANALYSIS
Particle Size (75 microns)

Solids (Inorganic)

Particle Size Analysis (PSA) - Soil (050)
GSL-0520; modified from SHELDRIK, B.H. & WANG, C, CARTER MO ED 2007
HYDROMETER (2 PT.)
% clay
% Sand
% Silt

Solids (Inorganic)

Percent Moisture - Soil (074)
GSL-0310; modified from CARTER, ET AL - SOIL SAMPLING & METHOD ANALYSIS, 2ND EDITION
GRAVIMETRIC
Moisture %

Solids (Inorganic)

Percent Saturation - Soil (073)
GSL-0140; modified from CARTER, ET AL - SOIL SAMPLING & METHOD ANALYSIS, 2ND EDITION
GRAVIMETRIC
% Saturation (Sat Paste)

Solids (Inorganic)

pH - Soil (061)
GIN-0110, GIN-0111; modified from CARTER & GREGORICH, SOIL SAMPLING & METHODS OF ANALYSIS,
2ND ED.
pH METER
pH (Saturated Paste)
pH-1:1 Soil:Water

Solids (Inorganic)

pH - Soil (071)
GIN-0111; CARTER, ET AL - SOIL SAMPLING & METHOD ANALYSIS, 2ND EDITION
pH METER - Extraction
pH (1:2) Soil: CaCl₂

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Solids (Inorganic)

Specific Gravity - Soil (072)

GSL-0230; modified from BAROID MUD BALANCE, ASTM D 4380, G50, and DRILLING WASTE

MANAGEMENT

MUD BALANCE

Specific Gravity (Sat Paste)

Solids (Inorganic)

Total Barium - Soil, Sludge, Sediment (075)

GSL-0620, GIN-0140; modified from ASTM D4503-08

LITHIUM METABORITE FUSION ICP/OES

Barium

Solids (Organic)

BTEX - Soil (037)

GTO-0570; modified from EPA SW-846 5030B and EPA SW-846 8260B and IN-HOUSE LEACHATE

GC/MS - PURGE AND TRAP/EXTRACTION

Benzene

Ethylbenzene

m/p-xylene

o-xylene

Styrene

Toluene

Solids (Organic)

BTEX - Soil (Leachate) (039)

GTO-0050; IN-HOUSE LEACHATE and modified from EPA 5030B and EPA 8260B (ANALYSIS)

GC/MS - PURGE AND TRAP

Benzene

Ethylbenzene

m,p-Xylene

o-Xylene

Toluene

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (036)

GTO-0570; CCME TIER 1

GC/FID - EXTRACTION/PURGE AND TRAP

F1: C6-C10

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (038)

GTO-0560; modified from CCME TIER 1

GC/FID - EXTRACTION

F2: C10-C16

F3: C16-C34

F4: C34-C50

Solids (Organic)

Petroleum Hydrocarbons (PHC) - Soil (052)

GTO-0560; CCME TIER 1

GRAVIMETRIC ANALYSIS

F4: Gravimetric

Solids (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Soil (043)

GTO-0500; modified from EPA SW-846 8270D and EPA SW-846 3540C

GC/MS - EXTRACTION

Acenaphthene

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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 (Parameter suspended on 3/7/2018)
Indeno (1,2,3 - cd) pyrene
Naphthalene
Phenanthrene
Pyrene

Solids (Organic)

Total Extractable Hydrocarbons (TEH) - Soil (045)
GTO-0510; modified from EPA SW-846 CH 4 and AEC V92-M2 and MOE-BC PBM D-156 BCMOE CSR EPH IN
SOLIDS BY GC/FID
GC/FID - EXTRACTION
C10-32
C11-C30
Heavy Extractable Petroleum Hydrocarbons (HEPH): C19-C32
Light Extractable Petroleum Hydrocarbons (LEPH): C10-C19

Water (Inorganic)

Alkalinity - Water (014)
GIN-0100; modified from SM 2320 B
TITRATION
Alkalinity (pH 4.5)

Water (Inorganic)

Ammonia - Water (062)
GIN-0200; modified from SM 4500-NH3
COLORIMETRIC
Ammonia

Water (Inorganic)

Anions - Water (028)
GIN-0150; modified from SM 4110 B
ION CHROMATOGRAPHY
Bromide
Chloride
Fluoride
Nitrate
Nitrite
Sulfate

Water (Inorganic)

Chemical Oxygen Demand (COD) - Water (024)
GIN-0280; modified from EPA 410.4
SPECTROPHOTOMETRIC
COD

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Water (Inorganic)

Conductivity - Water (016)

GMM-0205; modified from SM 2510

CONDUCTIVITY METER

Conductivity (25°C)

Water (Inorganic)

Dissolved Metals - Water (029)

GIN-0140, GWT-0200; modified from SM 3120 B

ICP/OES

Aluminum

Barium

Beryllium

Bismuth

Boron

Cadmium

Calcium

Chromium

Cobalt

Copper

Iron

Lead

Lithium

Magnesium

Manganese

Molybdenum

Nickel

Potassium

Silicon

Silver

Sodium

Strontium

Sulfur

Tin

Titanium

Tungsten

Vanadium

Zinc

Zirconium

Water (Inorganic)

Dissolved Metals - Water (067)

GIN-0141, GWT-0200; modified from SM 3125 B

ICP/MS

Antimony

Arsenic

Barium

Beryllium

Boron

Cadmium

Chromium

Cobalt

Copper

Iron

Lead

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Lithium
Manganese
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc

Water (Inorganic)

Mercury - Water (034)
GIN-0160; modified from SM 3112 B
COLD VAPOUR AA
Mercury

Water (Inorganic)

Oil and Grease - Water (027)
GMM-0330; modified from BCELM METHOD D-210
LIQUID - LIQUID EXTRACTION - GRAVIMETRIC
Total Oil and Grease

Water (Inorganic)

pH - Water (020)
GIN-0100; modified from SM 4500-H+ B
pH METER
pH

Water (Inorganic)

Solids - Water (021)
GWT-0610/GWT-0600; modified from SM 2540 C and SM 2540 D
GRAVIMETRIC
Total Dissolved Solids
Total Suspended Solids

Water (Inorganic)

Total Metals - Water (040)
GIN-0140, GWT-0200; modified from SM 3120 B
ICP/OES - DIGESTION
Aluminum
Barium
Boron
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Magnesium
Manganese
Molybdenum
Nickel

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Phosphorus
Potassium
Silicon
Silver
Sodium
Strontium
Sulphur
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

Water (Inorganic)

Total Metals - Water (068)

GIN-0141, GWT-0200; modified from SM 3125 B and SM 3030 E

ICP/MS - DIGESTION

Antimony
Arsenic
Barium
Beryllium
Bismuth
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Lithium
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc
Zirconium

Water (Inorganic)

Turbidity - Water (022)

GWT-0500; modified from SM 2130 B

NEPHELOMETRY

Turbidity

Water (Organic)

Extractable Hydrocarbons - Water (076)

GTO-0511; modified from EPA SW-846 3510 and AEC V92-M2

GC/FID

F3: C16-C34

F4: C34-C50

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Water (Organic)

Polycyclic Aromatic Hydrocarbons (PAH) - Water (041)

GTO-0200; modified from EPA SW-846 8270D and EPA SW-846 3510B

GC/MS - EXTRACTION

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)

Total Extractable Hydrocarbons (TEH) - Water (044)

GTO-0511; modified from EPA SW-846 3510 and AEC V92-M2 and MOE-BC PBM D-128

GC/FID

C11-C30

F2: C10-C16

Heavy Extractable Petroleum Hydrocarbons (HEPH): C19-C32

Light Extractable Petroleum Hydrocarbons (LEPH): C10-C19

Water (Organic)

Total Purgeable Hydrocarbons (TPH) - Water (046)

GTO-0540; modified from EPA SW-846 5030B and EPA SW-846 8260B

GC/FID - PURGE AND TRAP

F1: C6-C10

TP_gH (C5-C10)

Water (Organic)

Volatile Organic Compounds (VOC) - Water (042)

GTO-0540; modified from EPA SW-846 8260B and EPA SW-846 5030C and MOE-BC PBM D-74

GC/MS - PURGE AND TRAP

Benzene

Ethylbenzene

m/p-xylene

o-xylene

Styrene

Toluene

Water (Toxicology)

Microtox - Liquid Phase - Water (025)

GTX-0100; modified from EPS 1/RM/24 and AEUB DIRECTIVE G-50

BIOLUMINESCENCE

Microtox IC50 (15 min)

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