



## TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

### Scope of Accreditation

Accredited Laboratory No. 672

**Legal Name of Accredited Laboratory:** AGAT Laboratories LTD.

**Location Name or Operating as (if applicable):** Petroleum and Lubricating Testing Services, Oil Sands, Air, Forensic and Test Method Development Services

**Contact Name:** Reneh Mekael

**Address:** 3650 21<sup>st</sup> Street NE Calgary, Alberta T2E6V6

**Telephone:** 403 299 2090

**Fax:** 403 299 2105

**Website:** [www.agatlabs.com](http://www.agatlabs.com)

**Email:** [mekael@agatlabs.com](mailto:mekael@agatlabs.com)

<b>SCC File Number:</b>	15827
<b>Accreditation Standard(s):</b>	ISO/IEC 17025:2017
<b>Fields of Testing:</b>	Chemical/Physical
<b>Program Specialty Area:</b>	Environmental Testing (ET) Forensic Test Method Development and Evaluation and Non-routine Testing (TMDNRT)
<b>Initial Accreditation:</b>	2010-04-27
<b>Most Recent Accreditation:</b>	2020-12-10
<b>Accreditation Valid to:</b>	2022-04-27



**TEST METHOD DEVELOPMENT & EVALUATION AND NON-ROUTINE TESTING**

*(Testing conducted at 2420-42 Avenue NE, Calgary AB T2E7T6)*

Note: Laboratories accredited under this Program Specialty Area have demonstrated that they meet ISO/IEC 17025 requirements for routine testing under the same product classification as described below.

Description of Activities for which AGAT is accredited includes:

1. Modification, improvement and validation of published or existing test methodology for the screening and determination of chemical residues and contaminations relevant to environmental and forensic samples.
2. Development and validation of new testing methodology for the screening and determination of chemical residues and contaminants relevant to environmental and forensic samples.
3. Development and validation of mass spectral techniques for the confirmation of the identity of chemical residues and contaminants relevant to environmental and forensic samples.
4. Screening, determination and confirmation of the identity of chemical residues and contaminants relevant to environmental and forensic samples for non-routine purposes.

Procedure used for Test Method Development & Evaluation and Non-routine Testing:  
 TMD-60-250000 Handling of Test Method Development and Non-routine Testing.

**ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY**

*(Testing conducted at 2420-42 Avenue NE, Calgary AB T2E7T6)*

**Environmental, Occupational Health and Safety:**

**Air**

AQM-43-16000	Determination of Anions by Ion Chromatography (Modified APHA Method 4110B; EPA 6, EPA 8, ASSC Method 8, EPA 26, MMCAAP Method 47071, NIOSH 7906, NIOSH 7907, NIOSH 7908, NIOSH 6004, OSHA ID-200, OSHA ID-182) Fluoride (F <sup>-</sup> ) Chloride (Cl <sup>-</sup> ) Bromide (Br <sup>-</sup> ) Phosphate (PO <sub>4</sub> <sup>3-</sup> ) Nitrite (NO <sub>2</sub> <sup>-</sup> ) Nitrate (NO <sub>3</sub> <sup>-</sup> )
--------------	---



	Sulphate (SO <sub>4</sub> <sup>2-</sup> ) Sulfite (SO <sub>3</sub> <sup>2-</sup> ) Sulfur Dioxide (SO <sub>2</sub> ) Sulfuric Acid mist (H <sub>2</sub> SO <sub>4</sub> )
AQM-43-16002	Gravimetric Determination of Particulate Matter from Stationary and Other Sources (Modified Alberta Stacks Sampling Code Method 5, AENV, US EPA Method 5, US EPA Method 201A and US EPA 17)
AQM-43-16004	Determination of Nitrogen Dioxide (NO <sub>2</sub> ) in the Air by Ion Chromatography (in-house)
AQM-43-16005	Determination of Nitrogen Oxide (NO <sub>x</sub> ), from Stationary Sources (Alberta Stack Sampling Code, Method 7A, and Method 7D AENV; US EPA Method 7A; US EPA Method 7D)
AQM-43-16006	Determination of Hydrogen Sulfide (H <sub>2</sub> S) in Air by Spectrofluorometry (in-house)
AQM-43-16007	Determination of Sulfur Dioxide (SO <sub>2</sub> ) in Air by Ion Chromatography (in-house)
AQM-43-16008	Determination of Ozone (O <sub>3</sub> ) in Air by Ion Chromatography (in-house)
AQM-43-16009	Determination of Dustfall (Total and Fixed) by Gravimetric Analysis (Modified ASTM D1739, "Methods Manual for Chemical Analysis of Atmospheric Pollutants", Method No. 32020)
AQM-43-16010	Determination of Total Particulate and Dew Point in Air and Other Sources (Modified ASTM D1142, NIOSH 0500, Colorimetry)
AQM-43-16011	Determination of Ammonia (as N) and Hydrogen Sulfide in Aqueous Samples by Colorimetry (Modified Methods Manual for Chemical Analysis of Atmospheric Pollutants Method #41515, Method #43535)
AQM-43-16012	Determination of Ammonia (NH <sub>3</sub> ) in Air by Spectrofluorometry (in-house)
IHF-60-25002	Determination of Fixed Gases and Volatile Hydrocarbons in Air by Gas Chromatography (Modified ASTM D1946, EPA TO-14A, TO-15, NIOSH 6602, EPA



	10B, ASSC Method 18, EPA 18, ASSC Method 3C, EPA 3C) Oxygen Nitrogen Methane Ethane Carbon Monoxide Carbon Dioxide Non Methane Volatile Hydrocarbons Volatile Halogenated Hydrocarbons Nitrous Oxide Sulfur Hexafluoride C3-C12 Dimethyl Ether 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Benzene Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dichlorodifluoromethane Dichlorotetrafluoroethane (R114) Ethylbenzene Hexachlorobutadiene Methylene chloride m-Xylene o-Xylene p-Xylene Styrene Tetrachloroethene Toluene trans-1,3-Dichloropropene
--	--



	Trichloroethene Trichlorofluoromethane Trichlorotrifluoroethane (R113) Vinyl chloride
IHF-60-25003	Determination of Volatile Organic Compounds in Air by Gas Chromatography (Modified NIOSH 1500, NIOSH 1501, NIOSH 1003 ) 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-chloropropane (DBCP) 1,2-Dibromoethane (EDB) 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone (MEK) 2-Chloroethylvinylether 2-Hexanone 4-Methyl-2-pentanone (MIBK) Acetone Acetonitrile Acrolein Acrylonitrile Benzene Bromobenzene Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane



	<p>Ethylbenzene Hexachlorobutadiene Isopropylbenzene (Cumene) m,p-Xylene Methyl tert-butyl ether (MTBE) Methylene chloride Naphthalene o-Xylene Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane Vinyl acetate Vinyl chloride Total VOC as Hexane</p>
IHF-60-25006	<p>Determination of Hydrocarbon Based Biological Markers by Gas Chromatography in Oil and Soil Samples(in-house) S21 S22 DIA27S DIA27R DIA28Sab DIA28Rab DIA29S DIA29R 5aaa C27S C27abbR C27abbR(218) C27abbS C27abbS(218) 5aaa C27R 5aaa C28S C28abbR C28abbR(218) C28abbS C28abbS(218) 5aaa C28R 5aaa C29S C29abbR C29abbR(218) C29abbS C29abbS(218) 5aaa C29R Tr23 Tr24</p>



	Tr25 Tr26A Tr26B TET24 Tr27a Tr27b Tr28A Tr28B Tr29A Tr29B Tr30A Tr30B Tr31A Tr31B Ts Tm H28 NOR25H H29 C29Ts 30d M29 30O H30 M30 H31S H31R 30G H32S H32R H33S H33R H34S H34R H35S H35R H36S (TR35) H36R (TR35) D30 (177) H30 (177) H30b C20TA C21TA C22TA SC26TA RC26TA (SC27TA) SC28TA RC27TA RC28TA
--	--



	C21MA 1 C22MA 2 C23MA 3 C27MA 4_5 C27MA 6_7 C28MA 8 C28MA-U C27MA 9 C28MA 10_11 C29MA 12 C29MA-U C29MA 13 C28MA 14_15 C29MA 16 C30MA 17 C30MA 18 C4B C5B C6B DEC (cis) DEC(trans) 1-DEC 2-DEC 3-DEC 4-DEC Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene N2 N3 N4 N5 Biphenyl Bp1 Bp2 Acenaphthylene Acenaphthene AC1 AC2 Fluorene FL1 FL2 FL3 Phenanthrene Anthracene PA1 PA2 PA3 PA4
--	---





	PA5 Retene Fluoranthene Pyrene Benzo[a,b,c]fluorenes FP1 FP2 FP3 FP4 Benzo(c)phenanthrene Benzo(a)anthracene Cyclopenta[cd]pyrene Triphenylene Chrysene BC1 BC2 BC3 BC4 Benzo[b+j]fluoranthene Benzo[k]fluoranthene Benzo[j]fluoranthene Benzo[a]fluoranthene Benzo[e]pyrene Benzo[a]pyrene Perylene BAP1 BAP2 Indeno[1,2,3-c,d]fluoranthene Indeno[1,2,3-c,d]pyrene Dibenzo[a,c]anthracene Dibenzo[a,h]anthracene Benzo[g,h,i]perylene Benzothiophene BT1 BT2 Dibenzothiophene DB1 DB2 DB3 DB4 DB5 Benzo[b]naphtho[2,1-d]thiophene Benzo[b]naphtho[1,2-d]thiophene Benzo[b]naphtho[2,3-d]thiophene NBT1 NBT2 NBT3 NBT4 nC10
--	--



	isoC11 nC11 isoC12 nC12 isoC13 nC13 isoC14 nC14 Farnesane nC15 nC16 nor-Pristane Pristane Pristane (FID) nC17 nC17 (FID) Phytane Phytane (FID) nC18 nC18 (FID) nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37 nC38 nC39 nC40 nC41 nC42 nC43 nC44 Tetraethyl Lead (TEL)
--	--



Water

(Brine)

IHF-60-25010	Determination of Metals in Water Using Triple-Quad Inductively Coupled Plasma – Mass Spectrometry (Modified SM 3125B, EPA 1669) Aluminum Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium* Cesium Chromium Cobalt Copper Gallium Iron Lead Lithium Magnesium* Manganese Molybdenum Nickel Phosphorus Potassium* Rubidium Selenium Silicon* Silver Sodium* Strontium Sulfur* Tellurium Thallium Thorium Tin Titanium Tungsten Uranium Vanadium Yttrium Zinc Zirconium
--------------	--



## Water (Inorganic)

*(Testing conducted at 3650 – 21<sup>st</sup> Street NE, Calgary AB T2E6V6)*

WAT-0100	Determination of Soluble Sulfides in Water by Iodometric Titration (Modified APHA 4500-S)
WAT-0200	Determination of Chloride Ion Concentration in Water by Mercuric Nitrate Titration (Modified ASTM D512 Method A)
WAT-0300	Determination of pH, Alkalinity and Acidity in Water Using Benchtop pH meter for Conducting Subsequent Manual Acid Base Titration (Modified APHA 2310B and APHA 2320B)
WAT-0301	Determination of Conductivity, pH and Alkalinity of Water using PC-Titrate (Modified ASTM D1067) Autotitrator
WAT-0501	Determination of Freezing Point By Refractometer (ASTM D3321)
WAT-0600	Determination of Total Suspended Solids Dried at 103°C-105°C (APHA 2540D)
WAT-0601	Determination of Total Dissolved Solids Dried at 180°C (APHA 2540 C)
WAT-2100	Determination of Inorganic Anions in Water using Ion Chromatography (APHA 4110B) Chloride Nitrate Bromide Nitrite Sulfate
WAT-2301	Determination of Relative Density of Water using Portable Digital Density Meter (Modified ASTM D7777)
WAT-2302	Determination of Conductivity and Resistivity of Water using Conductivity Meter of Analytical Water Samples (APHA 2510 B)
WAT-2303	Determination of Selected Elements in Water Using Inductively Coupled Plasma Optical Emission Spectrometer (Modified EPA 200.7) Barium Calcium



	Iron Magnesium Manganese Potassium Sodium Strontium
WAT-2308	Determination of Iodide in Water using ISE Meter (Modified ASTM D3869 Test method C) Ion selective method

**Water (Microbiology)**

WAT-2304	Estimating Biological Activity of Acid Producing Bacteria in Water by APB-BART™ Test Kits (Acid producing bacteria- Biological Activity Reaction Test BART User Manual 2004 edition)
WAT-2305	Estimating Biological Activity of Sulphate reducing bacteria in Water by SRB-BART™ Test Kits (Sulphate reducing bacteria- Biological Activity Reaction Test BART User Manual 2004 edition)
WAT-2307	Estimating Biological Activity of Iron Related Bacteria in Water by IRB-BART™ Test Kits (Iron related bacteria Biological Activity Reaction Test BART User Manual 2004 edition)

**FORENSICS**

*(Testing conducted at 2420-42 Avenue NE, Calgary AB T2E7T6)*

**Forensic Chemistry / Trace Analysis**

IHF-60-25001	Determination of Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry (ASTM E1618)
IHF-60-25007	Determination of Extractable Petroleum Hydrocarbons in Soil by Two Dimensional Gas Chromatography (in-house) F2 F3 F4



	2-Methylnaphthalene Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b+j) fluoranthene/Benzo (k) fluoranthene Chrysene Fluoranthene Fluorene Indeno (1,2,3-c,d) pyrene/Dibenzo (a,h) anthracene Naphthalene Phenanthrene Pyrene A10-A12 A12-A16 A16-A21 A21-A34 C8-C10 C10-C12 C12-C16 C16-C21 C21-C34 C34-C50 A8-A10
--	--

**NON-METALLIC MINERALS AND PRODUCTS**

**Oil Shale and Tar Sands:**

*(Testing conducted at 3801-21 Street NE, Calgary AB T2E6T5)*

ROCK-04-26000	Determination of Water, Minerals and Bitumen in Oil Sands by Dean Stark Analysis Performed by Direct Determination (Modified ACOSA method)
ROCK-04-26001	Determination of Water, Minerals and Bitumen in Oil Sands by Dean Stark Analysis Performed by Weight Difference (Modified ACOSA method)
ROCK-31-001	Determination of Methylene Blue Index of Oil Sands (Modified ASTM C837)
ROCK-31-002	Evaluation of Particle Size Distribution (PSD) of Oil Sands Wet and Dry Sieve Combined (Modified API40 Recommended Practices)



ROCK-31-004	Determination of Particle Size Distribution (PSD) of Oil Sands Samples by Laser Diffraction (in-house)

**Petroleum Crudes and Natural Gas:**

*(Testing conducted at 3650 – 21<sup>st</sup> Street NE, Calgary AB T2E6V6)*

HC-0100	Determination of Density, Relative Density and API Gravity of Liquids by Digital Density Meter (ASTM D4052; ASTM D5002)
HC-0120	Determination of Hydrogen Sulfide by Tutweiler Titration and Stain Tubes (GPA C1; GPA 2377)
HC-0160	Determination of Hydrocarbon from Methane (C1) to Decane (C10) and inert gases in Gas Phase Mixtures by GC/TCD and GC/FID (Modified GPA 2261, GPA 2286) Helium Hydrogen Nitrogen Carbon Dioxide Methanol Methane Ethane Propane Isobutane n-Butane Isopentane n-Pentane Hexane Heptanes+ Oxygen Carbon Dioxide C1-C15+ Benzene Ethylbenzene m/p-Xylene



	o- Xylene Toluene
HC-0200	Determination of Water and Sediment in Crude Oil by the Centrifuge Method (Modified ASTM D4007) Solids Fraction Water Fraction
HC-0300	Determination of Cloud Point of Petroleum Products and Liquid Fuels (ASTM D2500; ASTM D5771)
HC-0310	Determination of Hydrocarbon C1 to C30+ by Flame Ionization Detection (Atmospheric and Pressurized Samples after Flashing (Modified GPA 2186) Methane Ethane Propane Iso-butane n-Butane Iso-pentane n-Pentane Cyclopentane Hexane Methylcyclopentane Benzene Cyclohexane Heptanes Methylcyclohexane Toluene Octane Ethylbenzene o-Xylene m,p-Xylene Nonane Trimethylbenzene Decanes Undecanes Dodecanes Tridecanes Tetradecanes Pentadecanes Hexadecanes Heptadecanes Octadecanes





	<p>Nonadecanes Eicosanes Heneicosanes Docosanes Tricosanes Tetracosanes Pentacosanes Hexacosanes Heptacosanes Octacosanes Nonacosanes Tricontanes+</p>
HC-0355	Flashing a Pressurized Hydrocarbon Liquid Sample to Atmospheric Pressure by the Single Stage Flash Method and Obtaining a Gas/Oil Ratio (in-house)
HC-0420	Determination of Flash Point by Pensky-Martens Closed Cup Tester (ASTM D93)
HC-0500	Determination of Pour Point in Petroleum Products (ASTM D97)
HC-0500	Determination of no flow point and pour Point of Petroleum Products and Liquid Fuels (ASTM D7346)
HC-0500	Determination of Pour Point of Crude Oils (ASTM D5853)
HC-0600	Determination of Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity) (ASTM D445)
HC-0610	Determination of Dynamic Viscosity (cP or mPa*s) and Density of Liquids by Stabinger Viscometer (and the Calculation of Kinematic Viscosity) (ASTM D7042)
HC-0700	Determination of Vapor Pressure of Petroleum Products by Reid Method (ASTM D323)
HC-0801	Determination of Organosulfur Compounds in Liquid and Gaseous Sample using GC/TCD/SCD (Modified UOP 791 ASTM D5504, ASTM D5623)
HC-0900	<p>Determination of Natural Gas Liquid and Liquefied Petroleum Gas Mixtures Containing the following Components by Gas Chromatography GC/TCD (GPA 2177)</p> <p>Nitrogen Carbon Dioxide Methane</p>



	Ethane Propane Isobutane n-Butane Isopentane n-Pentane Hexane Heptane
HC-0904	Determination of PIONAOX(U) in Atmospheric and Pressurized Liquid Hydrocarbon Samples by GC-FID (ASTM D6730) P- n-paraffins I- iso-paraffins O- Olefins N-Naphthenes A- Aromatics OX-Oxygenates U-Unknown Hydrocarbons
HC-0905	Determination of Hydrocarbon Compounds Ranging from C1 to C24+ in Live Crude Oil and Condensate Samples Using GC/FID Coupled with Heated Pressurized Liquid Injection System Valve (HPLIS) (ASTM D8003)
HC-1200	Determination of Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents (ASTM D 611 Method A) Aniline Point, °C Mixed Aniline Point, °C
HC-1300	Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure (ASTM D86) Initial Boiling Point, °C 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, and 90% Recovery, °C Final Boiling Point, °C Recovered, Volume % Residue, Volume % Loss, Volume %
HC-2000	Determination of Asphaltenes (pentane insoluble) %wt Content in Oil (Modified ASTM D2007 Annex A)



HC-2100	Determination of Heptane Insoluble Asphaltene Content in Oil %wt (Modified ASTM D6560)
HC-3100	Determination of Sulfur Content Mass% or ppm in Crude Oils and its Products by Energy Dispersive X-Ray Fluorescence Spectrometry (ASTM D4294)
HC-3120	Determination of Wax Content %wt of Petroleum Oils and Asphalts (Modified UOP 46-64)
HC-3180	Determination of Pentane Insolubles by Membrane Filtration (Modified ASTM D4055)
HC-3181	Determination of Boiling Point of Samples with Residues Such as Crude Oils and Atmospheric and Vacuum Residues by High Temperature Gas Chromatography (ASTM D7169)
HC-3184	Determination of Flash Point by TAG Closed cup Tester (ASTM D56)
HC-3188	Determination of Light Hydrocarbons (C1-C9) in Stabilized Crude Oils by Gas Chromatography (ASTM D7900)

**Petroleum Refinery Products (including asphalt materials, petrochemicals, fuels and lubricants):**

**Fuels and Lubricants**

LTS-30-8001	Determination of Kinematic Viscosity of Transparent and Opaque Liquids cSt at 40 and 100 degrees Celsius Using An Automatic Viscometer and Calculation of Dynamic Viscosity) (ASTM D445)
LTS-30-8007	Determination of Oil Contamination by Automatic Particle Count and Particle Shape Classification Using a Direct Imaging Integrated Tester (ASTM D 7596 )
LTS-30-8008	Determination Of Water In Petroleum Products, Lubricating Oils And Additives By Karl Fischer Titration Water % (ASTM D6304)
LTS-30-8014	Determination of Copper Corrosion from Petroleum Products by Copper Strip Tarnish Test (ASTM D130)
LTS-30-8015	Determination of Additive Elements, Wear Metals, and Contaminants in Used and Unused Lubricating Oils and by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) (ASTM D5185) Aluminium Silver Arsenic Boron Barium



	<p>Calcium Cadmium Chromium Copper Iron Potassium Magnesium Manganese Molybdenum Sodium Nickel Phosphorus Lead Antimony Silicon Strontium Titanium Vanadium Zinc Zirconium</p>
LTS-30-8024	Determination of Freezing Point in Degrees Celsius of Aviation Fuels (Modified ASTM D2386)
LTS-30-8028	Determination of Water Separation Characteristics of Aviation Turbine Fuels by Portable Separometer as per MSEP Rating (ASTM D3948)
LTS-30-8029	Determination of Electrical Conductivity of Aviation and Distillate Fuels in pS/m (ASTM D2624)
LTS-30-8030	Determination of Saybolt Color of Petroleum Products (ASTM D156)
LTS-30-8032	Determination of Flash point in degree Celsius by Tag Closed Cup Tester (ASTM D56)
LTS-30-8034	<p>Determination of Distillation of Petroleum Products at Atmospheric Pressure (ASTM D86)</p> <p>Initial Boiling Point, °C 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, and 90% Recovery, °C Final Boiling Point, °C Recovered, Volume % Residue, Volume % Loss, Volume %</p>
LTS-30-8035	Determination of Particle Contamination in Aviation Fuels by Laboratory Filtration of Solids in mg/L (Modified ASTM D5452)
LTS-30-8038	Determination of base number in mg/g KOH of Petroleum Products by Potentiometric Perchloric Acid Titration (ASTM D 2896)
LTS-30-8040	Determination of Acid Number of Petroleum Products by Potentiometric Titration (Modified ASTM D664)



LTS-30-8041	Condition Monitoring of In-service Lubricants by Trend Analysis using Fourier Transform Infrared (FT-IR) Spectrometry (ASTM E2412) Soot Oxidation Nitration Sulphation Phosphate Antiwear
LTS-30-8042	Determination of API and Density of Jet Fuel by Digital Density Meter (Modified ASTM D4052)
LTS-30-8047	Determining Insoluble Color Bodies in In-service Oil by Membrane Patch Colorimetry (ASTM D7843) • MPC Varnish Potential
LTS-30-8048	Remaining Useful Life of Lubricant Oils by Determination of Amine and Phenol Groups • Amine Remaining, % • Phenol Remaining, % (ASTM D6971)
LTS-30-8049	Determination Of Percent Fuel Dilution By Gas Chromatography • Diesel, % • Gasoline, % (ASTM D7593)
LTS-30-8050	Determining Corrosive Properties Of Cargoes In Petroleum Product Pipelines Corrosive Rating, as per NACE TM0172

Number of Scope Listings: 83  
 Number of Forensic Techniques: 2

**Notes:**

**\* Marked analytes are tested only in water.**

**ISO/IEC 17025:2017:** General Requirements for the Competence of Testing and Calibration Laboratories

**RG-TMDNRT:** SCC Requirements and Guidance for the Competence of Testing and Calibration Laboratories

**RG-FORENSIC:** SCC Requirements and Guidance for the Accreditation for Forensic Testing Laboratories

NIOSH – National Institute for Occupational Safety and Health

OSHA – Occupational Safety and Health Administration

EPA – Environmental Protection Agency

APHA – American Public Health Association

ASSC – Alberta Stack Sampling Code

ACOSA – Alberta Committee for Oils Sands Analysis

GPA – Gas Processor’s Association



**Standards Council of Canada**  
**Conseil canadien des normes**

UOP – Universal Oil Products

ASTM – American Society of Testing and Materials

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at [www.scc.ca](http://www.scc.ca).

---

Elias Rafoul  
Vice President, Accreditation Services  
Publication on: 2020-12-14