



TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

Accredited Laboratory No. 160

Legal Name of Accredited Laboratory: Bureau Veritas Canada (2019) Inc.,
formerly known as Maxxam Analytics
Petroleum Technology Center

Contact Name: Lalaine Mabanta

Address: 6744 - 50 Street NW
Edmonton, AB
T6B 3M9

Telephone: +1 780 577-7151

Fax: +1 780 378-8699

Website: www.bvlabs.com

Email: EdmontonQA@bvlabs.com

SCC File Number:	15229
Accreditation Standard(s):	ISO/IEC 17025:2017
Fields of Testing:	Biological Chemical/Physical
Program Specialty Area:	Environmental Testing (ET)
Initial Accreditation:	1995-03-06
Most Recent Accreditation:	2020-07-06
Accreditation Valid To:	2023-03-06

SCC Group Accreditation:

This laboratory is a part of a Group Accreditation with the following facilities in accordance with SCC's policy on Group Accreditation documented in the Accreditation Services Accreditation Program Overview.

151039 - Bureau Veritas Canada (2019) Inc. (Formerly Maxxam Analytics) - Unit D, 675 Berry St., Winnipeg, MB, R3H 1A7, Accredited Laboratory No. 837

151043 - Bureau Veritas Canada (2019) Inc. (Formerly Maxxam Analytics) - 2021 - 41st Avenue, N.E., Calgary, AB, T2E 6P2, Accredited Laboratory No. 836



Note: Environmental testings except for Adsorbable Organic Halides, Total Sulfide by Titration, and Air matrices are performed at:

Bureau Veritas
Edmonton Environmental
9331 48 Street NW
Edmonton, AB
T6B 2R4

ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

Environmental:

Air

PTC SOP - 00128	VOCs by Thermal Desorption Diffusive Tube [EPA 325B] 1, 3-Butadiene Benzene Ethylbenzene m,p-Xylenes o-Xylene Toluene
PTC SOP - 00148	Monitoring NO ₂ in the Atmosphere by using All-Season Passive Samplers [AWMA 91st PAPER 98-TP44.03] Nitrite
PTC SOP - 00149	Monitoring SO ₂ in the Atmosphere by using All-Season Passive Samplers [H. Tang, B. Brassard, R. Brassard and E. Peake, "A New Passive Sampling System for Monitoring SO ₂ in the Atmosphere" Proceedings, Clean Air '96: Second North American Conference and Exhibition, Nov. 19-22, 1996 Orlando USA] Sulfite
PTC SOP - 00150	Monitoring H ₂ S in the Atmosphere by using All-Season Passive Samplers [Hongmao Tang "A New All-Season Passive Sampling System for Monitoring H ₂ S in Air" The Scientific World, (2002)2, 155-168] Hydrogen Sulfide
PTC SOP - 00156	Volatile Organic Compounds on Passive Samplers using GC/MS [Modified from BP 36-126-NIOSH Method 1500 and Aromatic-NIOSH Method 1501] 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,2,4-Trimethylbenzene 1,2-Dichlorobenzene 1,3,5-Trimethylbenzene 1,4-Dichlorobenzene 2-Hexanone 2-methyl-4-Pentanone (MIBK) 3-Ethyltoluene



Benzene
Chlorobenzene
Chloroform
Decane
d-Limonene
Dodecane
Ethylbenzene
Heptane
Isopropylbenzene
Methylcyclohexane
Naphthalene
Nonane
Octane
Styrene
Tetrachloroethylene
Toluene
Trichloroethylene
Undecane
Xylene, Total

PTC SOP - 00157 Monitoring NH₃ in the Atm by using the Ogawa Passive Samplers [ASTM D6919]

Ammonia

PTC SOP - 00197 Monitoring Ozone in the Atmosphere by using Maxxam All-Season Passive Samplers [H. Tang and T. Lau "A New All-Season Passive Sampling System for Monitoring Ozone in Air", Environmental Monitoring and Assessment, 65 (1-2) 129-137, 2000.]

Ozone

Air Filter

PTC SOP - 00151 Mass Determination of Particulate Matter (PM 2.5 and 10) Gravimetric [Modified from US EPA, Quality Assurance Guidance Document, 2.12: Monitoring PM_{2.5} in Ambient Air Using Designated Reference or Class I Equivalent Methods]

PM10

PM2.5

PTC SOP - 00180 Dustfall, Total and Fixed, Gravimetric [Modified from AMD, Appendix 4-6]

Dustfall, Fixed

Dustfall, Total

Soil/Solid



- AB SOP-00002 Moisture Content in Soil [modified from CCME Petroleum Hydrocarbons In Soil - Tier 1 Method, Gravimetric]
% Moisture
- AB SOP-00039 Extraction and Analysis of BTEX/F1 by HS/GC/MS/FID Water, Soil and Oil [BTEX: Modified from EPA 8260 and EPA 5021, GC/MS – Headspace and F1: Modified from CCME Petroleum Hydrocarbons In Soil - Tier 1 Method, GC/FID - Headspace] [Also includes Water - Organic, BTEX: Modified from EPA 8260 and EPA 5021, GC/MS - Headspace and F1: Modified from CCME Petroleum Hydrocarbons - Tier 1 Method and EPA 5021, GC/FID - Headspace.
Benzene
Ethylbenzene
F1: C6-C10
m/p-xylene
o-xylene
Toluene
- AB SOP-00040 Analysis of Extractable Hydrocarbons in Water and Soils by GCFID [Modified from CCME Petroleum Hydrocarbons In Soil - Tier 1 Method, GC/FID, Gravimetric [Also includes Water – Organic, Modified from CCME Petroleum Hydrocarbons In Soil - Tier 1 Method, GC/FID, and Modified from Static Sheen Test (EPA Method 1617), Visual
F2: C10-C16
F3: C16-C34
F4: C34-C50
F4: Gravimetric
Sheen

Water (Inorganic)

- AB SOP-00006 pH by Manual Meter
[Modified From SM 4500-H+ B, pH Meter]
pH
- AB SOP-00016 Chemical Oxygen Demand (Total and Dissolved) [Modified From SM 5220 D, Colorimetric]
COD
- AB SOP-00058 Dissolved Oxygen- Modified Winkler Method [Modified from SM 4500-O C, Titrimetric]
Dissolved Oxygen
- AB SOP-00061 Total Suspended Solids, Total Fixed Solids, and Total Volatile Solids
[Modified from SM 2540 D and E, Gravimetric]



	Fixed Solids
	Total Suspended Solids
	Volatile Suspended Solids
EENVSOP-00159	pH Analysis in Bioassay Lab [Modified From SM 4500-H+ B, pH Meter]
	pH
PTC SOP-00173	Sulphide - Total, Titration Method [SM 4500-S2 F]

Water (Organic)

(Adsorbable Organic Halides - Water [028])

PTC SOP-00056	Adsorbable Organic Halogens [AE128.1] Colormetric Titration
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Water (Toxicology)

EENVSOP-00154	48-Hr Acute Static Bioassay using Daphnia magna [EPS 1/Rm/11 and EPS 1/RM/14, Acute Lethality (Survival)] Daphnia LC50 (48 h) Daphnia Single Concentration (48h)
EENVSOP-00155	Ceriodaphnia dubia Reproduction Inhibition and 7-Day Survival Chronic [EPS 1/RM/21, Survival and Reproduction Inhibition] Ceriodaphnia dubia (7d)
EENVSOP-00156	Fathead Minnow Larval Growth and Survival 7 Day Chronic Test [EPS 1/RM/22, Survival and Growth Inhibition] Fathead Minnow (7d)
EENVSOP-00160	96-Hour Acute Static Bioassay using Rainbow Trout [EPS 1/RM/9 and EPS 1/RM/13, Acute Lethality (Survival)] Trout LC50 (96 h) Trout Single Concentration (96h)

NON-METALLIC MINERALS AND PRODUCTS

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

Fuels and Lubricants

PTC SOP-00010	Determination of Water in Lubricating Oil by the Visual Crackle Test [Fitch, J. C., The Lubrication Field Test and Inspection Guide, Noria Publishing, Booklet, 2000]
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PTC SOP-00011	Additives, Wear Metals and Contaminants in Lubricating Oils by ICPOES [ASTM D5185]
PTC SOP-00012	Kinematic Viscosity of Lubricating Oils [ASTM D7279]
PTC SOP-00013	Oxidation, Nitration, Sulphation and Soot of Engine oils by FTIR [ASTM D7418]
PTC SOP-00014	Determination of Fuel Dilution for In-Service Engine Oils by GC [ASTM D7593]
PTC SOP-00017	Base Number of Lubricating Oils by Potentiometric Titration [D4739]
PTC SOP-00018	Water Content in Lubricating Oils by Coulometric KF Titration [ASTM D6304]
PTC SOP-00020	ISO Particle Count of Lubricating Oils Using an Optical Particle Counter [ISO 11500:2008]
PTC SOP-00029	Analysis of Hydrocarbon Condensates by Heated Flash [GPA 2286 and 2261]
PTC SOP-00030	Analysis of C4 Components in Condensate [Modified GPA 2177]
PTC SOP-00031	Calibration and Analysis of Trace Sulfur Compounds in Petroleum Products [ASTM D-5504 Modified]
PTC SOP-00033	Calibration and Analysis of Trace Sulfur Compounds in Petroleum Products [Modified ASTM D5623]
PTC SOP-00036	Hydrocarbon C30 Analysis by Gas Chromatography [ASTM D2887/CAN/CGSB 3.0, No.14.3]
PTC SOP-00037	Density of Light Hydrocarbons (condensate) by Digital Densitometer [ASTM D4052/ ASTM D5002]
PTC SOP-00038	Trace Methanol by Gas Chromatography [UOP 569 (modified)]
PTC SOP-00039	Boiling Range Distribution by ASTM D7900
PTC SOP-00044	Analysis of LPG/NGL to C15+ (Extended) [GPA 2186]
PTC SOP-00045	Ponau Analysis [CAN/CGSB 3.0 No. 14.3 and ASTM D6729]
PTC SOP-00048	Hydrocarbon C100 Analysis by Gas Chromatography [ASTM D6352/ASTM D7169]
PTC SOP-00049	Component Analysis of Glycols, Amines, and Sulfinols by GC [UOP 523 modified]
PTC SOP-00050	Total Organic Halogens and Organic Chlorides [modified ASTM D4929]
PTC SOP-00051	Boiling Range Distribution of Petroleum Fractions by Gas Chromatography [ASTM D2887]



PTC SOP-00052	High Pressure Density [ASTM D4052/5002]
PTC SOP-00055	Boiling Range Distribution by ASTM D6352
PTC SOP-00058	Molecular Weight by Freezing Point Depression [Cryette Instrument Manual]
PTC SOP-00062	Analysis of Hydrocarbon Gas [GPA 2286]
PTC SOP-00067	Measurement of Viscosity by Cannon - Fenske Opaque Viscometer [ASTM D445]
PTC SOP-00068	Pour Point Analysis of Petroleum Products [ASTM D97; D5853]
PTC SOP-00071	Distillation of Petroleum Products at Atmospheric Pressure [ASTM D86]
PTC SOP-00072	Reid Vapor Pressure of Petroleum Products [ASTM D323A]
PTC SOP-00082	Flash-Point by Pensky-Martens Closed Cup Tester [ASTM D93]
PTC SOP-00083	Detection of Copper Corrosion from Petroleum Products by the Copper Strip [ASTM D130/ASTM D1838]
PTC SOP-00084	Water and Sediment in Crude by the Centrifuge Method (Laboratory Procedure) [ASTM D4007; ASTM D1796; ASTM D2709]
PTC SOP-00089	Aniline Point of Petroleum Products [ASTM D611]
PTC SOP-00091	Electrical Conductivity of Aviation and Distillate Fuels [ASTM D2624]
PTC SOP-00092	Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures) [ASTM D4176]
PTC SOP-00093	Filterability of Diesel Fuels by Low Temperature Flow Test (LTFT) [ASTM D4539]
PTC SOP-00097	Determination of Bitumen, Water, Solids by Dean Stark Method [Alberta Research Council Oil Sands Analytical Method Manual, Chapter 1, Method 1.00]
PTC SOP-00099	Density and Relative Density of Liquids by Digital Density Meter [ASTM D4052]
PTC SOP-00100	Density and Relative Density of Crude Oils by Digital Density Analyzer [ASTM D5002]
PTC SOP-00103	Total Acid Number of Petroleum Products by Potentiometric Titration [ASTM D664]
PTC SOP-00105	Water in Petroleum Products by Coulometric Karl Fischer Titration [ASTM D4928/ASTM D6304]
PTC SOP-00107	Standard Test Method for Determination of Carbon Residue (Micro Method) [ASTM D4530]



PTC SOP-00111	Total Nitrogen Sulphur in Hydrocarbons by boat-inlet Antek [ASTM D5453-S, ASTM D5762 – N ₂ , ASTM D4629 – Trace Nitrogen]
PTC SOP-00115	Sediment in Oil by Membrane Filtration [ASTM D4807]
PTC SOP-00116	Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy [ASTM D4294]
PTC SOP-00120	Cetane Number of Diesel Fuel Oil [ASTM D613]
PTC SOP-00121	Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter [ASTM D240]
PTC SOP-00122	Lubricity of Diesel Fuels by High Frequency Reciprocating Rig [ASTM D6079]
PTC SOP-00126	Acid Number by Color-Indicator Titration [ASTM D974]
PTC SOP-00175	Ash Content [ASTM D482]
PTC SOP-00204	High Temperature Stability of Distillate Fuels [ASTM D6468]
PTC SOP-00206	Metals Analysis in Organics by ICPOES [ASTM D5708/ASTM D5185/ASTM D4951]: Silver (Ag), Aluminum (Al), Arsenic (As), Boron (B), Barium (Ba), Beryllium (Be), Calcium (Ca), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Iron (Fe), Lithium (Li), Potassium (K), Magnesium (Mg), Manganese (Mn), Molybdenum (Mo), Sodium (Na), Nickel (Ni), Phosphorus (P), Lead (Pb), Selenium (Se), Silicon (Si), Tin (Sn), Strontium (Sr), Titanium (Ti), Vanadium (V), Zinc (Zn)
PTC SOP-00209	Trace Hydrocarbon Analysis by GC [ASTM D5442] Methane, Ethane, Propone, Isobutane, n-Butane, Isopentane, n-pentane, methylcyclopentane, benzene, cyclohexane, methylcyclohexane, toluene, ethylbenzene, meta and para-xylene, ortho-xylene, trimethylbenzene, hexanes (C6), heptanes (C7), octanes (C8), nonanes (C9), decanes (C10), undecanes (C11), dodecanes (C12), tridecanes (C13), tetradecanes (C14), pentadecanes (C15), hexadecanes (C16), heptadecanes (C17), octadecanes (C18), nonadecanes (C19), eicosanes (C20), heneicosanes (C21), docosanes (C22), triacosanes (C23), tetracosanes (C24), pentacosanes (C25), hexacosanes (C26), heptacosanes (C27), octacosanes (C28), nonacosanes (C29), triacontanes plus (C30+)
PTC SOP-00211	Light End Analysis in Stabilized Hydrocarbon Liquids [Modified ASTM D2887]
PTC SOP-00218	Boiling Range distribution by ASTM D7169
PTC SOP-00241	Carbon, Hydrogen, Nitrogen and Sulphur Analysis [ASTM D5373/ASTM D3176 / ASTM D4239]
PTC SOP-00242	Proximate Analysis of Coal and Coke [ASTM D7582]
PTC SOP-00250	Preparation of Coal Samples and Determination of Moisture in Coal [ASTM D2013/D2013M and ASTM D3302/D3302M]
PTC SOP-00254	Heating Value of Coal and Coke by Bomb Calorimeter [ASTM D5865]
PTC SOP-00267	Viscosity by Stabinger [ASTM D7042]
PTC SOP-00275	Particle Size Distribution by Beckman Coulter Laser Analyzer
PTC SOP-00279	Total Mercury in Coal and Coal Combustion Residues [ASTM D6722]



Notes:

ASTM: American Society for Testing and Materials

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

NIOASH: The National Institute for Occupational Safety and Health

CCME: Canadian Council of Ministers of the Environment

EPA: Environment Protection Agency

AEC: Alberta Environmental Centre

GPA: Gas Producers Association

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.

Elias Rafoul
Vice President, Accreditation Services
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