The Petroleum EnvironmenTal Research Laboratory (PETRL) is a state-of-the-art laboratory situated at the Centre for Earth Observation Science (CEOS), University of Manitoba. As part of the Churchill Marine Observatory (CMO) project, PETRL will provide analytical support for experiments studying the behaviour of oil in ice-covered ocean environments. PETRL is also supporting research related to Oil Spill Preparedness in Canada’s Arctic Marine Environment (GENICE), and baseline studies of hydrocarbons in Arctic sediments and the food web.

These instruments housed in PETRL will be capable of analysing a broad range of petroleum hydrocarbons, their microbial metabolites, photo-degradation products and other transportation related contaminants of differing chemical and physical properties. The major PETRL instruments include: 1) a LECO GC-HRT Mass spectrometer, 2) an Agilent 7010B GC/MS Triple Quadrupole, and 3) a Waters SYNAPT G2-Si HDMS with atmospheric pressure gas chromatography (APGC). These instruments can be used to conduct both targeted and non-targeted analysis.

List of Instruments:

* Teledyne Hydra IIc
  + Solid Total Mercury Analyser
* Agilent 5977A
  + Single Quadrupole Mass Spectrometer
  + Agilent 7890B GC w/ DB-5ms 30m column for sample screening
* Agilent 7010B
  + Triple Quadrupole Mass Spectrometer
  + Agilent 7890B GC with backflush and Rxi-PAH 60m column for trace level PAH analysis
  + CTC PAL RSI 85 autosampler with headspace and liquid sample tool
* LECO Pegasus GC-HRT
  + High Resolution Time of Flight Mass Spectrometer
  + GCxGC chromatographic separation with comprehensive modulator
  + Rxi-PAH 60m column w/ DB-1HT column for non-target analysis and/or mass accurate analysis
* Waters SYNPAT G2-Si
  + High Resolution Time of Flight Mass Spectrometer
  + Waters Acquity Liquid Chromatography System
  + Atmospheric Pressure Gas Chromatography System
  + Electropsray Ionization, Electrospray Chemical Ionization, Atmospheric Pressure Photoionization, and Atmospheric Pressure Chemical Ionization Sources

For additional information, contact

* Principal Investigator: Dr. Gary Stern
* Technician: Jake Ritchie