Eastern Analytical, Inc.

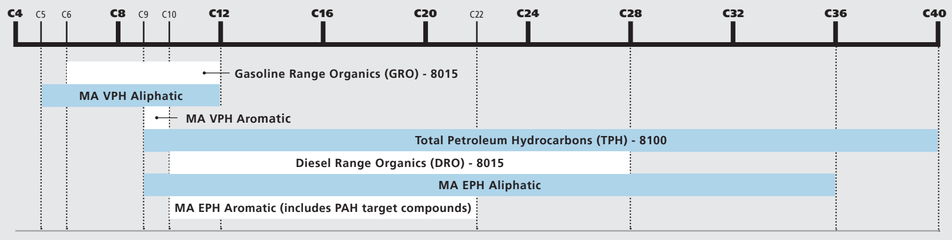
professional laboratory and drilling services

Data You Can Trust.
Service You Can Depend On.

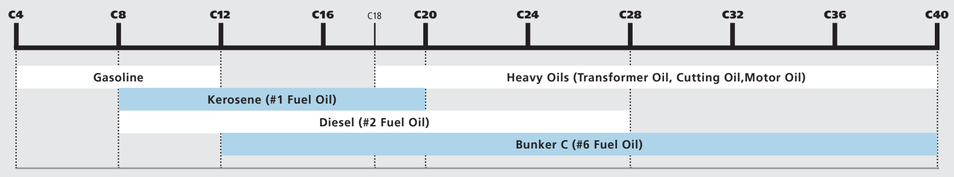
Hydrocarbon Spectrum Analyses

Hydrocarbons are an enormous group of compounds which contain the elements hydrogen and carbon. The various gas chromatographic systems at Eastern Analytical, Inc. are capable of measuring compounds containing as many as 40 carbon atoms per molecule. The C5-C40 range is represented on this chart.

EASTERN ANALYTICAL, INC. HYDROCARBON ANALYSIS



HYDROCARBON SPECTRUM



<< VOLATILE / SMALLEST MOLECULAR WEIGHT — NON-VOLATILE / LARGEST MOLECULAR WEIGHT >>

METHOD	ANALYTES	PROCEDURE – DETECTOR
VOLATILE ORGANIC COMPOUNDS		
8015 (mod.)	Volatile Hydrocarbons (GRO)	Purge & Trap — GC/FID
MA VPH	Volatile Petroleum Hydrocarbons Aliphatic, Aromatic, Target Compounds	Purge & Trap — GC/FID, GC/PID
SEMI-VOLATILE ORGANIC COMPOUNDS		
8100 (mod.)	Extractable Hydrocarbons (TPH)	Solvent Extraction — GC/FID
8015	Extractable Hydrocarbons (DRO)	Solvent Extraction — GC/FID
MA EPH	Extractable Petroleum Hydrocarbons Aliphatic, Aromatic, PAH Target Compounds	Solvent Extraction — GC/MS

Short Hold Time Parameters

DETERMINATION	MATRIX	MAXIMUM HOLDING TIME
BACTERIAL TESTS		
Coliform, Total / E. Coli / Fecal	WW, SW	8 Hours
Coliform, Total / E. Coli (P/A)	DW, GW*	30 Hours
Enterococci	DW, GW*	30 Hours
Enterococci	WW, SW	8 Hours
Heterotrophic Plate Count	DW, GW*, SW, WW	8 Hours
INORGANIC TESTS		
Biochemical Oxygen Demand (BOD)	WW	48 Hours
Carbonaceous Biochemical Oxygen Demand (CBOD)	WW	48 Hours
Chlorine, Total Residual	WW, DW	Analyze Immediately
Chlorophyll-a	GW, SW, WW, DW	24 Hours (Filtration Required)
Color	GW, SW, WW, DW	24 Hours
Ferrous Iron	GW, SW, WW, DW	24 Hours
Hydrogen Ion (pH)	GW, SW, WW, DW	Analyze Immediately
Nitrate (NO3)	GW, SW, WW, DW	48 Hours
Nitrite (NO2)	GW, SW, WW, DW	48 Hours
Odor	WW, DW	24 Hours
Orthophosphate	GW, SW, WW, DW	Filter within 15 min., 48 hours
Oxidation Reduction Potential (Probe)	GW, SW, WW, DW	Analyze Immediately
Oxygen, Dissolved (Probe)	GW, SW, WW, DW	Analyze Immediately
Residue, Settleable (SS) | Settleable Solids	GW, SW, WW, DW	48 Hours
Sulfite	GW, SW, WW, DW	Analyze Immediately
Temperature	GW, SW, WW	Analyze Immediately
Turbidity	GW, SW, WW, DW	48 Hours
METALS		
Chromium VI – Method 7196	WW, DW, GW	24 hours
SUBCONTRACT PARAMETERS		
Advanced Notice Needed for all Subcontracted Parameters | Unable to Receive on Fridays		
Asbestos	DW	48 Hours
Formaldehyde	WW	3 days until extraction; 3 days after extraction
Salmonella	S	8 Hours
Surfactants (MBAS) | Foaming Agents	WW, DW, GW	48 Hours
Volatile Organics by EPA TO-15, modified	A	72 Hours (Tedlar Bag)
WET Toxicity, Acute & Chronic	WW	36 Hours, lab must receive same day sample is collected

DW (Drinking Water), GW (Ground Water), SW (Surface Water), WW (Wastewater), S (Solid) and A (Air)
** GW wells located around and/or near septage lagoons will default to the WW hold time requirements.*
Please contact EAI in advance to schedule sample arrival especially when subcontracted parameters are needed.

VOCs

AQUEOUS	HOLD TIME	SAMPLE VOLUME	CONTAINER	PRESERVATIVE
Methanol/Ethanol	14 days	2x40 mL	VOC vials	Cool < 6°C
VOC	14 days	2x40 mL	VOC vials	HCl/Cool < 6°C
MA DEP VPH	14 days	2x40 mL	VOC vials	HCl/Cool < 6°C
GRO (8015)	14 days	2x40 mL	VOC vials	HCl/Cool < 6°C
Methane/Ethane/Ethene	14 days	2x40 mL	VOC vials	H2SO4/Cool < 6°C
1,4 Dioxane VOC SIM	14 days	2x40 mL	VOC vials	Cool < 6°C
SOIL				
VOC Method 5035	14 days	5 g	20 mL preweighed MeOH vial, 5 mL syringe*	
MA DEP VPH	28 days	5 g	20 mL preweighed MeOH vial, 5 mL syringe*	
GRO (8015)	14 days	5 g	20 mL preweighed MeOH vial, 5 mL syringe*	

Samples should be collected in duplicate for any combination of VOC and GRO or VPH. No headspace.
Organics must be collected in glass, not plastic!
****Use syringe with end cap for % solids determination. 20 mL MeOH vials preweighed.***

524.2
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,3-Dichloropropane
1,3,5-Trichorobenzene
1,3,5-Trimethylbenzene
1,4-Dichlorobenzene
2,2-Dichloropropane
2-Butanone (MEK)
2-Chlorotoluene
2-Hexanone
4-Chlorotoluene
4-Methyl-2-pentanone (MIBK)
Acetone
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Diethyl Ether
Ethylbenzene
Ethyl-t-butyl ether (ETBE)
Hexachlorobutadiene
Isopropyl ether (DIPE)
IsoPropylbenzene
Methylene chloride
Methyl-t-butyl ether (MTBE)
mp-Xylene
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-amyl methyl ether (TAME)
tert-Butyl Alcohol (TBA)
tert-Butylbenzene
Tetrachloroethene
Tetrahydrofuran (THF)
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Trichlorofluoromethane
Vinyl acetate
Vinyl chloride

624
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Butanone (MEK)
2-Chloroethylvinylether
2-Hexanone
4-Methyl-2-pentanone (MIBK)
Acetone
Acrolein
Acrylonitrile
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Ethylbenzene
Methylene chloride
Methyl-t-butyl ether (MTBE)
mp-Xylene
o-Xylene
Styrene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Trichlorofluoromethane
Vinyl acetate
Vinyl chloride

8260
1,1,1,2-Tetrachloroethane
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloropropene
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,3,5-Trichlorobenzene
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,3-Dichloropropane
1,4-Dichlorobenzene
1,4 Dioxane
2,2-Dichloropropane
2-Butanone (MEK)
2-Chlorotoluene
2-Hexanone
4-Chlorotoluene
4-Methyl-2-pentanone (MIBK)
Acetone
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Diethyl Ether
Ethylbenzene
Ethyl-t-butyl ether (ETBE)
Hexachlorobutadiene
Isopropyl ether (DIPE)
IsoPropylbenzene
Methylene chloride
Methyl-t-butyl ether (MTBE)
mp-Xylene
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
p-Isopropyltoluene
sec-Butylbenzene
Styrene
tert-amyl methyl ether (TAME)
tert-Butyl Alcohol (TBA)
tert-Butylbenzene
Tetrachloroethene
Tetrahydrofuran (THF)
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-Butene (CT only)
Trichloroethene
Trichlorofluoromethane
Vinyl chloride

MA VPH
Methyl-t-butyl ether (MTBE)
Benzene
Toluene
Ethylbenzene
mp-Xylene
o-Xylene
Naphthalene
Unadjusted C5-C8 Aliphatics
Unadjusted C9-C12 Aliphatics
C5-C8 Aliphatics Hydrocarbons
C9-C12 Aliphatic Hydrocarbons
C9-C10 Aromatic Hydrocarbons

8015 mod./RSK-175
Methane
Ethane
Ethene

8015 mod.
Methanol
Ethanol

8015 mod./TPH GRO Ranges
TPH (Gasoline Range C6-C12)

SVOCs

AQUEOUS	HOLD TIME	SAMPLE VOLUME	CONTAINER	PRESERVATIVE
TPH (8100)/DRO (8015)	7 days	1 liter	1 liter Glass	Cool < 6°C
PAH	7 days	1 liter	1 liter Amber Glass	Cool < 6°C
ABN	7 days	1 liter	1 liter Amber Glass	Cool < 6°C
Pesticides/PCBs	7 days	1 liter	1 liter Amber Glass	Cool < 6°C
MA DEP EPH	14 days/40 days	1 liter	1 liter Amber Glass	1:1 HCl pH <2/Cool < 6°C
Oil & Grease 1664A HEM	28 days	1 liter	Glass	Sulfuric Acid/Cool < 6°C
TPH 1664A SGT	28 days	1 liter	Glass	Sulfuric Acid/Cool < 6°C
Ethylene dibromide (EDB) and/ or Dibromochloropropane (DBCP)	14 days	2x40 mL	VOC vials	Sodium Thiosulfate/Cool < 6°C
Haloacetic Acids (HAA5)	14 days	2X60 mL	Amber Glass Vials	Ammonium Chloride/Cool < 6°C
SOIL				
TPH	14 days	4 oz	4 oz Amber Glass	Cool < 6°C
PAH	14 days	4 oz	4 oz Amber Glass	Cool < 6°C
ABN	14 days	4 oz	4 oz Amber Glass	Cool < 6°C
Pesticides/PCB	14 days	4 oz	4 oz Amber Glass	Cool < 6°C
MA DEP EPH	14 days/40 days	4 oz	4 oz Amber Glass	Cool < 6°C

8015
DRO (Diesel Range Organics C10-C28)

TPH 8100
TPH (C9-C40)

625 OR 8270 ACID
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Chlorophenol
2-Methylphenol
2-Nitrophenol
3/4-Methylphenol
4,6-Dinitro-2-methylphenol
4-Chloro-3-methylphenol
4-Nitrophenol
Benzoic Acid
Pentachlorophenol
Phenol

625 OR 8270 BASE NEUTRALS
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
2-Chloronaphthalene
2-Nitroaniline
3,3'-Dichlorobenzidine
3-Nitroaniline
4-Bromophenyl-phenylether
4-Chloroaniline
4-Chlorophenyl-phenylether
4-Nitroaniline
Azobenzene
Benzidine
Benzyl alcohol
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-chloroisopropyl)ether
bis(2-Ethylhexyl)phthalate
Butylbenzylphthalate
Carbazole
Dibenzofuran
Diethylphthalate
Dimethylphthalate
Di-n-butylphthalate
Di-n-octylphthalate
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Isophorone
Nitrobenzene
N-Nitrosodimethylamine
n-Nitroso-di-n-propylamine
n-Nitrosodiphenylamine
Pyridine

8270 PAH
Naphthalene
1-Methylnaphthalene
2-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo[a]anthracene
Chrysene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[a]pyrene
Dibenz[a,h]anthracene
Indeno[1,2,3-cd]pyrene
Benzo[g,h,i]perylene

MA EPH
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo[a]anthracene
Chrysene
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[a]pyrene
Indeno[1,2,3-cd]pyrene
Dibenz[a,h]anthracene
Benzo[g,h,i]perylene
Naphthalene
2-Methylnaphthalene
C9-C18 Aliphatic Hydrocarbons
C11-C22 Aromatic Hydrocarbons
C19-C36 Aliphatic Hydrocarbons
C11-C22 Aromatic (Unadjusted)

608 OR 8082 PCB
PCB-1016
PCB-1221
PCB-1232
PCB-1242
PCB-1254
PCB-1248
PCB-1260
PCB-1262
PCB-1268

608 OR 8081 PESTICIDES
Aldrin
alpha-BHC
beta-BHC
Lindane (gamma-BHC)
delta-BHC
Chlordane
4,4'-DDT
4,4'-DDE
4,4'-DDD
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan Sulfate
Endrin
Endrin Aldehyde
Heptachlor
Heptachlor Epoxide
Methoxychlor
Toxaphen

Wet Chemistry

	HOLD TIME	SAMPLE VOLUME	CONTAINER	PRESERVATIVE
BOD/CBOD	48 hrs	500 mL	Plastic	Cool < 6°C
pH	Immediate*	25 mL	Plastic	Cool < 6°C
Specific Conductance	28 days	200 mL	Plastic	Cool < 6°C
Turbidity	48 hrs	100 mL	Plastic	Cool < 6°C
Solids (TS,TVS,TSS,TDS)	7 days	500 mL	Plastic	Cool < 6°C
Settleable Solids	48 hrs	1 liter	Plastic	Cool < 6°C
Anions **	28 days	100 mL	Plastic	Cool < 6°C
Nitrate	48 hrs	50 mL	Plastic	Cool < 6°C
Nitrite	48 hrs	50 mL	Plastic	Cool < 6°C
Alkalinity	14 days	250 mL	Plastic	Cool < 6°C
Phenols	28 days	250 mL	Glass	Sulfuric Acid/Cool < 6°C
TOC	28 days	100 mL	Glass	Phosphoric Acid/Cool < 6°C
Total Phosphorus	28 days	100 mL	HDPE	Sulfuric Acid/Cool < 6°C
Ammonia	28 days	125 mL	Plastic/Glass	Sulfuric Acid/Cool < 6°C
TKN	28 days	125 mL	Plastic/Glass	Sulfuric Acid/Cool < 6°C
COD	28 days	20 mL	Plastic/Glass	Sulfuric Acid/Cool < 6°C
Cyanide	14 days	250 mL	Plastic/Glass	Sodium Hydroxide/Cool < 6°C
Sulfide	7 days	250 mL	Plastic	Zinc Acetate/Sodium Hydroxide/Cool < 6°C
Total Residual Chlorine	Immediate*	2x40 mL	VOC vials	Cool < 6°C
Sulfite	Immediate*	2x40 mL	VOC vials	aCool < 6°C
Bacteria	Immediate*	100 mL	Sterile Container	Sodium Thiosulfate/Cool < 6°C
Chlorophyll-a	24 hours	1 liter	Amber Plastic	Cool < 6°C
Perchlorate (Filtering Required)	28 days	125 mL	Plastic	Room Temperature
Microscopic Identification	Immediate*	2x1 liter	Amber Plastic	Cool < 6°C

**For samples with immediate hold time, please call us 24 hours in advance of delivery. **Fluoride, Chloride, Bromide, Sulfate*
Eastern Analytical, Inc. *offers microbiological identification analysis, cell counts and fluorescence analysis.*

SUBCONTRACT

Herbicides (Aqueous)	7 days	1 liter	Amber Glass	Cool < 6°C
Herbicides (Soil)	14 days	4 oz	Amber Glass	Cool < 6°C
Surfactants/MBAS (Aqueous)*	48 hours	500 mL	Plastic	Cool < 6°C
Formaldehyde (Aqueous)*	72 hours	1 liter	Amber Glass	Cool < 6°C
Cold Vapor Mercury (Aqueous)	28 days	125 mL	Plastic	Nitric Acid

**These subcontracted parameters can not be received on Fridays due to short hold time.*

Metals

	HOLD TIME	SAMPLE VOLUME	CONTAINER	PRESERVATIVE
ICP/ICP-MS Metals (Aqueous, Dissolved)	180 days	20 mL	2 oz Plastic	Nitric Acid/Cool < 6°C
ICP/ICP-MS Metals (Aqueous, Total)	180 days	125 mL	4 oz Plastic	Nitric Acid/Cool < 6°C
Mercury (Aqueous)	28 days	125 mL	4 oz Plastic	Nitric Acid/Cool < 6°C
Hexavalent Chromium	24 hrs	500 mL	16 oz Plastic	Cool < 6°C
ICP/ICP-MS Metals (Solid)	180 days	4 oz	4 oz Plastic/Glass	Cool < 6°C
Mercury only (Solid)	28 days	4 oz	4 oz Plastic/Glass	Cool < 6°C

METALS

Aluminum	Copper	Potassium
Antimony	Hardness, Ca (as CaCO3)	Selenium
Arsenic	Hardness, Mg (as CaCO3)	Silicon
Barium	Hardness, Total (as CaCO3)	Silver
Beryllium	Iron	Sodium
Boron	Lead	Strontium
Cadmium	Magnesium	Thallium
Calcium	Manganese	Tin
Chromium	Mercury	Titanium
Cobalt	Molybdenum	Uranium
	Nickel	Vanadium
	Phosphorus	Zinc

METALS - NON-ROUTINE

EAI has the capability of analyzing the following metals. Advanced notification and greater than 10 day turnaround time will be needed.

Bismuth	Gallium
Cerium	Rhodium
Cesium	Rubidium
Holmium	Scandium
Indium	Tungsten
Lithium	Yttrium
Germanium	Terbium

Drinking Water Testing

Public Water Supply Operators and municipalities count on our lab to deliver exceptional quality data and unsurpassed customer service for their drinking water monitoring testing.

- **Chemical Monitoring:**
  - ✓ VOC - Volatile Organic Compounds
  - ✓ SOC - Synthetic Organic Compounds
  - ✓ IOC - Inorganic Compounds
  - ✓ Radionuclide (Compliance Gross Alpha, Uranium, and Radium 226 & 228)
  - ✓ Nitrate
  - ✓ Nitrate
- **Bacteria**
- **Metals**
- **Disinfection Byproducts**
- **Simulated Distribution Testing (SDS)**
- ***and much more***

EASTERN ANALYTICAL, INC.
An Employee Owned Small Business

51 Antrim Avenue
Concord, NH 03301
p: 603-228-0525
f: 603-228-4591
customerservice@easternanalytical.com

OFFICE HOURS
Monday - Friday:
8:00 am - 5:00 pm

WE PROVIDE:
- *Exceptional Data Quality*
- *Reliable Turn Around Time*
- *Courier Service*
- *Electronic Data Uploads*
- *Competitive Pricing*
- *Courteous and Responsive Service*

DRILLING SERVICES
Eastern Analytical, Inc. Field Services utilizes Geoprobe® equipment for soil, soil vapor and groundwater sampling. Well decommissioning service and equipment rentals also available.

CERTIFICATION IN THE FOLLOWING STATES:
Alabama, Connecticut, New Hampshire, New York, Massachusetts, Maine, Rhode Island and Vermont.

800-287-0525 EasternAnalytical.com