

# Appendix A

## List Of Pollutants, Analytical Methods, Detection Limits And Quantitation Levels

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table for permit and application required monitoring unless:

* Another permit condition specifies other methods, detection levels, or quantitation levels.
* The method used produces measurable results in the sample and EPA has listed it as an EPA-approved method in 40 CFR Part 136

If the Permittee uses an alternative method, not specified in the permit and as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

If the Permittee is unable to obtain the required DL and QL in its effluent due to matrix effects, the Permittee must submit a matrix-specific detection limit (MDL) and a quantitation limit (QL) to Ecology with appropriate laboratory documentation.

When the permit requires the Permittee to measure the base neutral compounds in the list of priority pollutants, it must measure all of the base neutral pollutants listed in the table below. The list includes EPA required base neutral priority pollutants and several additional polynuclear aromatic hydrocarbons (PAHs). The Water Quality Program added several PAHs to the list of base neutrals below from Ecology’s Persistent Bioaccumulative Toxics (PBT) List. It only added those PBT parameters of interest to Appendix A that did not increase the overall cost of analysis unreasonably.

Ecology added this appendix to the permit in order to reduce the number of analytical “non-detects” in permit-required monitoring and to measure effluent concentrations near or below criteria values where possible at a reasonable cost.

The lists below include conventional pollutants (as defined in CWA section 502(6) and 40 CFR Part 122.), toxic or priority pollutants as defined in CWA section 307(a)(1) and listed in 40 CFR Part 122 Appendix D, 40 CFR Part 401.15 and 40 CFR Part 423 Appendix A), and nonconventionals. 40 CFR Part 122 Appendix D (Table V) also identifies toxic pollutants and hazardous substances which are required to be reported by dischargers if expected to be present. This permit appendix A list does not include those parameters. The list also includes pulp and paper pollutants identified in 40 CFR Part 430 and the dioxin and furan congeners identified using EPA Method 1613.

### Table 1: Conventional Pollutants

| **Pollutant**  | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- |
| Biochemical Oxygen Demand |  | SM5210-B |  | 2 mg/L |
| Biochemical Oxygen Demand, Soluble |  | SM5210-B 3 |  | 2 mg/L |
| Fecal Coliform |  | SM 9221E, 9221FSM 9222D | N/A | Specified in method sample aliquot dependent |
| Oil and Grease (HEM) (Hexane Extractable Material) |  | 1664 A or B | 1,400 | 5,000 |
| pH |  | SM4500-H+ B | N/A | N/A |
| Total Suspended Solids |  | SM2540-D |  | 5 mg/L |

### Table 2: NonConventional Pollutants

| **Pollutant** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- |
| Alkalinity, Total |  | SM2320-B |  | 5 mg/L as CaCO3 |
| Aluminum, Total  | 7429-90-5 | 200.8 | 2.0 | 10 |
| Ammonia, Total (as N) |  | SM4500-NH3-B and C/D/E/G/H |  | 20 |
| Barium Total  | 7440-39-3 | 200.8 | 0.5 | 2.0 |
| BTEX (benzene +toluene + ethylbenzene + m,o,p xylenes) |  | EPA SW 846 8021/8260 | 1 | 2 |
| Boron, Total  | 7440-42-8 | 200.8 | 2.0 | 10.0 |
| Chemical Oxygen Demand |  | SM5220-D |  | 10 mg/L |
| Chloride |  | SM4500-Cl B/C/D/E and SM4110 B |  | Sample and limit dependent |
| Chlorine, Total Residual |  | SM4500 Cl G |  | 50.0 |
| Cobalt, Total  | 7440-48-4 | 200.8 | 0.05 | 0.25 |
| Color |  | SM2120 B/C/E |  | 10 color units |
| Dissolved oxygen |  | SM4500-OC/OG |  | 0.2 mg/L |
| E.coli |  | SM 9221B, 9221F, 9223B | N/A | Specified in method - sample aliquot dependent |
| Enterococci |  | EPA 1600SM 9230B, 9230C, 9230D,  | N/A | Specified in method - sample aliquot dependent |
| Flow |  | Calibrated device |  |  |
| Fluoride  | 16984-48-8 | SM4500-F E | 25 | 100 |
| Hardness, Total |  | SM2340B |  | 200 as CaCO3 |
| Iron, Total  | 7439-89-6 | 200.7 | 12.5 | 50 |
| Magnesium, Total  | 7439-95-4 | 200.7 | 10 | 50 |
| Manganese, Total  | 7439-96-5 | 200.8 | 0.1 | 0.5 |
| Molybdenum, Total  | 7439-98-7 | 200.8 | 0.1 | 0.5 |
| Nitrate + Nitrite Nitrogen (as N) |  | SM4500-NO3- E/F/H |  | 100 |
| Nitrogen, Total Kjeldahl (as N) |  | SM4500-NorgB/C and SM4500NH3-B/C/D/EF/G/H |  | 300 |
| NWTPH Dx 4 |  | Ecology NWTPH Dx | 250 | 250 |
| NWTPH Gx 5 |  | Ecology NWTPH Gx | 250 | 250 |
| Phosphorus, Total (as P) |  | SM 4500 PB followed by SM4500-PE/PF | 3 | 10 |
| Salinity |  | SM2520-B |  | 3 practical salinity units or scale (PSU or PSS) |
| Settleable Solids |  | SM2540 -F |  | Sample and limit dependent |
| Soluble Reactive Phosphorus (as P) |  | SM4500-P E/F/G | 3 | 10 |
| Sulfate (as mg/L SO4)  |  | SM4110-B |  | 0.2 mg/L |
| Sulfide (as mg/L S) |  | SM4500-S2F/D/G |  | 0.2 mg/L |
| Sulfite (as mg/L SO3) |  | SM4500-SO3B |  | 2 mg/L |
| Temperature (max. 7-day avg.) |  | Analog recorder or Use micro-recording devices known as thermistors |  | 0.2º C |
| Tin, Total  | 7440-31-5 | 200.8 | 0.3 | 1.5 |
| Titanium, Total  | 7440-32-6 | 200.8 | 0.5 | 2.5 |
| Total Coliform |  | SM 9221BSM 9222B | N/A | Specified in method - sample aliquot dependent |
| Total Organic Carbon |  | SM5310-B/C/D |   | 1 mg/L |
| Total Dissolved solids |  | SM2540 C |  | 20 mg/L |

## Priority Pollutants

### Table 3: Metals, Cyanide & Total Phenols

| **Priority Pollutants** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| Antimony, Total  | 114 | 7440-36-0 | 200.8 | 0.3 | 1.0 |
| Arsenic, Total  | 115 | 7440-38-2 | 200.8 | 0.1 | 0.5 |
| Beryllium, Total  | 117 | 7440-41-7 | 200.8 | 0.1 | 0.5 |
| Cadmium, Total  | 118 | 7440-43-9 | 200.8 | 0.05 | 0.25 |
| Chromium (hex) dissolved | 119 | 18540-29-9 | SM3500-Cr C | 0.3 | 1.2 |
| Chromium, Total  | 119 | 7440-47-3 | 200.8 | 0.2 | 1.0 |
| Copper, Total  | 120 | 7440-50-8 | 200.8 | 0.4 | 2.0 |
| Lead, Total  | 122 | 7439-92-1 | 200.8 | 0.1 | 0.5 |
| Mercury, Total  | 123 | 7439-97-6 | 1631E | 0.0002 | 0.0005 |
| Nickel, Total  | 124 | 7440-02-0 | 200.8 | 0.1 | 0.5 |
| Selenium, Total | 125 | 7782-49-2 | 200.8 | 1.0 | 1.0 |
| Silver, Total  | 126 | 7440-22-4 | 200.8 | 0.04 | 0.2 |
| Thallium, Total  | 127 | 7440-28-0 | 200.8 | 0.09 | 0.36 |
| Zinc, Total  | 128 | 7440-66-6 | 200.8 | 0.5 | 2.5 |
| Cyanide, Total  | 121 | 57-12-5 | 335.4 | 5 | 10 |
| Cyanide, Weak Acid Dissociable | 121 |  | SM4500-CN I | 5 | 10 |
| Cyanide, Free Amenable to Chlorination (Available Cyanide) | 121 |  | SM4500-CN G | 5 | 10 |
| Phenols, Total | 65 |  | EPA 420.1 |  | 50 |

### Table 4: Acid Compounds

| **Priority Pollutants** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol  | 24 | 95-57-8 | 625.1 | 3.3 | 9.9 |
| 2,4-Dichlorophenol  | 31 | 120-83-2 | 625.1 | 2.7 | 8.1 |
| 2,4-Dimethylphenol  | 34 | 105-67-9 | 625.1 | 2.7 | 8.1 |
| 4,6-dinitro-o-cresol (2-methyl-4,6,-dinitrophenol) | 60 | 534-52-1 | 625.1/1625B | 24 | 72 |
| 2,4 dinitrophenol  | 59 | 51-28-5 | 625.1 | 42 | 126 |
| 2-Nitrophenol | 57 | 88-75-5 | 625.1 | 3.6 | 10.8 |
| 4-Nitrophenol  | 58 | 100-02-7 | 625.1 | 2.4 | 7.2 |
| Parachlorometa cresol (4-chloro-3-methylphenol) | 22 | 59-50-7 | 625.1 | 3.0 | 9.0 |
| Pentachlorophenol  | 64 | 87-86-5 | 625.1 | 3.6 | 10.8 |
| Phenol  | 65 | 108-95-2 | 625.1 | 1.5 | 4.5 |
| 2,4,6-Trichlorophenol  | 21 | 88-06-2 | 625.1 | 2.7 | 8.1 |

### Table 5: Volatile Compounds

| **Priority Pollutants** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| Acrolein  | 2 | 107-02-8 | 624.1 | 5 | 10 |
| Acrylonitrile  | 3 | 107-13-1 | 624.1 | 1.0 | 2.0 |
| Benzene  | 4 | 71-43-2 | 624.1 | 4.4 | 13.2 |
| Bromoform  | 47 | 75-25-2 | 624.1 | 4.7 | 14.1 |
| Carbon tetrachloride  | 6 | 56-23-5 | 624.1/601 or SM6230B | 2.8 | 8.4 |
| Chlorobenzene  | 7 | 108-90-7 | 624.1 | 6.0 | 18.0 |
| Chloroethane  | 16 | 75-00-3 | 624/601 | 1.0 | 2.0 |
| 2-Chloroethylvinyl Ether  | 19 | 110-75-8 | 624.1 | 1.0 | 2.0 |
| Chloroform  | 23 | 67-66-3 | 624.1 or SM6210B | 1.6 | 4.8 |
| Dibromochloromethane (chlordibromomethane) | 51 | 124-48-1 | 624.1 | 3.1 | 9.3 |
| 1,2-Dichlorobenzene  | 25 | 95-50-1 | 624.1 | 1.9 | 7.6 |
| 1,3-Dichlorobenzene  | 26 | 541-73-1 | 624.1 | 1.9 | 7.6 |
| 1,4-Dichlorobenzene  | 27 | 106-46-7 | 624.1 | 4.4 | 17.6 |
| Dichlorobromomethane  | 48 | 75-27-4 | 624.1 | 2.2 | 6.6 |
| 1,1-Dichloroethane  | 13 | 75-34-3 | 624.1 | 4.7 | 14.1 |
| 1,2-Dichloroethane  | 10 | 107-06-2 | 624.1 | 2.8 | 8.4 |
| 1,1-Dichloroethylene  | 29 | 75-35-4 | 624.1 | 2.8 | 8.4 |
| 1,2-Dichloropropane  | 32 | 78-87-5 | 624.1 | 6.0 | 18.0 |
| 1,3-dichloropropene (mixed isomers)(1,2-dichloropropylene)6 | 33 | 542-75-6 | 624.1 | 5.0 | 15.0 |
| Ethylbenzene  | 38 | 100-41-4 | 624.1 | 7.2 | 21.6 |
| Methyl bromide (Bromomethane) | 46 | 74-83-9 | 624/601 | 5.0 | 10.0 |
| Methyl chloride (Chloromethane) | 45 | 74-87-3 | 624.1 | 1.0 | 2.0 |
| Methylene chloride  | 44 | 75-09-2 | 624.1 | 2.8 | 8.4 |
| 1,1,2,2-Tetrachloroethane  | 15 | 79-34-5 | 624.1 | 6.9 | 20.7 |
| Tetrachloroethylene  | 85 | 127-18-4 | 624.1 | 4.1 | 12.3 |
| Toluene  | 86 | 108-88-3 | 624.1 | 6.0 | 18.0 |
| 1,2-Trans-Dichloroethylene (Ethylene dichloride) | 30 | 156-60-5 | 624.1 | 1.6 | 4.8 |
| 1,1,1-Trichloroethane  | 11 | 71-55-6 | 624.1 | 3.8 | 11.4 |
| 1,1,2-Trichloroethane  | 14 | 79-00-5 | 624.1 | 5.0 | 15.0 |
| Trichloroethylene  | 87 | 79-01-6 | 624.1 | 1.9 | 5.7 |
| Vinyl chloride  | 88 | 75-01-4 | 624/SM6200B | 1.0 | 2.0 |

### Table 6: Base/Neutral Compounds (Compounds in Bold are Ecology PBTS)

| **Priority Pollutants** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| Acenaphthene  | 1 | 83-32-9 | 625.1 | 1.9 | 5.7 |
| Acenaphthylene  | 77 | 208-96-8 | 625.1 | 3.5 | 10.5 |
| Anthracene  | 78 | 120-12-7 | 625.1 | 1.9 | 5.7 |
| Benzidine  | 5 | 92-87-5 | 625.1 | 44 | 132 |
| Benzyl butyl phthalate  | 67 | 85-68-7 | 625.1 | 2.5 | 7.5 |
| Benzo(a)anthracene | 72 | 56-55-3 | 625.1 | 7.8 | 23.4 |
| Benzo(b)fluoranthene (3,4-benzofluoranthene) 7 | 74 | 205-99-2 | 610/625.1 | 4.8 | 14.4 |
| **Benzo(j)fluoranthene 7** |  | 205-82-3 | 625 | 0.5 | 1.0 |
| Benzo(k)fluoranthene (11,12-benzofluoranthene) 7 | 75 | 207-08-9 | 610/625.1 | 2.5 | 7.5 |
| **Benzo(r,s,t)pentaphene**  |  | 189-55-9 | 625 | 1.3 | 5.0 |
| Benzo(a)pyrene  | 73 | 50-32-8 | 610/625.1 | 2.5 | 7.5 |
| Benzo(ghi)Perylene  | 79 | 191-24-2 | 610/625.1 | 4.1 | 12.3 |
| Bis(2-chloroethoxy)methane  | 43 | 111-91-1 | 625.1 | 5.3 | 15.9 |
| Bis(2-chloroethyl)ether  | 18 | 111-44-4 | 611/625.1 | 5.7 | 17.1 |
| Bis(2-chloro-1-methylethyl)Ether (Bis(2-chloroisopropyl)ether)10 | 42 | 108-60-1 | 625.1 | 5.7 | 17.1 |
| Bis(2-ethylhexyl)phthalate  | 66 | 117-81-7 | 625.1 | 2.5 | 7.5 |
| 4-Bromophenyl phenyl ether  | 41 | 101-55-3 | 625.1 | 1.9 | 5.7 |
| 2-Chloronaphthalene  | 20 | 91-58-7 | 625.1 | 1.9 | 5.7 |
| 4-Chlorophenyl phenyl ether  | 40 | 7005-72-3 | 625.1 | 4.2 | 12.6 |
| Chrysene  | 76 | 218-01-9 | 610/625.1 | 2.5 | 7.5 |
| **Dibenzo (a,h)acridine**  |  | 226-36-8 | 610M/625M | 2.5 | 10.0 |
| **Dibenzo (a,j)acridine**  |  | 224-42-0 | 610M/625M | 2.5 | 10.0 |
| Dibenzo(a-h)anthracene (1,2,5,6-dibenzanthracene) | 82 | 53-70-3 | 625.1 | 2.5 | 7.5 |
| **Dibenzo(a,e)pyrene**  |  | 192-65-4 | 610M/625M | 2.5 | 10.0 |
| **Dibenzo(a,h)pyrene**  |  | 189-64-0 | 625M | 2.5 | 10.0 |
| 3,3-Dichlorobenzidine | 28 | 91-94-1 | 605/625.1 | 16.5 | 49.5 |
| Diethyl phthalate  | 70 | 84-66-2 | 625.1 | 1.9 | 5.7 |
| Dimethyl phthalate  | 71 | 131-11-3 | 625.1 | 1.6 | 4.8 |
| Di-n-butyl phthalate  | 68 | 84-74-2 | 625.1 | 2.5 | 7.5 |
| 2,4-dinitrotoluene  | 35 | 121-14-2 | 609/625.1 | 5.7 | 17.1 |
| 2,6-dinitrotoluene  | 36 | 606-20-2 | 609/625.1 | 1.9 | 5.7 |
| Di-n-octyl phthalate  | 69 | 117-84-0 | 625.1 | 2.5 | 7.5 |
| 1,2-Diphenylhydrazine (as Azobenzene)  | 37 | 122-66-7 | 1625B/625.1 | 5.0 | 20 |
| Fluoranthene  | 39 | 206-44-0 | 625.1 | 2.2 | 6.6 |
| Fluorene  | 80 | 86-73-7 | 625.1 | 1.9 | 5.7 |
| Hexachlorobenzene  | 9 | 118-74-1 | 612/625.1 | 1.9 | 5.7 |
| Hexachlorobutadiene  | 52 | 87-68-3 | 625.1 | 0.9 | 2.7 |
| Hexachlorocyclopentadiene  | 53 | 77-47-4 | 1625B/625.1 | 2.0 | 4.0 |
| Hexachloroethane  | 12 | 67-72-1 | 625.1 | 1.6 | 4.8 |
| Indeno(1,2,3-cd)Pyrene | 83 | 193-39-5 | 610/625.1 | 3.7 | 11.1 |
| Isophorone  | 54 | 78-59-1 | 625.1 | 2.2 | 6.6 |
| **3-Methyl cholanthrene**  |  | 56-49-5 | 625 | 2.0 | 8.0 |
| Naphthalene  | 55 | 91-20-3 | 625.1 | 1.6 | 4.8 |
| Nitrobenzene  | 56 | 98-95-3 | 625.1 | 1.9 | 5.7 |
| N-Nitrosodimethylamine  | 61 | 62-75-9 | 607/625.1 | 2.0 | 4.0 |
| N-Nitrosodi-n-propylamine  | 63 | 621-64-7 | 607/625.1 | 0.5 | 1.0 |
| N-Nitrosodiphenylamine  | 62 | 86-30-6 | 625.1 | 1.0 | 2.0 |
| **Perylene**  |  | 198-55-0 | 625 | 1.9 | 7.6 |
| Phenanthrene  | 81 | 85-01-8 | 625.1 | 5.4 | 16.2 |
| Pyrene  | 84 | 129-00-0 | 625.1 | 1.9 | 5.7 |
| 1,2,4-Trichlorobenzene | 8 | 120-82-1 | 625.1 | 1.9 | 5.7 |

### Table 7: Dioxin

| **Priority Pollutant** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| 2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (2,3,7,8 TCDD) | 129 | 1746-01-6 | 1613B | 1.3 pg/L | 5 pg/L |

### Table 8: Pesticides/PCBS

| **Priority Pollutants** | **PP #** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- | --- |
| Aldrin  | 89 | 309-00-2 | 608.3 | 4.0 ng/L | 12 ng/L |
| alpha-BHC  | 102 | 319-84-6 | 608.3 | 3.0 ng/L | 9.0 ng/L |
| beta-BHC | 103 | 319-85-7 | 608.3 | 6.0 ng/L | 18 ng/L |
| gamma-BHC (Lindane)  | 104 | 58-89-9 | 608.3 | 4.0 ng/L | 12 ng/L |
| delta-BHC  | 105 | 319-86-8 | 608.3 | 9.0 ng/L | 27 ng/L |
| Chlordane 8 | 91 | 57-74-9 | 608.3 | 14 ng/L | 42 ng/L |
| 4,4’-DDT  | 92 | 50-29-3 | 608.3 | 12 ng/L | 36 ng/L |
| 4,4’-DDE | 93 | 72-55-9 | 608.3 | 4.0 ng/L | 12 ng/L |
| 4,4’ DDD  | 94 | 72-54-8 | 608.3 | 11ng/L | 33 ng/L |
| Dieldrin  | 90 | 60-57-1 | 608.3 | 2.0 ng/L | 6.0 ng/L |
| alpha-Endosulfan  | 95 | 959-98-8 | 608.3 | 14 ng/L | 42 ng/L |
| beta-Endosulfan  | 96 | 33213-65-9 | 608.3 | 4.0 ng/L | 12 ng/L |
| Endosulfan Sulfate  | 97 | 1031-07-8 | 608.3 | 66 ng/L | 198 ng/L |
| Endrin  | 98 | 72-20-8 | 608.3 | 6.0 ng/L | 18 ng/L |
| Endrin Aldehyde  | 99 | 7421-93-4 | 608.3 | 23 ng/L | 70 ng/L |
| Heptachlor  | 100 | 76-44-8 | 608.3 | 3.0 ng/L | 9.0 ng/L |
| Heptachlor Epoxide  | 101 | 1024-57-3 | 608.3 | 83 ng/L | 249 ng/L |
| PCB-1242 9 | 106 | 53469-21-9 | 608.3  | 0.065 | 0.195 |
| PCB-1254  | 107 | 11097-69-1 | 608.3  | 0.065 | 0.195 |
| PCB-1221  | 108 | 11104-28-2 | 608.3  | 0.065 | 0.195 |
| PCB-1232  | 109 | 11141-16-5 | 608.3  | 0.065 | 0.195 |
| PCB-1248 | 110 | 12672-29-6 | 608.3  | 0.065 | 0.195 |
| PCB-1260  | 111 | 11096-82-5 | 608.3  | 0.065 | 0.195 |
| PCB-1016 9 | 112 | 12674-11-2 | 608.3  | 0.065 | 0.195 |
| Toxaphene  | 113 | 8001-35-2 | 608.3 | 240 ng/L | 720 ng/L |

### Table 9: Pulp & Paper Pollutants (40CFR Part 430)

| **Pollutant**  | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- |
| Adsorbable Organic Halides (AOX) |  | EPA 1650 |  | 20 |
|  |  |  |  |  |
| 2,3,7,8- Tetrachlorodibenzo-p-dioxin (TCDD) (this is also priority pollutant and is listed above) | 1746-01-6 | EPA 1613 | 1.3 pg/L | 5 pg/L |
| 2,3,7,8- Tetrachlorodibenzofuran (TCDF)  | 51207-31-9  | EPA 1613 | 1.3 pg/L | 5 pg/L |
| Trichlorosyringol |  | EPA 1653 |  | 2.5 |
| 3,4,5-Trichlorocatechol |  | EPA 1653 |  | 5.0 |
| 3,4,6-Trichlorocatechol |  | EPA 1653 |  | 5.0 |
| 3,4,5-Trichloroguaiacol |  | EPA 1653 |  | 2.5 |
| 3,4,6-Trichloroguaiacol |  | EPA 1653 |  | 2.5 |
| 4,5,6-Trichloroguaiacol |  | EPA 1653 |  | 2.5 |
| 2,4,5-Trichlorophenol |  | EPA 1653 |  | 2.5 |
| 2,4,6-Trichlorophenol |  | EPA 1653 |  | 2.5 |
| Tetrachlorocatechol |  | EPA 1653 |  | 5.0 |
| Tetrachloroguaiacol |  | EPA 1653 |  | 5.0 |
| 2,3,4,6-Tetrachlorophenol |  | EPA 1653 |  | 2.5 |
| Pentachlorphenol (this is also priority pollutant and is listed above) |  | EPA 1653 |  | 5.0 |

### Table 10: Nonconventionals – Dioxin & Furan Congeners

| **Pollutant** | **CAS Number**(if available) | **Recommended Analytical Protocol** | **Detection** **(DL)1 *µg/L****Unless specified* | **Quantitation Level** **(QL) 2 *µg/L****Unless specified* |
| --- | --- | --- | --- | --- |
| 2,3,7,8- Tetrachlorodibenzo-p-dioxin (TCDD) (this is a priority pollutant and is also listed above) | 1746-01-6 | EPA 1613 | 1.3 pg/L | 5 pg/L |
| Total TCDD  | 41903-57-5  |  |  |  |
| 2,3,7,8- Tetrachlorodibenzofuran (TCDF)  | 51207-31-9  |  | 1.3 pg/L | 5 pg/L |
| Total-TCDF  | 55722-27-5  |  |  |  |
| 1,2,3,7,8- Pentachlorodibenzo-p-dioxin (PeCDD)  | 40321-76-4 |  |  |  |
| Total-PeCDD  | 36088-22-9  |  |  |  |
| 1,2,3,7,8- Pentachlorodibenzofuran (PeCDF)  | 57117-41-6 |  |  |  |
| 2,3,4,7,8-PeCDF  | 57117-31-4 |  |  |  |
| Total-PeCDF  | 30402-15-4 |  |  |  |
| 1,2,3,4,7,8- Hexachlorodibenzo-p-dioxin (HxCDD)  | 39227-28-6 |  |  |  |
| 1,2,3,6,7,8-HxCDD  | 57653-85-7 |  |  |  |
| 1,2,3,7,8,9-HxCDD  | 19408-74-3 |  |  |  |
| Total-HxCDD  | 34465-46-8 |  |  |  |
| 1,2,3,4,7,8- Hexachlorodibenzofuran (HxCDF)  | 70648-26-9 |  |  |  |
| 1,2,3,6,7,8-HxCDF  | 57117-44-9  |  |  |  |
| 1,2,3,7,8,9-HxCDF  | 72918-21-9 |  |  |  |
| 2,3,4,6,7,8-HxCDF  | 60851-34-5 |  |  |  |
| Total-HxCDF  | 55684-94-1 |  |  |  |
| 1,2,3,4,6,7,8- Heptachlorodibenzo-p-dioxin (HpCDD ) | 35822-46-9 |  |  |  |
| Total-HpCDD  | 37871-00-4 |  |  |  |
| 1,2,3,4,6,7,8- Heptachlorodibenzofuran (HpCDF)  | 67562-39-4 |  |  |  |
| 1,2,3,4,7,8,9-HpCDF  | 55673-89-7 |  |  |  |
| Total-HpCDF  | 38998-75-3 |  |  |  |
| Octachlorodibenzo-p-dioxin (OCDD ) | 3268-87-9 |  |  |  |
| Octachlorodibenzofuran (OCDF)  | 39001-02-0 |  |  |  |

## Analytical Methods

1. **Detection level (DL)** – or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.
2. **Quantitation Level (QL)** – also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1, 2, or 5) x 10n, where n is an integer. (64 FR 30417).
**Also Given As**: The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).
3. **Soluble Biochemical Oxygen Demand** – method note: First, filter the sample through a Millipore Nylon filter (or equivalent) - pore size of 0.45-0.50 um (prep all filters by filtering 250 ml of laboratory grade deionized water through the filter and discard). Then, analyze sample as per method 5210-B.
4. **Northwest Total Petroleum Hydrocarbons Diesel Extended Range** OR **NWTPH Dx** – [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf) https://fortress.wa.gov/ecy/publications/documents/97602.pdf
5. **Northwest Total Petroleum Hydrocarbons Gasoline Extended** Range OR **NWTPH Gx** – [Analytical Methods for Petroleum Hydrocarbons](https://fortress.wa.gov/ecy/publications/documents/97602.pdf) https://fortress.wa.gov/ecy/publications/documents/97602.pdf
6. **1, 3-dichloroproylene (mixed isomers)** – You may report this parameter as two separate parameters: cis-1, 3-dichlorpropropene (10061-01-5) and trans-1, 3-dichloropropene (10061-02-6).
7. **Total Benzofluoranthenes** – Because Benzo(b)fluoranthene, Benzo(j)fluoranthene and Benzo(k)fluoranthene co-elute you may report these three isomers as total benzofluoranthenes.
8. **Chlordane** – You may report alpha-chlordane (5103-71-9) and gamma-chlordane (5103-74-2) in place of chlordane (57-74-9). If you report alpha and gamma-chlordane, the DL/PQLs that apply are 14/42 ng/L.
9. **PCB 1016 & PCB 1242** – You may report these two PCB compounds as one parameter called PCB 1016/1242.
10. **Bis(2-Chloro-1-Methylethyl) Ether** – This compound was previously listed as Bis(2-Chloroisopropyl) Ether (39638-32-9)

## Apendix A Version History

**June 2012 Appendix A**

**Version 1.0**

* Updated orthophosphate to soluble reactive phosphorous
* Revised intro paragraph
* Added new approved O&G test option B

**Version 1.1**

* Revised coliform methods – removed 9221 D which is a presence /absence test. 9221 E quantifies the number of coliforms. 9221D is not really appropriate for most situations. Added note that detection level is method and aliquot dependent
* Updated Ammonia & TKN methods

**Version 1.2**

* Added soluble BOD and footnote and revised footnote numbering

**Version 1.3**

* Added (Hexane Extractable Material) after Oil and Grease (HEM) to clarify method
* Converted units in QLs for sulfate, sulfide, and sulfite to mg/L to match pollutant expression
* Updated QL for Settleable Solids, for gravimetric method, and added QL for volumetric

**August 2014 Appendix A**

**Version 1.0**

* Matched the conventionals with those as defined in CWA
* Added Adsorbable Organic Halides (AOX)
* Updated QL for Settleable Solids to sample and limit dependent
* Added Chloride with QL sample and limit dependent
* Added SM4500-PG to the recommended analytical protocol for soluable reactive phosphorus
* Changed format to landscape to add columns for separated CAS number and for the priority pollutant number

**December 2016 Appendix A**

**Version 1.0**

* Updated 11 base neutral and 3 acid compounds DLs and QLs based on lab and permittee input
* Revised PCB DLs and QLs consistent with new guidance in Permit Writer’s Manual

**September 2017 Appendix A**

**Version 1.0**

* Revised DLs and QLs for compounds affected by EPA’s Methods Update Rule (Methods 624.1, 625.1, and 608.3)

**March 2018 Appendix A**

**Version 1.0**

* Revised QL for Method 608.3 for PCBs. An error was discovered in EPA’s published Method (Table 2) as the ML should be 3x the MDL. This Appendix A update changed the QL for all aroclors from 0.095 ug/L to 0.195 ug/L.

**February 2019 Appendix A**

**Version 1.0**

* Replaced Bis(2-Chloroisopropyl) Ether (39638-32-9) with Bis(2-Chloro-1-Methylethyl) Ether (108-60-1). Updated method reporting limits per EPA Method 625.1

**June 2019 Appendix A**

**Version 1.0**

* Added E.coli and enterococci to nonconventional pollutants given the change to recreational criteria

**Version 1.1**

* Updated all Volatile Compound Method 624 references to Method 624.1

**October 2019 Appendix A**

**Version 1.0**

* Accessible format

**June 2021 Appendix A**

**Version 1.0**

* Enterococci (added EPA 1600); Total Coliform (removed SM 9223B).