

Appendix VI: Minimum Levels and Test Methods

PARAMETER - CAS No. -	Minimum Levels and Test Methods ^{1, 2, 3}				
	GC ⁴	GCMS ⁵	LC ⁶	FAA ⁷	Other
1. Total Suspended Solids (TSS)					5 mg/l Method 160.2
2. Total Residual Chlorine (TRC)					20 ug/l Method 330.5
3. Total Petroleum Hydrocarbons (TPH)					5 mg/l Method 1664
4. Cyanide (total) - 57125 -					10 ug/l Method 335.4
5. Benzene (B) - 71432 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C ²
6. Toluene (T) - 108883 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C ²
7. Ethylbenzene (E) - 100414 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C ²
8. (m,p,o) Xylenes (X) - 108383;106423; 95476-	0.5 ug/l Method 602	10 ug/l Method 1624			Method 8260C ²
9. Total BTEX	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C ²
10. Ethylene Dibromide (EDB) (1,2- Dibromoethane) - 106934 -	1.0 ug/l Method 618 0.01 ug/l Method 504.1	0.1 ug/l Methods 524.2			Method 8260C ²

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
11. Methyl-tert-Butyl Ether (MtBE)	0.5 ug/l Method 602 ⁸	5.0 ug/l Method 524.2			Method 8260C ²
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol) - 75650 -	0.5 ug/l Method 602 ⁸	100 ug/l Method 1666			Method 8260C ²
13. tert-Amyl Methyl Ether (TAME) -994058-	0.5 ug/l Method 602 ⁸				Method 8260C ²
14. Naphthalene - 91203 -	10 ug/l Method 610 GC/FID	2 ug/l Method 625 5.0 ug/l Method 524.2	0.2 ug/l Method 610 HPLC		Method 8270D ³
15. Carbon Tetrachloride - 56235 -	0.5 ug/l Method 601	2 ug/l Methods 624, 1624			Method 8260C ²
16. 1,4 Dichlorobenzene (p-DCB) - 106467 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C ²
17. 1,2 Dichlorobenzene (o-DCB) - 95501 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C ²
18. 1,3 Dichlorobenzene (m-DCB) - 541731 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C ²
19. 1,1 Dichloroethane (DCA) - 75343 -	0.5 ug/l Method 601	1 ug/l Method 624			Method 8260C ²
20. 1,2 Dichloroethane (DCA)- 107062 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
21. 1,1 Dichloroethylene (DCE) - 75354 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
22. cis-1,2 Dichloro-ethylene (DCE) -156592-	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
23. Dichloromethane (Methylene Chloride)- 75092 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
24. Tetrachloroethylene (PCE) - 127184 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
25. 1,1,1 Trichloro-ethane (TCA) - 71556 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
26. 1,1,2 Trichloro-ethane (TCA) - 79005 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
27. Trichloroethylene (TCE) - 79016 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
28. Vinyl Chloride - 75014 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C ²
29. Acetone - 67641 -	1.0 ug/l Method 524.2	50 ug/l Method 1624			Method 8260C ²
30. 1,4 Dioxane -123911-		50 ug/l Method 1624			Method 8260C ²
31. Total Phenols - 108952	1.0 ug/l Method 624 Method 8260 ²	1 ug/l Methods 625, 1625			Method 8260C ² Method 8270D ³
32. Pentachlorophenol (PCP) - 87865 -	1.0 ug/l Method 604 GCFID	5 ug/l Methods 625, 1625			Method 8270D ³

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
33. Total Phthalates ⁹ (Phthalate esthers)		10 ug/l* Method 625			Method 8270D ³
34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate] - 117817 -	10 ug/l Method 606	5 ug/l Method 625			Method 8270D ³
35. Total Group I Polynuclear Aromatic Hydrocarbons (PAH)					Method 8270D ³
a. Benzo(a) Anthracene -56553-	10 ug/l Method 610 GC	5 ug/l Method 625	0.05 ug/l Method 610 HPLC		Method 8270D ³
b. Benzo(a) Pyrene -50328 -		10 ug/l Method 625	2 ug/l Method 610 HPLC		Method 8270D ³
c. Benzo(b)Fluoranthene - 205992 -		10 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D ³
d. Benzo(k)Fluoranthene - 207089 -		10 ug/l Method 625	2 ug/l Method 610 HPLC		Method 8270D ³
e. Chrysene - 218019 -		10 ug/l Method 625	5 ug/l Method 610 HPLC		Method 8270D ³
f. Dibenzo(a,h) anthracene		10 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D ³
g. Indeno(1,2,3-cd) Pyrene - 193395 -		10 ug/l Method 625	0.15 ug/l Method 610		Method 8270D ³
36. Total Group II Polynuclear Aromatic Hydrocarbons (PAH)					Method 8270D ³

Minor Modification on Remediation General Permit (RGP):

On March 22, 2007, EPA made a minor modification to the RGP to correct the Minimum Level, (ML) for total phthalates (Phthalates and esthers). using Gas Chromatography/Mass Spectrometry (GCMS) from 5ug/l, Method 625 to 10 ug/l, Method 625. This change is just in Row 33 on Page 4 of Appendix VI.

Remediation General Permit - Appendix VI

h. Acenaphthene - 83329 -	1 ug/l Method 610 GC/FID	1 ug/l Method 625	0.5 ug/l Method 610 HPLC		Method 8270D ³
i. Acenaphthylene - 208968 -		10 ug/l Method 625	0.2 ug/l Method 610 HPLC		Method 8270D ³
PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
j. Anthracene - 120127 -		10 ug/l Method 625	2 ug/l Method 610 HPLC		Method 8270D ³
k. Benzo(ghi) Perylene - 191242 -		5 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D ³
l. Fluoranthene - 206440 -	10 ug/l Method 610 GC/FID	1 ug/l Method 625	0.5 ug/l Method 610 HPLC		Method 8270D ³
m. Fluorene - 86737 -		10 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D ³
n. Naphthalene - 91203 -	10 ug/l Method 610 GC/FID	2 ug/l Method 625 5.0 ug/l Method 524.2	0.2 ug/l Method 610 HPLC		Method 8270D ³
o. Phenanthrene - 85018 -		5 ug/l Method 625	0.05 ug/l Method 610 HPLC		Method 8270D ³
p. Pyrene - 129000 -		10 ug/l Method 625	0.05 ug/l Method 610 HPLC		Method 8270D ³
37. Total Polychlorinated Biphenyls (PCBs)¹⁰	0.5 ug/l Method 608				0.00005 ug/l Method 1668a ¹¹

Inorganic parameters:	Minimum Levels (ug/l) and Test Methods			
	Flame Atomic Absorption	Inductively Coupled Plasma	Furnace Atomic Absorption	Other
38. Antimony	200 ug/l	50 ug/l	5 ug/l	
39. Arsenic		5 ug/l	2 ug/l	
40. Cadmium	10 ug/l	5 ug/l	0.5 ug/l	
Inorganic parameters:	Minimum Levels (ug/l) and Test Methods			
	Flame Atomic Absorption	Inductively Coupled Plasma	Furnace Atomic Absorption	Other
41. Chromium (total)	Method 218.1	10 ug/l Methods 200.7 ¹¹ , 200.8, 200.15, 1620	5 ug/l Method 200.9	50 ug/l
42. Chromium (hexavalent)				10 ug/l Method 218.6 Method 1636
43. Copper	20 ug/l	5 ug/l	3 ug/l	
44. Lead	100 ug/l	40 ug/l	3 ug/l	
45. Mercury				0.2 ug/l
46. Nickel	30 ug/l	10 ug/l	5 ug/l	
47. Selenium		50 ug/l	5 ug/l	
48. Silver	50 ug/l	10 ug/l	2 ug/l	
49. Zinc	30 ug/l	10 ug/l		
50. Iron		Methods 6010b 200.7 ¹²		

- 1 . Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B). Where a minimum level (ML) is listed but a test method is not specified, permittee may use any of the available methods approved for use under 40 CFR 136, including alternatives approved by this permit, that meets that ML. See EPA's "Methods and Guidance for the Analysis of Water" at www.epa.gov/water/owrcatalog.nsf. Where test method is specified but ML not listed for that method, the lowest ML for listed methods must be used before concentration can be considered as "non-detect."
- 2 . For measuring volatile organic compounds, Method 8260C (or the latest version) may be used as a substitute for CWA Methods 524.2, 602, 624, or 1624. Method 8260C must be preceded by Method 5030 as the preparation method. However, any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8260C.
- 3 . For measuring semi-volatile organic compounds, Method 8270D may be used as a substitute for Methods 610, 625, or 1625. Method 8270D must be preceded by Method 3535 or Method 3520C as the sample preparation method. In either case, the quality control requirements of Method 3500B must be taken into account. The sample preparation method must be specified with data analysis records. Method 8270D may be modified to provide lower detection and quantitation limits using Selected Ion Monitoring (SIM). Any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8270D.
- 4 . GC - gas chromatography
- 5 . GCMS - gas chromatography/mass spectrometry
- 6 . LC - high pressure liquid chromatography
- 7 . Flame Atomic Absorption
- 8 . For measuring fuel oxygenates, Method 602 must be modified to include a heated purge.
- 9 . The sum of individual phthalate compounds.
- 10 . In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as *"total PCBs is the sum of all homologue, all isomer, all congener, or all Aroclor analyses"*.
- 11 . Method 1668a (HRGC/HRMS) has been proposed by EPA and is currently being validated. When approval of the method is finalized, it will be approved for use with this general permit.
- 12 . Methods 6010b and 200.7 for metals may only be used when sample prepared with SW-846 digestion method, Method 3010.