

CHAPTER 15 PROGRAM NOTE #7: SUGGESTED LABORATORY METHODS FOR ANALYZING APPENDIX I AND APPENDIX II CONSTITUENTS

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The State Water Resources Control Board's Resolution No. 93-62 (**Policy**) was approved by the Office of Administrative Law and became effective on July 28, 1993. The Policy directs Regional Water Boards to implement the USEPA's municipal solid waste landfill regulations (40 CFR Part 258, "**federal MSW regulations**") throughout the state by revising the waste discharge requirements (**WDRs**) of all dischargers having landfills subject to those regulations. One aspect of the federal MSW regulations that has caused considerable confusion is the requirement to monitor and analyze for certain constituents listed in Appendices I and II to Part 258. (Appendix I is a subset of the Appendix II constituents used for monitoring.)

Ms. May Hoe, Public Health Chemist for the Central Valley Regional Water Board, has compiled the following list of suggested USEPA analytical methods from SW-846 (through Update III) and Standard Methods, with an eye toward controlling cost by using the least number of methods while at the same time maintaining low detection limits and high reliability. May has also suggested additional recommended monitoring constituents (indicated in the following table with an asterisk "*") based on knowledge of wastes that are commonly discharged to MSW landfills. If you have any questions, please call May Hoe at (916) 255-3034 or CalNet 8-494-3034.

Volatile Organics (USEPA Method 8260B):

Acetone	Carbon disulfide
Acetonitrile	Carbon tetrachloride
Acrolein	Chlorobenzene
Acrylonitrile	Chloroethane
Allyl chloride (3-Chloropropene)	Chloroform
tert-Amyl ethyl ether*	Chloromethane
tert-Amyl methyl ether*	Chloroprene
Benzene	Dibromochloromethane
Bromobenzene	1,2-Dibromo-3-chloropropane (DBCP)
Bromochloromethane	Dibromomethane
Bromodichloromethane	1,2-Dibromoethane (Ethylene dibromide; EDB)
Bromoform	1,2-Dichlorobenzene
Bromomethane	1,3-Dichlorobenzene
tert-Butyl alcohol*	1,4-Dichlorobenzene
n-Butylbenzene*	trans -1,4-Dichloro-2-butene
sec-Butylbenzene*	Dichlorodifluoromethane
tert-Butylbenzene*	1,1-Dichloroethane
tert-Butyl ethyl ether*	1,2-Dichloroethane

Volatile Organics (USEPA Method 8260B) continued:

1,1-Dichloroethene	4-Methyl-2-pentanone
cis-1,2-Dichloroethene	Methyl tert-butyl ether (MtBE)*
trans-1,2-Dichloroethene	Naphthalene
Dichloromethane	2-Nitropropane
1,2-Dichloropropane	n-Propylbenzene*
1,3-Dichloropropane	Propionitrile
2,2-Dichloropropane	Styrene
1,1-Dichloropropene	1,1,1,2-Tetrachloroethane
cis-1,3-Dichloropropene	1,1,2,2-Tetrachloroethane
trans-1,3-Dichloropropene	Tetrachloroethene (PCE)
1,4-Dioxane*	Toluene
Ethylbenzene	1,2,4-Trichlorobenzene
Ethyl methacrylate	1,1,1,-Trichloroethane
Hexachlorobutadiene	1,1,2-Trichloroethane
Hexachloroethane	Trichloroethene (TCE)
2-Hexanone	Trichlorofluoromethane
Iodomethane	1,2,3-Trichloropropane
Isobutyl alcohol	1,2,4-Trimethylbenzene*
di-Isopropyl ether*	1,3,5-Trimethylbenzene*
Methacrylonitrile	Vinyl chloride
Methyl ethyl ketone	Xylene (total)

Semivolatile Organics (USEPA Method 8270C):

Acenaphthene	Chrysene
Acenaphthylene	Dacthal*
Acetophenone	Dibenzo(a,h)anthracene
Acetonitrile	Di-n-butyl phthalate
2-Acetylaminofluorene	3,3'-Dichlorobenzidine
Ametryn*	2,4-Dichlorophenol
4-Aminobiphenyl	2,6-Dichlorophenol
Anthracene	Diethyl phthalate
Atrazine*	2,4-Dichlorophenol
Benzo(a)anthracene	2,6-Dichlorophenol
Benzo(b)fluoranthene	Diethyl phthalate
Benzo(k)fluoranthene	O,O-Diethylphosphorothioate
Benzo(g,h,i)perylene	p-(Dimethylamino)azobenzene
Benzo(a)pyrene	7,12-Dimethylben(a)anthracene
Benzyl alcohol	3,3-Dimethylbenzidine
Bis(2-chloroethoxy) methane	2,4-Dimethylphenol
Bis(2-chloroethyl) ether	Dimethyl phthalate
Bis(2-ethylhexyl) phthalate	1,2-Dinitrobenzene
Bis(2-chloro-1-methylether) ether	1,3-Dinitrobenzene
Bis(4-bromophenyl phenyl) ether	1,4-Dinitrobenzene
Bromacil*	4,6-Dinitro-2-methylphenol
Butyl benzyl phthalate	2,4-Dinitrophenol
4-Chlorobenzenamine	2,4-Dinitrotoluene
4-Chloro-3-methyl phenol	2,6-Dinitrotoluene
2-Chloronaphthalene	Di-n-octyl phthalate
2-Chlorophenol	Diphenylamine
4-Chlorophebyl phenyl ether	EPTC*

Semivolatile Organics (USEPA Method 8270C) continued:

Ethyl methanesulfonate	N-Nitrosodimethylamine
Fluorene	N-Nitrosodiphenylamine
Fluoranthene	N-Nitrosomethylethylamine
Hexachlorobenzene	N-Nitrosodipropylamine
Hexachloropropene	N-Nitrosopiperidine
Indeno(1,2,3-cd)pyrene	N-Nitrosopyrrolidine
Indeno(1,2,3-cd)anthracene	5-Nitro-o-toluidine
Isophorone	Pentachlorobenzene
Kepone	Pentachloronitrobenzene
Lindane	Pentachlorophenol
Methapyrilene	Phenacelin
3-Methylchloroanthrene	Phenanthrene
Methylmethanesulfonate	Phenol
Methyl methacrylate	1,4-Phenylenediamine
2-Methylnaphthalene	Prometon*
2-Methylphenol	Pronamide
3-Methylphenol	Pyrene
4-Methylphenol	Safrole
Molinate*	Simazine*
1,4-Naphthoquinone	Simetryn*
1-Naphthylamine	2,4,5-Trichlorophenoxyacetic acid
2-Naphthylamine	1,2,4,5-Tetrachlorobenzene
2-Nitroaniline	2,3,4,6-Tetrachlorophenol
3-Nitroaniline	o-Toluidine
4-Nitroaniline	2,4,5-Trichlorophenol
Nitrobenzene	2,4,6-Trichlorophenol
2-Nitrophenol	O,O,O-Triethyl Phosphorothioate
4-Nitrophenol	sym-Trinitrobenzene
N-Nitrosodi-n-butylamine	Vinyl acetate
N-Nitrosodiethylamine	

Organochlorine Pesticides (USEPA Method 8081A):

Aldrin	Dieldrin
α -BHC	Endosulfan I
β -BHC	Endosulfan II
γ -BHC(Lindane)	Endosulfan sulfate
δ -BHC	Endrin
Chlorobenzilate	Endrin aldehyde
α -Chlordane	Endrin ketone
γ -Chlordane	Heptachlor
Chlordane - not otherwise specified	Heptachlor epoxide
DBCP	Hexachlorocyclopentadiene
4,4'-DDD	Isodrin
4,4'-DDE	Methoxychlor
4,4'-DDT	Toxaphene
Diallate	

Polychlorinated Biphenyls (PCBs) (USEPA Method 8082):

Aroclor 1016	2,3',4,4'-Tetrachlorobiphenyl*
Aroclor 1221	2,2',3,4,5'-Pentachlorobiphenyl*
Aroclor 1232	2,2',4,5,5'-Pentachlorobiphenyl*
Aroclor 1242	2,3,3',4'6-Pentachlorobiphenyl*
Aroclor 1248	2,2',3,4,4',5'-Hexachlorobiphenyl*
Aroclor 1254	2,2',3,5,5',6-Hexachlorobiphenyl*
Aroclor 1260	2,2',4,4',5,5'-Hexachlorobiphenyl*
2-Chlorobiphenyl*	2,2',3,3',4,4',5-Heptachlorobiphenyl*
2,3-Dichlorobiphenyl*	2,2',3,4,4',5,5'-Heptachlorobiphenyl*
2,2',5-Trichlorobiphenyl*	2,2',3,4,4',5',6-Heptachlorobiphenyl*
2,4',5-Trichlorobiphenyl*	2,2',3,4',5,5',6-Heptachlorobiphenyl*
2,2'3,5'-Tetrachlorobiphenyl*	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl*
2,2',5,5'-Tetrachlorobiphenyl*	

Organophosphorus Compounds (USEPA 8141A):

Chlorpyrifos	Malathion
Diazinon	Parathion
Dimethioate	Parathion-ethyl
Disulfoton	Parathion-methyl
Ethion	Phorate
Famphur	

Total Purgeable Petroleum Hydrocarbons* USEPA Method M8015/5030 or 5035

Total Extractable Petroleum Hydrocarbons* USEPA Method M8015/3510

Extractable Oil and Grease* USEPA Method 1664 or SM 5520 series

Anion Scan (USEPA Method 300):

Bromide*	Phosphate*
Chloride*	Sulfate*
Nitrate*	Sulfite*
Nitrite*	

Trace Metal Scan (USEPA Method 6010 B):

Barium	Silver
Beryllium	Tin
Chromium	Vanadium
Cobalt	Zinc
Copper	

Low Level Metals

USEPA Method 7062	Antimony & Arsenic
USEPA Method 7131A	Cadmium
USEPA Method 7421	Lead
USEPA Method 7471A	Mercury
USEPA Method 7521	Nickel
USEPA Method 7742	Selenium
USEPA Method 7841	Thallium

Other	USEPA Method 9030B Standard Method 4500-NH Standard Method 4500-Org USEPA Method 9010	Sulfide Ammonia Nitrogen* Total Kjeldhal Nitrogen* Cyanide
96-Hour Acute % Survival*	USEPA Method 600/4-90-027F	