

Attachment 5
Monitoring and Reporting

A monitoring study must be conducted in order to provide to the State Water Resources Control Board (State Water Board) an adequate representative characterization of the vessel discharges to determine compliance with the California Ocean Plan numeric objectives, the Basin Plan numeric objectives, and the California Toxics Rule criteria. One of two options must be selected for compliance:

Option A:

Individual Monitoring Study: If the vessel owner/operator selects an individual study approach, then each vessel must be sampled once a year for every year of the 2012 VGP permit cycle. Effluent monitoring must be performed on all waste discharges listed in Table 1. Take note that there are specific constituents listed in Table 2 for all water bodies, ocean and marine bay discharges, and discharges to the Sacramento/San Joaquin Delta and inland waters. The volume of each discharge into state waters must be measured or estimated. In the first sampling year, all constituents subject to the applicable area of discharge (all water bodies, ocean and marine bay discharges, and delta and inland water discharges), as listed in Table 2, must be monitored and recorded. Pollutant sampling in the following years of the 2013 VGP cycle will be narrowed to specific pollutants, based on the first year's sample results, determined by the Executive Director of the State Water Board.

Option B:

Collaborative Group/Regional Monitoring Study: If the vessel owner/operator chooses to join in a collaborative study effort, a Group/Regional Collaborative Study Program shall be developed in consultation with State Water Board staff. The Collaborative Study Design is subject to the approval of the Executive Director of the State Water Board. A representative sampling of each vessel class participating in the study must be performed, and the Collaborative Study Design must indicate the participating vessel owner/operators subject to it.

Reporting:

All monitoring results must be reported to the State Water Board, Division of Water Quality, NPDES Unit, 1001 I Street, Sacramento, CA 95814.

Table 1: Specific Waste Discharge Types

Graywater	Bildgewater/ Oily water Separator Effluent
Ballast Water	Deck Runoff/ Above Water Line Hull Cleaning
Graywater Mixed with Sewage	Fish Hold Effluent

Table 2: Specific Pollutant Types

Water Quality-Based Effluent limitations, All Water Bodies

CHEMICAL CONSTITUENTS	
Constituent	Units
pH	pH units
Ammonia (as N)	μ/l
Oil and Grease	mg/l

TOXICITY CONSTITUENTS	
Constituent	Units
Acute toxicity	TUa
Chronic toxicity	TUc

INDICATOR BACTERIA CONSTITUENTS	
Constituent	Units
Total Coliform Bacteria	MPN or CFU
Fecal Coliform Bacteria	MPN or CFU
Enterococcus Bacteria	MPN or CFU

Water Quality-Based Effluent Limitations for Ocean and Marine Bay Discharges

CHEMICAL CONSTITUENTS	
Constituent	Units
Arsenic	μ/l
Cadmium	μ/l
Chromium VI	μ/l
Copper	μ/l
Lead	μ/l
Mercury	μ/l
Nickel	μ/l
Selenium	μ/l
Silver	μ/l
Zinc	μ/l
Cyanide	μ/l
Total Chlorine Residual ²	μ/l
Phenolic Compounds (non-chlorinated)	μ/l

Chlorinated Phenolics	μ/l
Endosulfan	μ/l
Endrin	μ/l
Haxachloro-cyclohexane	μ/l
Halomethanes	μ/l
Tributyltin	μ/l
PAHs	μ/l
Tetrachloroethylene	μ/l

PHYSICAL CONSTITUENTS	
Constituent	Units
Turbidity	NTU
Suspended solids	mg/l
Settleable Solids	ml/l

Water Quality-Based Effluent Limitations for Discharges to the Sacramento/San Joaquin Delta, and Inland Waters

CHEMICAL CONSTITUENTS – VOLATILE ORGANICS	
Constituent	Units
1, 1 – Dichloroethane	μ/l
1, 1 – Dichloroethene	μ/l
1, 1, 1 – Trichloroethane	μ/l
1, 1, 2 – Trichloroethane	μ/l
1, 1, 2, 2 – Tetrachloroethane	μ/l
1, 2 – Dichlorobenzene	μ/l
1, 2 – Dichloroethane	μ/l
Cis – 1, 2 – Dichloroethene	μ/l
1, 2 Dichloropropane	μ/l
1, 2, 4 – Trichlorobenzene	μ/l
1, 3 – Dichlorobenzene	μ/l
1, 3 – Dichloropropene	μ/l
1, 4 – Dichlorobenzene	μ/l
Acrolein	μ/l
Acrylonitrile	μ/l
Benzene	μ/l
Bromoform	μ/l
Bromomethane	μ/l
Carbon Tetrachloride	μ/l
Chlorobenzene (mono chlorobenzene)	μ/l
Chloroethane	μ/l
2 – Chloroethyl vinyl ether	μ/l
Chloroform	μ/l
Chloromethane	μ/l

Dibromochloromethane	µ/l
Dichlorobromomethane	µ/l
Dichloromethane	µ/l
Ethylbenzene	µ/l
Hexachlorobenzene	µ/l
Hexachlorobutadiene	µ/l
Hexachloroethane	µ/l
Naphthalene	µ/l
Tetrachloroethene	µ/l
Toluene	µ/l
trans – 1, 2 – Dichloroethylene	µ/l
Trichloroethene	µ/l
Vinyl chloride	µ/l
Methyl – tert – butyl ether (MTBE)	µ/l
Trichlorofluoromethane	µ/l
1, 1, 2 – Trichloro – 1, 2, 2 – Trifluoroethane	µ/l
Styrene	µ/l
Xylenes	µ/l

CHEMICAL CONSTITUENTS – SEMI - VOLATILE ORGANICS

Constituent	Units
1, 2 Benzanthracene	µ/l
1, 2 Diphenylhydrazine	µ/l
2 – Chlorophenol	µ/l
2, 4 – Dichlorophenol	µ/l
2, 4 – Dimethylphenol	µ/l
2, 4 – Dinitrophenol	µ/l
2, 4 – Dinitrotoluene	µ/l
2, 4, 6 – Trichlorophenol	µ/l
2, 6 – Dinitrotoluene	µ/l
2 – Nitrophenol	µ/l
2 – Chloronaphthalene	µ/l
3, 3' – Dichlorobenzidine	µ/l
3, 4 – Benzofluoranthene	µ/l
4 – Chloro – 3 – methylphenol	µ/l
4, 6 – Dinitro – 2 – methylphenol	µ/l
4 – Nitrophenol	µ/l
4 – Bromophenyl phenyl ether	µ/l
4- Chlorophenyl phenyl ether	µ/l
Acenaphthene (PAH)	µ/l
Acenaphthylene (PAH)	µ/l
Anthracene (PAH)	µ/l
Benzidine	µ/l
Benzo(a)pyrene (3, 4 – Benzopyrene) (PAH)	µ/l
Benzo(g, h, i)perylene (PAH)	µ/l
Benzo(k)fluoranthene (PAH)	µ/l
Bis(2-chloroethyl) ether	µ/l

Bis(2-chloroisopropyl) ether	μ/l
Bis(2 – ethylhexyl) phthalate	μ/l
Butyl benzyl phthalate	μ/l
Chrysene (PAH)	μ/l
Di-n-butylphthalate	μ/l
Di-n-octylphthalate	μ/l
Dibenzo(a,h)-anthracene (PAH)	μ/l
Diethyl phthalate	μ/l
Dimethyl phthalate	μ/l
Fluoranthene (PAH)	μ/l
Fluorene (PAH)	μ/l
Hexachlorocyclopentadiene	μ/l
Indeno(1,2,3-c,d) pyrene (PAH)	μ/l
Isophorone	μ/l
N-Nitrosodiphenylamine	μ/l
N-Nitrosodimethylamine	μ/l
N-Nitrosodi-n-propylamine	μ/l
Pentachlorophenol	μ/l
Phenanthrene (PAH)	μ/l
Phenol	μ/l
Pyrene (PAH)	μ/l

CHEMICAL CONSTITUENTS - INORGANICS

Constituent	Units
Aluminum	μ/l
Antimony	μ/l
Arsenic	μ/l
Asbestos	μ/l
Barium	μ/l
Beryllium	μ/l
Cadmium	μ/l
Chromium (total)	μ/l
Chromium (VI)	μ/l
Copper	μ/l
Cyanide	μ/l
Iron	μ/l
Lead	μ/l
Mercury	μ/l
Manganese	μ/l
Nickel	μ/l
Selenium	μ/l
Silver	μ/l
Thallium	μ/l
Tributyltin	μ/l
Zinc	μ/l

OTHER CHEMICAL CONSTITUENTS

Constituent	Units
Chloride	μ/l
Foaming Agents (MBAS)	μ/l
Nitrate (as N)	μ/l
Nitrite (as N)	μ/l
Specific conductance (EC)	μ/l
Sulfate	μ/l
Total Dissolved Solids (TDS)	μ/l