



Victoria Government Gazette

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Environment Protection Act 1970 (No. 8056)

STATE ENVIRONMENT PROTECTION POLICY
No. W-21

(The Waters of Far East Gippsland)

*At the Executive Council Chamber, Melbourne, the
twenty-sixth day of February, 1985*

PRESENT:

His Excellency the Governor of Victoria

Mr Trezise
Mr Roper

Mr Spyker
Mr Kennan

Whereas section 16 of the *Environment Protection Act 1970* provides that the Governor in Council may, on the recommendation of the Environment Protection Authority, declare the environment protection policy to be observed with respect to the environment generally or in any portion or portions of Victoria or with respect to any element or elements or segment or segments of the environment;

And whereas section 17 (1) of the said Act provides that in and by any Order made under section 16 the Governor in Council may, for securing the observance of State environment protection policy declared by the Order—

- (a) classify any area or any segment or element of the environment in any area for the purposes of the Order;
- (b) set aside any area or areas or any segment or segments of the environment within which the discharge, emission, or deposit of wastes or the emission of noise is prohibited or restricted as specified in the Order;
- (c) makes rules to be observed for carrying any such prohibition or restriction into effect; and
- (d) delegate to any protection agency such of the powers of the Authority as are necessary for securing the observance of the Order;

And whereas section 18 of the said Act provides that State environment protection policy declared in any Order under section 16 shall establish the basis for maintaining environmental quality sufficient to protect

existing and anticipated beneficial uses in the area affected by the Order and in particular shall include in terms sufficiently clear to give an adequate basis for planning and licensing functions—

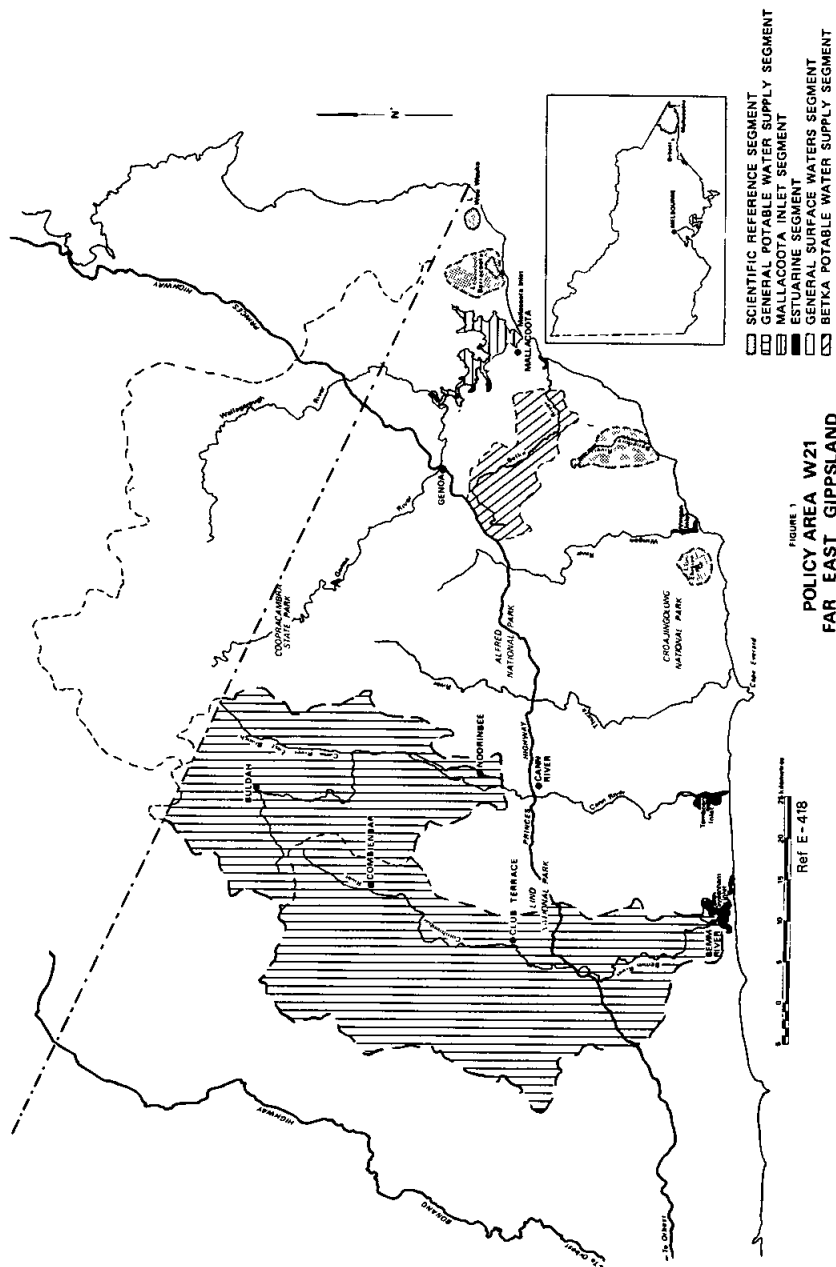
- (a) the boundaries of any area affected;
- (b) identification of the beneficial uses to be protected;
- (c) selection of the environmental indicators to be employed to measure and define the environmental quality;
- (d) a statement of the environmental quality objectives (where practicable); and
- (e) the program if any by which the stated environmental quality objectives are to be attained and maintained including, where appropriate, the specification of—
 - (i) maximum quantities and qualities of waste permitted to be discharged to the environment;
 - (ii) maximum levels of noise permitted to be emitted to the environment;
 - (iii) minimum standards for the installation and operation of works or equipment for the control of waste or noise from specified sources or classes of premises; and
 - (iv) measures designed to minimize the possibility of the occurrence of pollution.

And whereas in accordance with section 19 of the said Act the Authority caused the publication of notice of intention to declare State environment protection policy in respect of the waters of Far East Gippsland;

And whereas the Authority has now considered the information submitted by various persons;

And whereas more than two months have elapsed since the publication of the last notice.

Now therefore His Excellency the Governor of Victoria by and with the advice of the Executive Council thereof and on the recommendation of the Environment Protection Authority doth by this Order declare the following to be the State environment protection policy to be observed for the area referred to in the Order and with respect to the elements and segments of the environment referred to in the Order (that is to say);



**STATE ENVIRONMENT PROTECTION
POLICY No. W-21**

THE WATERS OF FAR EAST GIPPSLAND

1. This Order may be cited as the State environment protection policy (Waters of Far East Gippsland) No. W-21 (hereinafter referred to as the Policy), and shall come into operation upon publication in the *Government Gazette*.

2. This Policy is divided into parts as follows:

Part I—Preliminary

Part II—Boundaries of the Area Affected

Part III—Beneficial Uses to be Protected

Part IV—Water Quality Indicators and Objectives

Part V—Attainment Program

PART I—PRELIMINARY

3. In this Policy unless inconsistent with the context or subject matter:

“Act” means the “*Environment Protection Act 1970* as amended.

“Authority” means the Environment Protection Authority constituted under the Act.

“Background level” means the level of an indicator (measured in a manner and at a location specified by the Authority) in the surface waters and groundwaters outside the influence of any waste containing that indicator.

“Beneficial use” means a use of the environment or any element or segment of the environment that is conducive to public benefit, welfare, safety, or health and which requires protection from the effects of waste discharges, emissions and deposits.

“Delegated agency” means a protection agency to which the Authority has delegated powers or functions under section 68 of the Act with respect to the grant, refusal or enforcement of licences.

“Intensive animal industry” means an operation where animals are confined for the purpose of agricultural production and includes piggeries, poultry farms and feedlots.

“Groundwater” means the water beneath the land surfaces which is contained in aquifers.

“Licence” means a licence issued by the Authority or a protection agency on behalf of the Authority being a licence in writing in the prescribed form authorizing the person to whom it is issued to discharge, emit, or deposit wastes into the environment.

“Licensing provisions” means sections 20 to 31 inclusive of the Act.

“Mixing zone” means an area contiguous to a licensed waste discharge point and specified in that licence, where the receiving water quality objectives otherwise applicable in this Policy do not apply with respect to certain indicators as specified in the licence.

“Policy area” means the area in which this Policy shall be observed as specified in clause 5.

“Responsible authority” in relation to sewerage means any authority with jurisdiction over the provision of, or requirement for sewerage, including those authorities with control over the subdivision of land.

“Segment” in relation to the environment means any portion or portions of the environment expressed in terms of volume, space, area, quantity, quality or time or any combination thereof.

“Sewered property” means any sewered land or premises and any land or premises which have declared by a sewerage authority in the manner prescribed by statute to be a sewered property.

“Sewerage” means works for the collection, treatment and disposal of wastewater.

“Surface waters” means the surface waters of the Policy area, and includes any river, stream, reservoir, billabong, creek, anabranch, canal, spring, swamp, channel, lake, lagoon, natural or artificial water course, dam, tidal waters or coastal waters, and excludes waters within waste treatment systems, waters within water supply distribution systems, farm dams, private ponds, open piped or underground drains and the interstitial waters of sediments.

“Treatment” in relation to potable water supply means disinfection by detention, chlorination or other means and/or clarification to remove turbidity, colour and suspended solids using processes such as flocculation, coagulation, sedimentation or filtration.

“Waste” includes any matter prescribed to be waste and any matter, whether liquid, solid, gaseous, or radio-active, which is discharge, emitted, or deposited in the environment in such volume, constituency or manner as to cause an alteration of the environment.

“96 hour LC_{50} ” is the concentration of a toxicant or toxicant mixture which causes mortality of 50% of a test population of aquatic organisms within 96 hours.

4. The overall goal of this Policy is to attain and maintain acceptable levels of water quality which are sufficient to protect the beneficial uses of the surface waters of the Policy area valued by the people of Victoria. In particular, the Policy aims to:

- (a) Recognise the special ecological significance of parts of the Policy area;
- (b) Assist in realising the recreation and tourism potential of the Policy area; and
- (c) Minimise the costs and development constraints in achieving these goals.

**PART II—BOUNDARIES OF THE AREA
AFFECTED**

5. This Policy shall be observed with respect to all surface waters within that part of the State of Victoria east of, and including the catchments of, Bemm River and Cann River (as shown in Figure 1). Hereafter the area of the above catchments shall be referred to as the Policy area.

6. For the purpose of this Policy the following segments of the environment are classified:

(a) *Scientific Reference Segment:*

The surface waters of the Benedore River, Lake Barracoota, Lake Elusive, Lake Wau Wauka and catchments.

(b) *General Potable Water Supply Segment:*

The surface waters of the Cann River upstream of the Cann River town water supply offtake, and the Bemm River upstream of the proposed Bemm River town water offtake, and catchments.

(c) *Betka Potable Water Supply Segment:*

The surface waters of the Betka River upstream of the Mallacoota town water supply offtake and catchment.

(d) *Mallacoota Inlet Segment:*

The surface waters of Mallacoota Inlet, including those parts of tributary streams which are under tidal influence.

(e) *Estuarine Segment:*

The surface waters of the Betka estuary, Wingan Inlet and all other estuarine waters not contained in the Mallacoota Inlet Segment, including those parts of the tributary streams which are under tidal influence.

(f) *General Surface Waters Segment:*

The surface waters of the Policy area not contained within the Scientific Reference Segment, the General Potable Water Supply Segment, the Betka Potable Water Supply Segment, the Mallacoota Inlet Segment and the Estuarine Segment.

PART III—BENEFICIAL USES TO BE PROTECTED

7. The following beneficial uses shall be protected with respect to the water quality of the *Scientific Reference Segment:*

(a) Maintenance of aquatic ecosystems and associated wildlife (maximum level of protection)

(b) Scientific and educational uses

(c) Maintenance of foreshore and streambank vegetation.

8. The following beneficial uses shall be protected with respect to the water quality of the *General Potable Water Supply Segment:*

(a) Potable water supply
—with treatment

(b) Agricultural water supply
—farmstead
—stockwater
—irrigation

(c) Industrial water supply

(d) Recreation
—primary contact (e.g. bathing)
—secondary contact (e.g. boating)
—passive (e.g. aesthetic enjoyment)

(e) Passage of fish

(f) Production of edible fish and crustacea
—freshwater

(g) Maintenance of aquatic ecosystems and associated wildlife (high level of protection)

(h) Maintenance of streambank vegetation.

9. The following beneficial uses shall be protected with respect to the water supply of the *Betka Potable Water Supply Segment:*

(a) Potable water supply
—with treatment

(b) Agricultural water supply
—farmstead
—stockwater
—irrigation

(c) Industrial water supply

(d) Recreation
—primary contact (e.g. bathing)
—secondary contact (e.g. boating)
—passive (e.g. aesthetic enjoyment)

(e) Passage of fish

(f) Production of edible fish and crustacea
—freshwater

(g) Maintenance of aquatic ecosystems and associated wildlife (high level of protection)

(h) Maintenance of streambank vegetation.

10. The following beneficial uses shall be protected with respect to the water quality of the *Mallacoota Inlet Segment:*

(a) Navigation
—commercial and recreational craft

(b) Recreation
—primary contact (e.g. bathing, waterskiing)
—secondary contact (e.g. boating)
—passive (e.g. aesthetic enjoyment)

(c) Passage of fish

(d) Production of edible fish and crustacea
—estuarine

(e) Shellfish harvesting

(f) Maintenance of aquatic ecosystems and associated wildlife (moderate level of protection)

(g) Maintenance of foreshore and streambank vegetation.

11. The following beneficial uses shall be protected with respect to the water quality of the *Estuarine Segment:*

(a) Recreation
—primary contact (e.g. bathing, waterskiing)
—secondary contact (e.g. boating)
—passive (e.g. aesthetic enjoyment)

(b) Passage of fish

(c) Production of edible fish and crustacea
—estuarine

(d) Shellfish harvesting

(e) Maintenance of aquatic ecosystems and associated wildlife (high level of protection)

(f) Maintenance of foreshore and streambank vegetation.

12. The following beneficial uses shall be protected with respect to the water quality of the *General Surface Waters Segment*:

- (a) Agricultural water supply
 - farmstead
 - stockwater
 - irrigation
- (b) Industrial water supply
- (c) Recreation
 - primary contact (e.g. bathing)
 - secondary contact (e.g. boating)
 - passive (e.g. aesthetic enjoyment)
- (d) Passage of fish
- (e) Production of edible fish and crustacea
 - freshwater
- (f) Maintenance of aquatic ecosystems and associated wildlife (high level of protection)
- (g) Maintenance of streambank vegetation.

PART IV—WATER QUALITY INDICATORS AND OBJECTIVES

13. The levels of water quality required to protect the identified beneficial uses in each segment and downstream waters and which are required to be attained and maintained by this Policy, are defined by the water quality indicators and objectives prescribed in the respective schedules as follows:

Segment	Schedule
Scientific Reference Segment	A
General Potable Water Supply Segment	B
Betka Potable Water Supply Segment	B
Mallacoota Inlet Segment	C
Estuarine Segment	D
General Surface Waters Segment	E

14. The water quality indicators and objectives specified in clause 13 shall apply to all waters in each segment respectively, except where provisions are made to the contrary in a licence by the designation of mixing zones, and except for temporary non-compliance caused by stream and streamside spraying of pesticides and herbicides as provided by Schedule F.

PART V—ATTAINMENT PROGRAM

General

15. *Summary.* The objectives of this Policy shall be attained and maintained by the following means:

- (a) Control of the discharge of wastes to the surface waters through the licensing provisions of the Act and, where applicable, through Regulations introduced under the Act (see detailed clauses 20–28);
- (b) Adequate sewerage and drainage services and the construction of streets and roads (see detailed clauses 29–33);

(c) Appropriate location and management of waste disposal and waste generating activities including land use (see detailed clauses 34–46);

(d) Educational, research, monitoring and investigative activities insofar as these are necessary to carry out the above (see detailed clauses 47–50).

16. *Implementation.* The Policy is binding on all Government departments, agencies and instrumentalities. All such bodies shall observe and implement this Policy insofar as it relates to their powers, duties and responsibilities.

17. *Implementation plans.* The Authority shall co-ordinate the preparation of implementation plans for the attainment and maintenance of Policy objectives. Such plans may make provision for a staged attainment of Policy objectives through licensing or other means, where this does not contravene other provisions of the Policy.

18. *Planning Policy.* This Policy shall be implemented having regard to relevant Statements of Planning Policy made under the *Town and Country Planning Act 1961*. The preparation of such Statements of Planning Policy, planning schemes and interim development orders shall pay special attention to the implementation of this Policy and the attainment of the Policy objectives.

19. *Review.* The Policy shall be subject to review and amendment as new information and circumstances warrant.

Detailed Provisions

Waste Discharge Licensing

20. *Relationship to Policy objectives.* Subject to the provisions of this Policy, in considering any application for a licence the Authority shall have regard to the effect of the discharge, together with the collective effect of other waste discharges on receiving water quality so that the licence, if granted, and any conditions to which it is subject shall be consistent with the attainment and maintenance of the Policy objectives.

21. *Future waste discharge.* In considering applications for a licence the Authority may have regard to the need to preserve capacity of the surface waters to receive future waste discharges.

22. *Mixing zones.* In granting a licence the Authority may designate a mixing zone within which certain water quality objectives in relation to the indicator or indicators specified in the licence are not required to be achieved.

(a) The designation of a mixing zone is subject to the following requirements:

- (i) there must be no significant adverse effect to any protected beneficial use within the segment concerned as a result of the size and location of the mixing zone;
- (ii) the licence must clearly specify the location and size of the mixing zone and the indicator or indicators to which it applies; and

- (iii) where applicable to the beneficial uses protected in the affected segment or segments, mixing zones for the relevant indicators shall not be designated in the following:

- areas important for primary contact recreation;
- offtakes for domestic, industrial and agricultural water supplies;
- spawning and nursery areas of aquatic species and other areas of important ecological significance;
- areas where such zones will create barriers to the passage of migratory species.

- (b) Licence monitoring programs may require water quality monitoring in and around mixing zones, including biological monitoring and effluent toxicity testing where appropriate.

- (c) Within each mixing zone:

- (i) the level of dissolved oxygen shall not be less than 2 mg/L;
- (ii) there shall be no objectionable colour or odours and no excessive growths of algae or other aquatic plants;
- (iii) there shall be no visible floating foam, oils, grease, scum, litter or other objectionable matter;
- (iv) the level of toxicants, individually or in combination, shall not exceed the 96 hour LC_{50} as determined by tests or methods specified or approved by the Authority, except where it can be reasonably expected that mortality of fish and other important motile species will not occur; and
- (v) there shall be no mortality of fish or other important motile species as a result of temperature, pH or changes in filtrable residue (total dissolved solids).

23. *Exemptions.* Exemptions to waste discharge licensing made under section 20 (11) of the Act do not obviate the need for these waste discharges to comply with the objectives and provisions of the Policy.

24. *Mallacoota Inlet Segment and Estuarine Segment:*

- (a) No licence shall be granted for the discharge of sewage effluent, treated or untreated, to the *Mallacoota Inlet Segment* or the *Estuarine Segment*.
- (b) Any licence for the discharge, emission or deposit of wastes into the *Mallacoota Inlet Segment* or the *Estuarine Segment* shall include requirements to the effect that the point or points of discharge—
 - (i) shall terminate below the low water mark;
 - (ii) shall be so situated and constructed as to ensure adequate mixing and dispersion of the waste in the surface waters; and
 - (iii) shall be so situated as to cause no damage to intertidal vegetation, seagrass beds or other areas of major ecological significance.

25. *Betka Potable Water Supply Segment and Scientific Reference Segment.* No licence shall be granted for the discharge of wastes to the *Betka Potable Water Supply Segment* or the *Scientific Reference Segment*.

26. *Groundwater.* No licence shall be granted for the direct injection of waste to the groundwaters by means of a bore, well, infiltration basin or other similar structure specifically designed for this purpose, except for the purpose of artificially recharging aquifers without deterioration of water quality.

27. *Heavy metals.* Where a licence is granted for the discharge of wastes to the surface waters of the Policy area, the concentrations of heavy metals in such discharges shall not exceed the limits given in Schedule G. More stringent levels shall apply if necessary to achieve the Policy objectives. Existing licences shall be amended as necessary to achieve these limits within three years of the date of gazettal of this Policy.

28. *Agricultural wastes.* No licence shall be granted for the discharge to water of farm effluents from intensive animal industries, milking sheds and vegetable washing and processing.

Servicing

29. *Sewerage.*

- (a) Responsible authorities shall ensure that new subdivisions of land are provided with sewerage at the time of subdivision or that the allotments created by the subdivision are capable of adequately treating and retaining domestic wastewater within the boundaries of each allotment. Exceptions to this requirement may apply, with the approval of the responsible authority, to small subdivisions within or abutting areas of existing development in a zoned township or urban area to which sewerage cannot be readily provided. Such exemption shall be limited to subdivisions where the total number of allotments created by one or more subdivisions from a single parcel of land existing under one title at the date of gazettal of this Policy will be less than 10 allotments. A responsible authority acting in accordance with its own powers and responsibilities may impose more stringent requirements than provided by this exemption.
- (b) Sewerage shall be provided as soon as possible to all existing subdivisions of land where domestic wastewaters cannot be adequately treated and retained within the boundaries of each allotment. Where possible sewerage shall be provided prior to the commencement of building works. High priority should be given to sewerage existing subdivisions where building works have already commenced.

Areas identified as requiring sewerage are listed in Schedule H.

- (c) In determining whether domestic wastewaters are capable of being adequately treated and retained within the boundaries of each allotment, responsible authorities shall have regard to factors such as the dimensions and area of the allotments, the intensity of the proposed use,

climatic and soil considerations, water supply conditions and physical characteristics of the site.

- (d) Where domestic wastewaters are not capable of being treated and retained within the boundaries of each allotment as indicated in (c) above, and sewerage will not be available for the acceptance of domestic wastewaters within 5 years of the date of the gazettal of this Policy, then until such time as sewerage is available, the minimum acceptable treatment for all domestic wastewaters shall be by an all-waste septic tank and sandfilter system in accord with the *Code of Practice—Septic Tanks (1979)*, Health Commission of Victoria, or such other manual approved by the Authority.
- (e) In seweraged areas, the appropriate steps shall be taken by sewerage authorities to ensure that all premises are connected to the sewerage system for the purpose of domestic wastewater disposal.
- (f) Detailed consideration and encouragement shall be given to the reclamation and re-use of wastewater and, in particular, to the discharge of sewage effluent to land.

30. *Discharge to sewer.* The discharge of wastewater from any seweraged property or any property where sewerage reticulation is available should, in general, be to the sewerage system, if that waste (with pretreatment if necessary) is acceptable to the appropriate sewerage authority. Land disposal of wastewaters from seweraged properties will be permitted if appropriate.

31. *Street construction.* Streets and roads shall be constructed to the appropriate standards as soon as practicable and provided with adequate drainage. Such construction should be carried out in accordance with "*Guidelines for Minimising Soil Erosion and Sedimentation from Construction Sites in Victoria*" (1979), published by the Soil Conservation Authority.

Surface drainage from unmade, or partially constructed, streets and roads should be conveyed through or across appropriate sediment control structures, including grassed areas, thence to natural drainage lines.

32. *Drainage.* Drainage system design shall ensure that erosion of streambeds, streambanks and other drainage lines does not result from the provision of such services and should make allowance, where practicable, for the attenuation of peak runoff and the retention and trapping of contaminants including litter, in runoff. Input of these contaminants to the drainage system should be minimized by control of activities within the catchment of the drainage system. In particular urban drainage management shall include good housekeeping practices such as regular street sweeping and increased use of detention basins.

33. *Litter.* Management of streams, lakes, estuaries and environs shall include the formulation of a litter control strategy which will make provisions for community education and for the regular collection and removal of litter or debris, and ensure that sufficient resources are devoted to the enforcement of the *Litter Act 1964*.

Waste Generation and Waste Disposal

34. *Land use.* In the development and administration of land use planning schemes, due regard shall be given to the need for land use to be so located and managed as to ensure that contaminated runoff, both from sites and within the catchment as a whole is reduced to a minimum.

35. *Land disturbance and erosion.* Land disturbance activities shall be carefully controlled and appropriate soil conservation measures shall be taken in order to minimize soil erosion and subsequent runoff of suspended, dissolved and settleable matter.

- (a) Construction works including building activities and provision of services should be carried out in accordance with *Guidelines for Minimising Soil Erosion and Sedimentation from Construction Sites in Victoria (1979)*, published by the Soil Conservation Authority.
- (b) Where streambank erosion and substrate disturbance are evident, streambank buffer zones should be established. Within these zones:
- (i) eroding streambanks should be stabilized by vegetative or other means;
 - (ii) stock access should be restricted to defined watering and crossing points, by the use of fencing where necessary. Such watering and crossing points should be stabilized;
 - (iii) vermin and noxious weeds should be controlled.
- (c) Land disturbance activities, in particular the excavation and removal of soil, on streambeds, streambanks, flood plains and lake shores should be avoided, except for necessary river management works.
- (d) Land Use Determinations shall be made under the *Soil Conservation and Land Utilization Act 1958* for all proclaimed potable water supply catchments as soon as possible.

36. *Forestry operations.* Forestry operations in the vicinity of surface waters should be controlled to minimize land disturbance and the input of sediment to streams and damage to aquatic habitats.

- (a) Guidelines given in the Forests Commission "*Prescriptions for Hardwood Harvesting and Regeneration of State Forests—Eastern Division*" shall be adhered to and enforced, particularly those clauses related to reserves along permanent streams, filter strips along non-permanent streams, road construction, and forest harvesting on steep slopes.

The Prescriptions should continue to be reviewed on the basis of new information to ensure that Policy objectives are being met.

- (b) All reasonable precautions should be taken to prevent wild fires in order to avoid subsequent loss of soil, nutrients and dissolved matter to streams.

37. *Runoff from diffuse sources.* Where runoff from diffuse sources is causing Policy objectives to be exceeded, the following means of control shall be investigated and applied where appropriate.

- (a) Elimination or treatment of the source of the contaminated runoff;
- (b) Changes to land use practices;
- (c) Establishment of vegetated streamside buffer zones to filter runoff. Within such zones:
- (i) stock access should be restricted to defined watering and crossing points. Such watering and crossing points should be stabilized;
 - (ii) vermin and noxious weeds should be controlled;
 - (iii) urban development should be restricted.
38. *Disposal of waste to land (including garbage, solid waste and sludge).*
- (a) The disposal of wastes to the land surface shall be carried out in such a manner and at such locations so as not to cause the pollution of groundwater, and surface waters.
- (b) Without limiting the generality of sub-clause (a), no wastes, other than inert solid wastes, shall be deposited on land within 60 metres of surface waters, nor on a floodplain, except where provision is made to prevent the entry of floodwaters.
- (c) Toxic chemicals shall not be stored nor disposed of on a flood plain (as defined by a flood frequency of one in fifty years).
39. *Dredging, spoil disposal and other works.* Dredging, river improvement, reclamation, spoil disposal and other works should be carried out in a manner which causes minimal disturbance of plant and animal habitats. Dredged spoil shall not be disposed of near mariculture areas.
40. *Flood plain management.* The control and management of activities within flood plains shall include provisions to ensure that Policy objectives are achieved and maintained. In particular sewage treatment and pumping works shall not be located on a flood plain (as defined by a flood frequency of one in ten years). Where the Authority is satisfied that no practicable alternative exists, lagoons may be located on a flood plain, provided they are constructed so as to prevent the entry of flood water from a flood with a frequency of one in ten years.
41. *Contingency plans.* Industries in the Policy area should develop and maintain contingency plans for the avoidance and control of spills or breakdowns so as to prevent pollution of surface waters. Such plans should include:
- (a) Emergency holding and clean-up procedures;
 - (b) Action to minimize any adverse environmental effects; and
 - (c) Methods for disposal of spilled materials.
42. *Oil spills.* All necessary precautions should be taken to ensure that no oil or grease is spilled into the surface waters of the Policy area, including mixing zones. Where practicable spills should be physically reclaimed. In other circumstances methods which cause least damage to aquatic biota and the environment should be adopted. Any dispersant used should be of minimal toxicity.
43. *Intensive animal industries.* The location and operation of intensive animal industries and milking sheds should be in accordance with *Guidelines for the Conduct of Intensive Animal Industries* published by the Department of Agriculture and the Authority. In particular:
- (a) No new intensive animal industry should be established within the *Betka Potable Water Supply Segment*.
 - (b) No buildings or yards associated with any intensive animal industry should be constructed within 800 metres upstream of any potable water supply storage or offtake controlled by a statutory authority or within 200 metres of a potable water supply channel or within 100 metres of surface waters.
44. *Rules for agricultural waste disposal.* For the purpose of section 17 (1) of the Act, rules prohibiting and restricting the discharge of waste to the surface waters of the Policy area from farms are hereby made as follows:
- (a) All farm effluents from intensive animal industries, milking sheds and vegetable washing and processing shall be disposed of by land irrigation in such a manner as to preclude any polluting runoff to surface waters or pollution of groundwater.
 - (b) No solid or liquid effluent from any intensive animal industry, milking shed and vegetable washing and processing shall be disposed of within 800 metres upstream of any potable water supply storage or offtake controlled by a statutory authority or within 200 metres of a potable water supply channel, or within 100 metres of surface waters.
- PENALTY: 10 Penalty Units
45. *Boating.*
- (a) The discharge of sewage from boats should be to an appropriate shore-based disposal facility.
 - (b) Regulations proclaimed under the *Motor Boating Act 1961* shall be adhered to and enforced. Where streambank erosion is evident as a result of boating activity, appropriate bank stabilization works shall be carried out and consideration given to additional regulation of boating in such areas.
46. *Rule for Scientific Reference Segment.* For the purpose of section 17 (1) of the Act the *Scientific Reference Segment* is hereby set aside as a segment of the environment in which the discharge, emission, or deposit of wastes is prohibited or restricted as follows:
- There shall be no discharge, emission, or deposit of waste, and no streamside spraying of pesticides and herbicides, in the *Scientific Reference Segment*.

Related Activities

47. *Research.* Further research and studies should be initiated by the Authority, subject to the availability of funds, to assist in the attainment and maintenance of the Policy including:

- (a) The design and management of vegetated buffer zones to minimize polluting runoff to surface waters.
- (b) An investigation into the relationship between concentrations of nutrients (especially nitrogen and phosphorus) in stream and estuarine waters and the occurrence of nuisance growths of algae and other aquatic plants in these waters.

48. *Toxicity testing.* The Authority shall continue to initiate acute and chronic toxicity tests designed to determine the effects of individual toxicants or toxicant mixtures on the physiology, behaviour and reproduction of suitable native species subject to the availability of funds. The results of these tests may be confirmed by biological studies on the survival and

productivity of suitable species in the environment. In determining the most suitable species to be used in these tests due regard shall be given to representation of various trophic levels and taxonomic groups. Data obtained from these local toxicity tests (as it becomes available) shall be used to complement overseas data in improving the T values by variation of Tables 1 and 2 of this Policy as appropriate.

49. *Monitoring.* The Authority shall undertake a water quality monitoring program to ensure that sufficient data are available to assist in the implementation of this Policy and to assess the attainment and maintenance of Policy objectives. The reports of such monitoring shall be publicly available.

50. *Public education.* In co-operation with other public and private bodies the Authority shall promote public education in water quality management, waste disposal and pollution control in the Policy area, particularly with respect to the input of waste from diffuse sources.

Schedule A**SCIENTIFIC REFERENCE SEGMENT****WATER QUALITY INDICATORS AND OBJECTIVES**

<i>Indicator</i>	<i>Objective</i>
All indicators	The level shall not vary from background levels.

Schedule B**GENERAL POTABLE WATER SUPPLY SEGMENT****BETKA POTABLE WATER SUPPLY SEGMENT****WATER QUALITY INDICATORS AND OBJECTIVES**

<i>Indicator</i>	<i>Objective</i>
1. Dissolved Oxygen	The concentration of dissolved oxygen shall not be less than 8.0 mg/L or 85% saturation (whichever is higher).
2. Bacteria (<i>E. coli</i>)	The level of <i>E. coli</i> shall not exceed 100 organisms/100mL in 90% of samples taken in any year.
3. pH	The pH shall not vary from the background level by more than 0.5 units, nor fall outside the range 6.5 to 8.5.
4. Temperature	The temperature shall not vary by more than 0.5°C from background levels.
5. Filtrable Residue (Total Dissolved Solids)	The level of filtrable residue shall not vary by more than 2% from background levels.
6. Light Penetration	(a) The combined effects of turbidity and colour shall not reduce the depth of the compensation point for photosynthetic activity to the extent that such reduction would be of detriment to the aquatic ecosystem. (b) Without limiting the generality of objective (a), light penetration shall not vary by more than 10% from background levels.
7. Toxicants	(a) The level of toxicants shall not exceed levels for which there is substantiated evidence of lethal or sublethal toxic effects or undesirable physiological, mutagenic, carcinogenic or teratogenic responses in humans, plants, birds, animals, fish, and other aquatic life, as these relate to the stated beneficial uses of this segment, with due regard to biologically cumulative effects in food chains and the combined effects of toxicant mixtures. (b) Without limiting the generality of objective (a), the level of toxicants shall not exceed that derived from subclauses (i), (ii) and (iii) below, Table 5 or Table 6 (whichever is the lower).

(i) Individual Toxicants

The concentration of individual toxicants shall not exceed levels given by the formula:

$$N + 0.2 (T - N)$$

where T is the threshold concentration of chronic sublethal effects for aquatic ecosystems and N is the background level of the toxicant.

T may be obtained from Table 1. For toxicants not listed in the table, T shall be derived from appropriate toxicity tests specified or approved by the Authority.

(ii) Toxicant Mixtures

The concentration of toxicant mixtures shall not exceed 0.2 times the threshold concentration of chronic sublethal effects for aquatic life (T_m).

T_m shall be derived from appropriate toxicity tests specified or approved by the Authority.

In the absence of such tests the levels of toxic matter in combination shall satisfy the following relationship:

$$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n} < 1.0$$

where C₁, C₂, C_n are the measured or expected concentrations of the toxicants and L₁, L₂, L_n are the appropriate levels derived from (b) (i) for toxicants in isolation. Individual fractions less than 0.2 are not included in the summation.

(iii) Toxicants in Edible Tissue

The level of toxicants in the water column shall not exceed a level which would cause the concentration in edible fish and crustacea to exceed that listed in the *Food and Drugs Standards Regulations* (1966).

8. Nutrients and Biostimulants

Nutrients and other growth stimulants shall not be present in quantities sufficient to cause excessive or nuisance growths of algae or other aquatic plants in these segments and downstream waters.

9. Aesthetic Characteristics
Odours and Colours
Taints

The level of odours and colours in waters shall not be objectionable.

(a) The level of taints in edible aquatic organisms shall not be objectionable.

(b) Without limiting the generality of objective (a) the concentration of individual substances listed in Table 3 shall not exceed the limits given in the Table.

Floatable Matter

There shall be no visible floating oil, grease, scum, litter or other objectionable matter.

Potability

Subject to the objective for Filtrable Residue the levels of potability indicators listed in Table 4 shall not exceed the limits given in the Table.

10. Non-filtrable Residue (Suspended Solids)

The annual median level of non-filtrable residue shall not exceed 25 mg/L nor shall the 90th percentile exceed 80 mg/L.

11. Settleable Matter

The level of settleable matter shall not result in deposits which adversely affect the recreation and ecosystem values of the surface waters as expressed by the beneficial uses.

Schedule C

MALLACOOTA INLET SEGMENT

WATER QUALITY INDICATORS AND OBJECTIVES

Indicator

Objective

1. Dissolved Oxygen

The concentration of dissolved oxygen shall not be less than 7.5 mg/L or 75% saturation (whichever is higher).

2. Bacteria

(a) Total Coliforms

The total coliform median MPN shall not exceed 70 organisms/100 mL based on a minimum of 5 water samples taken within a 42 day period, nor shall more than 10% of those samples exceed a total coliform MPN of 230 organisms/100 mL.

- (b) Faecal Coliforms (in the absence of Faecal Coliform data, *E.coli* counts should be used.) The faecal coliform median MPN shall not exceed 14 organisms/100 mL based on a minimum of 5 water samples taken within a 42 day period, nor shall more than 10% of those sample exceed a median MPN of 43 organisms/100 mL.
3. pH The pH shall not vary from the background level by more than 0.2 units, nor fall outside the range 6.5 to 8.5.
4. Temperature The temperature shall not vary by more than 1.0°C from background levels.
5. Salinity There shall be no change in isohaline patterns by more than 5% of the background seasonal variation.
6. Light Penetration
- (a) The combined effects of turbidity and colour shall not reduce the depth of the compensation point for photosynthetic activity to the extent that such reduction would be of detriment to the aquatic ecosystem
- (b) Without limiting the generality of objective (a), light penetration shall not vary by more than 10% from background levels.
7. Toxicants
- (a) The level of toxicants shall not exceed levels for which there is substantiated evidence of lethal or sublethal toxic effects of undesirable physiological, mutagenic, carcinogenic, or teratogenic responses in humans, plants, birds, animals, fish and other aquatic life as these relate to the stated beneficial uses of this segment, with due regard to biologically cumulative effects in food chains and the combined effects of toxicant mixtures.
- (b) Without limiting the generality of objective (a), the level of toxicants shall not exceed that derived from sub-clauses (i) and (ii) below.
- (i) Individual Toxicants
- The concentration of individual toxicants shall not exceed the levels given by the formula:
- $$N + 0.5(T - N)$$
- Where T is the threshold concentration of chronic sublethal effects for aquatic ecosystems and N is the background level of the toxicant. T may be obtained from Table 2. For toxicants not listed in this Table, T shall be derived from appropriate toxicity tests specified or approved by the Authority.
- (ii) Toxicant Mixtures
- The concentration of toxicant mixtures shall not exceed 0.5 times the threshold concentration of chronic sublethal effects for aquatic life (Tm).
- Tm shall be derived from appropriate toxicity tests specified or approved by the Authority.
- In the absence of such tests the levels of toxic matter in combination shall satisfy the following relationship:
- $$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n} < 1.0$$
- where C₁, C₂, C_n are the measured or expected concentrations of the toxicant and L₁, L₂, L_n are the appropriate levels derived from (b) (i) for toxicants in isolation. Individual fractions less than 0.2 are not included in the summation.
- (iii) Toxicants in Edible Tissue
- The level of toxicants in the water column shall not exceed a level which would cause the concentration in edible fish and crustacea to exceed that listed in the *Food and Drugs Standards Regulations* (1966).
8. Nutrients and Biostimulants Nutrients and other growth stimulants shall not be present in quantities sufficient to cause excessive or nuisance growths of algae or other aquatic plants in this segments and downstream waters.
9. Aesthetic Characteristics
- Odours and Colours The level of odours and colours in waters shall not be objectionable.
- Taints
- (a) The level of taints in edible aquatic organisms shall not be objectionable.
- (b) Without limiting the generality of objective (a) the concentration of individual substances listed in Table 3 shall not exceed the limits given in the Table.

1. Floatable Matter	There shall be no visible floating oil, grease, scum, litter or other objectionable matter.
10. Non-filtrable Residue (Suspended Solids)	The annual median level of non-filtrable residue shall not exceed 25 mg/L, nor shall the 90th percentile exceed 80 mg/L.
11. Settleable Matter	The level of settleable matter shall not result in deposits which adversely affect the recreation and ecosystem values of the surface waters as expressed by the beneficial uses.

Schedule D

THE ESTUARINE SEGMENT

WATER QUALITY INDICATORS AND OBJECTIVES

<i>Indicator</i>	<i>Objective</i>
1. Dissolved Oxygen	The concentration of dissolved oxygen shall not be less than 8.0 mg/L or 85% saturation (whichever is higher).
2. Bacteria	
(a) Total Coliforms	The total coliform median MPN shall not exceed 70 organisms/100 mL based on not less than 5 water samples taken within a 42 day period, nor shall more than 10% of those samples exceed a total coliform MPN of 230 organisms/100 mL (for a five-tube decimal dilution test).
(b) Faecal Coliforms, (in the absence of Faecal Coliform data, <i>E. coli</i> counts should be used.)	The faecal coliform median MPN shall not exceed 14 organisms/100 mL based on a minimum of 5 water samples taken within a 42 day period, nor shall more than 10% of those samples exceed a median MPN of 43 organisms/100 mL.
3. pH	The pH shall not vary from the background level by more than 0.2 units, nor fall outside the range of 6.5 to 8.5.
4. Temperature	The temperature shall not vary by more than 0.5°C from background levels.
5. Salinity	There shall be no change in isohaline patterns by more than 2% of the background seasonal variation.
6. Light Penetration	<p>(a) The combined effects of turbidity and colour shall not reduce the depth of the compensation point for photosynthetic activity to the extent that such reduction would be of detriment to the aquatic ecosystem.</p> <p>(b) Without limiting the generality of objective (a), light penetration shall not vary by more than 10% from background levels.</p>
7. Toxicants	<p>(a) The level of toxicants shall not exceed levels for which there is substantiated evidence of lethal or sublethal toxic effects or undesirable physiological, mutagenic, carcinogenic or teratogenic responses in humans, plants, birds, animals, fish and other aquatic life, as these relate to the stated beneficial uses of this segment, with due regard to biologically cumulative effects in food chains and the combined effects of toxicant mixtures.</p> <p>(b) Without limiting the generality of objective (a), the level of toxicants shall not exceed that derived from sub-clauses (i), (ii) and (iii) below.</p> <p style="margin-left: 20px;">(i) Individual Toxicants</p> <p style="margin-left: 40px;">The concentrations of individual toxicants shall not exceed the levels given by the formula:</p> <p style="margin-left: 40px;">$N + 0.2(T - N)$</p> <p style="margin-left: 40px;">Where T is the threshold concentration of chronic sublethal effects for aquatic ecosystems and N is the natural background level of the toxicant.</p> <p style="margin-left: 40px;">T may be obtained from Table 2. For toxicants not listed in that Table, T shall be derived from appropriate toxicity tests specified or approved by the Authority.</p> <p style="margin-left: 20px;">(ii) Toxicant Mixtures</p> <p style="margin-left: 40px;">The concentration of toxicant mixtures shall not exceed 0.2 times the threshold concentration of chronic sublethal effects for aquatic life (T_m).</p> <p style="margin-left: 40px;">T_m shall be derived from appropriate toxicity tests specified or approved by the Authority.</p>

In the absence of such tests the levels of toxic matter in combination shall satisfy the following relationship:

$$\frac{C1}{L1} + \frac{C2}{L2} + \dots + \frac{Cn}{Ln} < 1.0$$

where C1, C2, Cn are the measured or expected concentrations of the toxicants and L1, L2, Ln are the appropriate levels derived from (b) (i) for toxicants in isolation. Individual fractions less than 0.2 are not included in the summation.

(iii) Toxicants in Edible Tissue

The level of toxicants in the water column shall not exceed a level which would cause the concentration in edible fish and crustacea to exceed that listed in the *Food and Drugs Standards Regulations* (1966).

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| 8. Nutrients and Biostimulants | Nutrients and other growth stimulants shall not be present in quantities sufficient to cause excessive or nuisance growths of algae or other aquatic plants in these segments and downstream waters. |
| 9. Aesthetic Characteristics | |
| Odours and Colours | The level of odours and colours in waters shall not be objectionable. |
| Taints | (a) The level of taints in edible aquatic organisms shall not be objectionable.
(b) Without limiting the generality of objective (a) the concentration of individual substances listed in Table 3 shall not exceed the limits given in the Table. |
| Floatable Matter | There shall be no visible floating oil, grease, scum, litter or other objectionable matter. |
| 10. Non-filtrable Residue (Suspended Solids) | The annual median level of non-filtrable residue shall not exceed 25 mg/L nor shall the 90th percentile exceed 80 mg/L. |
| 11. Settleable Matter | The level of settleable matter shall not result in deposits which adversely affect the recreation and ecosystem values of the surface waters as expressed by the beneficial uses. |

Schedule E

GENERAL SURFACE WATERS SEGMENT

WATER QUALITY INDICATORS AND OBJECTIVES

<i>Indicator</i>	<i>Objective</i>
1. Dissolved Oxygen	The concentration of dissolved oxygen shall not be less than 8.0 mg/L or 85% saturation (whichever is higher).
2. Bacteria (<i>E.coli</i>)	The geometric mean of <i>E.coli</i> shall not exceed 200 organisms/100 mL based on not less than 5 samples taken over a period of not more than 42 days, nor shall more than 20% of these samples exceed 400 organisms/100 mL.
3. pH	The pH shall not vary from the background level by more than 0.5 units, nor fall outside the range 6.5 to 8.5.
4. Temperature	The temperature shall not vary by more than 0.5°C from background levels.
5. Filtrable Residue (Total Dissolved Solids)	The level of filtrable residue shall not vary by more than 2% from background levels.
6. Light penetration	(a) The combined effects of turbidity and colour shall not reduce the depth of the compensation point for photosynthetic activity to the extent that such reduction would be of detriment to the aquatic ecosystem. (b) Without limiting the generality of objective (a), light penetration shall not vary by more than 10% from background levels.
7. Toxicants	(a) The levels of toxicants shall not exceed levels for which there is substantiated evidence of lethal or sublethal toxic effects or undesirable physiological, mutagenic, carcinogenic or teratogenic responses in humans, plants, birds, animals, fish and other aquatic life, as these relate to the stated beneficial uses of this segment, with due regard to biologically cumulative effects in food chains and the combined effects of toxicant mixtures. (b) Without limiting the generality of objective (a), the level of toxicants shall not exceed that derived from sub-clauses (i), (ii) and (iii) below.

(i) Individual Toxicants

The concentrations of individual toxicants shall not exceed the levels given by the formula:

$$N + 0.2(T-N)$$

Where T is the threshold concentration of chronic sub-lethal effects for aquatic ecosystems and N is the background level of the toxicant.

T may be obtained from Table 1. For toxicants not listed in that Table, T shall be derived from appropriate toxicity tests specified or approved by the Authority.

(ii) Toxicant Mixtures

The concentration of toxicant mixtures shall not exceed 0.2 times the threshold concentration of chronic sublethal effects for aquatic life (T_m).

T_m shall be derived from appropriate toxicity tests specified or approved by the Authority.

In the absence of such tests the levels of toxic matter in combination shall satisfy the following relationship:

$$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \dots + \frac{C_n}{L_n} < 1.0$$

where C_1, C_2, C_n are the measured or expected concentrations of the toxicants and L_1, L_2, L_n are the appropriate levels derived from (b) (i) for toxicants in isolation. Individual fractions less than 0.2 are not included in the summation.

(iii) Toxicants in Edible Tissue

The level of toxicants in the water column shall not exceed a level which would cause the concentration in edible fish and crustacea to exceed that listed in the *Food and Drugs Standards Regulations* (1966).

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| 8. Nutrients and Biostimulants | Nutrients and other growth stimulants shall not be present in quantities sufficient to cause excessive or nuisance growths of algae or other aquatic plants in this segments and downstream waters. |
| 9. Aesthetic Characteristics
Odours and Colours
Taints | The level of odours and colours in waters shall not be objectionable.
(a) The level of taints in edible aquatic organisms shall not be objectionable.
(b) Without limiting the generality of objective (a), the concentration of individual substances listed in Table 3 shall not exceed the limits given in the Table. |
| Floatable Matter | There shall be no visible floating foam, oil, grease, scum, litter or other objectionable matter. |
| 10. Non-filtrable Residue
(Suspended Solids) | The annual median level of non-filtrable residue shall not exceed 25 mg/L nor shall the 90th percentile exceed 80 mg/L. |
| 11. Settleable Matter | The level of settleable matter shall not result in deposits which adversely affect the recreation and ecosystem values of the surface waters as expressed by the beneficial uses. |

Schedule F**STREAM AND STREAMSIDE SPRAYING OF PESTICIDES AND HERBICIDES**

1. Stream and streamside spraying of chemicals for the eradication of pests and weeds may cause the receiving water quality objectives to be temporary exceeded subject to the following requirements:

- (a) Except as provided in clause 2 of this schedule the level of the chemical in the receiving waters shall not exceed 100 times the threshold concentration of chronic sublethal effects for aquatic life (T) as included in Tables 1 and 2 (as appropriate); and

- (b) Except as provided in clause 2 of this schedule the level of the chemical in the receiving waters where potable water supply is a protected beneficial use shall not exceed the levels specified in Table 5 at the point of the water supply offtake.

2. The Minister responsible for the Act may permit the levels of chemicals used for stream and streamside spraying of pests and weeds to temporarily exceed those required by clause 1 of this schedule, provided the Minister is satisfied that, having regard to all the circumstances, the non-protection of the beneficial uses concerned would be in the greater public interest. Any such decision shall be published in the *Government Gazette* as soon as possible after it is made.

Schedule G HEAVY METAL LIMITS FOR WASTE DISCHARGES		Schedule H AREAS IDENTIFIED AS REQUIRING SEWERAGE
Heavy Metal	Limit (g/m ³)	Mallacoota
Arsenic	0.50	
Cadmium	0.10	
Chromium (total)	0.30	
Copper	0.20	
Iron	2.00	
Lead	0.10	
Manganese	0.50	
Mercury	0.005	
Nickel	0.50	
Silver	0.10	
Zinc	0.50	

TABLE 1
Threshold Concentrations (T) for Freshwaters

Toxicant	T (ug/L)	Toxicant	T (ug/L)
A Metals			
Aluminium	50	Zinc	50
Antimony	(x)	Other Metals	(x)
Arsenic	50		
Barium	(x)	B Pesticides	
Beryllium	11	Acrolein	(x)
Bismuth	(x)	Aldrin	0.003
Cadmium	0.4	Allethrin	0.002
Chromium	10	Aminocarb	(x)
Cobalt	(x)	Amitrole	300
Copper	10	Azinphos-methyl	0.001
Iron	1000	Azinphos-ethyl	(x)
Lead	25	Benfluralin	(x)
Lithium	(x)	Bensulphide	(x)
Manganese	(x)	Captafol	(x)
Mercury	0.05	Carbaryl	0.02
Methyl-mercury (As Hg)	0.004	Carbophenothion	(x)
Molybdenum	(x)	Chlordane	0.01
Nickel	30	Chloroxuron	(x)
Selenium	50	Chlorpropham	(x)
Silver	0.1	Chlorthal-dimethyl	(x)
Thallium	(x)	Coumaphos	0.001
Uranium	(x)	Crotoxyphos	0.1
Vanadium	(x)	DDT	0.001

Table 1—continued

Toxicant	T (ug/L)	Toxicant	T (ug/L)
Diazinon	0.009	Molinate	(x)
Dicamba	200	Monuron	(x)
Dichlobenil	37	Naled	0.004
Dichlone	0.2	Paraquat	(x)
Dichlorvos	0.001	Parathion	0.04
Dieldrin	0.003	Parathion-methyl	(x)
Dioxathion	0.09	Phorate	(x)
Diphenamid	(x)	Pebulate	(x)
Diquat	0.5	Picloram	(x)
Disulfoton	0.05	Propoxur	(x)
Diuron	1.6	Pyrethrum	0.01
2, 4-D (PGBE)	(x)	Rotenone	10
2, 4-D (BEE)	4.0	Simazine	10
2, 4-D (IOE)	(x)	Temephos	(x)
2, 4-D (Diethylamine salts)	(x)	Toxaphene	0.005
2, 2-DPA	110	Trichlorphon	0.002
Endosulfan	0.003	Trifluralin	(x)
Endothal (Disodium salt)	(x)		
Endothal (Dipotassium salt)	(x)		
Endrin	0.004	C Miscellaneous	
EPTC	(x)	Ammonia (unionized) (as N)	16
Ethion	0.02	Boron	10000
Fenaminosulf	(x)	Bromine (molecular)	(x)
Fenchlorphos	(x)	Bromate	(x)
Fenoprop (BEE)	2.5	Chlorine (total residual)	2.0
Fenoprop (PGBE)	2.0	Cyanide (free ion)	5.0
Fenoprop (IOE)	(x)	Fluoride	(x)
Fenoprop (Potassium salt)	(x)	Phenolics	100
Fenthion	0.006	Phosphorus (elemental)	0.04
Guthion	0.01	Polychlorinated biphenyls	0.001
Heptachlor	0.001	Phthalate Esters	
Lindane	0.01	Di-n-butyl phthalate	4.0
Malathion	0.01	Di-z-ethylhexyl phthalate	0.3
MCPA	(x)	Other	0.2
Methoxychlor	0.03	Sulphides (total)	2
Mevinphos	0.002	Surfactants (anionic & non-ionic)	20
Mirex	0.001	Radioactivity (gross)	0.4 Bq/L

(x) indicates insufficient information

TABLE 2
Threshold Concentrations (T)
for Marine and Estuarine Waters

Toxicant	T (ug/L)	Toxicant	T (ug/L)
A Metals			
Aluminium	200	Vanadium	(x)
Antimony	(x)	Zinc	20
Arsenic	10	B Pesticides	
Barium	500	Chlordane	0.004
Beryllium	100	Endosulfan	0.001
Bismuth	(x)	C Miscellaneous	
Cadmium	3.0	Ammonia (unionized) (as N)	8
Chromium	10	Boron	1000
Cobalt	(x)	Bromine (molecular)	100
Copper	5.0	Bromate (ion)	100 (mg/L)
Iron	200	Chlorine (total residual)	10
Lead	10	Cyanide	5
Lithium	(x)	Fluoride	1500
Manganese	20	Phenolics	100
Lindane	0.004	Phosphorus (elemental)	0.04
Others	(As for Table 1)	Petroleum hydrocarbons (soluble aromatic derivatives)	1.0
Mercury	0.10	Polychlorinated biphenols	0.001
Molybdenum	(x)	Phthalate esters	See Table 1
Nickel	20	Sulphides (total)	2
Selenium	25	Surfactants (anionic & non-ionic)	20
Silver	1		
Thallium	50		
Uranium	100		

TABLE 3
Levels for Chemicals which cause Tainting of the
Flesh of Fish and Other Aquatic Organisms

Chemical	Level (mg/L)	Chemical	Level (mg/L)
acenaphthene	0.02	hexachlorocyclopentadiene	0.001
acetophenone	0.5	isopropylbenzene	0.25
acrylonitrile	18	2-methyl-4-chlorophenol	1.8
n-butylmercaptan	0.06	2-methyl-6-chlorophenol	0.003
o-sec. butylphenol	0.3	3-methyl-4-chlorophenol	3
p-tert. butylphenol	0.03	3-methyl-6-chlorophenol	0.02
chlorobenzene	0.02	α -methylstyrene	0.25
o-chlorophenol	0.1 ug/L	naphtha	0.1
p-chlorophenol	0.1 ug/L	naphthalene	1
copper	1	naphthol	0.5
m-cresol	0.2	2-naphthol	0.3
o-cresol	0.4	nitrobenzene	0.03
p-cresol	0.12	oil, emulsifiable	15
p-dichlorobenzene	0.25	pentachlorophenol	0.03
β , β -dichlorodiethylether	0.09	phenol	0.3
2,3-dichlorophenol	0.04 ug/L	o-phenylphenol	1
2,4-dichlorophenol	0.3 ug/L	pyridine	5
2,5-dichlorophenol	0.5 ug/L	pyrocatechol	0.8
2,6-dichlorophenol	0.2 ug/L	pyrogallol	20
3,4-dichlorophenol	0.3 ug/L	quinoline	0.5
dimethylamine	7	p-quinone	0.5
2,4-dimethylphenol	0.4	styrene	0.25
diphenyloxide	0.05	2,3,4,6-tetrachlorophenol	0.001
ethanethiol	0.24	2,4,5-trichlorophenol	0.001
ethylacrylate	0.6	2,4,6-trichlorophenol	0.002
ethylbenzene	0.25	toluene	0.25
formaldehyde	95	zinc	5
guaiacol	0.082		

TABLE 4
Potability Indicators and Levels for Aesthetic Objectives

Indicator	Level	Indicator	Level
A Physical			
Colour (Pt-Co units)	50	Magnesium (as Mg)	150
Odour (TON) ⁽¹⁾	3	Manganese (as Mn)	0.5
B Chemical (mg/L)			
Ammonia (Total as N)	0.1	Oil (Mineral)	0.2
Calcium (as Ca)	200	Organics (CCE + CAE) ⁽²⁾	0.2
Chloride (as Cl)	600	Phenolics	0.002
Foaming Agents (as MBAS)	1.0	Sulphate (as SO ₄)	400
Hardness (as CaCO ₃)	600		
Total Iron	1.0		

(1) TON—Threshold Odour Number
(2) CCE—Carbon Chloroform Extract
CAE—Carbon Alcohol Extract

TABLE 5.
Toxicant Levels
For the Protection of Potable Water Supplies

Toxicant	Level	Toxicant	Level
A Metals (ug/L)			
Arsenic	50	Chlorfenvinphos	30
Barium	1000	Chloroxuron	30
Cadmium	10	Chlorpyrifos	2
Chromium	50	Cyhexatin	200
Lead	50	2,4-D	100
Mercury	1	2,4,5-T	20
Selenium	10	DDT	3
Silver	50	Demeton	30
B Pesticides (ug/L)			
Acephate	60	Demeton-S-methyl	
Alachlor	10	Oxy-demeton-S-methyl	
Aldrin	1	Demeton-S-methylsulfon	
Amitrole	10	Diazinon	10
Asulam	300	Dicamba	300
Azinphos-methyl	10	Dichlobenil	20
Barban	300	Dichlorvos	20
Benomyl	200	Dichlofop-methyl	3
Bentazone	400	Dicofol	100
Bioresmethrin	60	Dieldrin	1
Bromacil	600	Difenzoquat	200
Bromophos-ethyl	20	Dimethoate	100
Bromoxynil octanoate	30	Dinitramine	600
Butachlor	30	Diquat	50
Carbaryl	60	Disulfoton	30
Carbendazim	400	Endosulfan	40
Carbofuran	30	Endothal	600
Carbophenothion	1	Endrin	1
Chlordane	6	EPTC	60
Chordimeform	20	Ethion	6
		Ethoprophos	0.006
		Fenchlorphos	60
		Fenitrothion	30

Table 5—continued

<i>Toxicant</i>	<i>Level</i>	<i>Toxicant</i>	<i>Level</i>
Fenoprop	20	Pirimiphos-ethyl	1
Fensulphothion	20	Pirimiphos-methyl	60
Fenvalerate	40	Profenofos	5
Flemprop-methyl	1	Promecarb	60
Fluometuron	100	Propargite	1000
Fosamine	3000	Propoxur	1000
Glyphosate	100	Pyrazophos	6
Heptachlor	3	Quintozene	40
Hexazinone	600	Sulprofos	2
Hexaflurate	60	Temephos	300
Lindane	100	Thiobencarb	50
Maldison	100	Thiobucarb	500
Mancozeb	400	Thiophanate	400
Maneb	30	Thiometon	30
Methidathion	60	Thiram	30
Methomyl	60	Trichlophon	30
Metolachlor	40	Trifluralin	500
Metribuzin	40	Zineb	30
Mevinphos	6		
Monocrotophos	2	C Radionuclides	(Bq/L)
Nabam	30	(i) Specified Radionuclides	
Nitralin	1400	Radium 226	0.4
Omethoate	0.4	Strontium 90	1.0
Oryzalin	60	Gross Beta (in absence of Sr 90 and Alpha emitters)	40
Paraquat	10	(ii) Unspecified Radionuclides	
Parathion	30	Gross Alpha activity	0.1
Parathion-methyl	6	Gross Beta activity (including Sr 90)	1.0
Pendimethalin	1000		
Perfluidone	20	D Miscellaneous	(mg/L)
Permethrin	300	Boron	1.0
Phenisopham	2	Cyanide	0.05
Picloram	1000	Fluoride	1.5
Piperonyl butoxide	200	Nitrate & Nitrite (as N)	10
Pirimicarb	100	Polynuclear aromatic hydrocarbons	0.0002

TABLE 6

Toxicant Levels for the Protection of Agricultural Water Supply

1. STOCK WATERING

<i>Toxicant</i>	<i>Level</i>
A Metals	(mg/L)
Aluminium	5.0
Arsenic	0.2
Cadmium	0.01
Calcium	700
Chromium	1.0
Cobalt	1.0
Copper	0.5
Lead	0.1
Magnesium	250
Mercury	0.002
Molybdenum	0.01
Selenium	0.02
Sodium	2000
Vanadium	0.1
Zinc	20
B Pesticides	(ug/L)
AS FOR TABLE 5	
C Radionuclides	(Bq/L)
(i) Specified Radionuclides	
Radium 226	0.4
Strontium 90	1.0
Gross Beta (in absence of Sr 90 and Alpha emitters)	40
(ii) Unspecified Radionuclides	
Gross Alpha activity	0.1
Gross Beta activity (including Sr 90)	1.0
D Miscellaneous	(mg/L)
Boron	5.0
Chloride	1000
Fluoride	2
Nitrate & Nitrite (as N)	100
Nitrite (as N)	10
Sulphate	1000
Polynuclear aromatic hydrocarbons	0.0002

<i>Toxicant</i>	<i>Level</i>
A Metals	(mg/L)
Carbon Chloroform Extract & Carbon Alcohol Extract	0.2
Phenolics	0.002

2. IRRIGATION SUPPLY

<i>Toxicant</i>	<i>Level</i>
A Metals	(mg/L)
Aluminium	5.0
Arsenic	0.1
Beryllium	0.1
Cadmium	0.01
Chromium	0.1
Cobalt	0.05
Copper	0.2
Iron	1.0
Lead	5.0
Lithium	0.07
Manganese	0.2
Molybdenum	0.01
Nickel	0.2
Selenium	0.02
Vanadium	0.1
Zinc	2.0
B Miscellaneous	(mg/L)
Boron	0.7
Fluoride	1.0

And the Honourable Evan Walker, Her Majesty's Minister for Planning and Environment for the State of Victoria, shall give the necessary directions herein accordingly.

TIM NEESON
Acting Clerk of the Executive Council

EXPLANATORY NOTES

Application

On 26 February 1985, the Governor in Council declared a State environment protection policy (SEPP) for the Waters of Far East Gippsland. The declaration was made under section 16 of the *Environment Protection Act 1970*, on the recommendation of the Environment Protection Authority. The Policy comes into operation upon publication in the *Government Gazette*.

The Policy area covers the surface waters within the State of Victoria east of, and including the catchments of, Bemm River and Cann River (see Figure 1).

Background

Since the commencement on 1 March 1973 of the waste discharge licensing provisions of the *Environment Protection Act*, waste discharge control in the Policy area has been exercised by the Authority through sections 20–31 of the Act, without the benefit of SEPP.

There are no major licensed waste discharges in the Policy area, although a number of smaller discharges occur. The principal input of contaminants to surface waters come from diffuse sources such as forestry and agricultural activities. The largest town in the Policy area is Mallacoota. Seepage from septic tanks in the town causes localized water quality problems in Mallacoota Inlet.

The Policy was formulated to:

- (1) formally establish a set of environmental objectives for existing discharges and overcome existing water quality problems;
- (2) provide guidance for future development; and
- (3) address water quality management as it relates to factors other than licensable waste discharges.

The Authority commenced preparation of a draft Policy in 1978, advised by an inter-agency technical liaison working group. During 1978, the Latrobe Valley Water and Sewerage Board, under contract to the Authority, collected water quality data from the Policy area. A draft Policy was prepared and issued for public comment for four months from November 1981. The draft Policy was revised in the light of public comment and changing Policy formulation methodology, then recommended by the Authority to the Government.

Purpose and function

The Policy to which these notes refer is a State environment protection policy as provided for in sections 16–19 of the *Environment Protection Act*. Such a Policy is formulated in draft form by the Environment Protection Authority, circulated for public review and comment and, following any necessary revision, recommended by the Authority to the Governor in Council for declaration.

State environment protection policy is an official declaration by the Government of Victoria of the nature and level of protection to be accorded to the environment. A Policy may relate to the environment in general or to some element of the environment. Policies may be declared for air, water, land or noise or for a combination of these elements. They may encompass the whole State of Victoria or some particular area or areas within the State.

These Policies provide a statutory basis for all decision-making in regard to environment protection and pollution control. All licensing of waste discharges must be in accord with the objectives specified in declared Policies. All Regulations made in relation to pollution control must be framed in the light of these objectives.

There are three main features of a State Environment Protection Policy.

1. Beneficial Uses

A Policy identifies "beneficial uses" of the environment to be protected, i.e. ways in which the public derives benefit or enjoyment from the environment and which need protection from the effects of waste discharges or noise.

2. Quality Objectives

The beneficial uses determine the level of environmental quality that must be achieved and maintained. If a waterway is to be protected from the purpose of swimming, the water quality obviously needs to be higher than in the case where it is to be protected as a watering place for stock. The quality objectives in a Policy constitute the level of environmental quality that is needed to protect the beneficial uses.

3. Attainment Program

As far as possible, a Policy does not stop at defining quality objectives, but also outlines a management program whereby the objectives can be achieved and maintained. The requirements set forth in the attainment program are to be implemented by various government agencies such as the EPA.

Goals of the Policy

The Far East Gippsland Policy area includes most of the catchments of the Bemm, Cann, Thurra, Wingan, Betka, Genoa and Wallagarragh Rivers. Some of the catchments of the Cann and Genoa Rivers and much of the Wallagarragh River catchment lie in New South Wales and so are not covered by this Policy. The Policy area also includes Mallacoota, Wingan, Tamboon and Sydenham Inlets.

Most of the area north of the Princes Highway is covered by State Forest and managed by the Forests Commission of Victoria. There is a limited area of agricultural land, mainly along the Cann River. To the south of the highway lies more State Forest and the Croajingalong National Park.

The Policy recognises the ecological significance and largely untouched nature of the area. The Policy aims to maintain the overall good water quality in the region, and through this, to protect the aquatic environment and the recreation and tourism potential. The specific aims of the Policy are outlined in clause 4.

Segments and beneficial uses

The Policy area has been divided into six segments:

- Scientific Reference Segment
- General Potable Water Supply Segment
- Betka Potable Water Supply Segment
- Mallacoota Inlet Segment
- Estuarine Segment
- General Surface Waters Segment

The boundaries of the segments delineate areas with the same set of beneficial uses. The location of the segments are shown on Figure 1.

The Policy aims to protect all the existing beneficial uses. The aquatic ecosystem is given a high level of protection throughout most of the Policy area. The ecosystem in the Scientific Reference Segment is

afforded the maximum level of protection in recognition of its special ecological significance. Shellfish culture is protected in the Mallacoota Inlet and Estuarine Segments.

The protected beneficial uses are summarized in Table E1.

TABLE E1: SUMMARY OF PROTECTED BENEFICIAL USES

<i>Beneficial Uses</i>	<i>Segment</i>	<i>Scientific Reference</i>	<i>General Potable Water Supply</i>	<i>Betka Potable Water Supply</i>	<i>Mallacoota Inlet</i>	<i>Estuarine</i>	<i>General Waters</i>
POT							
Potable water supply							
—with treatment			●	●			
AGR							
Agricultural water supply							
—Farmstead			●	●			●
—Stockwater			●	●			●
—Irrigation			●	●			●
IND							
Industrial water supply			●	●			●
NAV							
Navigation					●		
REC							
Recreation							
—Primary contact			●	●	●	●	●
—Secondary contact			●	●	●	●	●
—Passive			●	●	●	●	●
PAS							
Passage of fish			●	●	●	●	●
PRO							
Production of edible fish and crustacea							
—Estuarine					●	●	
—Freshwater			●	●			●
SHE							
Shellfish culture						●	
ECO							
Maintenance and Preservation of Aquatic Ecosystems and Associated Wildlife							
—Estuarine		max level	high level	high level	mod level	high level	high level
—Freshwater							
VEGF							
Maintenance of Streambank and Foreshore vegetation		●	●	●	●	●	●
SCI.							
Scientific and Educational uses		●					

Water quality objectives

The water quality objectives for each segment have been specified on the basis of the beneficial use which imposes the most stringent water quality requirement for each indicator. For most indicators protection of the aquatic ecosystem imposes the strictest water quality requirements. In segments where potable water supply is protected, human health considerations place restrictions on some indicators.

Available data indicate that water quality in the Policy area is generally good and that most objectives are being met. There are occasional instances of elevated *E. coli* levels in Mallacoota Inlet and at the Cann River water supply offtake. In Mallacoota Inlet, these are due to seepage from septic tanks and drainage of sullage from Mallacoota, particularly in the summer months when the population increases. The elevated bacterial counts will be lowered when sewerage is provided (this is anticipated to occur in 1985). The bacteria in the Cann River are derived from runoff from grazing land. The Cann River also shows some elevated non-filtrable residue (suspended solids) levels. The suspended material comes from bank erosion and drainage from agricultural land. Elsewhere in the Policy area, forestry operations may be causing localized incidents of high non-filtrable residue (suspended solids), due primarily to poorly drained roads and tracks. Where remedial action has been identified to overcome these problems, it is addressed in the attainment program (see next section).

The water quality indicators and objectives for each segment are summarized in Table E2.

Attainment program

The attainment program consists of two parts—general provisions (clauses 15–19) and detailed provisions (clauses 20–50). The general provisions are an outline of the management means required to implement the Policy and provide a basis for more detailed implementation plans. The detailed provisions include those actions which can be identified from the start as necessary for the achievement of Policy objectives. They also foreshadow implementation plans which highlight water quality management problems and outline mechanisms and actions for their solution.

Responsibility for various actions rests with all Government agencies in so far as their powers, duties and responsibilities relate to the provisions of the Policy. As water quality in the policy area is generally good, most of the attainment program provisions relate to maintaining that quality. Any licence issued for a waste discharge must be consistent with attainment of Policy objectives (clause 20), may consider reserving assimilative capacity for future waste discharges (clause 21) and may designate mixing zones within which, subject to some constraints, Policy objectives are not required to be met (clause 22). Discharges exempt from licensing are still required to comply with the objectives and provisions of the Policy (clause 23).

To protect shellfish harvesting, discharges of sewage effluent are not permitted to the Mallacoota Inlet and Estuarine Segments and other discharges to these segments are subject to controls (clause 24). No licences

will be granted for the discharge of wastes to the Betka Potable Water Supply and Scientific Reference Segments (clause 25 and 46). This restriction in the Betka Potable Water Supply Segment is to protect the water supplies to Mallacoota with only minimal treatment being required.

The restriction in the Scientific Reference Segment is to protect the significant aquatic ecosystems in this segment. The Policy also imposes constraints on discharges to groundwater (clause 26), the level of heavy metals in discharges (clause 27) and prohibits discharges to water of some agricultural wastes (clause 28). The provision of services should be done with regard to Policy objectives. The policy requires sewerage to be provided to all subdivisions where wastewaters cannot be retained on site. This applies to both new (clause 29 (a)) and existing (clause 29 (b)) subdivisions. The policy identifies factors that affect on site retention of wastewater (clause 29 (c)) sets out a minimum acceptable treatment where sewerage is not available (clause 29 (d)), requires all domestic wastewater to be disposed of to sewer (clause 29 (e)) and encourages re-use of waste water (clause 29 (f)). In general, where sewerage is available all wastewaters should be directed to sewer (clause 30). The construction of streets and roads (clause 31) and drainage system design (clause 32) should ensure that the input of contaminants to surface waters is minimized. A litter control strategy is encouraged (clause 33).

The Policy makes provisions for the control of a number of waste generation and waste disposal activities. In general, land use location and management should minimize contaminated runoff (clause 34). The input of sediment to streams is controlled by encouraging appropriate measures during construction (clause 35 (a)), advocating the stabilization of eroding streambanks (clause 35 (b)) and minimizing land disturbance activities in and near streams (clause 35 (c)). Clause 35 (d) encourages the preparation of Land Use Determinations for all proclaimed water supply catchments. One means of controlling sediment input from diffuse sources is through the establishment of streamside buffer zones. The policy advocates the use of these where bank erosion and substrate disturbance are evident (clause 35 (b)) and suggests the investigation of their use to control runoff from diffuse sources (clause 37 (c)). Where power boats are contributing to bank erosion, the Policy requires bank stabilization works to be carried out (clause 45 (b)).

Measures to minimize land disturbance and erosion during forestry operations are advocated (clause 36) and measures for the control of contaminants from diffuse sources identified (clause 37). The Policy sets out guidelines for the disposal of wastes to land (clause 38), dredging works (clause 39), activities on floodplains (clause 40), control of chemical spills (clauses 41 and 42) and the disposal of agricultural wastes (clauses 43 and 44). The Policy advocates the disposal of wastewaters from boats to be an appropriate on shore facility (clause 45 (a)). The Environment Protection Authority will need to carry out a number of activities relating to implementation of the Policy. These are research (clauses 47 and 48), monitoring (clause 49) and public education (clause 50).

TABLE E2: SUMMARY OF WATER QUALITY OBJECTIVES

Indicator	Unit	Scientific Reference Segment	General Potable Water Supply Segment	Betka Potable Water Supply Segment	Mallacoota Inlet Segment	Estuarine Segment	General Surface Waters Segment
DISSOLVED OXYGEN	mg/L	Background	> 8.0	> 8.0	> 7.5	> 8.0	> 8.0
BACTERIA	% saturation	Background	> 85	> 85	75	> 85	> 85
Total Coliforms	orgs/100 mL, 50 pc	Background	> 85	> 85	< 70	< 70	> 85
Faecal Coliforms	orgs/100 mL, 50 pc	Background	< 100	< 100	< 14	< 14	< 200
E. Coli.	orgs/100 mL, 90 pc	Background	< 100	< 100	< 14	< 14	< 200
pH	units variation	Nil	0.5	0.5	0.2	0.2	0.5
TEMPERATURE	units range	Background	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
SALINITY OR FILTRABLE RESIDUE (Total Dissolved Solids)	*C variation	Nil	0.5	0.5	1	0.5	0.5
LIGHT PENETRATION	% variation	Nil	< 2	< 2	< 5	< 2	< 2
TOXICANTS	mg/L	Background	< 10	< 10	< 10	< 10	< 10
	individual (a)	Background	< N + 0.2 (T-N)	< N + 0.2 (T-N)	< N + 0.5 (T-N)	< N + 0.2 (T-N)	< N + 0.2 (T-N)
	mixture (b)	Background	< 1	< 1	< 1	< 1	< 1
	(c)	Background	F & D Table 1 & 5	F & D Table 1 & 5	F & D Table 2	F & D Table 2	F & D Table 1
NUTRIENTS	Qualitative	Background	(d)	(d)	(d)	(d)	(d)
AESTHETIC QUALITY	odors/colours	Background	(e) Table 3	(e) Table 3	(e) Table 3	(e) Table 3	(e) Table 3
floatable matter	potability	Background	(f) Table 4	(f) Table 4	(f)	(f)	(f)
NON-FILTRABLE RESIDUE (Suspended Solids)	mg/L 50pc	Background	< 25	< 25	< 25	< 25	< 25
SETTLABLE MATTER	mg/L 90pc	Background	< 80	< 80	< 80	< 80	< 80
	Qualitative	Background	(g)	(g)	(g)	(g)	(g)

NOTES

(a) Formula as specified where N equals natural background level and T equals the threshold concentration of chronic sublethal effects. T is obtained from Tables 1 and 2 or toxicity tests specified by the Authority.

(b) The mixture relationship is the sum of measured/appropriate levels for individual toxicants (fractions < 0.2 not included).

(c) F&D is the Food and Drug Standards Regulations.

(d) No excessive or nuisance growths of aquatic plants.

(e) No objectional odours or colours.

(f) No visible floating oil, grease, scum, litter or other objectional matter.

(g) No detrimental effect on protected beneficial uses.