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SPECIAL

Environment Protection Act 1970

STATE ENVIRONMENT PROTECTION POLICY GROUNDWATERS OF VICTORIA

The Governor in Council, under section 16(1) of the **Environment Protection Act 1970**, and on the recommendation of the Environment Protection Authority, declares the following State Environment Protection Policy (Groundwaters of Victoria).

Dated:

Responsible Minister: **MARIE TEHAN**
Minister for Conservation and Land Management

Clerk of the Executive Council

1. Title and Commencement

This Order may be cited as the State environment protection policy (Groundwaters of Victoria) referred to below as the policy, and will come into operation upon publication in the *Government Gazette*.

2. Policy impact assessment

A policy impact assessment has been prepared pursuant to Section 18C of the **Environment Protection Act 1970**.

3. Contents of policy

This policy is divided into parts as follows -

1. Title
2. Policy impact assessment
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SCHEDULE A: Groundwater Protection Zones

PART I - PRELIMINARY**4. Definitions**

In this policy, unless inconsistent with the context or subject matter -

"aquifer" means a geological structure or formation, or part thereof, permeated with water or capable of -

- (a) being permeated permanently or intermittently with water; and
- (b) transmitting water.

"ash pond" means a basin that receives hydraulically transported ash and saline water produced during electricity generation at coal fired power stations;

"attenuation" means the reduction in concentration of contaminants in a solution passing through a porous medium by natural mechanisms including removal by ion exchange, chemical precipitation, adsorption filtration or biodegradation and hydrodynamic dispersion (mixing with surrounding water);

"attenuation zone" means the part of an aquifer that surrounds a source of migrating contaminants and is designated by the Authority as an attenuation zone in accordance with clause 17;

"background level" means the level or range of levels (usually determined from a number of sites or a series of measurements from the same site) of an indicator measured in a manner and at a location specified by the Authority in waters outside the influence of any contaminant containing a measurable level of that indicator;

"bore" means any bore, well or excavation or any artificially constructed or improved underground cavity used or to be used for the purpose of -

- (a) the interception, collection, or storage of groundwater; or
- (b) groundwater observation or the collection of data concerning groundwater; or
- (c) the drainage or desalinisation of any land; or
- (d) in the case of a bore that does not form part of a septic tank system, the disposal of any matter below the surface of the ground; or
- (e) the recharge of an aquifer -

but does not include a bore that is used solely for purposes other than those specified in paragraphs (a), (b) and (d).

"contamination" means a change in water quality that produces a noticeable or measurable change in its characteristics;

"diffuse source" means a source of contaminants which is not an identifiable single point of discharge;

"drillhole" means any hole drilled by a drilling rig but does not include other excavations such as backhoe pits, shafts and drives;

"evaporation basin" means a natural depression used, or artificial structure constructed, for the purpose of disposing of liquid by evaporation. Liquid is also lost from evaporation basins by infiltration into the ground;

"**groundwater**" means, subject to clause 6, any water contained in or occurring in a geological structure or formation or an artificial landfill;

"**groundwater protection zone**" means any area which -

- (a) has groundwater of special environmental significance or vulnerability, or requires more stringent controls to protect groundwater than are otherwise prescribed by this policy; and
- (b) is prescribed in Schedule A;

"**hydrogeology**" means the geological science concerned with the occurrence, distribution, quality and movement of groundwater;

"**indicator**" means any physical, chemical or biological characteristic used as a measure of environmental quality, as described in clause 10;

"**infiltration basin**" means a structure constructed for the purpose of disposing of liquid by infiltration into the ground;

"**landfill cell**" means a compartment within a tipping area in which waste is deposited, and enclosed by cover material;

"**non-aqueous phase liquid**" means a liquid which has low solubility in water that is in sufficient quantity to form a discrete layer or separate phase;

"**objective**" means a level of an indicator prescribed for the protection of a beneficial use, as described in clause 10;

"**permeability**" means the ability of a porous or fractured medium to transmit a fluid;

"**polluted groundwater zone**" means an area the Authority identifies in accordance with clause 19 as having an existing level of contamination of groundwater that precludes one or more beneficial uses that would otherwise apply to that groundwater;

"**policy area**" means the area defined in clause 6;

"**potable mineral water**" means potable groundwater which in its natural state contains carbon dioxide and other soluble matter in sufficient concentration to cause effervescence or impart a distinctive taste;

"**potable water**" means water suitable for human consumption;

"**potable water - acceptable**" means -

- (a) potable water with a TDS of between 501 and 1,000 mg/L; and
- (b) potable water with a TDS of between 1,001 and 1,500 mg/L referred to in clause 9(4);

"**potable water - desirable**" means potable water with a TDS of between 0 and 500 mg/L;

"**protection agency**" means any person or body, whether corporate or unincorporate, having powers or duties under any Act other than the **Environment Protection Act 1970** with respect to the environment or any segment of the environment in any part of parts of Victoria;

"recharge" means the process of water being added to a groundwater system;

"solution channelling" means the process whereby cavities and channels are formed in rock by water dissolving the rock and forming conduits for water flow;

"tailings" means any waste mineral or stone produced in the course of doing work under a licence issued under the **Mineral Resources Development Act 1990**, or a former licence or a former title within the meaning of clause 2 of schedule 2 (whether before or after 6 November 1991) of that Act, and includes any mineral or stone discarded from plant or machinery used for extracting minerals;

"taint" in relation to groundwater means to change the taste or odour of groundwater to the extent that the groundwater becomes objectionable or unduly offensive to the senses of human beings;

"TDS" means total dissolved solids, measured by a method approved by the Authority;

"unconfined aquifer" means the aquifer nearest the land surface where there is no overlying low permeability layer and in which the upper boundary of the saturated zone is at atmospheric pressure;

"vulnerable aquifer" means an aquifer that is susceptible to contamination by seepage from sources of contaminants at or near the land surface. The degree of vulnerability is determined by factors including the type of contaminant, soil permeability and mineralogy and depth to groundwater;

"waste" includes-

- (a) any matter whether solid, liquid, gaseous or radio-active which is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alternation in the environment;
- (b) any discarded, rejected, unwanted, surplus or abandoned matter;
- (c) any otherwise discarded, rejected, abandoned, unwanted or surplus matter intended for-
 - (i) recycling, reprocessing, recovery or purification by a separate operation from that which produced the matter; or
 - (ii) sale; and
- (d) any matter prescribed to be waste;

"water-table" means the surface of saturation in an unconfined aquifer at which the water pressure is equal to atmospheric pressure.

5. Policy goal and principles

- (1) The goal of this policy is to maintain and where necessary improve groundwater quality sufficient to protect existing and potential beneficial uses of groundwaters throughout Victoria.
- (2) The principles upon which the policy is based are -
 - (a) groundwater is an undervalued resource and all Victorians share the responsibility to protect groundwater;
 - (b) the protection of groundwater and aquifers is fundamental to the protection of the environmental quality of surface waters;
 - (c) groundwater and aquifers should be protected to the greatest extent practicable from serious or irreversible damage arising from human activity; and
 - (d) the principles of environmental policy in the InterGovernmental Agreement on the Environment, including -
 - (i) *polluter pays*: those who generate pollution and waste should bear the cost of containment, avoidance or abatement;
 - (ii) *intergenerational equity*: the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations; and
 - (iii) *precautionary principle*: where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

PART II - BOUNDARIES OF THE AREA AFFECTED**6. Policy area**

- (1) Subject to sub-clause (2), this policy shall be observed throughout the State of Victoria and shall apply to all groundwaters and aquifers.
- (2) This policy does not apply to groundwater within any landfill cell.

7. Application of policy

Where the provisions of this policy are inconsistent with the provisions of any other State environment protection policy in relation to groundwater the provisions of this policy will prevail.

8. Segments of the groundwater environment

- (1) For the purpose of this policy, the segments of the groundwater environment specified in Table 1 are classified on the basis of the background level of TDS.
- (2) The Authority will determine to which segment groundwater in any aquifer belongs, having regard to as many sources of information, including spatial and temporal variability, as are reasonably available to the Authority.

Table 1 - Segments

Segment	A1	A2	B	C	D
TDS range (mg/L)	0 - 500	501 - 1,000	1,001 - 3,500	3,501 - 13,000	greater than 13,000

PART III - BENEFICIAL USES TO BE PROTECTED

9. *Beneficial uses*

- (1) Subject to sub-clause (2) the beneficial uses specified in Table 2 will be protected in each segment marked by a tick.
- (2) The Authority may determine that a beneficial use specified in Table 2 does not apply to groundwater where -
 - (a) there is insufficient aquifer yield to sustain the beneficial use;
 - (b) based on Table 3 the background level of a water quality indicator other than TDS, may be detrimental to the beneficial use;
 - (c) the beneficial use is impracticable due to one or more soil characteristics; or
 - (d) a polluted groundwater zone has been identified by the Authority.
- (3) When making a determination under sub-clause 2(a) the Authority -
 - (a) will take into account possible variations within the aquifer and reasonable yield enhancement techniques; and
 - (b) must be satisfied that -
 - (i) the beneficial use *maintenance of ecosystems* is protected;
 - (ii) there is no risk of adversely affecting any beneficial uses in surrounding areas; and
 - (iii) fracture flow or solution channelling is not the dominant mode of permeability.
- (4) The beneficial use 'potable water-acceptable' shall apply to groundwater of 1,001-1,500 mg/L TDS where that beneficial use exists at the date of publication of this policy in the Victorian Government Gazette.

Table 2 - Protected Beneficial Uses of the Segments

Beneficial Uses	Segments (mg/L TDS)				
	A1 (0-500)	A2 (501-1,000)	B (1,001- 3,500)	C (3,501- 13,000)	D (greater than 13,000)
1. Maintenance of ecosystems	✓	✓	✓	✓	✓
2. Potable water supply:					
desirable	✓				
acceptable		✓			
3. Potable mineral water supply	✓	✓	✓		
4. Agriculture, parks and gardens	✓	✓	✓		
5. Stock watering	✓	✓	✓	✓	
6. Industrial water use	✓	✓	✓	✓	✓
7. Primary contact recreation (eg. bathing, swimming)	✓	✓	✓	✓	
8. Buildings and structures	✓	✓	✓	✓	✓

PART IV - INDICATORS AND OBJECTIVES**10. Groundwater quality indicators and objectives**

- (1) The levels of groundwater quality required to protect beneficial uses are specified by the groundwater quality indicators and objectives in Table 3.
- (2) The groundwater quality indicators and objectives specified in Table 3 will apply to all groundwater except where -
 - (a) the Authority designates an attenuation zone in any works approval, licence or notice under the **Environment Protection Act 1970**;
 - (b) the groundwater is within a polluted groundwater zone;
 - (c) the background level of a groundwater quality indicator is greater than the objective, in which case the background level will become the objective; or
 - (d) the groundwater is within a groundwater protection zone for which more stringent objectives have been developed.
- (3) Notwithstanding sub-clauses (1) and (2), water quality is to be maintained as close as practicable to background levels.

Table 3 - Groundwater quality indicators and objectives

Beneficial Use	Indicators	Objectives
Maintenance of ecosystems	<ul style="list-style-type: none"> Those specified in the relevant State environment protection policy for surface waters 	<ul style="list-style-type: none"> Groundwater shall not cause receiving waters to be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified in the relevant State environment protection policy for surface waters
Potable water supply: desirable	<ul style="list-style-type: none"> Those specified for raw water for drinking water supply in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> TDS shall be less than 501 mg/L Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for raw water for drinking water supply in the Australian Water Quality Guidelines for Fresh and Marine Waters The constituents of groundwater shall not be affected in a manner or to an extent that leads to tainting
Potable water supply: acceptable	<ul style="list-style-type: none"> Those specified for raw water for drinking water supply in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for raw water for drinking water supply in the Australian Water Quality Guidelines for Fresh and Marine Waters The constituents of groundwater shall not be affected in a manner or to an extent that leads to tainting
Potable mineral water supply	<ul style="list-style-type: none"> Those specified for potable mineral water in the Australian Food Standards Code (1987) - Standard 08 Mineral Water 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified in the Australian Food Standards Code (1987) - Standard 08 Mineral Water The constituents of groundwater shall not be affected in a manner or to an extent that leads to tainting
Agricultural water supply: irrigation	<ul style="list-style-type: none"> Those specified for irrigation in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for irrigation in the Australian Water Quality Guidelines for Fresh and Marine Waters
Agricultural water supply: stock watering	<ul style="list-style-type: none"> Those specified for livestock in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for livestock in the Australian Water Quality Guidelines for Fresh and Marine Waters
Industrial water use	<ul style="list-style-type: none"> Those specified for industrial use in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for industrial water quality in the Australian Water Quality Guidelines for Fresh and Marine Waters
Primary contact recreation	<ul style="list-style-type: none"> Those specified for primary contact recreation in the Australian Water Quality Guidelines for Fresh and Marine Waters 	<ul style="list-style-type: none"> Groundwater shall not be affected to the extent that the level of any water quality indicator is greater than the level of that indicator specified for primary contact recreation in the Australian Water Quality Guidelines for Fresh and Marine Waters
Buildings and Structures	<ul style="list-style-type: none"> pH sulphate redox potential 	<ul style="list-style-type: none"> Introduced contaminants shall not cause groundwater to become corrosive to structures or building materials

PART V - ATTAINMENT PROGRAM**11. Responsibilities**

- (1) The Authority will identify and promote measures to achieve the best practicable environmental outcomes within the policy area.
- (2) The Authority will exercise its powers, duties and functions to -
 - (a) assist the community to understand and contribute to improved groundwater quality in the policy area;
 - (b) work co-operatively with all who use and manage groundwater in the policy area to promote the use of practices that protect beneficial uses of groundwater;
 - (c) ensure that any works approval, licence or notice issued under the Act contains requirements that are consistent with the policy; and
 - (d) co-ordinate, review and report on the attainment of the provisions of the policy.
- (3) Protection agencies must implement the policy in so far as it relates to their powers, duties and responsibilities.

12. Prevention of groundwater pollution

All practicable measures must be undertaken to prevent pollution of groundwater.

13. Clean up of polluted groundwater

Without limiting its other powers, the Authority may by notice under the **Environment Protection Act 1970** direct the clean up of polluted groundwater as specified in the notice.

14. Planning schemes and permits

All planning authorities must ensure that planning schemes administered under the **Planning and Environment Act 1987** and permits issued under planning schemes are consistent with the provisions of this policy.

15. Groundwater protection zones

- (1) Groundwater protection zones are prescribed in Schedule A.
- (2) This policy is varied for the areas indicated and to the extent detailed in Schedule A.
- (3) Proposals for declaration of a zone will be considered by the Authority.

16. Hydrogeological assessment

Without limiting its other powers, in the development of works approval and licence conditions and notice requirements, or in the assessment of compliance with these conditions or requirements, the Authority may require a hydrogeological assessment to be undertaken to determine any -

- (a) existing groundwater contamination and resulting risk to beneficial uses of groundwater; and
- (b) potential risk to groundwater quality and beneficial uses of groundwater.

17. Attenuation zones

- (1) Without limiting its other powers, in issuing or amending a works approval, licence or notice under the **Environment Protection Act 1970**, the Authority may designate an attenuation zone within which some or all of the water quality objectives specified in Table 3 are not required to be achieved.
- (2) The designation of an attenuation zone is subject to the following conditions -
 - (a) the Authority must be satisfied that all practicable measures have been taken to prevent pollution of groundwater; and
 - (b) an attenuation zone may only be designated for landfills receiving municipal waste, waste water irrigation, ash ponds or evaporation basins that are incorporated in Government approved salinity management plans.
- (3) An attenuation zone will not be designated -
 - (a) unless the groundwater quality objectives specified in Table 3 are met at the boundaries of the premises to which the works approval, licence or notice relates;
 - (b) within a groundwater protection zone specified in Schedule A;
 - (c) where the Authority is satisfied there is an unacceptable risk of detriment to an existing beneficial use; or
 - (d) in aquifers with high permeability or low attenuation properties.
- (4) A works approval, licence or notice will -
 - (a) specify the location and boundaries of the attenuation zone and which water quality objectives are not required to be achieved within the attenuation zone;
 - (b) if appropriate, include a groundwater monitoring program that is to be carried out from sampling points at the boundaries of the attenuation zone and/or close to any waste source; and
 - (c) require the proponent of the works, licensee or notice recipient to prepare a contingency plan to the Authority's satisfaction that will be implemented if groundwater at or beyond the boundaries of the attenuation zone is polluted.
- (5) Upon the revocation of any notice or upon surrender or revocation of any licence in which an attenuation zone has been designated, the Authority may identify that area as a polluted groundwater zone.

18. Non-aqueous phase liquid

Where non-aqueous phase liquid is present in an aquifer, it must be removed unless the Authority is satisfied that there is no unacceptable risk posed to any beneficial use by the non-aqueous phase liquid.

19. Polluted groundwater zones

- (1) The Authority will require groundwater within polluted groundwater zones to be:
 - (a) managed to contain that polluted groundwater within the zone, and
 - (b) cleaned up to the extent practicable in order to move towards the objectives prescribed in this policy to protect beneficial uses.
- (2) The Authority will periodically require the reassessment of the practicability of clean up of groundwater within polluted groundwater zones.
- (3) The Authority will not issue or amend any works approval or licence, or transfer any licence in respect of any premises situated within a polluted groundwater zone unless the Authority is satisfied that -
 - (a) beyond any proposed or currently designated attenuation zone there will not be any risk of further degradation of groundwater quality in the polluted groundwater zone as a result of any activity or proposed activity at the premises; and

- (b) there will not be any detriment to any beneficial use of surface waters or groundwater beyond the boundaries of the polluted groundwater zone.

20. Direct waste discharge to groundwater

There must not be any direct discharge of waste to any aquifer by means of a bore, underground mine workings, infiltration basin, evaporation basin or other similar structures, except for the purpose of -

- (1) aquifer recharge, irrigation drainage, backfilling of underground mine workings with tailings, or stormwater disposal, where the relevant protection agency is satisfied that the groundwater quality objectives of this policy specified in Table 3 will be met, and that there will be no detriment to any beneficial use of groundwater, land or surface waters; or
- (2) groundwater remediation projects involving the injection of uncontaminated water or the re-injection of treated water to the aquifer, where the Authority is satisfied that -
 - (a) the groundwater quality objectives specified in Table 3 will be met at the completion of the project; and
 - (b) there will be no detriment to any beneficial use of groundwater, land or surface waters beyond the boundaries of the premises on which the project is being conducted.

21. Rising water-tables

Any proposal to discharge, deposit or dispose of waste to land where the discharge, deposit or disposal has potential to cause detriment to groundwater quality must include an assessment of -

- (a) any background rate of rise of the water-table;
- (b) any rise of the water-table expected to be caused by recharge induced by the discharge, deposit or disposal of the waste; and
- (c) the impact of any rise of the water-table on the sustainability of -
 - (i) the proposal;
 - (ii) the surrounding land use; and
 - (iii) any nearby ecosystem.

22. Drilling, bore construction and decommissioning

Any -

- (a) drilling;
 - (b) bore construction and development; and
 - (c) decommissioning of drillholes and bores -
- must be consistent with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority.

23. Regional catchment strategies

The Authority will work with Catchment Management Authorities and other protection agencies to ensure that regional catchment strategies and other management strategies and programs make adequate provision for the protection of beneficial uses of groundwater.

24. Diffuse sources

Where an activity has the potential to be or to cause a diffuse source of groundwater pollution, the activity must be consistent with current best practice or with any relevant best practice environmental management guidelines adopted by the Authority.

PART VI - RELATED ACTIVITIES**25. *Research and monitoring***

The Authority will work with and encourage the Department of Natural Resources and the Environment, Catchment Management Authorities, the State Groundwater Council, Rural Water Authorities, protection agencies, other agencies, academic and research institutions, industry bodies, the general public and others to ensure that studies, research and surveys are conducted to assist in the attainment and maintenance of the groundwater quality objectives specified in Table 3.

26. *Hydrogeological information/data development*

The Department of Natural Resources and the Environment will ensure the establishment and operation of a hydrogeological information system that -

- (a) provides a readily accessible and integrated system for describing aquifers and groundwater quality;
- (b) clearly defines aquifers and their vulnerability to pollution;
- (c) details current and historical sources of groundwater pollution; and
- (d) includes detailed information for locations at which there is a concentration of potential pollution sources and vulnerable aquifers.

27. *Codes of practice and guidelines*

- (1) In co-operation with relevant protection agencies, individuals and organisations the Authority will initiate and participate in the development and review of codes of practice and guidelines aimed at minimising the impact of activities that are detrimental or potentially detrimental to groundwater quality.
- (2) The Authority will make publicly available a list and copies of the guidelines and codes of best practice approved by the Authority which are referred to in this policy.

28. *Public awareness*

The Authority, the Department of Natural Resources and Environment and other protection agencies will promote public awareness in matters relating to -

- (a) the management of activities to prevent groundwater pollution;
- (b) the location, quality, availability and uses of groundwater resources in Victoria; and
- (c) risk assessment to ensure better understanding of toxicologically based risk to human health and the ecology.

29. Monitoring, assessment and reporting of groundwater quality and policy performance

- (1) The Authority will ensure that²⁵-
 - (a) monitoring of groundwater quality in the policy area is adequate to provide the information necessary to assess compliance with this policy;
 - (b) all protection agencies that are responsible for the management or use of groundwater resources or whose actions affect or are likely to affect groundwater quality to undertake programs to assess ambient groundwater quality; and
 - (c) where deemed appropriate, any works approval, licence, licence amendment or notice includes conditions that provide for monitoring of ambient groundwater quality to enable assessment of compliance with this policy.
- (2) The sampling programs, analytical methods, quality assurance measures, assessment protocols and reporting protocols used for assessing compliance with this policy in accord with sub-clause (1) must be those approved by the Authority from time to time.
- (3) The Authority will ensure that the quality of Victorian groundwater is periodically reported to the public.
- (4) A report under sub-clause (3) may include²⁶-
 - (a) an overview of groundwater quality within the policy area;
 - (b) a review of the effectiveness of the implementation of this policy; and
 - (c) an assessment of the adequacy of the existing groundwater pollution monitoring program.
- (5) Protection agencies must provide water quality information and data to assist the Authority prepare reports under sub-clause (3).

SCHEDULE A: Groundwater Protection Zones

None currently prescribed.

State environment protection policy (Groundwaters of Victoria)

EXPLANATORY NOTES

Purpose of State environment protection policy

State environment protection policies (SEPPs) are declared by the Governor in Council under section 16(1) of the *Environment Protection Act 1970*. SEPPs provide a framework for environmental decision-making and a clear set of publicly agreed environmental objectives that all sections of the community must work together to achieve. Environment protection programs in Victoria are developed within this broad framework.

A State environment protection policy may apply to Victoria generally or to a portion of the State and may include:

- identification of the beneficial uses of the environment that are to be protected (beneficial uses include uses of the environment such as ecosystem protection, drinking water supply, and recreational uses);
- selection of indicators (measures) of environmental quality;
- a statement of environmental quality objectives; and
- an optional "attainment program" which outlines selected measures which will support attainment of the policy's environmental quality objectives.

Background to State environment protection policy (Groundwaters of Victoria)

The State environment protection policy (Groundwaters of Victoria) (the 'Groundwaters policy') is a new policy which provides a framework for the protection of groundwaters throughout Victoria. In the past, SEPP provisions aimed at groundwater protection have focussed only on specific regions (through regional policies largely focussed on surface water protection).

The development of the groundwaters policy meets community demands for an integrated framework of environment protection goals for groundwater. It will allow a consistent approach to groundwater protection throughout Victoria and sets a consistent set of groundwater quality objectives. The groundwaters policy will over-ride all existing groundwater protection provisions in other State environment protection policies.

State environment protection policy (Groundwaters of Victoria)

Title

Clause 1 states that the policy title is *State environment protection policy (Groundwaters of Victoria)*. This clause notes that the policy comes into effect upon publication in the *Government Gazette*.

Policy Impact Assessment

Clause 2 notes that a Policy Impact Assessment has been prepared as part of the development of the *State environment protection policy (Groundwaters of Victoria)*.

PART I - PRELIMINARY

Definitions

Clause 4 provides specific definitions of various words and terms used throughout the groundwaters policy. The purpose of these definitions is not to provide a glossary of technical terms but simply to give a specific meaning to a term which may slightly limit or otherwise differentiate it from the meaning currently accepted in every-day language.

Policy goal and principles

Clause 5 sets out the policy goal and the principles upon which the policy is based. The policy goal and principles outline the key considerations which underlie the content of the groundwaters policy.

PART II - BOUNDARIES OF THE AREA AFFECTED

Policy area

Clause 6 notes that the policy applies to all groundwaters and aquifers throughout Victoria with the exception of groundwater within a landfill cell.

Application of policy

Clause 7 states that the groundwaters policy over-rides all provisions relating to groundwaters in other State environment protection policies where there is any inconsistency between the groundwater policy and another State environment protection policy.

Segments of the groundwater environment

Clause 8 divides the groundwater environment into five segments. These segments are defined by the background level of Total Dissolved Solids (TDS, a measure of salinity) in the groundwater. The Authority is charged with determining which segment applies to groundwater at a location, taking all reasonably available information into account.

PART III - BENEFICIAL USES TO BE PROTECTED

Beneficial uses

Clause 9 and table 2 of the groundwaters policy outlines the beneficial uses which are protected, and identifies which beneficial uses are protected in each segment. The beneficial uses identified in the groundwaters policy are:

- maintenance of ecosystems
- potable water supply
- potable mineral water supply
- agriculture, parks and gardens
- stock watering
- industrial water use
- primary contact recreation
- buildings and structures

PART IV - INDICATORS AND OBJECTIVES

Groundwater quality indicators and objectives

Indicators of environmental quality and the objectives appropriate to ensure the protection of beneficial uses are identified in clause 10 and table 3 of the groundwaters policy. These objectives apply except where:

- an attenuation zone has been designated,
- a polluted groundwater zone has been designated,
- the background level of an indicator is higher than the objective, in which case the objective is maintenance of background level, or

- a groundwater protection zone has been designated and more stringent objectives developed for that zone.

The policy also recognises that reductions in environmental quality which are not sufficiently serious to lead to a breach of the objectives outlined in Table 3 of the policy can still adversely affect the quality of a beneficial use. To guard against this, sub-clause 10(3) provides for groundwater to be maintained as close as practicable to background levels. For example, pH levels of groundwater should not be altered such that it will affect an existing agricultural use of that water for sensitive crops under the agriculture, parks and gardens beneficial use.

PART V - ATTAINMENT PROGRAM

Responsibilities

Clause 11 states that the groundwaters policy applies to all Victorian people, companies, government agencies and other organisations, and applies to both public and private land. It also notes the responsibility of the Environment Protection Authority to lead implementation of the policy, with protection agencies (ie. agencies which have responsibilities for environment protection granted to them by legislation) implementing the policy to the extent their powers allow.

Prevention of groundwater pollution

Clause 12 notes that "All practicable measures shall be undertaken to prevent pollution of groundwater."

Clean up of polluted groundwater

Clause 13 notes the Authority's powers to direct clean up of polluted groundwater through a notice issued under the *Environment Protection Act 1970*.

Planning schemes and permits

Clause 14 states that all planning schemes and permits issued under planning schemes must be consistent with the provisions of the groundwaters policy.

Groundwater protection zones

Clause 15 allows groundwater protection zones to be listed within Schedule A of the groundwaters policy. A groundwater protection zone may vary any portion of the policy to provide greater levels of protection for groundwaters within that zone. At this stage, no groundwater protection zones have been included within Schedule A. The addition of such zones to Schedule A will require amendment of the groundwaters policy. Proposals to add groundwater protection zones to the groundwater policy will be considered by the Environment Protection Authority.

Hydrogeological assessment

The Authority may require a hydrogeological assessment to be undertaken to determine any existing groundwater contamination and resulting risk to beneficial uses of groundwater and any potential risk to groundwater quality and beneficial uses as part of a works approval, or in licence conditions or notice requirements.

Attenuation zones

An attenuation zone allows the groundwater quality objectives specified in Table 3 to be exceeded within that specified zone. This is allowed on the condition that the contaminants present in the

groundwater are attenuated such that the water complies with the policy's groundwater quality objectives at the boundary of the attenuation zone.

Under clause 17, provided the Authority is satisfied that all practicable measures have been taken to prevent pollution of groundwater, it may (through a works approval, licence or notice) designate attenuation zones for the following activities:

- landfills receiving municipal waste,
- waste water irrigation,
- ash ponds, and
- evaporation basins incorporated in Government approved salinity management plans.

The maximum extent of an attenuation zone which can be designated is the boundary of the property upon which the activity takes place. This ensures that pollution of groundwaters (and therefore loss of beneficial uses) is not allowed to occur beneath other properties.

Attenuation zones must not be designated:

- within a groundwater protection zone,
- where there is unacceptable risk of detriment to an existing beneficial use, or
- in aquifers with high permeability or low attenuation properties.

Non aqueous phase liquid

Clause 18 states the Authority's intention that non aqueous phase liquid pollution will be removed in all cases except where "the Authority is satisfied that there is no unacceptable risk posed by the non aqueous phase liquid to any beneficial use".

Polluted groundwater zones

A polluted groundwater zone is an area identified by the Authority as having an existing level of groundwater contamination that precludes one or more beneficial use that would otherwise apply to that groundwater. Clean up of polluted groundwater zones will be required to the extent practicable, with the ultimate aim being to achieve the groundwater quality objectives set out in the policy. The Authority will require periodic reassessment of the practicability of clean up of groundwater within a polluted groundwater zone.

Direct waste discharge to groundwater

Clause 20 of the policy states that direct discharge of waste to an aquifer is not allowed to occur except where the groundwater quality objectives will be met, where there will be no detriment to any beneficial use of groundwater, land or surface water, and for the purpose of:

- aquifer recharge,
- irrigation drainage,
- backfilling of underground mine workings with tailings,
- stormwater disposal, or
- groundwater remediation projects involving the injection of uncontaminated water or the re-injection of treated water to the aquifer.

Rising water-tables

Clause 21 states that any proposal for waste discharge to land must include assessment of any background rise in the water-table and any rise in the water-table expected to be caused by the proposed waste discharge to land. The impact any water-table rise will have on the sustainability of the proposed waste disposal practice, surrounding land use and nearby ecosystems must also be considered.

Drilling, bore construction and decommissioning

Clause 22 states that any drilling, bore construction and decommissioning of drillholes and bores must be consistent with current best practice or with any relevant best practice guidelines adopted by the Environment Protection Authority.

Regional catchment strategies

Under clause 23, the Environment Protection Authority will work with Catchment Management Authorities to ensure that regional catchment strategies and other management strategies and programs make adequate provision for the protection of beneficial uses of groundwater.

Diffuse sources

Clause 24 notes that best practice must be adopted for the management of activities which have the potential to be, or to cause, a diffuse source of groundwater pollution.

PART VI - RELATED ACTIVITIES***Research and Monitoring***

Clause 25 states that the Authority will work with a range of organisations and individuals to ensure that studies, research and surveys are conducted to assist in achieving the groundwater policy's goals and objectives.

Hydrogeological information/data development

The Department of Natural Resources and Environment is charged with responsibility for ensuring that a State-wide hydrogeological information system is established and operated. This system will provide a readily accessible and integrated set of information describing aquifers and groundwater quality.

Codes of practice and guidelines

Clause 27 states that the Authority will work in co-operation with relevant protection agencies, individuals and organisations to develop and review codes of practice for activities which may affect groundwater quality. The Authority shall make available a list and copies of such codes and guidelines.

Public awareness

The Authority will work with the Department of Natural Resources and Environment and other protection agencies to promote public awareness regarding groundwater resources and protection of groundwater quality.

Monitoring, assessment and reporting of groundwater quality and policy performance

Clause 29 requires the Authority to ensure that adequate monitoring of groundwater quality is undertaken, and that protection agencies and firms (via works approval, licence and notice requirements) undertake appropriate monitoring of groundwater quality.

The Authority will periodically use the monitoring data gathered to make available public reports as to the quality of Victorian groundwater.

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