

SYDNEY CATCHMENT AUTHORITY

AND

SYDNEY WATER CORPORATION

**BULK WATER
SUPPLY AGREEMENT**



**A MESSAGE FROM THE CHIEF EXECUTIVE OF
THE SYDNEY CATCHMENT AUTHORITY
AND THE MANAGING DIRECTOR OF
THE SYDNEY WATER CORPORATION**

Sydney Water and the Sydney Catchment Authority share responsibilities for managing the sustainable provision of high quality drinking water to the communities of metropolitan Sydney, the Blue Mountains and Illawarra.

This Bulk Water Supply Agreement:

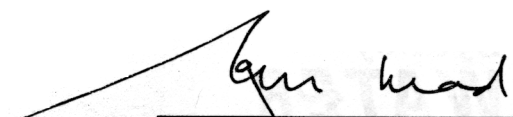
meets the obligations under section 22 of the *Sydney Water Catchment Management Act 1998* for the Sydney Catchment Authority and Sydney Water to enter into arrangements regarding the supply of bulk raw water;

establishes the principles underlying the operational and administrative arrangements under which the Sydney Catchment Authority supplies bulk raw water to Sydney Water; and

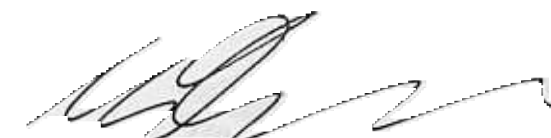
provides the framework for detailed procedures to be contained within the bulk water supply protocols that support the agreement.

We both depend on each other for critical aspects of our operations. We need successful cooperation to maintain a seamless approach to the multi-barrier protection of drinking water quality, from catchment to tap. This involves catchment management; water storage management; water quality monitoring; water treatment and delivery system management.

We recognise the importance of maintaining a balance across commercial, environmental and health objectives, in accordance with the principles of ecological sustainable development. Our tasks are vital to the public health, environmental and economic well being of the community.



GRAEME HEAD
Chief Executive
Sydney Catchment Authority



DAVID EVANS
Managing Director
Sydney Water Corporation

Contents

PART A : FRAMEWORK	5
1. Agreement	5
2. Nature and purpose	5
3. Bulk water supply protocols	5
4. Liaison between the SCA and Sydney Water	6
5. Commencement and duration	6
6. Review and variation	6
7. Dispute Resolution	6
8. Termination	6
9. Safety and the Environment	7
10. Access to assets	7
PART B : STANDARD OF THE QUALITY OF BULK RAW WATER SUPPLIED BY SCA	8
11. Water quality standards	8
12. Operational considerations	8
13. Backwash supernatant	8
14. Water quality monitoring and reporting	8
15. Water quality planning and risk management	9
PART C : MAINTENANCE OF ADEQUATE RESERVES OF WATER BY THE SCA	10
16. Optimisation of available water	10
17. Daily supply of water	10
18. Annual supply of water	10
19. Drought management	10
20. Water supply planning	11
PART D : CONTINUITY OF THE WATER SUPPLY	12
21. Incident management planning	12
22. Rights and obligations when an incident occurs	12

PART E : COST TO BE PAID BY SYDNEY WATER FOR SUPPLY OF WATER TO IT.....	13
23. Charges for the supply of water	13
24. Measurement of water supplied	13
25. Billing and payment arrangements.....	13
26. Recovery of costs incurred as a result of negligent or intentional acts or omissions.....	13
PART F : MISCELLANEOUS	15
27. Definitions	15
28. Interpretations	15
29. Compliance with laws.....	16
30. Severability	16
31. Force majeure.....	16
32. Indemnity	17
33. Limitation on action for failure to supply water	17
34. Ownership of information	18
35. Notices.....	18
36. Relationship of the parties.....	18
SCHEDULE 1 : WATER QUALITY STANDARDS.....	20
S1: Prospect Water Filtration Plant	20
S2: Macarthur Water Filtration Plant	21
S3: Illawarra Water Filtration Plant.....	22
S4: Woronora Water Filtration Plant.....	22
S5: Warragamba Water Filtration Plant.....	23
S6: Orchard Hills Water Filtration Plant.....	23
S7: Nepean Water Filtration Plant.....	24
S8: Cascade Water Filtration Plant	24

Part A: Framework

1. Agreement

This agreement is made on the 13th day of April 2006
between

The **SYDNEY CATCHMENT AUTHORITY** of Level 2, 311 High Street, Penrith in the State of New South Wales

AND

SYDNEY WATER CORPORATION of 115-123 Bathurst Street, Sydney in the State of New South Wales.

The Sydney Catchment Authority is constituted under the *Sydney Water Catchment Management Act 1998* (SWCM Act) with a specific function of supplying bulk water to Sydney Water and a principal objective to ensure that water supplied by it complies with appropriate standards of quality.

Sydney Water is constituted under the *Sydney Water Act 1994* (Sydney Water Act) with a principal objective of protecting public health by supplying safe drinking water to its customers and other members of the public.

2. Nature and purpose

This Bulk Water Supply Agreement establishes the commercial and operational arrangements under which the SCA supplies bulk raw water to Sydney Water.

This agreement is entered into in accordance with requirements of Division 4 of Part 3 of the SWCM Act.

Section 22 of the SWCM Act requires the arrangements to deal with and include:

- standard of the quality of the water supplied
- continuity of water supply
- maintenance of adequate reserves of water by the SCA
- cost to be paid by Sydney Water for the supply of water to it

3. Bulk water supply protocols

This agreement is supplemented by the bulk water supply protocols that have been developed by the SCA and Sydney Water, in conjunction with the Water Filtration Plant contractors (BOO operators).

The bulk water supply protocols contain details of the operations and activities that will be undertaken by the SCA, Sydney Water and the BOO operators in the delivery of raw and treated water, including normal and abnormal operational procedures, planned and unplanned work, quality assurance, quality control, calibration and location of flow meters, access to assets and sharing and exchange of information, and other matters, as agreed.

The bulk water supply protocols must be reviewed at least once in the life of this agreement, or when requested by either the SCA or Sydney Water.

4. Liaison between the SCA and Sydney Water

The SCA and Sydney Water have nominated a representative for the purposes of this agreement.

The SCA and Sydney Water may work with NSW Health on matters related to water quality in accordance with the requirements of legislation and regulatory instruments. The Strategic Liaison Group is the basis for this arrangement.

5. Commencement and duration

This agreement commences on 13 April 2006.

This agreement remains in force until amended or replaced.

Execution of this agreement is dependent on the prior approval of the Minister responsible for the SWCM Act.

6. Review and variation

The agreement will be reviewed at least every five years. It may be reviewed, amended or replaced:

- at any time upon the agreement of the SCA and Sydney Water; or
- when required by the Minister; or
- when required by the SCA's or Sydney Water's Operating Licence.

Any variation to this agreement must be agreed in writing and executed by each organisation in accordance with the provisions of the SWCM Act.

7. Dispute Resolution

If any difference or dispute arises between the SCA and Sydney Water under this agreement, both agree:

- to seek in good faith to resolve the matter between themselves; and
- to continue to perform their respective obligations under this agreement, notwithstanding the difference or dispute.

If the SCA and Sydney Water have not resolved the difference or dispute within ten (10) business days of notification of the dispute being received, the matter may be referred to the managing directors of the SCA and Sydney Water.

The managing directors shall meet within ten (10) business days to resolve the dispute in good faith or adopt a process to resolve the dispute.

If the managing directors cannot reach a decision concerning the dispute within thirty (30) business days of it being referred to them, then the matter may be referred to the respective ministers for their joint determination.

If a joint determination of the difference or dispute by the organisations' responsible ministers is not achieved within a reasonable period, the matter is to be referred to the Premier for resolution.

8. Termination

Subject to the provisions of the SWCM Act, either organisation may give notice of termination of this agreement to the other if the other organisation ceases to hold an Operating Licence.

Termination of this agreement will take effect as specified in the notice.

9. Safety and the Environment

In performing their obligations under this agreement, their respective operating licences and other legislative and regulatory requirements, the SCA and Sydney Water are committed to the safety of employees, contractors and members of the public and will place safety first when performing their respective obligations.

The SCA and Sydney Water will use reasonable endeavours to identify all material risks to the safety of persons, and damage to the environment, which may arise in relation to the performance of their obligations. Each organisation must inform the other of these risks and the practices adopted to eliminate or mitigate these risks.

When performing their respective obligations under this agreement, each organisation must comply with the other's OH&S protocols and procedures when on the other's land or premises.

10. Access to assets

Each organisation is to give the other sufficient access to their lands and assets to enable the other organisation to discharge their responsibilities under their Act, Operating Licence and any other legislation and regulatory instruments.

Procedures to allow access to the assets are contained in the bulk water supply protocols.

Part B: Standard of the quality of bulk raw water supplied by SCA

11. Water quality standards

The SCA provides and delivers bulk raw water to Sydney Water in accordance with:

- bulk raw water quality specifications set out in Schedule 1; and
- bulk raw water quality requirements specified in the regulatory instruments, including the SCA's operating licence and/ or agreed to between the SCA, Sydney Water and NSW Health.

The SCA and Sydney Water will work in conjunction with NSW Health in relation to any alterations to water quality standards.

The forum for discussion concerning any such alterations is the Strategic Liaison Group between NSW Health, the SCA and Sydney Water.

12. Operational considerations

The SCA must determine the optimal source of any bulk raw water it supplies to Sydney Water, so that water of a quality most appropriate for treatment can be available at any time, having regard to:

- available water quality information;
- licence requirements imposed by regulators;
- long term maintenance of its pre-determined water storage objectives and criteria;
- quality and commercial optimisation of Sydney Water's water treatment processes; and
- Sydney Water's contractual obligations under the water filtration agreements with the BOO operators entered into prior to this agreement and as advised by Sydney Water in writing to the SCA.

13. Backwash supernatant

The operational configuration of certain water filtration plants owned by or operated under contract with Sydney Water may require from time to time the discharge of backwash supernatant or other waters to a place other than the head of works for the particular water filtration plant.

For this to occur, Sydney Water must obtain appropriate approvals or exemptions under the *Protection of the Environment Operations Act 1997*.

The SCA will undertake to accommodate Sydney Water's needs in relation to the discharge of backwash supernatant once Sydney Water has secured appropriate approvals from the regulator.

14. Water quality monitoring and reporting

The SCA will undertake water quality monitoring and reporting in accordance with the requirements of:

- SWCM Act;
- SCA Operating Licence;

- *Water Act 1912* or the *Water Management Act 2000*; and
- any instruments under these Acts.

15. Water quality planning and risk management

The SCA and Sydney Water will work together on water quality planning and risk management in accordance with the requirements of the SWCM Act, the Sydney Water Act and any regulatory instruments under these Acts, through the Strategic Liaison Group and other appropriate forums.

The SCA and Sydney Water will have a transparent multi-barrier approach to the minimisation of risk to public health, through the management of water quality from the catchment to the consumers' tap.

Part C: Maintenance of adequate reserves of water by the SCA

16. Optimisation of available water

The SCA manages its bulk raw water storage and supply system to optimise water availability, having regard to:

- quality of available water in individual storages;
- storage and catchment capacities of the individual supply systems;
- climatic variability of the individual systems;
- need to optimise its water entitlement under the Fish River Water Supply Scheme; and
- environmental aspects of its use of run-of-river transfer systems.

17. Daily supply of water

The SCA must provide bulk raw water to Sydney Water at supply points agreed with Sydney Water.

The SCA must ensure that its supply of bulk raw water to Sydney Water satisfies day-to-day demand of the water filtration plants and Sydney Water's water distribution systems, subject to clauses 12, 16 and 31 of this agreement.

The SCA will operate its supply system so as to provide volumes of bulk raw water up to the rated hydraulic capacities of each water filtration plant detailed in the bulk water supply protocols, subject to this agreement.

The operational procedures to be followed by the SCA and Sydney Water for daily water supply are documented in the bulk water supply protocols.

18. Annual supply of water

The SCA must supply bulk raw water to Sydney Water in accordance with:

- any environmental and riparian flow release requirements set out in its water management licence, or any other licence or approval under the *Water Management Act 2000*;
- any other operating requirements arising out of legislation or regulatory instruments; and
- agreed drought response and contingency plans at a sub-system level.

19. Drought management

The SCA and Sydney Water will have arrangements to manage and mitigate the impact of drought, in accordance with the requirements of legislation and relevant regulatory instruments.

In the event of drought the SCA and Sydney Water are to cooperate with each other to achieve an optimal response that minimises inconvenience to Sydney Water's customers and any other customers of the SCA.

20. Water supply planning

The SCA and Sydney Water are to work with each other and other government agencies in monitoring the demand for water and the development of future water supply strategies for Sydney, the Illawarra and the Blue Mountains.

The SCA and Sydney Water are to liaise as appropriate in relation to the operational aspects of water supply planning.

Part D: Continuity of the water supply

21. Incident management planning

The SCA and Sydney Water are each to prepare and maintain incident response and contingency plans for possible major incidents or emergencies, including asset failures, floods and bushfires, which have the potential to or will impact on the other organisation.

These plans are to be made in accordance with:

- *SWCM Act*;
- *Sydney Water Act*;
- *Dam Safety Act 1978*;
- *State Emergency and Rescue Management Act 1989*;
- *Rural Fires Act 1987*; and
- any other relevant or appropriate legislation and regulatory instruments.

Plans for incidents that have the potential to or will impact on the other organisation must be prepared in consultation with the other organisation and copies of each plan and any revisions are to be made available to the other organisation.

22. Rights and obligations when an incident occurs

In the event of a major incident or emergency that has the potential to or will impact on the other organisation, each organisation is to:

- act in accordance with the appropriate plans and protocols; and
- cooperate with the other to achieve an optimal response that minimises inconvenience to Sydney Water's customers and any other customers of the SCA.

In the event of such a major incident or emergency, each organisation grants to the other, its employees and agents, the right at any time during the incident to enter its works, assets and lands to take such steps as are reasonably necessary to overcome the cause or consequences of the incident.

In relation to the water filtration plants that are the subject of build own operate agreements between Sydney Water and the private sector, Sydney Water must provide to the SCA such information available to Sydney Water which the SCA requests and which Sydney Water is not legally or contractually precluded from providing.

If an incident arises out of or as a consequence of a breach of this agreement, or from any negligent or intentional act or omission, then the organisation responsible for the breach or negligent or intentional act or omission must pay the reasonable costs and expenses incurred by the other organisation.

Part E: Cost to be paid by Sydney Water for supply of water to it

23. Charges for the supply of water

Sydney Water will pay the SCA charges for the bulk raw water supplied to it by the SCA in accordance with the determinations of maximum prices made from time to time by the Independent Pricing and Regulatory Tribunal.

24. Measurement of water supplied

For the purposes of clause 23, the quantity of bulk raw water supplied by the SCA to Sydney Water must be measured by flow meters located at points agreed to between the SCA and Sydney Water and documented in the bulk water supply protocols.

To ensure their accuracy, the flow meters will be tested and calibrated according to requirements documented in the bulk water supply protocols, or when requested by Sydney Water or the SCA.

All costs associated with such testing or calibration must be met by the SCA unless data and information obtained from flow meters are shared, in which case costs must be shared.

The cost of any additional testing must be borne by the party making the request.

Data and information from flow meters must be made available on an integrated basis to each organisation's telemetry and other relevant communications and monitoring systems.

25. Billing and payment arrangements

The SCA must render to Sydney Water an account for the bulk raw water supplied to Sydney Water within twenty-one (21) days from the last day of the preceding calendar month or within any other agreed period.

Sydney Water must pay to the SCA the amount shown on the account within twenty-one (21) calendar days of the account being rendered by the SCA or within any other agreed period.

The SCA will not charge Sydney Water for water supplied in circumstances where the Commissioner of the NSW Rural Fire Service takes charge of bushfire fighting operations pursuant to section 44 of the *Rural Fires Act 1997*.

Accounts may be adjusted under the following circumstances:

- when the quantity of bulk raw water supplied has been incorrectly measured;
- when Sydney Water seeks to recover part or all of the cost of the water used in relevant bushfire fighting operations; or
- when the SCA receives or would have received, but for a negligent act or omission, reimbursement as a result of an insurance claim arising from an event of force majeure (in accordance with clause 31).

26. Recovery of costs incurred as a result of negligent or intentional acts or omissions

Costs may be recovered by Sydney Water or the SCA according to the indemnity provided by clause 32 of this agreement when:

- costs or expenses have been incurred in responding to an incident that resulted from a breach of this agreement, a negligent or intentional act or omission by the other organisation (in accordance with clause 22);
- the SCA commits a negligent or intentional act or omission that results in the provision of bulk raw water that does not meet the water quality standards in Schedule 1 and Sydney Water incurs costs as a result of:
 - ⇒ “flushing” its distribution system to remove contamination; or
 - ⇒ paying redress to its customers for failing to meet water quality standards contained in relevant regulatory instruments;
- Sydney Water breaches this agreement or commits a negligent or intentional act or omission and the SCA incurs costs as a result of these Sydney Water actions that directly prevent the SCA from complying with Schedule 1.

Part F: Miscellaneous

27. Definitions

The following definitions apply in this agreement:

Area of operations has the same meaning as in the SWCM Act.

BOO operators means the build own operate (BOO) operators who own and operate Sydney Water's water filtration plants.

Bulk raw water means water supplied by the SCA to Sydney Water under this agreement.

Bulk water supply protocol means a document as agreed between the SCA, Sydney Water and the BOO Operators detailing day-to-day operating protocols for normal and abnormal operations.

Emergency has the same meaning as in the SCA's Corporate Incident Management Manual.

Flow meters means the flow meters installed or utilised by the SCA under this agreement for the measurement of bulk raw water and includes ancillary equipment provided for data logging purposes, data capture and data recording.

Major incident has the same meaning as in the SCA's Corporate Incident Management Manual.

Minister means the Minister responsible for administering the SWCM Act.

Operating licence means, in the case of the SCA, the licence granted to it under the SWCM Act and, in the case of Sydney Water, the licence granted to it under the Sydney Water Act.

Strategic Liaison Group means the Strategic Liaison Group established under the respective memoranda of understanding between NSW Health and the SCA, and between NSW Health and Sydney Water.

28. Interpretations

In this agreement (unless the context requires otherwise):

- a reference to a party is to a party to this agreement;
- where an expression is defined, any other part of speech or grammatical form of that expression has a corresponding meaning;
- the singular includes the plural;
- a reference to any legislation or legislative provision includes any statutory modification or re-enactment of, or legislative provision substituted for and any subordinated legislation issued under, that legislation or legislative provision; and
- headings do not affect the interpretation of this agreement.

No rule of construction applies to the disadvantage of a party because that party was responsible for the preparation of, or seeks to rely on, this agreement or any part of it.

The rights, powers and remedies provided in the agreement are cumulative with and not exclusive of the rights, powers or remedies provided by law independently of this agreement.

- Subject to the following clause:
 - ⇒ Nothing in this agreement will in any way unlawfully restrict or otherwise unlawfully affect the unfettered discretion of a party to exercise any of its functions under law; and
 - ⇒ Anything which a party does, fails to do, or purports to do, pursuant of its statutory functions or powers will be deemed not to be an act or omission by that party under this agreement and will not entitle the other party to make any claim against that party arising out of the subject matter of this agreement.
- The above clause does not limit liability that a party would have had to the other party under this agreement as a result of a breach by a party of a term of this agreement but for the above sub-clause.

29. Compliance with laws

Each organisation must discharge its responsibilities and carry out its rights under this agreement in accordance with all applicable laws.

Nothing in this agreement is to be read in diminution of the responsibility of the SCA under common law or statute law (including the Trade Practices Act), for:

- The quality of water supplied to Sydney Water; and
- Notifying Sydney Water of any defects, contamination or dangers in the water; and
- Taking action to rectify such faults, defects, contamination or dangers found in the water.

30. Severability

If any provision of this agreement or its application is invalid or unenforceable, then the remainder of this agreement is not affected.

31. Force majeure

Each organisation recognises that within its own area of operations there are things that are outside its control, or may not be capable of being controlled or effectively managed or remedied.

“Force majeure” means any event beyond the reasonable control of the organisation affected, including but not limited to:

- an act of God, lightning, fire, or earthquake;
- declared or undeclared war;
- governmental or quasi-governmental restraint, expropriation, intervention, direction or embargo;
- statewide or national strikes where the affected party has not caused or contributed to the circumstances giving rise to the strike; and
- other events that are not reasonably within the control of the organisation affected.

“Force majeure” does not include industrial disputation that is solely between the organisation affected and its employees, or between the subcontractors of the organisation affected and their employees.

The organisation affected by an event of force majeure must use all possible diligence to remove the effect and to mitigate the consequences of the event of force majeure as quickly as possible.

When an event of force majeure prevents an organisation from performing any of its obligations under this agreement, those obligations are suspended for the period in which those obligations are genuinely affected by the event of force majeure.

Clause 31 only applies when the organisation affected by the event of force majeure:

- Could not have reasonably prevented, overcome or taken appropriate remedial action to mitigate the effect of the event of force majeure; and
- Promptly informs the other organisation of the event of force majeure and the likely consequences in relation to the obligations under this agreement.

If an event of force majeure affects the SCA’s ability to perform its obligations under this agreement and Sydney Water’s obligations to pay the charge in clause 23 are consequently affected, Sydney Water must continue to pay the charge in full without adjustment for a period of fourteen (14) days from the date the event of force majeure occurred.

32. Indemnity

When a negligent or intentional act or omission by the SCA results in damage or loss to Sydney Water, the SCA must indemnify Sydney Water against the damage or loss.

When a negligent or intentional act or omission by Sydney Water results in damage or loss to the SCA, Sydney Water must indemnify the SCA against the damage or loss.

In this clause 32

- “SCA” and “Sydney Water” includes the respective Board members, directors, officers, employees and agents;
- “Legal requirements” includes any law or licence or requirements granted or imposed under any law;
- “Damage or loss” includes any and all damages, losses, penalties, demands, suits, costs, expenses (including reasonable solicitor’s fees and expenses) and proceedings of any nature, but does not include consequential losses;
- “Indemnify” includes keep indemnified, defend and save;
- Any indemnification must be in accordance with the governing law; and
- The indemnity survives the expiration or sooner termination of this agreement.

33. Limitation on action for failure to supply water

Sydney Water may not bring an action or proceeding against the SCA solely by the reason of inadequate volumes of water for water supply purposes in any of the storages operated or controlled by the SCA.

34. Ownership of information

Unless the SCA and Sydney Water otherwise agree in writing, the ownership of information (including data) which is legally capable of being owned:

- Vests in the organisation which has created that information; and
- If the information has been jointly created, vests in the SCA and Sydney Water equally.

The sharing of information does not of itself confer or vest ownership in an organisation.

35. Notices

Every notice, consent, approval, demand or other communication of any nature whatsoever required to be served, given or made under or arising from this agreement:

- must be in writing in order to be valid unless some other form of notice is specifically provided for in the bulk water supply protocols; and
- must be:
 - ⇒ left at the address of the addressee; or
 - ⇒ sent by prepaid ordinary post to the address of the addressee;
 - ⇒ sent by facsimile to the facsimile number notified by the addressee from time to time; or
 - ⇒ sent by email to the email address notified by the addressee.

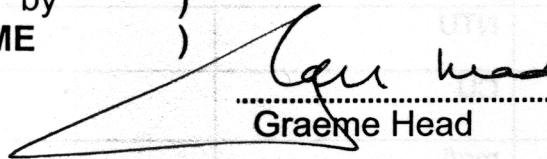
36. Relationship of the parties


Nothing in this agreement constitutes a partnership between the SCA and Sydney Water, nor does it constitute one organisation the agent of the other and no organisation has any authority to bind the other organisation in any way except as expressly specified in this agreement.

No organisation enters into this agreement as an agent for any other person or for the benefit of any other person unless expressly specified in this agreement.


EXECUTED as an Agreement.

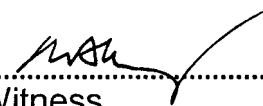
SIGNED as an Agreement for)
and on behalf of **SYDNEY**)
CATCHMENT AUTHORITY by)
its Chief Executive **GRAEME**)
HEAD)


.....
Graeme Head 11.4.06


.....
Witness

SIGNED as an Agreement for)
and on behalf of **SYDNEY**)
WATER by its Managing)
Director **DAVID EVANS**)


.....
David Evans


.....
Witness

13. 4.06
.....
Date

Schedule 1: Water Quality Standards

[Note: See clause 11 Water quality standards]

S1: Prospect Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	40
True colour @ 400 nm	CU	-	60
Iron (total)	mg/L	-	3.50
Manganese	mg/L	-	1.40
Aluminium	mg/L	-	2.60
Hardness	mg/L as CaCO ₃	25.0	70.0
Alkalinity	mg/L as CaCO ₃	15	60
pH	pH units	6.3	7.9
Temperature	°C	10	25
Algae (Note 2)	ASU	-	1000

Note: When the Authority makes available to Sydney Water Bulk Raw Water that is capable of being blended so that the Bulk Raw Water at the Prospect Water Filtration Plant inlet can satisfy the above criteria, then the Bulk Raw Water is deemed to satisfy those criteria provided the Authority has given reasonable prior notice to Sydney Water of the need to blend the Bulk Raw Water.

Note 2: If turbidity is greater than 10 NTU or true colour is greater than 30 CU, then the maximum Algae criteria will be 500 ASU.

S2: Macarthur Water Filtration Plant

Parameter	Unit	Minimum	Maximum Value of Parameter For Demand Range ML/d			
			<265 ≥185	<185 ≥125	<125 ≥80	<80
Turbidity	NTU	-	10	25	50	60
True colour @ 400 nm	CU	-	40	40	40	40
Iron	mg/L	-	0.60	0.80	1.10	1.30
Manganese	mg/L	-	0.20	0.25	0.30	0.35
Aluminium	mg/L	-	0.40	0.50	0.75	0.95
Hardness	mg/L as CaCO ₃	6	30	32.20	32.20	32.20
Alkalinity	mg/L as CaCO ₃	-	15	15	15	15
pH	pH units	5.7	7.7	7.7	7.7	7.7
Temperature	°C	8	25	25	25	25
Algae	As set out in the following table headed "Algal Limits"					

Table: Algal Limits

Algae	Typical Cells	Plant Production Rate	ASU Limit (Average of 3 Samples)
Small < 10 µm or individual cells of filamentous or colonial series.	Chlorella Anabaena Monodus Melosira	Low (≤ 125 ML/d)	0-500
Large > 10 µm or branching or gelatinous species	Asterionella Taballaria Fragillaria Synedra Cyclotella Dinobryan Elakatothrix Volvox	High (> 125 ML/d)	0-100

S3: Illawarra Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	10
True colour @ 400 nm	CU	-	50
Iron	mg/L	-	1.1
Manganese	mg/L	-	0.4
Aluminium	mg/L	-	1.4
Hardness	mg/L as CaCO ₃	-	30
Alkalinity	mg/L as CaCO ₃	-	10
pH	pH units	6.2	7.2
Temperature	°C	10	25
Odour	-	-	Not objectionable
Algae	ASU	-	5000

S4: Woronora Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	10
True colour @ 400 nm	CU	-	70
Iron	mg/L	-	1
Manganese	mg/L	-	0.1
Aluminium	mg/L	-	0.4
Hardness	mg/L as CaCO ₃	2	30
Alkalinity	mg/L as CaCO ₃	-	15
pH	pH units	5.1	7.5
Temperature	°C	10	25
Odour	-	-	Not objectionable
Algae	ASU	-	5000

S5: Warragamba Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	40
True colour @ 400 nm	CU	-	60
Iron	mg/L	-	3.50
Manganese	mg/L	-	1.40
Aluminium	mg/L	-	2.60
Hardness	mg/L as CaCO ₃	25.0	70
Alkalinity	mg/L as CaCO ₃	15.0	60.0
pH	pH units	6.3	7.9
Temperature	°C	10	25
Algae	ASU	-	2000

S6: Orchard Hills Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	40
True colour @ 400 nm	CU	-	60
Iron	mg/L	-	3.50
Manganese	mg/L	-	1.40
Aluminium	mg/L	-	2.60
Hardness	mg/L as CaCO ₃	25.0	70
Alkalinity	mg/L as CaCO ₃	15.0	60
pH	pH units	6.3	7.9
Temperature	°C	10	25
Algae	ASU	-	2000

S7: Nepean Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	150
True colour @ 400 nm	CU	-	60
Iron	mg/L	-	5.0
Manganese	mg/L	-	1.5
Aluminium	mg/L	-	1.0
Hardness	mg/L as CaCO ₃	2	35
Alkalinity	mg/L as CaCO ₃	0.5	25
pH	pH units	4.8	7.7
Temperature	°C	10	25
Algae	ASU	-	2000

S8: Cascade Water Filtration Plant

Parameter	Units	Minimum	Maximum
Turbidity	NTU	-	15
True colour @ 400 nm	CU	-	60
Iron	mg/L	-	3.0
Manganese	mg/L	-	0.3
Aluminium	mg/L	-	0.2
Hardness	mg/L as CaCO ₃	-	40
Alkalinity	mg/L as CaCO ₃	-	30
pH	pH units	6.0	7.9
Temperature	°C	10	25
Algae	ASU	-	2000