



# Surface and Groundwater Response Plan

## Googong Township Integrated Water Cycle Project

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## Terms and Abbreviations

CoA	Condition of Approval
DP&E	Department of Planning and Environment
EPA	Environment Protection Authority
GTPL	Googong Township Proprietary Limited
GWMP	Groundwater Monitoring Program
IWC	Integrated water cycle
NOW	NSW Office of Water
NSW	New South Wales
OEMP	Operational Environmental Management Plan
Operator	GTPL (during process commissioning and verification) or QCC (during ongoing operation)
Plan	Surface and Ground Water Response Plan
QCC	Queanbeyan City Council
SGWRP	Surface and Ground Water Response Plan
SWAEMP	Surface Water (and Aquatic Ecology) Monitoring Program
TAMS	ACT Territory and Municipal Services
WMP	Water Management Plan

## D1 Background

The development of the Surface Water (and Aquatic Ecology) Monitoring Program (SWAEMP) and the Groundwater Monitoring Program (GWMP) (Appendices A and B to the Water Management Plan (WMP)) forms part of a range of mitigation measures to manage risks to surface water and groundwater quality, aquatic ecology, soil and plants.

Impacts will be monitored via these monitoring programs and will provide input to be fed into the response protocols outlined in this Surface and Groundwater Response Plan (SGWRP or the Plan).

## D2 Purpose and objectives

This SWGRP has been developed with reference to the WMP and associated sub-plans.

This Plan outlines the appropriate response protocols to be undertaken in the event that adverse impacts associated with the IWC Project are identified in relation to surface water, aquatic ecology and groundwater. It also outlines measures to mitigate impacts on landowners and downstream water users, and response procedures to be followed in the event of any unforeseen impacts.

This Protocol also fulfils the requirements of Condition of Approval (CoA) D8 (d), as shown in Table 1.

**Table 1** Conditions of Approval

CoA No.	Condition requirements	Document reference
D8	1. a <b>Surface and Ground Water Response Plan</b> , including:	This Plan
	A. a response protocol for any exceedances of the surface water and groundwater assessment criteria;	D4 and D5
	B. measures to notify and compensate landowners of privately-owned land whose water supply is adversely affected by the project; and	D8
	C. measures to mitigate and/or offset any adverse impacts on waterways, groundwater dependent ecosystems and/or riparian vegetation; and	D4

## D3 Framework for management response actions

A framework for management response actions to surface water and/or groundwater-related issues stemming from the operation of the IWC Project is outlined in Table 2. The operator (Googong Township Pty Ltd (GTPL) during process verification, and Queanbeyan City Council (QCC) following handover) will have the responsibility to undertake these response actions. Further details are provided in the protocols outlined in Sections D4 to D8.

**Table 2** Water management response actions

Potential surface and/or groundwater issue	Response
Surface water and/or groundwater monitoring results fall outside the impact assessment criteria (outlined in both the Surface Water and Groundwater Monitoring Programs)	<ul style="list-style-type: none"> <li>▪ Investigate results and trends, considering any mitigation factors where applicable.</li> <li>▪ Report results to senior management .</li> <li>▪ Where relevant initiate the criteria exceedance protocol, outlined in Section D4.</li> </ul>
Receipt of community complaint	<ul style="list-style-type: none"> <li>▪ Investigate complaint, considering any mitigating factors.</li> <li>▪ Report complaint to senior management.</li> <li>▪ Provide feedback to IWC Project operational personnel, where relevant.</li> <li>▪ Provide feedback to complainant.</li> <li>▪ Where relevant, initiate the protocol outlined in Sections D7 and D8.</li> </ul>
Non-compliance with discharge limits	<ul style="list-style-type: none"> <li>▪ Notify Environment Protection Authority (EPA) of the non-compliance, in line with regulatory requirements for incident reporting.</li> <li>▪ Investigate non-compliance, considering any mitigating factors where applicable.</li> <li>▪ Provide incident report to EPA.</li> </ul>
Emergency discharges from the system	<ul style="list-style-type: none"> <li>▪ Follow the emergency response procedures prepared by the operator, as part of the Operational Environmental Management Plan (OEMP).</li> <li>▪ Notify the EPA of the emergency discharge, in line with regulatory requirements for incident reporting.</li> <li>▪ Notify potentially affected stakeholders, including ACT Territory and Municipal Services (TAMS) and potentially affected downstream landholders.</li> <li>▪ Investigate discharge, considering any mitigating factors where applicable.</li> <li>▪ Review adequacy of existing management infrastructure and controls.</li> <li>▪ Provide incident report to EPA.</li> </ul>

Potential surface and/or groundwater issue	Response
Adverse impact on surface water and/or groundwater supply entitlements for landowners	<ul style="list-style-type: none"> <li>▪ Investigate the cause of any adverse impact on surface water and/or groundwater supply.</li> <li>▪ Where relevant initiate the process outlined in Section D5.</li> </ul>
Adverse impacts on waterways, groundwater dependent ecosystems and/or riparian vegetation	<ul style="list-style-type: none"> <li>▪ Investigate results and trends, considering any mitigation factors where applicable.</li> <li>▪ Report results to senior management.</li> <li>▪ Where relevant initiate the protocol outlined in Section D4.</li> </ul>
Unforeseen impact	<ul style="list-style-type: none"> <li>▪ Initiate protocol outlined in Section D6.</li> </ul>

The outcomes of the use of the protocols detailed in Sections D4 to D8 will be reported in the WMP Annual Review. The implementation of any mitigation measures will be undertaken by the operator (GTPL or QCC) in consultation with Department of Planning and Environment (DP&E), NSW Office of Water (NOW), and EPA, and will be reported in the WMP Annual Review.



## D4 Criteria exceedance protocol

The operator will monitor surface water and groundwater in accordance with the SWAEMP and GWMP (refer to Appendices A and B of the WMP, respectively). If the surface water or groundwater monitoring are outside the surface water or groundwater impact assessment criteria outlined in these programs, further investigations will be required. The operator will:

- Confirm the timing and general location of the exceedance(s).
- Confirm the meteorological conditions at the time of the exceedance(s) (where relevant).
- Identify any potential contributing factors.
- Assess the monitoring results against background trends to identify any anomalies or causes.
- If the exceedance is not attributable to the IWC Project, report the results to the EPA and incorporate the alterations to all monitoring programs.
- Where the exceedance is potentially attributable to the IWC Project, the appropriate reporting actions will be implemented and appropriate mitigation and management strategies will be developed and implemented.
- Where mitigation and management strategies have been implemented, additional monitoring may be undertaken and regular reviews will be undertaken to determine the effectiveness of the strategies.
- The exceedance will be reported in accordance with the reporting mechanisms outlined in the SWAEMP and GWMP and the IWC Project's Environment Protection Licence.

## D5 Response protocol for adverse impacts on existing surface water and groundwater bore supplies

Surface water available to downstream landowners may be affected by activities associated with the IWC Project. In the event that a complaint is received from a landowner regarding the loss of a surface water supply the Complaints Management Protocol, as detailed in Section D7, will be implemented.

If the initial investigations conclude that the complaint is valid and that the IWC Project has contributed to the event(s), the following steps will also be implemented by the operator (GTPL or QCC):

- provide a copy of the landowner complaint to the NOW and DP&E, and inform both agencies of the intention to conduct independent review.
- Commission an independent review including investigation (if applicable) of:
  - relevant surface water flow rates, surface water availability, meteorological conditions over the relevant period of record, storm events and/or flooding depths.
  - any changes to land use that may have affected surface water flow rates and quality over time.
  - whether the event(s) is/are attributable solely to the IWC Project.
- Provide a copy of the independent review report to the landowner and NOW.
- If the investigation concludes that the event(s) are attributable to the IWC Project then:
  - appropriate mitigation and managements strategies, where relevant will be developed and implemented.
  - an alternative source of water or compensation will be arranged with the landowner, as detailed in Section D8.
- where mitigation and management strategies have been implemented, additional monitoring may be undertaken and regular reviews will be undertaken to determine the effectiveness of the strategies.

Groundwater available to adjacent landowners may be affected by activities associated with the IWC Project. In the event that a complaint is received from a landowner regarding the loss of groundwater supply the Complaints Management Protocol, as detailed in Section D7, will be implemented.

If the initial investigations conclude that the complaint is valid and that the IWC Project has contributed to the event(s), the following steps will also be implemented by the operator (GTPL or QCC):

- provide a copy of the landowner complaint to the NOW and DP&E, and inform both agencies of the intention to conduct independent review.
- Commission an independent review including investigation (if applicable) of:
  - relevant groundwater levels and groundwater quality monitoring results.
  - any changes to land use that may have affected groundwater levels and groundwater quality over time.
  - meteorological conditions over the relevant period of record.
  - whether the event(s) is/are attributable solely to the IWC Project.
- Provide a copy of the independent review report to the landowner and NOW.

- If the investigation concludes that the event(s) are attributable to the IWC Project then:
  - rehabilitate the bore/well supply by deepening; or
  - replace the water supply with water of equivalent quality and quantity.
- develop and implement appropriate mitigation and management strategies, where relevant.
- implement additional monitoring as necessary to determine the effectiveness of the strategies undertaken.

## D6 Unforeseen impacts protocol

In the event of unforeseen impacts associated with surface waters or groundwater potential caused by the IWC Project, the following protocol will be implemented:

- conduct a preliminary review of the nature of the impact, including:
  - any relevant monitoring data
  - current IWC Project activities and land use practices.
- commission of an investigation by an appropriately qualified expert into the unforeseen impact to confirm cause and effect and consider relevant options for amelioration of impact(s) as appropriate.
- Prepare an action plan in consultation with the appropriate regulatory agency(s).
- Mitigate causal factors where possible.
- Implement additional monitoring as necessary to measure the effectiveness of the controls implemented.

## D7 Complaint management protocol

GTPL has developed a Complaints Management Procedure for the IWC Project, which details how to receive, respond to, record and action any community complaints. This ensures a consistent approach to handling any complaint associated with the IWC Project while they are operator. With respect to complaints regarding surface water or groundwater the investigations will include, as a minimum:

- Records of the timing and general location of the issue initiating the complaint.
- Details of the meteorological conditions at the time of the issue initiating the complaint.
- Identification of any potential contributing factors.
- A review of any monitoring results relevant to the complaint.

QCC have an existing complaints management policy and complaints management system. The Googong IWC Project will be incorporated into this system.

Where a complaint is potentially attributable to the IWC Project, appropriate mitigation and management strategies will be developed by the operator, and implemented and monitored for the effectiveness of the strategies undertaken.

Details of complaints relating to surface water or groundwater will be provided to relevant IWC Project operational personnel, to assist in the improvement of management practices, where relevant. A summary of the complaints received by the community will be reported in the WMP Annual Review. Records of complaints will be maintained by the operator.

Enquiries and complaints can be taken 24 hours a day, seven days a week on the dedicated community information hotline:

- During process verification - **1800 838 438 (GTPL)**
- During ongoing operation (business hours) - **(02) 6285 6000 (QCC)**
- During ongoing operation (after hours) - **(02) 6298 1234 (QCC)**.

Complaints will be responded to within 24 hours and ongoing correspondence relating to the complaint will be responded to within five working days or as agreed by the complainant/Director General.

If a complainant considers the operation to be in exceedance of the impact assessment criteria, they may request an independent review of the effects of the operation on their land. Such a request must be made in writing to the Director-General of the DP&E. If the Director-General determines that an independent review is to be undertaken, the operator must follow the procedures outlined in the relevant development consent.

## D8 Compensation of landowners whose water supply is adversely affected

Surface water and groundwater impact assessment criteria have been established in their respective monitoring programs (Appendices A and B of the WMP respectively). Trigger levels will be reviewed annually in line with review of the WMP and accompanying sub-plans, as outlined in Section 7.2 of the WMP.

In the event that the monitoring results identify an exceedance of the nominated trigger levels, or that the operator identifies through other means that the IWC Project may have affected landowner water supply entitlements (e.g. through landowner complaint) the operator will:

- Notify any potentially affected landowners to inform them of the exceedance.
- Follow the protocol outlined in Section D4, to investigate whether the impact is attributable to the IWC Project. This may include additional water testing.
- Consult with the affected landowners to determine whether the exceedance of the nominated trigger levels has resulted in an adverse effect on their water supply entitlements. This will be informed by landowner water supply arrangement and intended use.

If it is confirmed that any landowner's water supply entitlements has been adversely affected, the operator will liaise with the affected resident/landowner to ensure an alternative source of water supply, commensurate with the entitlement and intended use, is made available.

As required under CoA B3 of the Project Approval, the alternative source of water supply will be provided for the duration of the impact attributed to the IWC Project and will be of an equivalent quality and quantity to the affected supply and be provided within 24 hours of the loss being identified, or as otherwise agreed by the affected resident/land owner.

If the operator is unable to provide an alternative supply of water, reasonable alternative compensation will be granted in consultation with the affected landowner. If the operator and the landowner cannot agree on the measures to be implemented, or if there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General of DP&E for resolution (as detailed in CoA B3).

Potential impacts on downstream landowner water supply will be considered for properties located along Montgomery Creek, Googong Creek and the Queanbeyan River between the IWC Project's discharge points and monitoring point seven (approximately two kilometres downstream of Wickerslack Lane, as identified in Figure 1 of the SWAEMP, Appendix A).

A survey of private bores has identified limited down-gradient groundwater users and the likelihood of an adverse water supply impact is considered low (SMEC 2015).

## D9 References

SMEC (2015). *Googong Hydrogeological Services – Annual Groundwater Monitoring Report*.  
Prepared for GTPL.