

Groundwater Standard

AGL-HSE-STD-009.2

This standard applies to all activities carried out by AGL employees and contractors, at AGL controlled sites, that:

- Extract and/or use groundwater as a water supply source;
- Pump groundwater to the surface, and subsequently require this by-product to be managed;
- Directly discharge, via a bore, into an aquifer;
- Directly or indirectly may result in groundwater contamination; and
- Directly or indirectly may result in impacts to groundwater levels/pressures.

The reference numbers given to minimum controls provide a direct linkage between this standard and the Risk and Control Matrix. The Groundwater Methodology AGL-HSE-SDM-009.2 provides further explanation of how to achieve the minimum controls.

RCM Ref	Minimum Controls
GENERAL	
9.2.1.1	Licences, permits or authorisation for: <ul style="list-style-type: none"> • Groundwater extraction, management, and discharge; and • Bore construction must be obtained and adhered to.
9.2.1.2	All reporting and monitoring program results must adhere with licence, permit or authorisation conditions and/or other regulatory reporting requirements.
9.2.1.3	Notices or orders, issued by the regulatory authority, for the extraction, management and discharge of groundwater including contaminated water, must be complied with and all requirements adhered to.
GROUNDWATER EXTRACTED FOR SUPPLY AND USE	
9.2.1.4	Bore construction at an AGL controlled sites must be carried out by a bore driller with a valid drillers licence. The drillers licence must: <ul style="list-style-type: none"> • Be issued by the relevant regulatory authority; and • Applicable to the class of work (as defined by applicable legislation) and the drilling method to be used.
9.2.1.5	Bore information (e.g. bore location, bore depth and water quality), as prescribed by licence conditions and applicable legislative requirements, must be provided to the relevant regulatory authority(ies).
9.2.1.6	Groundwater extraction at AGL controlled sites must comply with the water use minimum controls stated in the Surface Water Standard (AGL-HSE-STD-009.3).
GROUNDWATER EXTRACTED FOR OTHER PURPOSES THAN SUPPLY	

RCM Ref	Minimum Controls
9.2.1.7	AGL controlled sites must notify the relevant regulatory authority(ies) prior to commencing to pump produced water, naturally poor quality or contaminated groundwater to the surface, where required under applicable legislation.
9.2.1.8	Produced water, naturally poor quality or contaminated groundwater pumped to the surface must be managed in accordance with the wastewater management minimum controls stated in the Surface Water Standard (AGL-HSE-STD-009.3).
DISCHARGE TO GROUNDWATER	
9.2.1.9	AGL controlled sites must avoid discharges to groundwater, wherever possible. If discharge to groundwater is to be considered as a disposal option, a risk assessment must be carried out in accordance with the HSE Risk Management Standard (AGL-HSE-STD-004.1).
9.2.1.10	Water quality objectives for groundwater must not be exceeded at or beyond the boundaries of the attenuation zone, designated by the relevant regulatory authority.
9.2.1.11	AGL controlled sites must engage with a suitably qualified groundwater professional to assist with the development of a monitoring program.
9.2.1.12	AGL controlled sites must comply with the wastewater discharge monitoring minimum controls as stated in the Surface Water Standard (AGL-HSE-STD-009.3), as these apply to discharge to groundwater.
GROUNDWATER CONTAMINATION AND/OR CHANGES TO GROUNDWATER LEVELS/PRESSURES	
Prevention and Identification	
9.2.1.13	AGL controlled sites must comply with the land contamination identification, assessment, remediation, and incident and emergencies minimum controls stated in the Land Standard (AGL-HSE-STD-009.1), as these apply to groundwater contamination.
9.2.1.14	Guidelines, protocols, and codes of practice related to groundwater protection must be complied with, as prescribed by the regulatory authority(ies).
9.2.1.15	AGL controlled sites must verify if they are located within or in the vicinity of a groundwater protection area, as designated by the regulatory authority. If a groundwater protection area is identified, the AGL controlled site must comply with conditions prescribed by legislation and/or specific requirements issued by the regulatory authority.
Assessment	
9.2.1.16	Contaminated groundwater and/or groundwater levels/pressures assessments must be undertaken by suitably qualified and experienced groundwater professionals.
Management and Remediation	

RCM Ref	Minimum Controls
9.2.1.17	Contaminated groundwater remediation must be undertaken by suitably qualified and experienced groundwater professionals.
9.2.1.18	Where required, if a Non-Aqueous Phase Liquid (NAPL) is present in an aquifer, it must be removed unless exempted by the regulatory authority.
Incidents and Emergencies	
9.2.1.19	Hazards, near misses and incidents resulting in potential or actual contamination of groundwater must be reported and investigated using the AGL Incident Management System.
9.2.1.20	Incidents that result in the contamination of groundwater must be reported to the regulatory authority, in accordance with the notification requirements established by applicable legislation.
TRAINING AND COMPETENCY	
9.2.1.21	Assessment, clean-up, or remediation of contaminated groundwater must be carried out by qualified and experienced professionals.

Version	Date	Reviewed by	Approved by	Date approved	Next Review	Comments
3.0	09/05/2018	HSE Systems Manager	Head of Safety/Head of Environment, Health, Audit and Training	09/05/2018	09/07/2018	Version 3.0