Gingin Regional Landfill (MS796)

CLASS II LANDFILL, LOT 7778 DIAGRAM 209805, 1189 WANNAMAL ROAD SOUTH, CULLULA, SHIRE OF GINGIN

Environmental Protection Act 1986

Fernview Environmental Pty Ltd

Compliance Assessment Report (2025)

JBS&G Australia Pty Ltd | 67366 | Rev 0

16 March 2026

We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.

Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte

Table of Contents

List of Tables

Appendices

Appendix A	**MS796**
Appendix B	**MS1073**
Appendix C	**Statement of Compliance**
Appendix D	**MS796 Compliance Assessment**
Appendix E	**Carnaby's Cockatoo Habitat Offsets Strategy Compliance Assessment**
Appendix F	**Evidence Register**
Appendix G	**Groundwater Monitoring Report**

Abbreviations

Term	Definition
ACR	Annual Compliance Report
EPBC	Environmental Biodiversity Conservation Act
CBC	Carnaby's Black Cockatoo
CCHOS	Carnaby's Cockatoo Habitat Offset Strategy
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWER	Department of Water and Environmental Regulation
JBS&G	JBS&G Australia Pty Ltd
WA	Western Australia

1. Introduction

1.1 Project Background

Fernview Environmental Pty Ltd (Fernview) is developing the Gingin bioreactor landfill facility (the Project) at Lot 98 Wannamal Road South Cullala, Western Australia. The Project is located approximately 100 km north of Perth, WA. The Project is to construct and operate a landfill accepting Class II-type waste with six cells and a landfill gas collection system and utilisation plant facility. The Project is to have a total operational lifetime of not more than 30 years.

The Project has current environmental approval under Part IV of the *Environmental Protection Act 1986* (EP Act); Ministerial Statement 796 (MS796) (**Appendix A**). Conditions under MS796 were amended by MS1073 (**Appendix B**), issued by the Minister for Environment on 26 February 2018. MS796 conditions included in this document reflect these changes. MS975 was also issued for this Project but this approval has now been deleted by MS1073.

The main contact person for the project is Tom Rudas.

1.2 Objectives and Scope

The objective of this document is to comply with Condition 4-6 of MS796, which requires submission of an annual compliance assessment report (CAR) to address the status and compliance of the Project with Ministerial Statement conditions and key actions in accordance with the Compliance Assessment Plan (CAP) (Veolia Environmental Services, 2009).

The scope of this document covers the reporting period commencing 9 June 2024 and concluding 8 June 2025.

This report has been prepared in accordance with the Office of Environmental Protection Authority (OEPA) *Post Assessment Guideline for Preparing a Compliance Assessment Report* (OEPA 2012a).

1.3 Proponent Details

The details of the proponent are detailed below in **Table 1.1**.

Table 1-1: Proponent Details

Subject	Detail
Project	Class II Landfill
Proponent:	Fernview Environmental Pty Ltd
ACN:	617 674 469
Proponent Address:	Unit 1 48 Kelvin Road Maddington WA 6109

2. Current Implementation Status

Construction of the Project commenced on 6 April 2020 and was completed on 27 January 2023. The landfill had not commenced operations and was under care and maintenance for the entire 09 June 2024 to 08 June 2025 reporting period. Landfill operations commenced on 15 September 2025.

3. Audit Methodology

3.1 Reporting Period

This CAR addresses the reporting period between 09 June 2024 and 08 June 2025.

3.2 Audit Criteria

This assessment was conducted in accordance with the CAP. Audit criteria were based on the conditions of approval as per **Appendix C** (Compliance Audit Table). The audit table contains each MS796 / MS1073 condition separated into audit elements for auditing purposes (i.e. the audit criteria), and includes the following headings, per *Post Assessment Guideline for Preparing an Audit Table* (OEPA 2012b):

- Audit Code: The audit code is alphanumeric and denotes each audit element. It is the Statement number, followed by an abbreviation to indicate whether the audit element is relevant to an implementation condition, procedure or commitment, followed by the number of the relevant implementation condition, procedure or commitment.
- Subject: The subject is the main theme of the implementation condition, procedure or commitment.
- Requirement: The wording of the relevant implementation condition, procedure or commitment.
- How: Indicates the manner in which the requirements of an audit element should be achieved.
- Evidence: Lists information or data required to be collected to verify compliance with an audit element, as outlined in the Statement.
- Phase: Indicates the project phase applicable to the audit element.
- Timeframe: Indicates the timing for achieving the requirements of an audit element.
- Status: Indicates the compliance status.
- Further information: Further information and supporting evidence relevant to the audit element.

3.3 Methodology

The audit was undertaken in January and February 2026 by Tracey Parker (Associate, JBS&G) and involved a desktop assessment of compliance against conditions of MS796. Evidence was requested from the proponent and what was received (as listed in **Appendix D**) was reviewed to certify that the conditions were met. Site personnel consulted during the audit are listed in **Table 3-1**.

Table 3-1: Key Personnel Consulted for the Audit

Personnel	Position	Organisation
Tom Rudas	Director	Fernview Environmental

3.3.1 Terminology

All conditions have been assessed and assigned a compliance status as defined in **Table 3.2**.

Table 3-2: Action implementation status (OEPA 2012b)

Status	Description
Compliant	Implementation of the proposal has been carried out in accordance with requirements of the audit element.
Completed	A requirement with a finite period of application has been satisfactorily completed.
Not required at this stage	The requirements of the audit element were not triggered during the reporting period.
Potentially non-compliant	Possible or likely failure to meet the requirements of the audit element.
Non-compliant	Implementation of the proposal has not been carried out in accordance with the requirements of the audit element.
In process	Where an audit element requires a management or monitoring plan be submitted to the OEPA or another government agency for approval, that submission has been made and no further information or changes have been requested by the OEPA or the other government agency and assessment by the OEPA or other government agency for approval is still pending.

3.4 Information for Inclusion in Compliance Assessment Report

The CAP suggests a list of headings for inclusion in the Compliance Assessment Report as per **Table 3.3**.

Table 3-3: Information for inclusion in Compliance Assessment Reports

Heading	Notes
Waste Volumes	The landfill was under C&M in the reporting period and did not commence receiving waste.
Compaction Rates	No landfill compaction operations in the reporting period
Airspace Consumption	No landfilling occurred in the reporting period.
Complaints Register	There were no reported complaints in the reporting period
Incidents	There were no incidents recorded in the reporting period.
Water Quality Monitoring (Groundwater)	Groundwater Monitoring Results and Monitoring Locations (Refer to Section 6.1 and Appendix H)
Water Quality Monitoring (Leachate Volumes)	Landfill was not operational and no leachate was produced in the reporting period.
Water Quality Monitoring (Stormwater Surface Drain Channels)	Landfill was not operational and monitoring of surface drainage channels was undertaken.
Air Quality Monitoring	Landfill had not commenced first placement of waste. No air quality monitoring had commenced.
Amenity	Security fencing is in place, the site is being managed without litter present, there have been no observations of feral animals, measures for monitoring fauna and weeds are to be implemented, traffic and noise is managed on site.

Heading	Notes
	Refer to Appendix D, Appendix E and Appendix F
Fire Prevention	The Fire Management Plan is currently under review. The 6-monthly fire system check is being implemented.
Site Changes	A Licence amendment is being drafted for a proposal for out of cell waste segregation to be submitted to DWER 27/02/2026.
Final Cell Contours	Cell did not receive any waste in the reporting period.
DEC Inspections o Resolved Issues o Unresolved Issues	Fernview are currently working through audit actions from DWER audit at landfill on 04/12/2026.
Environmental Improvement	Fernview plan to: • action items raised in DWER on site audit not already completed (including licence amendment). • address the identified non-compliances in this CAR in the 2025/06 reporting period. • implement licence amendment once received. • The Feral Animal Management Plan will be updated to align with the implementation requirements determined post commencement of landfilling operations at the Project site.

4. Compliance Status

Compliance with the conditions of MS796 and commitments in the associated management plans for the Project have been assessed and reported using the Audit Tables provided in **Appendix D and Appendix E**.

A Statement of Compliance has been completed and forms part of this submission (**Appendix C**).

4.1 Compliance with MS796

This assessment of compliance with the 55 sub-conditions of the MS796 approval for this reporting period has found that:

- 27 conditions were assessed as compliant, with seven of these conditions assessed as compliant (complete);
- 21 conditions were assessed as not required at this stage; and
- Seven conditions were assessed as non-compliant.

The conditions that were potentially non-compliant and non-compliant are summarised in **Table 4-1** and corrective and preventative actions are provided in the table too.

Table 4-1: MS796 Non-compliances and Corrective and Preventative Actions

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
796M1-1A	The proponent shall implement the proposal as assessed by the Environmental Protection Authority and described in schedule 1 of this statement subject to the conditions and procedures of this statement.	The conditions of this Ministerial Statement were assessed and it was determined: • 14 conditions were compliant; • Seven conditions were completed; • 28 conditions were not required at this stage; • One condition was potentially non-compliant; and • Seven conditions were non-compliant.	Refer to corrective actions outlined below.	Refer to preventative actions outlined below.
796M1-2	The proponent shall implement the proposal within the boundary delineated by the AMG coordinates in schedule 2.	The proponent has implemented the proposal outside the area delineated by the coordinates in Schedule 2 impacting an area of approximately 1.2 ha outside of the boundary.	The proponent has reported this area of impact to DWER with the shape file attached to this CAR.	Survey will be obtained and areas demarcated prior to any clearing to be undertaken for future stages of the development.
796M4-3	The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1.	A CAR was not prepared for the following reporting periods; 2020/2021, 2021/2022, 2022/2023 and 2023/2024.	This CAR has been prepared for the reporting period from 11 June 2024 to 10 June 2025.	Future CARs will be prepared and lodged to the Department within the required timeframe.
796M4-6	The proponent shall submit a compliance assessment report annually from the date of issue of this Implementation Statement addressing the previous twelve-month period or as agreed by the CEO of the Department of Environment and Conservation. The compliance assessment report shall: 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and	As above	As above The CAR meets the requirements of this condition.	As above

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
	Conservation, delegated to sign on the Managing Director's behalf; 2. include a statement as to whether the proponent has complied with the conditions Review; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; and 5. indicate any proposed changes to the compliance assessment plan required by condition 4-1.			
796M8-4	The proponent shall make the draft and final Landfill Decommissioning and Post-closure Management Plans required by conditions 8-1 and 8-2 publicly available in a manner approved by the CEO of the Department of Environment and Conservation.	The Draft Landfill Decommissioning and Post-closure Management Plan is not available to the public via the proponent's website (E04).	The Proponent will make the draft Landfill Decommissioning and Post-closure Management Plan available to the public by uploading it the proponent's website.	The Proponent will ensure the Draft Landfill Decommissioning and Post-closure Management Plan remains on the Proponent's website.
796M10-1	The proponent shall provide an offset, being a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South**, to counterbalance the significant residual impact to 42.5 hectares (ha) of foraging habitat for *Calyptorhynchus latirostris* (Carnaby's black cockatoo) as a result of implementation of the proposal	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 26 February 2019. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance on 05/12/2024 (C04).	The Proponent will ensure the subdivision and transfer of the offset occurs as soon as possible.	The Proponent will advise the Department when this transfer of land occurs.
796M10-6	The proponent shall implement the latest version of the Carnaby's Cockatoo Habitat Offsets Strategy which the CEO has	The approval holder has implemented the latest approved version of the Appendix Carnaby's Cockatoo Habitat Offsets	See **Table 4.2** below	See **table 4.2** below

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
	confirmed by notice in writing satisfies the requirements of condition 10-3.	Strategy. The auditor assessed the compliance with the Strategy in Appendix B and found eight commitments were assessed as non-compliant and two were found to be potentially non-compliant.		

4.2 Compliance with the Carnaby's Cockatoo Habitat Offsets Strategy

This assessment of compliance with the 48 commitments within the Carnaby's Cockatoo Habitat Offsets Strategy (CCHOS) (**Appendix E**) for the reporting period has found that:

- 17 commitments were assessed as compliant;
- Three commitments were assessed as completed;
- 18 commitments were assessed as not required at this stage;
- Two commitments were assessed as potentially non-compliant; and
- Eight commitments were assessed as non-compliant.

The potentially non-compliant and non-compliant conditions are outlined in **Table 4-2**, as well as corrective and preventative actions.

Table 4-2: CCHOS Potential Non-compliances, Non-compliances and Corrective and Preventative Actions

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
CCHOS 03	Any foraging habitat outside the 'Proposed Footprint Boundary' must not be cleared	An area of 15.59 ha of CBC foraging habitat was cleared outside of the EPBC proposed footprint boundary on 06/08/2024, including access tracks and an area for a sediment pond required under the works approval. The approval holder received a warning notice on 05/12/2024 from DCCEEW in regard to this non-compliance (C03).	The footprint boundary was reconciled. DCCEEW was notified of the non-compliance. DWER have been notified of this non-compliance with the shape file attached to this CAR.	The Proponent will ensure no clearing of foraging habitat outside the 'Proposed Footprint Boundary' will occur in the future.
CCHOS 11	Implementation of the weed monitoring and control measures described in the Fernview Landfill – Decommissioning and Post Closure Management Plan 2015 (Appendix D) for the life of the project.	Annual weed inspections, weed eradication or consultation with neighbours on weed eradication was not undertaken Spring 2024. The approval holder received a warning notice from the DCCEEW in regard to this non-compliance 05/12/2024. Weed monitoring and control will be action during the next reporting period.	Weed monitoring and control will be actioned during the next reporting period.	Weed monitoring and control will be implemented at the Project site, throughout the lifetime of the Project.
CCHOS 14	A Fire Management Plan has been prepared and will be implemented as part of the project's Environmental Management Plan to minimise the risk of fire.	The Fire Management Plan (R04) is in place. Fernview have not conducted 6-monthly fire management checks (and before each summer season) as required under section 9.5.6 of the FMP in accordance with Appendix B "Fernview Landfill Fire Management Checklist" to ensure the requirements of the FMP is implemented.	Six monthly fire management checks will commence during the next reporting period.	Six monthly fire management checks will continue through-out the lifetime of the Project.
CCHOS 24	Set aside 189.14ha of habitat on Lot 98 (Appendix C) for conservation purposes in perpetuity. The Department of Parks and Wildlife (DPAW) have	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal	The Proponent will ensure the subdivision and transfer of the	The Proponent will advise the Department

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
	expressed their interest in acquiring the offset area and incorporating it into the State managed conservation estate. This remains a logical approach given that the offset area abuts land recently acquired by the Department for inclusion in the conservation estate.	Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	offset occurs as soon as possible.	when this transfer of land occurs.
CCHOS 26	Conduct annual monitoring of the interface between the project area and the offset area to ensure that the conservation values of the interface do not diminish from their current levels.	No monitoring was undertaken of the interface between the Project area and the offset area in the reporting period. The approval holder received a warning notice from DCCEEW in regard to this non-compliance 05/12/2024.	Annual monitoring of the interface between the Project area and the offset area will commence during the next reporting period.	Annual monitoring of the interface between the project area and the offset area will continue throughout the lifetime of the Project.
CCHOS 27	Annual reporting by Fernview to the DEE and DPAW demonstrating compliance with the proposed commitments will be undertaken.	No annual reporting was provided to DCCEEW or DBCA demonstrating compliance with the Offset Strategy in 2024 for the 2023 reporting period. The approval holder received infringement notice CEB24/130 from DCCEEW in regard to this non-compliance 05/12/2024.	Annual reporting on the offset plan for 2024/25 was submitted in the DCCEEW ACR 10/07/2025. This report is to be sent to DBCA.	Annual reporting by the Proponent will be undertaken throughout the lifetime of the Project.
CCHOS 32	Within 24 months of commencing the project, Fernview will transfer to the State of Western Australia, 189.14ha of land containing black cockatoo habitat for addition to the conservation estate as depicted in Appendix C.	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	CCHOS 24	CCHOS 24
CCHOS 37	Fernview is to undertake annual reporting to the Commonwealth and DPAW to demonstrate compliance with the above outcomes.	An annual report for the 2023 reporting period was not provided in 2024. The approval holder received infringement	The Proponent has prepared annual reports for the DWER and the DCCEEW for the	The Proponent will continue to undertake annual reporting,

Condition	Condition Requirement	Non-compliance / Potential Non-compliance	Corrective Actions	Preventative Actions
		notice CEB24/130 from DCCEEW in regard to this non-compliance 05/12/2024.	2024/2025 reporting period.	throughout the lifetime of the Project.
CCHOS 47	2.8.1 Acquisition Mechanism The offset area will be subdivided from the landholding and transferred to the State Government. The subdivision process will be managed by DPAW and the nominal costs will be met by Fernview.	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	Refer to CCHOS 24	Refer to CCHOS 24
CCHOS 48	2.8.2 Contingency Measure If the subdivision and transfer do not proceed, Fernview will investigate options to secure a conservation covenant over the offset area. The covenant will be registered on the Certificate of Title. Under these circumstances, an environmental management plan would be prepared and implemented for the offset area to the satisfaction of the DEE.	Fernview have not made efforts in the reporting period to pursue the transfer of the offset to DBCA however intend to focus on this now. A request has been made to extend the transfer period to 30/06/2026 (C09).	Refer to CCHOS 24	Refer to CCHOS 24

5. Environmental Information / Monitoring

5.1 Groundwater Monitoring

Baseline groundwater monitoring undertaken up to the period March 2024 is included in **G**.

The study concludes that:

- Groundwater at the site is deep and generally between 20 and 50 m below ground level.
- The aquifer is unconfined.
- Groundwater quality is good with no industrial (i.e. pesticide, hydrocarbon or heavy metal) contaminants, largely meeting Contaminated Sites Guidelines (2014) Ecological and Drinking water quality guidelines.
- Groundwater flows from north east to south west across the site
- Groundwater monitoring bores are well placed to monitor any potential impacts from the landfill.
- Any potential subsurface contamination of leachate, if sufficient to reach groundwater, would flow generally in a west-south-west direction towards the Gingin Brook catchment. However, as the flow distance to Gingin Brook is 3.5 kilometres, the dilution and dispersion of any contamination over this distance would be sufficient to preclude any impact on water in Gingin Brook.

The surveillance monitoring program commenced in February 2025 and those results are reported in the 2025 Annual Groundwater Report (tba) to be provided in the 2026 CAR.

6. Revision of Compliance Assessment Plan

The Compliance Assessment Plan (CAP) (Veolia Environmental Services, 2009) for the site has been reviewed and it has been noted an updated document is required as it doesn't include the updated MS796 approval conditions in the Audit Table. The revised CAP will also be amended to incorporate:

- Details of the current proponent Fernview;
- Current regulator details;
- Current regulatory guidelines; and
- Updated site and project details.

The revised CAP will be prepared during the next reporting period.

7. References

Office of Environmental Protection Authority (OEPA) 2012a, *Post Assessment Guideline for Preparing a Compliance Assessment Report*, OEPA, Perth, August 2012.

Office of Environmental Protection Authority (OEPA) 2012b, *Post Assessment Guideline for Preparing an Audit Table*, OEPA, Perth, August 2012.

Veolia Environmental Services (2009) Compliance Assessment Plan (CAP). Fernview Landfill, Lot 7778 Wannamal Road South, Cullula, Shire Of Gingin, Veolia Environmental Services.

Appendix A MS796

Published on 11 June 2009 Statement No: 796

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE *ENVIRONMENTAL PROTECTION ACT 1986)*

CLASS II LANDFILL, LOT 7778 DIAGRAM 209805, 1189 WANNAMAL ROAD SOUTH, CULLULA, SHIRE OF GINGIN

Proposal:	To construct and operate a landfill accepting Class II-type waste. Six cells will be constructed with a total operational lifetime of not more than 30 years. A landfill gas collection system and utilisation plant facility will also be constructed.
Proponent:	Veolia Environmental Services (Australia) Pty Ltd (ABN 20 051 316 584)
Proponent Address:	4-6 Rivers Street, BIBRA LAKE WA 6163
Assessment Number:	1736

Report of the Environmental Protection Authority: Bulletin 1287

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

1 Proposal Implementation

1-1 The proponent shall implement the proposal as assessed by the Environmental Protection Authority and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

1-2 The proponent shall implement the proposal within the boundary delineated by the AMG coordinates in schedule 2.

1-3 The proponent shall refer any changes to the type of waste intended for acceptance to the Environmental Protection Authority.

2 Proponent Nomination and Contact Details

2-1 The proponent for the time being nominated by the Minister for Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.

2-2 The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.

3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

4 Compliance Reporting

4-1 The proponent shall prepare and maintain a compliance assessment plan to the satisfaction of the CEO of the Department of Environment and Conservation.

4-2 The proponent shall submit to the CEO of the Department of Environment and Conservation, the compliance assessment plan required by condition 4-1 at least 6 months prior to the first compliance report required by condition 4-6. The compliance assessment plan shall indicate:

1. frequency of compliance reporting;
2. approach and timing of compliance assessments;
3. retention of compliance assessments;
4. reporting of potential non-compliances and corrective actions taken;
5. table of contents of compliance reports; and
6. public availability of compliance reports.

4-3 The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1.

4-4 The proponent shall retain reports of all compliance assessments described in the compliance assessment plan required by condition 4-1 and shall make those reports available when requested by the CEO of the Department of Environment and Conservation.

4-5 The proponent shall advise the CEO of the Department of Environment and Conservation of any potential non-compliance as soon as practicable.

4-6 The proponent shall submit a compliance assessment report annually from the date of issue of this Implementation Statement addressing the previous twelve month period or as agreed by the CEO of the Department of Environment and Conservation. The compliance assessment report shall:

1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the Managing Director's behalf;

2. include a statement as to whether the proponent has complied with the conditions Review;

3. identify all potential non-compliances and describe corrective and preventative actions taken;

4. be made publicly available in accordance with the approved compliance assessment plan; and

5. indicate any proposed changes to the compliance assessment plan required by condition 4-1.

5 Performance Review and Reporting

5-1 The proponent shall submit to the CEO a Performance Review Report at the conclusion of the first, second, fourth, sixth, eighth and tenth years after the start of implementation and then, at such intervals as the CEO may regard as reasonable, which addresses:

1. the major environmental risks and impacts; the performance objectives, standards and criteria related to these; the success of risk reduction/impact mitigation measures and results of monitoring related to management of the major risks and impacts;

2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable; and

3. significant improvements gained in environmental management which could be applied to this and other similar projects.

5-2 The proponent shall make the Performance Review Reports required by condition 5-1 publicly available in a manner approved by the CEO.

6 Ground and Surface Water

6-1 The proponent shall construct the landfill cells and leachate storage ponds to include as a minimum, a double-lined containment system consisting of a minimum 2.0 millimetre high-density polyethylene flexible membrane liner and a clay based liner with a performance equivalent or greater than that of a compacted clay liner one metre thick and a hydraulic conductivity less than 1×10^{-9} metres per second. The lining system shall also incorporate a leakage detection and recovery system beneath the double liner consisting of a permeable layer underlain by a further 2.0 mm thick high-density polyethylene flexible membrane.

6-2 The proponent shall ensure that at all times landfill and waste mining activities preserve the quality of ground and surface water consistent with ANZECC* requirements, taking into consideration natural background water quality, so that existing and potential uses, including ecosystem maintenance, are protected.

* - *Australian Water Quality Guidelines for Fresh and Marine Waters*, ANZECC (November 1992, and its updates).

6-3 The proponent shall monitor the quality of groundwater on and in proximity to the proposal area shown in Figure 2 in Schedule 1. This monitoring shall be done in accordance with the works approval and licensing provisions of Part V of the *Environmental Protection Act 1986*.

6-4 The proponent shall submit the results of the monitoring to the CEO of the Department of Environment and Conservation in accordance with the timing and requirements of condition 6-3.

6-5 In the event that the requirements of condition 6-2 are not met, the proponent shall provide proposed management measures to the CEO of the Department of Environment and Conservation.

6-6 The proponent shall make the results of monitoring required by condition 6-4 publicly available in a manner approved by the CEO.

7 Flora and Vegetation

7-1 The proponent shall implement the proposal to avoid disturbance of areas south of line from Map Grid of Australia coordinate 402075mE, 6545552mN to Map Grid of Australia coordinate 403252mE, 6545552mN where ‘Very Good’ to ‘Excellent’ condition vegetation has been recorded.

8 Landfill Decommissioning and Post-closure Management Plan.

8-1 Prior to the commencement of construction, the proponent shall prepare a draft Landfill Decommissioning and Post-closure Management Plan in accordance with the requirements of the CEO of the Department of Environment and Conservation.

8-2 At least two years prior to the anticipated date of closure, the proponent shall submit a final Landfill Decommissioning and Post-closure Management Plan designed to ensure that the site is left in an environmentally acceptable condition in accordance with the requirements of the CEO of the Department of Environment and Conservation.

The Landfill Decommissioning and Post-closure Management Plan shall address:

1. Progressive rehabilitation to pre-development condition or better through re-vegetation of capped landfill cells with selected local native species;
2. Choice of capping materials which are consistent with Best Practice Guidelines, which shall include a low permeability layer, followed by a sub-soil layer and a final layer of soil suitable for vegetation establishment;
3. Ongoing operational practice to ensure that the final landfill surface will be constructed to a predetermined crossfall to enhance surface water runoff while safeguarding against erosion and to ensure that final contours of the site will blend into the surrounding environment;
4. Monitoring and management of ground and surface water; and
5. Response, mitigation and contingency measures to be implemented if ground and surface water quality is affected to an unacceptable level as determined by the CEO of the Department of Environment and Conservation.

8-3 The proponent shall implement the final Landfill Decommissioning and Post-closure Management Plan required by conditions 8-2 until such time as the Minister for Environment determines, on advice of the CEO of the Department of Environment and Conservation, that the proponent's post-closure responsibilities are complete.

8-4 The proponent shall make the draft and final Landfill Decommissioning and Post-closure Management Plans required by conditions 8-1 and 8-2 publicly available in a manner approved by the CEO of the Department of Environment and Conservation.

9 Financial assurance

9-1 As security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, the proponent shall, prior to the commencement of construction, provide to the CEO of the Department of Environment and Conservation, a financial assurance for the benefit of both the Minister and the CEO and which is in the form of an unconditional and irrevocable bank guarantee, from a guarantor acceptable to the CEO and in a form acceptable to the CEO, in the initial amount of AU$3.5 million.

9-2 Prior to the commencement of landfilling, the proponent shall prepare and submit to the CEO of the Department of Environment and Conservation an assessment of the risk covered by the financial assurance.

9-3 The amount of the financial assurance shall be reviewed and as necessary replaced every three years in accordance with condition 9-2.

9-4 In the event that the guarantor referred to in condition 9-1 terminates its liability under the bank guarantee by paying to the Minister or the CEO the balance of the financial assurance remaining unpaid, the CEO will hold the financial assurance (being the amount paid by the guarantor upon termination), as security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, in an interest bearing account nominated by the CEO, with the interest accruing for the benefit of the Minister or the CEO.

9-5 The financial assurance may be called on or used in accordance with section 86E of the *Environmental Protection Act 1986* if the proponent fails to implement the proposal in accordance with conditions 6-1, 6-2 and 8-3.

9-6 The financial assurance shall be discharged by the CEO and the Minister when the CEO has given the proponent written notice pursuant to section 86F(1) of the *Environmental Protection Act 1986*.

Notes

1. Where a condition states “on advice of the Environmental Protection Authority”, the Environmental Protection Authority will provide that advice to the Department of Environment and Conservation for the preparation of written notice to the proponent.

2. The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment and Conservation.

3. The Minister for Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment and Conservation over the fulfilment of the requirements of the conditions.

4. The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986.*

Hon Donna Faragher JP MLC
MINISTER FOR ENVIRONMENT; YOUTH

Schedule 1

The Proposal (Assessment No. 1736)

General Description

The proposal is to construct and operate a landfill accepting Class II-type waste and associated landfill gas collection and utilisation plant. The proposal is located in the Shire of Gingin (Figure 1) on the northeast corner of Lot 7778 Wannamal Road South (Figure 2).

From Brand Highway, site access would be through Wannamal Road West, Wannamal Road South and initially through a previously cleared easement to the south of the footprint, shown as 'Existing Light Vehicle Access' on Figure 2. The proposed long-term access roads are Wannamal Road West, Wannamal Road South and an internal access road to the east of the landfill footprint, shown as 'Main Access Road' on Figure 2.

The proposal is described in the following document – *Proposed Regional Landfill, Fernview Farm, Gingin: Environmental Approval Supporting Documentation, Version 10* (30 April 2008).

Summary Description

A summary of the key proposal characteristics is presented in Table 1.

Table 1: Summary of key proposal characteristics

Element	Description
General	
Project life	Not more than 30 years
Operating hours for waste acceptance	Monday to Friday – 0700 to 1700 Saturday – 0700 to 1600 Public holidays – Open except for Good Friday and Christmas
Development boundary	Delineated by AMG Coordinates in Schedule 2
Total vegetation clearing	Not more than 61 hectares for infrastructure and internal access roads
Waste acceptance and transport	
Waste acceptance rate	Not more than 150,000 tonnes per annum of Class II-type waste[1]
External access roads to landfill site from Brand Highway	Wannamal Road West and Wannamal Road South
Infrastructure	
Landfill area	Not more than 30 hectares
Internal access roads	As shown in Figure 2
Leachate storage ponds	Two ponds lined with same lining system as landfill cells
Other facilities	Landfill gas extraction and utilisation plant, weighbridge, administration office, utilities, equipment storage yard, fencing.
Landfill design	
Landfill design and construction	In accordance with the Department of Environment's 2005 *Draft Best Practice Environmental Management on Siting, Design, Operation and Rehabilitation of Landfill* for a Class II landfill[1] as a minimum.

Post-capping contours	Not more than 225 metres Australian Height Datum

[1]Class II-type waste and Class II landfill as defined in the Department of Environment *Landfill Waste Classification and Waste Definitions 1996 (As amended).*

Figures (attached)

Figure 1 – Regional location of proposal
Figure 2 – Proposal footprint

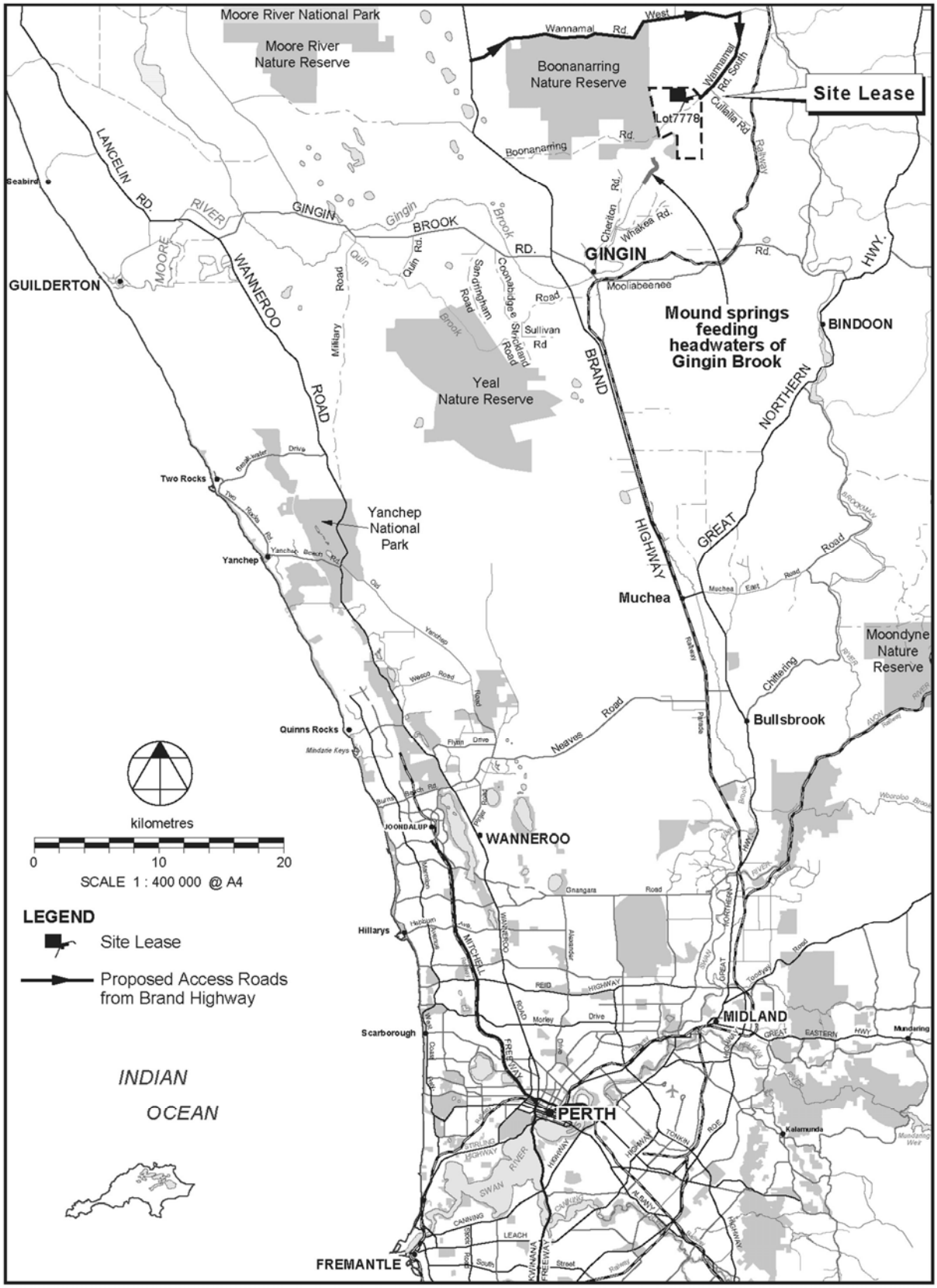


Figure 1: Regional location of proposal

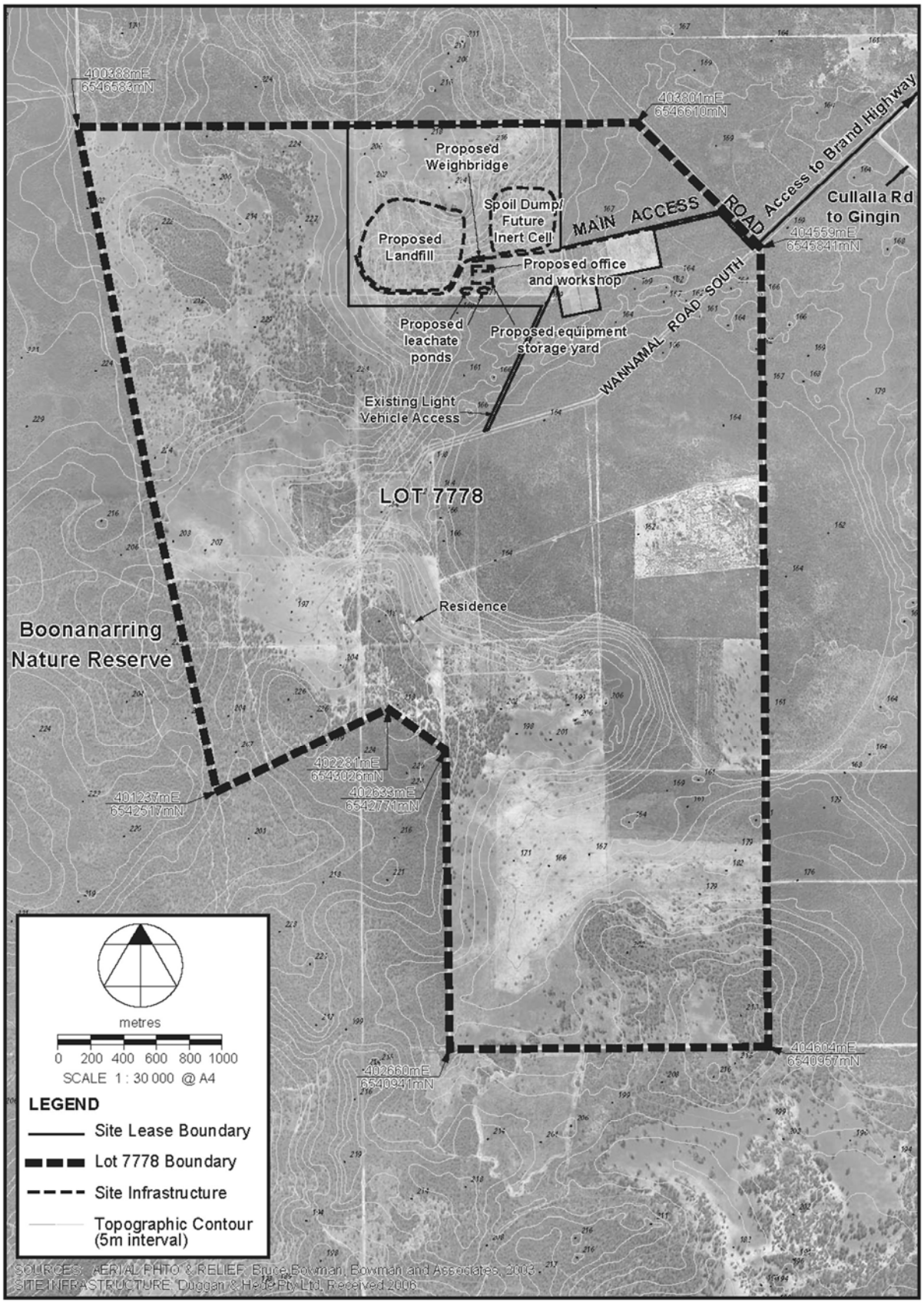


Figure 2: Proposal footprint

Schedule 2

The Proposal (Assessment No. 1736)

AMG coordinates to delineate boundary of proposal development area.

402075mE, 6545552mN
403252mE, 6545552mN
402868mE, 6544720mN
402895mE, 6544730mN
403299mE, 6545607mN
403350mE, 6545422mN
403579mE, 6545470mN
403546mE, 6545646mN
403951mE, 6545727mN
403905mE, 6545953mN
404308mE, 6546047mN
404507mE, 6545836mN
404522mE, 6545849mN
404315mE, 6546069mN
403338mE, 6545841mN
403330mE, 6546598mN
402070mE, 6546588mN

Appendix B MS1073

Published on: 26 February 2018 Statement No. 1073

STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS APPLYING TO A PROPOSAL
(Section 46 of the *Environmental Protection Act 1986*)

CLASS II LANDFILL, LOT 7778 DIAGRAM 209805,
1189 WANNAMAL ROAD SOUTH, CULLALLA
SHIRE OF GINGIN

Proposal: To construct and operate a landfill accepting Class II-type waste. Six cells will be constructed with a total operational lifetime of not more than 30 years. A landfill gas collection system and utilisation plant facility will also be constructed.

The proposal is further documented in Schedule 1 of Ministerial Statement 796.

Proponent: Fernview Environmental Pty Ltd
Australian Company Number 617 674 469

Proponent Address: Unit 1/48 Kelvin Road, MADDINGTON WA 6109

Report of the Environmental Protection Authority: 1612

Preceding Statements Relating to this Proposal: 796, 975

Pursuant to section 45 of the *Environmental Protection Act 1986,* as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 796 dated 11 June 2009 (Statement 796) and Ministerial Statement No. 975 dated 2 July 2014 (Statement 975) be changed as specified in this Statement.

All conditions of Statement 975 are deleted.

Condition 3 of Statement 796 is deleted and replaced with:

3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after 13 June 2022, and any commencement prior to this date must be substantial.

3-2 Any commencement of implementation of the proposal, on or before 13 June 2022, must be demonstrated as substantial by providing the CEO* with written evidence, on or before 13 June 2022.

Condition 10 is added to Statement 796.

10 Environmental Offsets

10-1 The proponent shall provide an offset, being a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South**, to counterbalance the significant residual impact to 42.5 hectares (ha) of foraging habitat for *Calyptorhynchus latirostris* (Carnaby's black cockatoo) as a result of implementation of the proposal.

10-2 Within twelve months of the publication of the Statement to change the implementation conditions relating to this proposal***, or as otherwise agreed in writing by the CEO, the proponent shall prepare and submit a Carnaby's Cockatoo Habitat Offsets Strategy to the CEO satisfying the requirements of condition 10-3.

10-3 The Carnaby's Cockatoo Habitat Offsets Strategy required by condition 10-2 shall:

(1) identify the portion of Lot 98 Wannamal Road South that will comprise the offset area;

(2) include a completed Commonwealth's Offset Assessment Guide (or its update) demonstrating how the offset area counterbalances the significant residual impact to 42.5 ha of *Calyptorhynchus latirostris* (Carnaby's black cockatoo) foraging habitat;

(3) identify the environmental attributes of the offset area;

(4) outline the process for ceding the offset area to the Crown for the purpose of conservation; and

(5) identify:

(a) the nature and quantum of the upfront works associated with establishing the offset area;

(b) a timeframe or schedule for the upfront works to be carried out;

(c) the quantum of the management of the offset area for no less than seven years, and of the portion of this to be contributed by the proponent; and

(d) the management body that will accept management responsibility for the offset area.

10-4 After receiving notice in writing from the CEO that the Carnaby's Cockatoo Habitat Offsets Strategy satisfies the requirements of condition 10-3, the proponent shall:

(1) take action to ensure the offset area is ceded to the Crown within twenty-four (24) months of the publication of the Statement to change the implementation conditions relating to this proposal**; and

(2) implement the upfront works identified subject to condition 10-3(5)(a) in accordance with the timeframe or schedule identified subject to condition 10-3(5)(b).

10-5 Any changes to the aspects of the Carnaby's Cockatoo Habitat Offsets Strategy required by condition 10-3 must be approved in writing by the CEO.

10-6 The proponent shall implement the latest version of the Carnaby's Cockatoo Habitat Offsets Strategy which the CEO has confirmed by notice in writing satisfies the requirements of condition 10-3.

Condition 11 is added to Statement 796.

11 Feral Animal Environmental Management Plan

11-1 The proponent shall prepare and submit a Feral Animal Management Plan to the CEO that demonstrates how the proponent will achieve the following environmental objectives:

(1) prevent, where practicable, and minimise the number of feral animals attracted to the proposal, including but not limited to rats, foxes and cats; and

(2) eradicate, where practicable, and minimise the number of feral animals within the proposal development area.

11-2 The Plan shall specify environmental objectives, management targets, management actions, monitoring and reporting to demonstrate that the objectives in condition 11-1 will be met.

11-3 The proponent shall submit the Plan to the CEO within six months of the publication of the Statement to change the implementation conditions relating to this proposal***, or as otherwise agreed in writing by the CEO.

11-4 The proponent shall not commence operation of the landfill until the CEO has confirmed in writing that the Plan satisfies the requirements of conditions 11-1 and 11-2.

11-5 The proponent shall implement the most recent version of the Feral Animal Management Plan approved by the CEO.

11-6 Any changes to management targets, management actions, monitoring and reporting in the Feral Animal Management Plan must be approved by the CEO in writing.

* “CEO” is the Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.

** Coordinates defining Lot 98 Deposited Plan 75926, Wannamal Road South (formerly part of Lot 7778 on Diagram 209805) are held by the Department of Water and Environmental Regulation, Document Reference Number 2017-1512437377558.

*** The Statement published under section 45(5) of the *Environmental Protection Act 1986,* as applied by section 46(8), and relating to Report of the Environmental Protection Authority number 1612.

[Signed on 26 February 2018]

Hon Stephen Dawson MLC
MINISTER FOR ENVIRONMENT

Appendix C Statement of Compliance

Statement of Compliance

1. Proposal and Proponent Details

Proposal Title	*CLASS II LANDFILL, LOT 7778 DIAGRAM 209805, 1189 WANNAMAL ROAD SOUTH, CULLULA, SHIRE OF GINGIN*
Statement Number	*796*
Proponent Name	*Fernview Environmental Pty Ltd*
Proponent's Australian Company Number *(where relevant)*	*617 674 469*

2. Statement of Compliance Details

Reporting Period	*11/06/24* to *10/06/25*

Implementation phase(s) during reporting period (please tick ✓ relevant phase(s))							
Pre-construction		Construction	✓	Operation		Decommissioning	

Audit Table for Statement addressed in this Statement of Compliance is provided at Attachment:	D
An audit table for the Statement addressed in this Statement of Compliance must be provided as Attachment 2 to this Statement of Compliance. The audit table must be prepared and maintained in accordance with the Department of Water and Environmental Regulation (DWER) *Post Assessment Guideline for Preparing an Audit Table*, as amended from time to time. The 'Status Column' of the audit table must accurately describe the compliance status of each implementation condition and/or procedure for the reporting period of this Statement of Compliance. The terms that may be used by the proponent in the 'Status Column' of the audit table are limited to the Compliance Status Terms listed and defined in Table 1 of Attachment 1.	

Were all implementation conditions and/or procedures of the Statement complied with within the reporting period? (please tick ✓ the appropriate box)			
No (please proceed to Section 3)	✓	Yes (please proceed to Section 4)	

Each page (including Attachment 2) must be initialed by the person who signs Section 4 of this Statement of Compliance.
INITIALS: _____

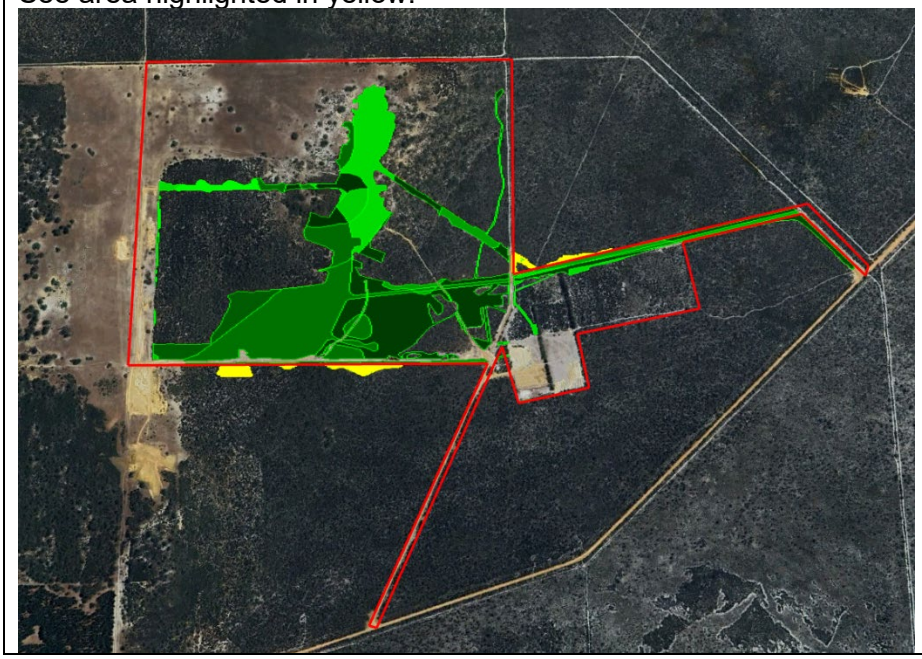
3. Details of Non-compliance(s) and/or Potential Non-compliance(s)

The information required Section 3 must be provided for each non-compliance or potential non-compliance identified during the reporting period covered by this Statement of Compliance.

Non-compliance/potential non-compliance 3-1

Which implementation condition or procedure was non-compliant or potentially non-compliant?
796M1-2 The proponent shall implement the proposal within the boundary delineated by the AMG coordinates in schedule 2.
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
The proponent implemented works for the proposal outside the Schedule 2 boundary in the period prior to the reporting period (between 2020 and 2024).

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☐ Yes ☐ Reported to DWER verbally Date _____ ☐ Reported to DWER in writing Date _____	☑ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
The proponent undertook works for the proposal on 1.2 ha outside the boundary of the Schedule 2 area.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
See area highlighted in yellow. 

What was the cause(s) of the non-compliance or potential non-compliance?
Works Approval Required Earthquake batters to go outside original project boundary and landfill fence alignment route straight to access track.
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
The proposal boundary has been extended by 1.2 ha for the infrastructure (pond and access tracks) required to remain for the project operation.
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-2

Which implementation condition or procedure was non-compliant or potentially non-compliant?
796M4-3 The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1. 796M4-6 The proponent shall submit a compliance assessment report annually from the date of issue of this Implementation Statement addressing the previous twelve month period or as agreed by the CEO of the Department of Environment and Conservation.
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
12/07/2021

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☑ Yes ☐ Reported to DWER verbally Date _____ ☑ Reported to DWER in writing Date __17/04/2025 (DWER Compliance Assessment)_____	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
A CAR was not prepared for the following reporting periods; 2020/2021, 2021/2022, 2022/2023 and 2023/2024.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
N/A
What was the cause(s) of the non-compliance or potential non-compliance?
Failure to prepare a Compliance Assessment Report
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
A Compliance Assessment Report for 2025 has been prepared and submitted with this PAF.

What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Fernview have engaged JBS&G to undertake compliance monitoring and preparation of future CARs.
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-3

Which implementation condition or procedure was non-compliant or potentially non-compliant?
796M8-4 The proponent shall make the draft and final Landfill Decommissioning and Post-closure Management Plans required by conditions 8-1 and 8-2 publicly available in a manner approved by the CEO of the Department of Environment and Conservation.
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
11/06/2024 to 10/06/2025

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☐ Yes ☐ Reported to DWER verbally Date _____ ☐ Reported to DWER in writing Date _____	☑ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
The proponent did not have a website in the reporting period to make the plan available to the public on.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
N/A
What was the cause(s) of the non-compliance or potential non-compliance?
Fernview had not established a website during the reporting period.
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
A website has been established and the document has been published on the Fernview website at https://fernviewenvironmental.au/
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Nil
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and

• as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-4

Which implementation condition or procedure was non-compliant or potentially non-compliant?
796M10-1 The proponent shall provide an offset, being a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South**, to counterbalance the significant residual impact to 42.5 hectares (ha) of foraging habitat for *Calyptorhynchus latirostris* (Carnaby's black cockatoo) as a result of implementation of the proposal
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
26/02/2019

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☑ Yes ☐ Reported to DWER verbally Date _____ ☐ Reported to DWER in writing Date ___11/11/2020 (CAR)___	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset has not yet occurred.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
What was the cause(s) of the non-compliance or potential non-compliance?
Delays in coordinating transfers with DBCA.
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
Fernview have contracted JBS&G to coordinate transfer of portion of Lot 98 with DBCA.
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Discussions had commenced with DBCA however these were not finalized.
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-5

Which implementation condition or procedure was non-compliant or potentially non-compliant?
796M10-6 The proponent shall implement the latest version of the Carnaby's Cockatoo Habitat Offsets Strategy which the CEO has confirmed by notice in writing satisfies the requirements of condition 10-3.
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
11/06/2024 to 10/06/2025 Reporting Period.

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☐ Yes ☐ Reported to DWER verbally Date _____ ☐ Reported to DWER in writing Date _____	☑ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
• The proponent cleared outside the EPBC Approval footprint boundary (a warning notice was received by DCCEEW 05/12/2004) • Annual weed inspections, weed eradication or consultation with neighbours on weed eradication was not undertaken Spring 2024 • 6-monthly fire checks were not documented prior to the 2004/05 summer season • Interface monitoring between the project and offset property boundary was not undertaken in the reporting period • 2003 Offset Compliance Report was not sent to DCCEEW or DBCA
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
What was the cause(s) of the non-compliance or potential non-compliance?
Failure to fully implement the Offset Plan.
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
• An infringement notice has been received from DCCEEW for this non-compliance. • A directed variation is in progress for the maters relating to clearing on the project and the footprint boundary • Weed commitments, fire commitments, interface monitoring and all compliance reporting is being coordinated with JBS&G to ensure implementation .
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
Nil

Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

For additional non-compliance or potential non-compliance, please duplicate this page as required.For additional non-compliance or potential non-compliance, please duplicate this page as required.

4. Proponent Declaration

I, Tom Rudas, Director *(full name and position title)*

declare that I am authorised on behalf of Fernview Environmental Pty Ltd

(being the person responsible for the proposal) to submit this form and that the information contained in this form is true and not misleading.

Signature

Date: 30 March 2026

Please note that:

- it is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give or cause to be given information that to his knowledge is false or misleading in a material particular; and
- the Chief Executive Officer of the DWER has powers under section 47(2) of the *Environmental Protection Act 1986* to require reports and information about implementation of the proposal to which the statement relates and compliance with the implementation conditions.

5. Submission of Statement of Compliance

One hard copy and one electronic copy (preferably PDF on CD or thumb drive) of the Statement of Compliance are required to be submitted to the Chief Executive Officer, DWER, marked to the attention of Manager, Compliance (Ministerial Statements).

Please note, the DWER has adopted a procedure of providing written acknowledgment of receipt of all Statements of Compliance submitted by the proponent, however, the DWER does not approve Statements of Compliance.

6. Contact Information

Queries regarding Statements of Compliance, or other issues of compliance relevant to a Statement may be directed to Compliance (Ministerial Statements), DWER:

Manager, Compliance (Ministerial Statements)

Department of Water and Environmental Regulation

Postal Address:	Locked Bag 10 Joondalup DC WA 6919
Phone:	(08) 6364 7000
Email:	compliance@dwer.wa.gov.au

7. Post Assessment Guidelines and Forms

Post assessment documents can be found at www.epa.wa.gov.au

ATTACHMENT 1

Table 1 Compliance Status Terms

Compliance Status Terms	Abbrev	Definition	Notes
Compliant	C	Implementation of the proposal has been carried out in accordance with the requirements of the audit element.	This term applies to audit elements with: • ongoing requirements that have been met during the reporting period; and • requirements with a finite period of application that have been met during the reporting period, but whose status has not yet been classified as 'completed'.
Completed	CLD	A requirement with a finite period of application has been satisfactorily completed.	This term may only be used where: • audit elements have a finite period of application (e.g. construction activities, development of a document); • the action has been satisfactorily completed; and • the DWER has provided written acceptance of 'completed' status for the audit element.
Not required at this stage	NR	The requirements of the audit element were not triggered during the reporting period.	This should be consistent with the 'Phase' column of the audit table.
Potentially Non-compliant	PNC	Possible or likely failure to meet the requirements of the audit element.	This term may apply where during the reporting period the proponent has identified a potential non-compliance and has not yet finalized its investigations to determine whether non-compliance has occurred.
Non-compliant	NC	Implementation of the proposal has not been carried out in accordance with the requirements of the audit element.	This term applies where the requirements of the audit element are not "complete" have not been met during the reporting period.
In Process	IP	Where an audit element requires a management or monitoring plan be submitted to the DWER or another government agency for approval, that submission has been made and no further information or changes have been requested by the DWER or the other government agency and assessment by the DWER or other government agency for approval is still pending.	**The term 'In Process' may not be used for any purpose other than that stated in the Definition Column.** The term 'In Process' may not be used to describe the compliance status of an implementation condition and/or procedure that requires implementation throughout the life of the project (e.g. implementation of a management plan).

Appendix D MS796 Compliance Assessment

Table D-1: MS 796 Audit Table

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
MS796:M1-1A	Proposal Implementation	The proponent shall implement the proposal as assessed by the Environmental Protection Authority and described in schedule 1 of this statement subject to the conditions and procedures of this statement.	Project implemented in accordance with the agreed conditions within the Ministerial Statement.	This CAR.	Overall	Ongoing	Non-compliant	The conditions of this Ministerial Statement were assessed and it was determined: • 19 conditions were compliant; • Seven conditions were completed; • 22 conditions were not required at this stage; and • Seven conditions were non-compliant.
MS796:M1-1B	Proposal Implementation	Schedule 1: General Project life Not more than 30 years	The project life shall extend for no longer than the 06 April 2050.	C01_Commencement Date Submission to DWER	Overall	Prior to 06/04/2050	Not required at this stage	The Project commenced 06/04/2020 and has not reached Project life expiry of 06/04/2050.
MS796:M1-1C	Proposal Implementation	Schedule 1: General Operating hours for waste acceptance: Monday to Friday – 0700 to 1700 Saturday – 0700 to 1600 Public holidays – Open except for Good Friday and Christmas	The project must operate within the permitted hours.	Not applicable	Operation	During operations	Not required at this stage	The Project did not commence operations during the reporting period
MS796:M1-1D	Proposal Implementation	Schedule 1: General Total vegetation clearing: Not more than 61 hectares for infrastructure and internal access roads	Not more than 61 hectares of native vegetation may be cleared.	E03_2025 Clearing Calcs	Pre-construction (clearing)	Overall	Compliant	Not more than 61 hectares of native vegetation has been cleared. 2025 clearing calculations indicate that 38.71 ha of vegetation has been cleared (E03).
MS796:M1-1E	Proposal Implementation	Schedule 1: Waste acceptance and transport Waste acceptance rate: Not more than 150,000 tonnes per annum of Class II- type waste as defined in the Department of Environment Landfill Waste Classification and Waste Definitions 1996 (As amended).	Not more than 150,000 tonnes per annum of Class II type waste can be accepted at waste management facility.	Not applicable	Operation	During operations	Not required at this stage	The Project did not commence operations during the reporting period.
MS796:M1-1F	Proposal Implementation	Schedule 1: Waste acceptance and transport External access roads to landfill site from Brand Highway: Wannamal Road West and Wannamal Road South	Access to the landfill site.	Not applicable	Operation	During operations	Not required at this stage	The Project did not commence operations during the reporting period.
MS796:M1-1G	Proposal Implementation	Schedule 1: Infrastructure Landfill area Not more than 30 hectares	Footprint of the landfill area no larger than 30 hectares.	G05_Landfill Area	Overall	Overall	Compliant	The footprint of the landfill area is 2.9 hectares (G05).
MS796:M1-1H	Proposal Implementation	Schedule 1: Infrastructure Internal access roads As shown in Figure 2	Internal access roads comply with Figure 2.	G04_Premises Boundary Plan	Construction	During construction	Compliant	The internal access road complies with Figure 2 (G04).
MS796:M1-1I	Proposal Implementation	Schedule 1: Infrastructure Leachate storage ponds: Two ponds lined with same lining system as landfill cells	The two leachate storage ponds are lined with the same lining system as the landfill cells.	R08_Works Approval Compliance Report 2 May 24	Construction	During construction	Compliant	Leachate storage pond lined with same lining system as landfill cell. Leachate pond: Lower HDPE layer (HDPE Bottom) (300 mm

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								thickness) (R08). Landfill cell 1: Underlying HDPE layer (300 mm thickness) (R08).
MS796:M1-1J	Proposal Implementation	Schedule 1: Infrastructure Other facilities: Landfill gas extraction and utilisation plant, weighbridge, administration office, utilities, equipment storage yard, fencing.	Other facilities permitted to be constructed are the: • Landfill gas extraction and utilisation plant; • Weighbridge; • Administration; • Office; • Utilities; • Equipment storage yard; and • Fencing.	R08_Works Approval Compliance Report 2 May 24 P01_IMG_0020 P02_IMG_0025 P03_IMG_0019 P04_IMG_0027 P05_IMG_0023 P06_IMG_0033	Construction	During construction	Compliant	• Landfill gas extraction and utilisation plant – Not yet constructed (R08). • Weighbridge – Installed (P01). • Administration – Installed (P02). • Office – Installed (P03). • Utilities Installed (P04). • Equipment storage yard – Constructed (P05). • Fencing – Installed (P06).
MS796:M1-1K	Proposal Implementation	Schedule 1: Landfill design Landfill design and construction: In accordance with the Department of Environment's 2005 *Draft Best Practice Environmental Management on Siting, Design, Operation and Rehabilitation of Landfill for a Class II landfill* as a minimum.	Landfill design and construction to be in accordance with the 2005 *Draft Best Practice Environmental Management on Siting, Design, Operation and Rehabilitation of Landfill for a Class II landfill.*	R08_Works Approval Compliance Report 2 May 24 R09_CQA Validation Report May 2024 (V4)	Design & construction	During design & construction	Compliant	The Works Approval Compliance Report confirms the landfill cell has been constructed in accordance with the Works Approval and best practice methodologies (R08 & R09).
MS796:M1-1L	Proposal Implementation	Schedule 1: Landfill design Post-capping contours: Not more than 225 metres Australian Height Datum	Post-capped landfill no higher than 225 metres Australian Height Datum.	Not applicable	Closure	Post-closure	Not required at this stage	The landfill has not yet reached the capping (closure) stage.
796M1-2	Proposal Implementation	The proponent shall implement the proposal within the boundary delineated by the AMG coordinates in schedule 2.	Project implemented within the boundary delineated by the AMG coordinates in schedule 2.	G06_Implementation outside of Schedule 2 Area	Construction	Ongoing	Non-compliant	The proponent has implemented the proposal outside the area delineated by the coordinates in Schedule 2 (G06), impacting an area of approximately 1.2 ha outside of the boundary due to works approval required earthquake batters and landfill fence alignment.
796M1-3	Proposal Implementation	The proponent shall refer any changes to the type of waste intended for acceptance to the Environmental Protection Authority.	Referral notifying the Environmental Protection Authority of any proposed change to the type of waste intended for acceptance.	Not applicable	Overall	Before any change in waste type	Not required at this stage	The Project did not commence accepting waste during the reporting period.
796M2-1	Proponent Nomination and Contact Details	The proponent for the time being nominated by the Minister for Environment under sections 38(6) or 38(7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal.	Fernview to nominate the main contact person for this project.	C02_WA EPA Approval for Offset Strategy C05_Submission of FPAMP to DWER C06_DWER Approval for FPAMP V3 This report. R07_Fernview_Compliance Assessment Plan	Overall	Ongoing	Compliant	Past correspondence (C02, C05, C06) and CAR lodged to the Department includes contact persons for the project. This report states the main contact person from Fernview. The prior contact (from Veolia) is nominated in the CAP (R07). The updated CAP will include the main contact person from Fernview.
796M2-2	Proponent Nomination and Contact Details	The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change.	Letter notifying the CEO of any change in proponent details.	Not applicable	Overall	Within 30 days of change	Not required at this stage.	The contact address and person did not change during the reporting period. The contact person changed after the reporting period. The updated CAP will include the up-to-date details of the main contact person from Fernview.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
796M3-1	Time Limit for Proposal Implementation	The proponent shall not commence implementation of the proposal after 13 June 2022, and any commencement prior to this date must be substantial.	Commence substantial implementation of the project prior to 13 June 2022.	C01_Commencement Date Submission to DWER	Construction	Prior to 13/06/2022	Compliant	The proponent commenced substantial implementation of the proposal on 06/04/2020 (prior to 13/06/2022).
796M3-2	Time Limit for Proposal Implementation	Any commencement of implementation of the proposal, on or before 13 June 2022, must be demonstrated as substantial by providing the CEO* with written evidence, on or before 13 June 2022.	Provide written evidence of substantial commencement of implementation to the DWER CEO prior to 13 June 2022.	C01_Commencement Date Submission to DWER	Construction	Prior to 13/06/2022	Compliant	The proponent notified the CEO with written evidence of substantial commencement on 11/05/2020 (prior to 13/06/2022).
796M4-1	Compliance Reporting	The proponent shall prepare and maintain a compliance assessment plan to the satisfaction of the CEO of the Department of Environment and Conservation.	Prepare and maintain the CAP to the satisfaction of the CEO of the DEC.	R07_Fernview_Compliance Assessment Plan	Overall	Prior to 9 September 2009	Compliant	The CAP has been prepared (R07). The CAP is dated 8 September 2009 (R07). As mentioned in Section 6 of this report, the CAP will be updated during this reporting period as it doesn't include the: • Updated MS796 approval conditions in the Audit Table; • Details of the current proponent; • Current regulator details; • Current regulatory guidelines; and • Updated site and project details.
796M4-2	Compliance Reporting	The proponent shall submit to the CEO of the Department of Environment and Conservation, the compliance assessment plan required by condition 4-1 at least 6 months prior to the first compliance report required by condition 4-6. The compliance assessment plan shall indicate: 1. frequency of compliance reporting; 2. approach and timing of compliance assessments; 3. retention of compliance assessments; 4. reporting of potential non-compliances and corrective actions taken; 5. table of contents of compliance reports; and 6. public availability of compliance reports.	The compliance assessment plan shall indicate: 1. frequency of compliance reporting; 2. approach and timing of compliance assessments; 3. retention of compliance assessments; 4. reporting of potential non-compliances and corrective actions taken; 5. table of contents of compliance reports; and 6. public availability of compliance reports.	R07_Fernview_Compliance Assessment Plan	Overall	At least 6 months prior to the first compliance report required by condition 4-6 or by September 2009	Completed	CAP was prepared by Veolia in September 2009 (R07). The CAP (R07) includes: 1. Frequency of compliance reporting – Section 3.2; 2. Approach and timing of compliance assessments - Section 3.3; 3. Retention of compliance assessments – Section 3.4; 4. Reporting of potential non-compliances and corrective actions taken – Section 3.5; 5. Table of contents of compliance reports – Section 3.1; and 6. Public availability of compliance reports – Section 3.6.
796M4-3	Compliance Reporting	The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1.	Assess compliance with conditions in accordance with the CAP required by condition 4-1.	R10_COMPLIANCE ASSESSMENT REPORT_2018-2019 R11_COMPLIANCE ASSESSMENT REPORT_2019-2020	Overall	Ongoing	Non-compliant.	A CAR for the period from 9 June 2018 to 9 June 2019 (R10) and 9 June 2019 to 9 June 2020 (R11) was prepared. A CAR was not prepared for the following reporting periods; 2020/2021, 2021/2022, 2022/2023 and 2023/2024. This CAR has been prepared for the reporting period from 9 June 2024 to 9 June 2025.
796M4-4	Compliance Reporting	The proponent shall retain reports of all compliance assessments described in the compliance assessment plan required by condition 4-1 and shall make those reports available when requested by the CEO of the Department of Environment and Conservation.	Retain reports of all compliance assessments described in the CAP required by condition 4-1 and ensure those reports are available when requested by the CEO of the DEC.	R10_COMPLIANCE ASSESSMENT REPORT_2018-2019 R11_COMPLIANCE ASSESSMENT REPORT_2019-2020	Overall	Ongoing	Compliant	The CARs for the periods from 9 June 2018 to 9 June 2019 (R10) and 9 June 2019 to 9 June 2020 (R11), and this CAR will be retained, and can be made available to the CEO upon request.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
796M4-5	Compliance Reporting	The proponent shall advise the CEO of the Department of Environment and Conservation of any potential non-compliance as soon as practicable.	As soon as practicable a letter will advise the CEO of the DEC of any potential non-compliance.	This Report	Overall	As soon as practicable	Compliant	This CAR is the reporting mechanism of the non-compliances with the following MS796 conditions: • MS796:M1-1A – Implementation of the conditions of the Ministerial Statement (MS796); • 796M1-2 - Project boundary; • 796M10-1 – Environmental offset; and • 796M10-6 – Implementation of the Carnaby's Cockatoo Habitat Offsets Strategy. The Department is already aware of the non-compliance with Condition 796M4-3 (Compliance Reporting).
796M4-6	Compliance Reporting	The proponent shall submit a compliance assessment report annually from the date of issue of this Implementation Statement addressing the previous twelve month period or as agreed by the CEO of the Department of Environment and Conservation. The compliance assessment report shall: 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the Managing Director's behalf; 2. include a statement as to whether the proponent has complied with the conditions Review; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; and 5. indicate any proposed changes to the compliance assessment plan required by condition 4-1.	The compliance assessment report shall: 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the DEC, delegated to sign on the Managing Director's behalf; 2. include a statement as to whether the proponent has complied with the conditions Review; 3. identify all potential non-compliances and describe corrective and preventative actions taken; 4. be made publicly available in accordance with the approved compliance assessment plan; 5. indicate any proposed changes to the compliance assessment plan required by condition 4-1.	R10_COMPLIANCE ASSESSMENT REPORT_2018-2019 R11_COMPLIANCE ASSESSMENT REPORT_2019-2020 This Report	Overall	Annually	Non-compliant	A CAR for the period from 11 June 2018 to 9 June 2019 (R10) and 9 June 2019 to 9 June 2020 (R11) was prepared. A CAR was not prepared for the following reporting periods; 2020/2021, 2021/2022, 2022/2023 and 2023/2024. This CAR has been prepared for the reporting period from 9 June 2024 to 9 June 2025. This CAR: 1. Is endorsed by the appropriate person- Refer to **Appendix G.** 2. Includes a statement as to whether the proponent has complied with the conditions – Section 4 and **Appendix G**. 3. Identifies all potential non-compliances and describes corrective and preventative actions taken - Section 4 and **Appendix G**. 4. Will be publicly available – Will be posted on the proponent's website. 5. Indicates proposed changes to the compliance assessment plan required by condition 4-1 – Section 6.
796M5-1	Performance Review and Reporting	The proponent shall submit to the CEO a Performance Review Report at the conclusion of the first, second, fourth, sixth, eighth and tenth years after the start of implementation and then, at such intervals as the CEO may regard as reasonable, which addresses: 1. the major environmental risks and impacts; the performance objectives, standards and criteria related to these; the success of risk reduction/impact mitigation measures and results of monitoring related to management of the major risks and impacts; 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where	Submit a Performance Review Report that Addresses: 1. the major environmental risks and impacts; the performance objectives, standards and criteria related to these; the success of risk reduction/impact mitigation measures and results of monitoring related to the management of the major risks and impacts; 2. The level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable; and 3. significant improvements gained in environmental management which could be applied to this and other similar projects.	Not applicable	Overall	Scheduled years	Not required at this stage.	The proponent commenced substantial implementation of the proposal on 06/04/2020, a performance review report was due 06/04/2021, 06/04/2022 and 06/04/2024 (prior to the reporting period)., No performance review reports have been submitted to date. No performance review reports were due in the reporting period.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		practicable; and 3. significant improvements gained in environmental management which could be applied to this and other similar projects.						
796M5-2	Performance Review and Reporting	The proponent shall make the Performance Review Reports required by condition 5-1 publicly available in a manner approved by the CEO.	Make the Performance Review Reports required by condition 5-1 publicly available in a manner approved by the CEO.	Not applicable	Overall	After submission	Not required at this stage	Refer to 796M5-1.
796M6-1	Ground and Surface Water	The proponent shall construct the landfill cells and leachate storage ponds to include as a minimum, a double-lined containment system consisting of a minimum 2.0 millimetre high-density polyethylene flexible membrane liner and a clay based liner with a performance equivalent or greater than that of a compacted clay liner one metre thick and a hydraulic conductivity less than 1 x 10-9 metres per second. The lining system shall also incorporate a leakage detection and recovery system beneath the double liner consisting of a permeable layer underlain by a further 2.0 mm thick high-density polyethylene flexible membrane.	Construct the landfill cells and leachate storage ponds, prior to the commencement of landfilling, to include as a minimum, a double-lined containment system consisting of a minimum 2.0 millimetre high-density polyethylene flexible membrane liner and a clay-based liner with a performance equivalent or greater than that of a compacted clay liner one metre thick and a hydraulic conductivity less than 1 x 10^{-9} metres per second. The lining system shall also incorporate a leakage detection and recovery system beneath the double liner consisting of a permeable layer underlain by a further 2.0 mm thick high-density polyethylene flexible membrane.	R08_Works Approval Compliance Report 2 May 24 R09_CQA Validation Report May 2024 (V4)	Construction	During construction	Compliant	There is an underlying leakage detection and recovery system (R08). Leachate pond and landfill cell is constructed with a lower HDPE layer (300 mm thickness) (R08) and a Geosynthetic Clay Liner (GCL) with a hydraulic conductivity of <1x10^{-11}m/s (R09).
796M6-2	Ground and Surface Water	The proponent shall ensure that at all times landfill and waste mining activities preserve the quality of ground and surface water consistent with ANZECC* requirements, taking into consideration natural background water quality, so that existing and potential uses, including ecosystem maintenance, are protected. *- Australian Water Quality Guidelines for Fresh and Marine Waters, ANZECC (November 1992, and its updates).	Using the requirements consistent with the ANZECC* Guidelines, landfill and waste mining activities will preserve the quality of ground and surface water, taking into consideration the natural background water quality, so that existing and potential uses, including ecosystem maintenance, are protected. * - Australian Water Quality Guidelines for Fresh and Marine Waters, ANZECC (November 1992, and its updates).	Not applicable	Overall	Ongoing	Not required at this stage	The Project has not yet commenced landfilling activities.
796M6-3	Ground and Surface Water	The proponent shall monitor the quality of groundwater on and in proximity to the proposal area shown in Figure 2 in Schedule 1. This monitoring shall be done in accordance with the works approval and licensing provisions of Part V of the *Environmental Protection Act 1986*.	Monitoring the quality of groundwater on and in proximity to the proposal area shown in Figure 2 in Schedule 1 will occur at all times in accordance with the works approval and licensing provisions of Part V of the Environmental Protection Act 1986.	R12_Compliance Groundwater Monitoring Report	Overall	As per licence	Compliant	Groundwater quality monitoring was undertaken in October 2025 in accordance with licence conditions (R12, Table 4.3: Groundwater Schedule of Analysis).
796M6-4	Ground and Surface Water	The proponent shall submit the results of the monitoring to the CEO of the Department of Environment and Conservation in accordance with the timing and requirements of condition 6-3.	Submit the results of the monitoring to the CEO of the DEC in accordance with the timing and requirements of condition 6-3.	R12_Compliance Groundwater Monitoring Report C10_Fernview_Licence_Groundwater Monitoring Report_Lodgement	Overall	As required	Not required at this stage	The Compliance Groundwater Monitoring Report (R12) will be lodged to the DWER by 31 March 2026, as an attachment to the Annual Audit Compliance Report (AACR) required under Condition 42 of Part V EPA licence (L9443/2024/1) (C10). This

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								lodgement date is outside of the reporting period.
796M6-5	Ground and Surface Water	In the event that the requirements of condition 6-2 are not met, the proponent shall provide proposed management measures to the CEO of the Department of Environment and Conservation.	If, as evidenced by the monitoring undertaken for condition 6-2, that the requirements of condition 6- 2 are not met provide to the CEO of the DEC proposed management measures in order to comply with condition 6-2.	Not applicable	Overall	If criteria not met	Not required at this stage	The Project has not yet commenced landfilling activities.
796M6-6	Ground and Surface Water	The proponent shall make the results of monitoring required by condition 6-4 publicly available in a manner approved by the CEO.	Make the results of the monitoring required by condition 6-4 publicly available in a manner approved by the CEO.	Not applicable	Overall	After reporting	Not required at this stage	The groundwater monitoring results will be posted on the Fernview website, after they are lodged with the DWER as an attachment to the Annual Audit Compliance Report (AACR) required under Condition 42 of Part V EPA licence (L9443/2024/1) (C10). This lodgement date is outside of the reporting period.
796M7-1	Flora and Vegetation	The proponent shall implement the proposal to avoid disturbance of areas south of line from Map Grid of Australia coordinate 402075mE, 6545552mN to Map Grid of Australia coordinate 403252mE, 6545552mN where 'Very Good' to 'Excellent' condition vegetation has been recorded.	Construction and ongoing maintenance of a fence to ensure no disturbance to areas south of a line from Map Grid of Australia coordinate 402075mE, 6545552mN to Map Grid of Australia coordinate 403252mE, 6545552mN where 'Very Good' to 'Excellent' condition vegetation has been recorded, occur.	G02_67366_01_A3L_02_Revised Fence Location P06_IMG_0033	Overall	During all disturbance works	Compliant	Fence constructed (G02) and maintained (P06).
796M8-1	Landfill Decommissioning and Post-closure Management Plan.	Prior to the commencement of construction, the proponent shall prepare a draft Landfill Decommissioning and Post-closure Management Plan in accordance with the requirements of the CEO of the Department of Environment and Conservation.	Prepare a Draft Landfill Decommissioning and Post- closure Management Plan in accordance with the requirements of the CEO of the DEC.	R13_Fernview Landfill – Decommissioning and Post Closure Management Plan	Design	Before construction	Completed	The 2020 Draft Landfill Decommissioning and Post-closure Management Plan (R13) was prepared as part of the Landfill Management Plan.
796M8-2	Landfill Decommissioning and Post-closure Management Plan.	At least two years prior to the anticipated date of closure, the proponent shall submit a final Landfill Decommissioning and Post-closure Management Plan designed to ensure that the site is left in an environmentally acceptable condition in accordance with the requirements of the CEO of the Department of Environment and Conservation. The Landfill Decommissioning and Post-closure Management Plan shall address: 1. Progressive rehabilitation to pre-development condition or better through re-vegetation of capped landfill cells with selected local native species; 2. Choice of capping materials which are consistent with Best Practice Guidelines, which shall include a low permeability layer, followed by a sub-soil layer and a final layer of soil suitable for vegetation establishment; 3. Ongoing operational practice to ensure that the final landfill surface will be	The Landfill Decommissioning and Post-closure Management Plan shall address: 1. Progressive rehabilitation to pre-development condition or better through revegetation of capped landfill cells with selected local native species; 2. Choice of capping materials which are consistent with Best Practice Guidelines, which shall include a low permeability layer, followed by a sub-soil layer and final layer of soil suitable for vegetation establishment; 3. Ongoing operational practice to ensure that the final landfill surface will be constructed to a predetermined cross fall to enhance surface water runoff while safeguarding against erosion and to ensure that final contours of the site will blend into the surrounding environment; 4. Monitoring and management of ground and surface water; and 5. The response, mitigation and contingency measures to be	Not applicable	Overall	≥2 years before closure	Not required at this stage	The Project has not yet reached closure.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		constructed to a predetermined crossfall to enhance surface water runoff while safeguarding against erosion and to ensure that final contours of the site will blend into the surrounding environment; 4. Monitoring and management of ground and surface water; and 5. Response, mitigation and contingency measures to be implemented if ground and surface water quality is affected to an unacceptable level as determined by the CEO of the Department of Environment and Conservation.	implemented if ground and surface water quality is affected to an unacceptable level as determined by the CEO of the DEC.					
796M8-3	Landfill Decommissioning and Post-closure Management Plan.	The proponent shall implement the final Landfill Decommissioning and Post-closure Management Plan required by conditions 8-2 until such time as the Minister for Environment determines, on advice of the CEO of the Department of Environment and Conservation, that the proponent's post-closure responsibilities are complete.	Implement the final Landfill Decommissioning and Post-closure Management Plan required by conditions 8-2 at such time as the Minister for Environment determines, on the advice of the CEO of the DEC, that the proponent's post-closure responsibilities are complete.	Not applicable	Overall	Post-closure	Not required at this stage	The Project has not yet reached closure.
796M8-4	Landfill Decommissioning and Post-closure Management Plan.	The proponent shall make the draft and final Landfill Decommissioning and Post-closure Management Plans required by conditions 8-1 and 8-2 publicly available in a manner approved by the CEO of the Department of Environment and Conservation.	Make publicly available the draft and final Landfill Decommissioning and Post- closure Management Plans required by conditions 8-1 and 8-2, in a manner approved by the CEO of the DEC.	E04_Fernview website screenshot	Overall	After preparation	Non-compliant	The Draft Landfill Decommissioning and Post-closure Management Plan was not available to the public via the proponent's website (E04).
796M9-1	Financial Assurance	As security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, the proponent shall, prior to the commencement of construction, provide to the CEO of the Department of Environment and Conservation, a financial assurance for the benefit of both the Minister and the CEO and which is in the form of an unconditional and irrevocable bank guarantee, from a guarantor acceptable to the CEO and in a form acceptable to the CEO, in the initial amount of AU$3.5 million.	An amount of AU$3.5 million in the form of an unconditional and irrevocable bank guarantee to ensure security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, from a guarantor acceptable to the CEO and in a form acceptable to the CEO.	R11_COMPLIANCE ASSESSMENT REPORT_2019-2020	Design	Before construction	Completed	The 2019/2020 CAR (R11) stated "08 June 2020 – DWER acknowledges the final draft of the Bank Guarantee for review and approval."
796M9-2	Financial Assurance	Prior to the commencement of landfilling, the proponent shall prepare and submit to the CEO of the Department of Environment and Conservation an assessment of the risk covered by the financial assurance.	Prepare and submit an assessment of the risk covered by the financial assurance to the CEO of the DEC, prior to the commencement of landfilling.	Not applicable	Overall	Before landfilling	Not required at this stage	Landfilling did not commence during the reporting period.
796M9-3	Financial Assurance	The amount of the financial assurance shall be reviewed and as necessary replaced every three years in accordance with condition 9-2.	A review of the amount of the financial assurance will be conducted every three years in accordance with condition 9-2 and in consultation with the Shire of Gingin and the DEC.	Not applicable	Overall	Every 3 years	Not required at this stage	A review of the level of financial assurance was required in June 2023, 3 years after the Bank Guarantee was provided. Another review is required in June 2026. These

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								review dates fall outside of the reporting period.
796M9-4	Financial Assurance	In the event that the guarantor referred to in condition 9-1 terminates its liability under the bank guarantee by paying to the Minister or the CEO the balance of the financial assurance remaining unpaid, the CEO will hold the financial assurance (being the amount paid by the guarantor upon termination), as security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, in an interest bearing account nominated by the CEO, with the interest accruing for the benefit of the Minister or the CEO.	In the event that the guarantor referred to in condition 9-1 terminates its liability under the bank guarantee by paying to the Minister or the CEO the balance of the financial assurance remaining unpaid, the CEO will hold the financial assurance (being the amount paid by the guarantor upon termination), as security for the due and punctual observance and performance by the proponent of the requirements of conditions 6-1, 6-2 and 8-3, in an interest-bearing account nominated by the CEO, with the interest accruing for the benefit of the Minister or the CEO.	Not applicable	Overall	If triggered	Not required at this stage	The guarantor (Fernview) referred to in condition 9-1 has not terminated its liability under the bank guarantee.
796M9-5	Financial Assurance	The financial assurance may be called on or used in accordance with section 86E of the *Environmental Protection Act 1986* if the proponent fails to implement the proposal in accordance with conditions 6-1, 6-2 and 8-3.	The Minister or CEO may call on the financial assurance in the event that the proponent fails to implement the proposal in accordance with conditions 6-1, 6-2 and 8-3.	Not applicable	Overall	If non-compliance	Not required at this stage	The Minister or CEO has not called on the financial assurance. This CAR has determined that Fernview has implemented the proposal in accordance with conditions 6-1, 6-2 and 8-3.
796M9-6	Financial Assurance	The financial assurance shall be discharged by the CEO and the Minister when the CEO has given the proponent written notice pursuant to section 86F(1) of the *Environmental Protection Act 1986*.	The CEO and the Minister discharge the financial assurance when the CEO has given the proponent written notice pursuant to section 86F(1) of the Environmental Protection Act 1986.	Not applicable	Overall	Upon approval	Not required at this stage	The CEO and the Minister has not discharged the financial assurance.
796M10-1	Environmental Offsets	The proponent shall provide an offset, being a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South**, to counterbalance the significant residual impact to 42.5 hectares (ha) of foraging habitat for *Calyptorhynchus latirostris* (Carnaby's black cockatoo) as a result of implementation of the proposal	Provide an offset that is a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South.	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C04_20241205 - 2015-7621 - Infringement and Warning Letter	Overall	By 26/02/2019	Non-compliant	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 26 February 2019. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance on 05/12/2024 (C04).
796M10-2	Environmental Offsets	Within twelve months of the publication of the Statement to change the implementation conditions relating to this proposal***, or as otherwise agreed in writing by the CEO, the proponent shall prepare and submit a Carnaby's Cockatoo Habitat Offsets Strategy to the CEO satisfying the requirements of condition 10-3.	Prepare and submit a Carnaby's Cockatoo Habitat Offsets Strategy to the DWER CEO.	R01_2025 Independent Audit	Overall	26 February 2019	Completed	As reported in the 2025 Independent Audit (R01), the Offsets Strategy (R02) was submitted to the DWER CEO 08/11/2019 and approved on 04/05/2020.
796M10-3	Environmental Offsets	The Carnaby's Cockatoo Habitat Offsets Strategy required by condition 10-2 shall: (1) identify the portion of Lot 98 Wannamal Road South that will comprise the offset area; (2) include a completed Commonwealth's Offset Assessment Guide (or its update) demonstrating how the offset area	Include items MS 1073 Condition 10-3 1 to 5 in the Carnaby's Cockatoo Habitat Offsets Strategy.	R02_Carnabys Cockatoo Habitat Offset Strategy_C10-2_MS1073_Final C02_WA EPA Approval for Offset Strategy	Overall	26 February 2019	Completed	The Offset Strategy (R02), dated 2019, contains items 1 to 4 of the requirements of MS1073 condition 10-3 however only partially includes items required under condition 5. Cockatoo Habitat Offsets Strategy includes:

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		counterbalances the significant residual impact to 42.5 ha of Calyptorhynchus latirostris (Carnaby's black cockatoo) foraging habitat (3) identify the environmental attributes of the offset area (4) outline the process for ceding the offset area to the Crown for the purpose of conservation; and (5) identify: (5a) the nature and quantum of the upfront works associated with establishing the offset area; (5b) a timeframe or schedule for the upfront works to be carried out; (5c) the quantum of the management of the offset area for no less than seven years, and of the portion of this to be contributed by the proponent; and (5d) the management body that will accept management responsibility for the offset area.						1. Figure 3 identifies the portion of Lot 98 Wannamal Road South that will comprise the offset area; 2. Section 2.4.1 demonstrates how the offset area counterbalances the significant residual impact to 42.5 ha of CBC foraging habitat; 3. Appendix B identifies the environmental attributes of the offset area; 4. Section 2.8 outlines the process for ceding the offset area to the Crown for the purpose of conservation; and 5. Cockatoo Habitat Offsets Strategy does not identify: a. the quantum for fencing and weed control associated with establishing the offset area; b. the timeframe or schedule for fencing and weed control upfront works to be carried out; c. the quantum of the management of the offset area for no less than seven years. The Offset Strategy (R02) does identify the management body that will accept management responsibility for the offset area (requirement 5d). Despite items 5, the Offset Strategy was approved on 04/05/2020.
796M10-4	Environmental Offsets	After receiving notice in writing from the CEO that the Carnaby's Cockatoo Habitat Offsets Strategy satisfies the requirements of condition 10-3, the proponent shall: (1) take action to ensure the offset area is ceded to the Crown within twenty-four (24) months of the publication of the Statement to change the implementation conditions relating to this proposal**; and (2) implement the upfront works identified subject to condition 10-3(5)(a) in accordance with the timeframe or schedule identified subject to condition 10-3(5)(b).	Implement the Carnaby's Cockatoo Habitat Offsets Strategy upfront works on Strategy approval from the CEO.	R01_2025 Independent Audit C02_WA EPA Approval for Offset Strategy C04_20241205 - 2015-7621 - Infringement and Warning Letter	Overall	26 February 2020	Completed	As reported in the 2025 Independent Audit (R01), the Offset Strategy was approved on 04/05/2020 and the required upfront works included fencing along the entire proposed footprint boundary within 12 months of commencement of the Project and undertaking weed monitoring (where required) control annually. The approval holder received a warning notice 05/12/2024 (C04) in regard to not implementing the upfront works on Strategy approval.
796M10-5	Environmental Offsets	Any changes to the aspects of the Carnaby's Cockatoo Habitat Offsets Strategy required by condition 10-3 must be approved in writing by the CEO.	Apply to the DWER CEO for any changes to the Carnaby's Cockatoo Habitat Offsets Strategy.	Not applicable	Overall	Ongoing	Not required at this stage	An application for changes to the Carnaby's Cockatoo Habitat Offsets Strategy have not been made to date however recent consultation with the Department regarding future disturbance requirements for the site have the potential to trigger a requirement for this application. This application would also need to address the non-compliance identified in 796M10-1.
796M10-6	Environmental Offsets	The proponent shall implement the latest version of the Carnaby's Cockatoo Habitat Offsets Strategy which the CEO has confirmed by notice in writing satisfies the requirements of condition 10-3.	Implement the latest approved version of the Carnaby's Cockatoo Habitat Offsets Strategy.	R01_2025 Independent Audit Appendix B C04_20241205 - 2015-7621 - Infringement and Warning Letter	Overall	Ongoing	Non-Compliant	The approval holder has implemented the latest approved version of the Appendix Carnaby's Cockatoo Habitat Offsets Strategy. The auditor assessed the compliance with the Strategy in Appendix B and found that:

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
								• 17 commitments were assessed as compliant; • 3 commitments were assessed as completed; • 18 commitments were assessed not required at this stage; • Two commitments were assessed as potentially non-compliant; and • Eight commitments were assessed as non-compliant
796M11-1	Feral Animal MP	The proponent shall prepare and submit a Feral Animal Management Plan to the CEO that demonstrates how the proponent will achieve the following environmental objectives: (1) prevent, where practicable, and minimise the number of feral animals attracted to the proposal, including but not limited to rats, foxes and cats; and (2) eradicate, where practicable, and minimise the number of feral animals within the proposal development area.	Prepare and submit a Feral Animal Management Plan to the DWER CEO with the two objectives listed.	C05_Submission of FPAMP to DWER R01_2025 Independent Audit	Overall	By 26/08/2018*	Compliant	As reported in the 2025 Independent Audit (R01), the Feral and Pest Animal Management Plan (V1) was prepared and submitted to DWER 02/08/2018 (C05).
796M11-2	Feral Animal MP	The Plan shall specify environmental objectives, management targets, management actions, monitoring and reporting to demonstrate that the objectives in condition 11-1 will be met.	The FPAMP will specify: • environmental objectives; • management targets; • management actions; • monitoring; and • reporting.	R03_Feral and Pest Animal Management Plan Rev 3	Overall	By 26/08/2018*	Completed	The FPAMP (R03) contains: • environmental objective in Section 1; • management targets in Table 4 (appendices); • management actions in Section 3; • monitoring in Section 3.6; and • reporting in Section 3.2 and Table 4 (appendices). The FPAMP will be updated during the next reporting period.
796M11-3	Feral Animal MP	The proponent shall submit the Plan to the CEO within six months of the publication of the Statement to change the implementation conditions relating to this proposal***, or as otherwise agreed in writing by the CEO.	Submit the FPAMP by 26 August 2018 or as otherwise agreed with the DWER CEO.	C05_Submission of FPAMP to DWER C06_DWER Approval for FPAMP V3	Overall	By 26/08/2018*	Compliant	The FPAMP was submitted (C02) 02/08/2018 (prior to 26/08/2018) and approved 11/02/2019 (C06).
796M11-4	Feral Animal MP	The proponent shall not commence operation of the landfill until the CEO has confirmed in writing that the Plan satisfies the requirements of conditions 11-1 and 11-2.	Do not commence operations until the DWER CEO has approved the FPAMP.	C05_Submission of FPAMP to DWER C06_DWER Approval for FPAMP V3	Operations	Until the CEO has confirmed in writing	Compliant	No operations occurred in the reporting period
796M11-5	Feral Animal MP	The proponent shall implement the most recent version of the Feral Animal Management Plan approved by the CEO.	Implement the most recent version of the approved Feral Animal Management Plan.	Appendix F of this CAR.	Operations	Ongoing	Not required at this stage	The proponent has not commenced operations.
796M11-6	Feral Animal MP	Any changes to management targets, management actions, monitoring and reporting in the Feral Animal Management Plan must be approved by the CEO in writing	Apply to the DWER CEO for any changes to the management targets, management actions, monitoring and reporting in the Feral Animal Management Plan.	R04_Feral and Pest Animal Management Plan C06_Submission of FPAMP V2 C05_DWER Approval for FPAMP V3	Overall	As required	Compliant	The amended Feral and Pest Animal Management Plan (R04) was submitted 18/01/2019 (C06) and approved (V3) 11/02/2019 (C05).

Appendix E Carnaby's Cockatoo Habitat Offsets Strategy Compliance Assessment

Table E-2: Carnaby's Cockatoo Habitat Offsets Strategy Audit Table

Condition No.	Condition	Timing	Verification Method	Evidence	Determination	Compliance Finding
2.2.2 On-site Mitigation						
CCHOS 01	The design and construction of the landfill facility will be carried out in accordance with the Works Approval W6083/2017/1	During construction	Compliance audit of EPBC Approval during ACR confirms the implementation of the Works Approval conditions 1 to 4 and 6 to 8.	R01_2025 Independent Audit	As reported in the independent audit (R01), the design and construction of the landfill facility was carried out in accordance with the Works Approval W6083/2017/1.	Completed
CCHOS 02	To minimise impacts no more than 42.5 ha of foraging habitat for the Carnaby's Black Cockatoo in the area enclosed by the line designated as 'Proposed Footprint Boundary' as shown on the map at Appendix C.	Overall	Aerial imagery with reference to habitat mapping	R05_ACR 2025 Rev 0	There was no clearing in the reporting period (R05). An area of 29.91 ha of foraging habitat for the Carnaby's Black Cockatoo has been cleared (R05).	Compliant
CCHOS 03	Any foraging habitat outside the 'Proposed Footprint Boundary' must not be cleared	Overall	Aerial imagery with reference to habitat mapping and proposed footprint boundary.	R05_ACR 2025 Rev 0 C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause)	No additional area of foraging habitat has been cleared (R05). An area of 15.59 ha of CBC foraging habitat was cleared outside of the proposed footprint boundary on 06/08/2024, including access tracks and an area for a sediment pond required under the works approval. The approval holder received a warning notice from DCCEEW on 05/12/2024 in regard to this non-compliance (C03).	Non-compliant
CCHOS 04	Installation of a 1.8 m high mesh fencing along the entire 'Proposed Footprint Boundary' as shown on the map at Appendix C, within 12 months of commencement of the project, and maintaining it for the life of the project.	By 06/04/2021	Sighting of constructed fence and survey data	R01_2025 Independent Audit	As reported in the independent audit (R01), the 1.8m high mesh fence was installed around the Project area during February 2024.	Completed
CCHOS 05	Personnel will be educated on the importance of adhering to clearing limits in order to minimise disturbance to existing vegetation.	Overall	Induction presentation Induction register	R05_ACR 2025 Rev 0	There was no clearing in the reporting period.	Not required at this stage
CCHOS 06	Cleared soil and/or vegetation will be stockpiled for potential use as daily cover and/or capping material.	Overall	Site inspection confirms that soil and/or vegetation has been stockpiled	E01_CCHOS 06 stockpiled topsoil and vegetation	Vegetation and topsoil are stockpiled in windrows on cleared areas on western area and eastern areas of site (E01).	Compliant
CCHOS 07	Site disturbance is to be minimised, with vegetation retained where possible in between infrastructure with regard to Health, Safety and Operational requirements.	Overall	Aerial imagery	R05_ACR 2025 Rev 0	No site disturbance in the reporting period.	Compliant
CCHOS 08	Roads and tracks will be developed along existing easements where possible.	During construction	Aerial imagery	G01_67366_A3L_01_Proposed Footprint Boundary G02_67366_01_A3L_02_Revised Fence Location	No new tracks were developed in the reporting period. Existing tracks were utilised for activities in the reporting period.	Compliant
CCHOS 09	Vegetation to the south of the project area will be fenced to minimise disturbance.	During construction	Site inspection confirms that vegetation to the south is fenced.	M02_Gingin Landfill ACR Evidence Request Response Rev 0	Vegetation to the south along Wannamal Road is fenced (farm fencing).	Compliant
CCHOS 10	Implementation of the rehabilitation measures described in the Fernview Landfill – Decommissioning and Post Closure Management Plan 2015 (Appendix D) within 12 months from the completion of capping of the landfill cells in order to re-establish a self-sustaining vegetation cover (of a similar species composition and structure)	Overall	Compliance audit of EPBC Approval during ACR confirms the implementation of the rehabilitation measures described in the Fernview Landfill – Decommissioning and	Not applicable	Landfill has not commenced operations phase and there are currently no areas under / proposed to be under rehabilitation.	Not required at this stage

Condition No.	Condition	Timing	Verification Method	Evidence	Determination	Compliance Finding
	integrated with the surrounding ecosystem, providing foraging habitat for the Carnaby's Black Cockatoo.		Post Closure Management Plan 2015.			
CCHOS 11	Implementation of the weed monitoring and control measures described in the Fernview Landfill – Decommissioning and Post Closure Management Plan 2015 (Appendix D) for the life of the project.	Overall	Compliance audit of EPBC Approval during ACR confirms the implementation of the weed monitoring and control measures described in the Fernview Landfill – Decommissioning and Post Closure Management Plan 2015.	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C04_20241205 - 2015-7621 - Infringement and Warning Letter	Annual weed inspections, weed eradication or consultation with neighbours on weed eradication was not undertaken Spring 2024. The approval holder received a warning notice from the DCCEEW in regard to this non-compliance 05/12/2024. Weed monitoring and control will be actioned during the next reporting period.	Non-compliant
CCHOS 12	Implementation of the Works Approval conditions 1 to 4 and 6 to 8 to minimize the impacts of Dieback,	During construction	Compliance audit of EPBC Approval during ACR confirms the implementation of the Works Approval conditions 1 to 4 and 6 to 8.	Refer to CCHOS 01	Refer to CCHOS 01	Completed
CCHOS 13	Vehicle use will be restricted to designated tracks with parking in allocated areas.	Overall	Site inspection confirms that vehicles are restricted to designated tracks and allocated parking areas Incident register	M02_Gingin Landfill ACR Evidence Request Response Rev 0 E02_CCHOS 13 Incident Register	Fernview confirmed (M02) that all vehicles are restricted to tracks and parking areas. Incident Register (E02) shows no incidents of vehicle movement off designated tracks.	Compliant
CCHOS 14	A Fire Management Plan has been prepared and will be implemented as part of the project's Environmental Management Plan to minimise the risk of fire.	Overall	Compliance audit confirms that the Fire Management Plan is being implemented.	R04_Fire Management Plan 151022 BB Rev 1	The Fire Management Plan (R04) is in place. Fernview have not conducted 6-monthly fire management checks (and before each summer season) as required under section 9.5.6 of the FMP in accordance with Appendix B "Fernview Landfill Fire Management Checklist" to ensure the requirements of the FMP is implemented.	Potentially non-compliant
CCHOS 15	Vehicles and machinery will be parked in designated locations only to minimise habitat damage.	Overall	Site inspection confirms that vehicles are parked in designated locations. Incident register	M02_Gingin Landfill ACR Evidence Request Response Rev 0 E02_CCHOS 13 Incident Register	Fernview confirmed (M02) that all vehicles are parked in designated areas. Incident Register (E02) shows no incidents of habitat damage.	Compliant
CCHOS 16	Traffic will be restricted to established roads and parking areas, to again minimise habitat destruction.	Overall	Site inspection confirms that vehicles are restricted to roads and parking areas Incident register	M02_Gingin Landfill ACR Evidence Request Response Rev 0 E02_CCHOS 13 Incident Register	Fernview confirmed (M02) that all vehicles are restricted to tracks and parking areas. Incident Register (E02) shows no incidents of habitat damage.	Compliant
CCHOS 17	Site traffic speed limits will be lowered to minimise fauna death on roads.	Overall	Speed limit signage	M02_Gingin Landfill ACR Evidence Request Response Rev 0	Fernview confirmed (M02) that all vehicles comply with the 20 km/h and 8 km/h speed limit restrictions.	Compliant
CCHOS 18	Ensuring putrescible wastes are covered with soil at the end of each day. This will minimise the potential for night-time foraging by birds and feral and native animals.	During operations	Daily operations procedure (daily putrescible waste covered). Site inspection confirms that putrescible wastes are covered at the end of each day.	Not applicable	Landfill has not commenced operations.	Not required at this stage
CCHOS 19	Ensuring housekeeping procedures such as litter removal at the perimeter of the site are maintained to discourage fauna from the site.	Overall	Site inspection confirms all litter at the perimeter of site is removed.	Not applicable	Landfill has not commenced operations.	Not required at this stage
CCHOS 20	Applying the odour control strategies to minimise the attraction of fauna to the site.	During operations	Compliance audit confirms implementation of odour control strategies	Not applicable	Landfill has not commenced operations.	Not required at this stage
CCHOS 21	Site environmental inductions will raise employee awareness in relation to conservation of fauna	Overall	Induction Presentation Induction Register	M01_Gingin Landfill Independent Audit Evidence Request Response Rev 1	There were no operations in the reporting period.	Not required at this stage

Condition No.	Condition	Timing	Verification Method	Evidence	Determination	Compliance Finding
	(particularly rare, threatened or vulnerable fauna) and their habitats.					
CCHOS 22	Direct contact with fauna will be avoided whenever possible.	Overall	Induction Presentation Pest management records	M01_Gingin Landfill Independent Audit Evidence Request Response Rev 1	There was no direct contact with fauna in the reporting period.	Compliant
CCHOS 23	Implementation of the control measures to minimise the impacts of feral animals described in the Feral and Pest Animal Management Plan	During operations	Compliance audit in ACR	Not applicable	Implementation of Feral and Pest Animal Management Plan is applicable to operations phase. There were no operations in the reporting period.	Not required at this stage
2.3	PROPOSED OFFSETS					
CCHOS 24	Set aside 189.14ha of habitat on Lot 98 (Appendix C) for conservation purposes in perpetuity. The Department of Parks and Wildlife (DPAW) have expressed their interest in acquiring the offset area and incorporating it into the State managed conservation estate. This remains a logical approach given that the offset area abuts land recently acquired by the Department for inclusion in the conservation estate.	By 24/10/2021	Correspondence to DCCEEW with evidence of transfer of offset to DBCA.	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C04_20241205 - 2015-7621 - Infringement and Warning Letter	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 25	Manage the interface between the project area and the offset area to ensure that the habitat condition does not deteriorate from baseline condition as mapped in May 2016. This will be achieved through the provision of fencing as required along with periodic inspection for weeds and windblown litter or fly-tipped wastes.	During operations	Annual weed inspection records Regular staff perimeter fencing and offset area waste inspection records Site inspection confirms no windblown litter or fly-tipped waste in offset area.	Not applicable	Operations have not commenced. No waste has been accepted at the site.	Not required at this stage
CCHOS 26	Conduct annual monitoring of the interface between the project area and the offset area to ensure that the conservation values of the interface do not diminish from their current levels.	Annually	Offset Area Interface Monitoring of Conservation Values Report	M02_Gingin Landfill ACR Evidence Request Response Rev 0 C04_20241205 - 2015-7621 - Infringement and Warning Letter	No monitoring was undertaken of the interface between the Project area and the offset area in the reporting period. The approval holder received a warning notice from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 27	Annual reporting by Fernview to the DEE and DPAW demonstrating compliance with the proposed commitments will be undertaken.	Annually	Submission correspondence to DCCEEW with attached ACR Submission correspondence to DBCA demonstrating compliance with the Offset Strategy	M02_Gingin Landfill ACR Evidence Request Response Rev 0 C04_20241205 - 2015-7621 - Infringement and Warning Letter	No annual reporting was provided to DCCEEW or DBCA demonstrating compliance with the Offset Strategy in 2024 for the 2023 reporting period. The approval holder received infringement notice CEB24/130 from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 28	Implement the Feral and Pest Animal Management Plan in the project area.	During operations	Compliance audit in ACR	Not applicable	Implementation of the FPAMP under condition 11 of MS 1073 is required once the landfill is operational.	Not required at this stage
CCHOS 29	Ensure appropriate closure of the landfill facility.	Decommissioning	Decommissioning Monitoring Report	Not applicable	Landfill currently has no areas under / proposed for decommissioning.	Not required at this stage
2.7	OUTCOME BASED CONDITIONS					
CCHOS 30	The project footprint is limited to 66.6ha.	Overall	Pre-disturbance aerial photography comparison	G01_67366_A3L_01_Proposed Footprint Boundary G03_67366_A3L_03_Original Boundary Clearing Calcs	The Project footprint (areas utilised by the Project) were limited to 54.399 ha.	Compliant
CCHOS 31	No more than 42.5ha of native vegetation will be cleared in the project footprint.	Overall	Aerial photography comparison with respect to habitat mapping	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C07_202502 DCCEEW Request for Information Further Clearing Gingin Landfill Rev E C04_20241205 - 2015-7621 - Infringement and Warning Letter	There was no clearing in the reporting period. A total of 17.25 ha was cleared in the proposed Project footprint prior to this reporting period.	Compliant

Condition No.	Condition	Timing	Verification Method	Evidence	Determination	Compliance Finding
CCHOS 32	Within 24 months of commencing the project, Fernview will transfer to the State of Western Australia, 189.14ha of land containing black cockatoo habitat for addition to the conservation estate as depicted in Appendix C.	By 24/10/2021	Correspondence to DCCEEW with evidence of transfer of offset to DBCA.	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C04_20241205 - 2015-7621 - Infringement and Warning Letter	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 33	The subdivision will be managed by DPAW and the nominal costs associated with the subdivision will be met by Fernview.	By 24/10/2021	Evidence of payment of DBCA invoice.	Refer to CCHOS 32	Transfer of Lot 98 to DBCA has not occurred to date.	Not required at this stage
CCHOS 34	Fernview will manage the interface between the landfill operations and the offset area through the provision of fencing and periodic inspection for weeds, windblown litter and illegally dumped wastes. The offset area condition is not to diminish below current levels as a result of the landfill project.	During operations	Annual weed inspection records Regular staff perimeter fencing and offset area waste inspection records Site inspection confirms no windblown waste or illegally dumped rubbish in offset area.	Not applicable	Operations have not commenced. Waste has not yet been accepted at the site.	Not required at this stage
CCHOS 35	Following decommissioning, Fernview will transfer to DPAW the area of land where the weighbridge, office facilities and storage area are located.	During decommissioning	Correspondence from DBCA accepting annual report.	Not applicable	Landfill is not in operational phase and there are currently no areas under / proposed for decommissioning.	Not required at this stage
CCHOS 36	Prior to decommissioning of the site, Fernview will discuss and agree with DPAW the transfer details for the weighbridge, office facilities and storage area.	Prior to decommissioning	Correspondence to DBCA on transfer details for the weighbridge, office facilities and storage area.	Not applicable	Operations have not commenced. No decommissioning is planned.	Not required at this stage
CCHOS 37	Fernview is to undertake annual reporting to the Commonwealth and DPAW to demonstrate compliance with the above outcomes.	Annually	Submission correspondence to DCCEEW with attached ACR	C04_20241205 - 2015-7621 - Infringement and Warning Letter	An annual report for the 2023 reporting period was not provided in 2024. The approval holder received infringement notice CEB24/130 from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 38	Reporting will be published on the Fernview website in accordance with the conditions 11 to 13 of the EPBC Act Approval.	Annually	Independent audit confirms that ACR is published on Proponent website.	Not applicable	Refer to CCHOS 37	Not required at this stage
CCHOS 39	Non-compliance with the above outcomes will be reported to the Federal Minister for Environment.	Overall	Non-compliance notification correspondence with DCCEEW on offset plan outcome based conditions.	C08_Gingin Landfill Facility near Cullala_ WA (EPBC 2015_7261) - Notification of Potential Non-compliances C04_20241205 - 2015-7621 - Infringement and Warning Letter	The proponent has notified DCCEEW of non-compliance with commitments CCHOS 32, CCHOS 33 and CCHOS 37 (C04). This has resulted in two infringement notices from DCCEEW (C04).	Compliant
CCHOS 40	Any variance from the outcome based conditions (Section 2.7) will require written authorisation from the Federal Minister for the Environment.	Overall	Application correspondence with DCCEEW on variance to offset plan outcome based conditions.	C09_ 2015_7621 Gingin Regional Landfill variation of conditions _SEC_OFFICIAL_ C08_Gingin Landfill Facility near Cullala_ WA (EPBC 2015_7261) - Notification of Potential Non-compliances C04_20241205 - 2015-7621 - Infringement and Warning Letter	To address Fernview's variance from the outcome based conditions the following actions have been taken: A request has been made to extend the time to transfer to the State of Western Australia, 189.14ha of land containing black cockatoo habitat for addition to the conservation estate to 30/06/2026 (C09). Reported non-compliance with the outcomes to DCCEEW (C08) Received enforcement action from DCCEEW for breaching conditions 1, 2, 3, 4, 5, 11, 12, 13 and 14 of the approval (C04).	Compliant
2.8 DPAW ACQUISITION						
CCHOS 41	Use of fencing, gates and a controlled entry/exit point so that authorised personnel and vehicles can enter the site.	During the construction, operation and decommissioning phases	Site Inspection	R05_ACR 2025 Rev 0	Landfill has been fenced with gate access (R04). There has been no unauthorised access in the reporting period (R05).	Compliant

Condition No.	Condition	Timing	Verification Method	Evidence	Determination	Compliance Finding
CCHOS 42	The general public will not have direct access to the site.	During the construction, operation and decommissioning phases	Incident register	Refer to CCHOS 41	Refer to CCHOS 41. There have been no reports of public access.	Compliant
CCHOS 43	Wastes will be delivered to the site by covered vehicles which will be unloaded in the active cell and in the vicinity of the active tipping facing. One active tipping face will be operational at a time, with compaction and covering of waste taking place daily.	During operation	Landfill Operations Procedure (delivery, management of tipping face) Site inspection	Not applicable	Landfill has not commenced operations.	Not required at this stage
CCHOS 44	Perimeter fencing around the site boundary will reduce the occurrence of windblown rubbish impacting adjacent conservation areas.	During operation	Site inspection confirms 1.8m fence in place separating landfill from offset area.	Not applicable G04_Premises Boundary Plan	Operations have not commenced. Landfill has been fenced.	Not required at this stage
CCHOS 45	The perimeter fencing will be inspected regularly by staff. Where windblown wastes or illegally dumped rubbish is noted by staff, these will be collected and disposed of.	During operation	Regular staff perimeter fencing and offset area waste inspection records Site inspection confirms no windblown waste or illegally dumped rubbish in offset area.	Not applicable	Operations have not commenced.	Not required at this stage
CCHOS 46	Site speed limits will apply to reduce the risks associated with the loss of wastes from vehicles.	During the construction, operation and decommissioning phases	Site inspection confirms speed limit signage and vehicle compliance with speed limits.	M02_Gingin Landfill ACR Evidence Request Response Rev 0	Fernview confirmed (M02) that all vehicles comply with the 20 km/h and 8 km/h speed limit restrictions. Vehicles operating on site during the reporting period were associated with construction not waste operations.	Compliant
CCHOS 47	2.8.1 Acquisition Mechanism The offset area will be subdivided from the landholding and transferred to the State Government. The subdivision process will be managed by DPAW and the nominal costs will be met by Fernview.	By 24/10/2021	Correspondence to DCCEEW with evidence of transfer of offset to DBCA.	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause) C04_20241205 - 2015-7621 - Infringement and Warning Letter	The subdivision and transfer of a portion of Lot 98 on Deposited Plan 75926, Wannamal Road South for offset did not occur by 24 October 2021. The approval holder received infringement notice CEB24/129 from DCCEEW in regard to this non-compliance 05/12/2024.	Non-compliant
CCHOS 48	2.8.2 Contingency Measure If the subdivision and transfer do not proceed, Fernview will investigate options to secure a conservation covenant over the offset area. The covenant will be registered on the Certificate of Title. Under these circumstances, an environmental management plan would be prepared and implemented for the offset area to the satisfaction of the DEE.	Overall	Correspondence with DBCA Certificate of title with covenant Environmental Management Plan for Offset Area	M02_Gingin Landfill ACR Evidence Request Response Rev 0 C09_ 2015_7621 Gingin Regional Landfill variation of conditions _SEC_OFFICIAL_	Fernview have not made efforts in the reporting period to pursue the transfer of the offset to DBCA however intend to focus on this now. A request has been made to extend the transfer period to 30/06/2026 (C09).	Potentially non-compliant

Appendix F Evidence Register

Table F-3: Evidence Register

Code	Reference	Author	Electronic	Hard-copy	Topic
C01	C01_Commencement Date Submission to DWER	Fernview	X		Letter to DWER dated 11/05/2020 notifying the Department that the date of commencement of the action under Part B condition 5 of the Approval was 6 April 2020.
C02	C02_WA EPA Approval for Offset Strategy	DWER	X		Letter to Fernview 04/05/2020 approving the Carnaby's Cockatoo Habitat Offsets Strategy dated 8 November 2019.
C03	C03_EPBC 2015_7261 Non-compliance Information Request (Show Cause)	JBS&G	X		Letter to DCCEEW 30/08/2024 in response to C09 regarding non-compliance with approval conditions attached to EPBC 2015/7621 providing further information.
C04	C04_20241205 - 2015-7621 - Infringement and Warning Letter	DCCEEW	X		Letter to Fernview 05/12/2024 regarding Breach of conditions attached to the Environment Protection and Biodiversity Conservation Act 1999 approval for EPBC 2015/7621 including: • warning for contravening conditions 1, 2, 3, 5, 12, and 13; • infringement notice CEB24/129 from DCCEEW for contravening condition 4; • infringement notice CEB24/130 from DCCEEW for contravening condition 11; and • infringement notice CEB24/131 from DCCEEW for contravening condition 14.
C05	C05_Submission of FPAMP to DWER	Fernview	X		Letter to Department of Water and Environmental Regulation 02/08/2018 submitting Version 1 of the (amended) Feral and Pest Animal Management Plan.
C06	C06_DWER Approval for FPAMP V3	DWER	X		Letter of approval 11/02/2019 for the Feral and Pest Animal Management Plan [V3, January 2019].
C07	C07_202502 DCCEEW Request for Information Further Clearing Gingin Landfill Rev E	JBS&G	X		Letter to DCCEEW 13/03/2025 regarding EPBC 2015/7621 DCCEEW Request for further Information to inform Directed Variation

Code	Reference	Author	Electronic	Hard-copy	Topic
C08	C08_Gingin Landfill Facility near Cullala_ WA (EPBC 2015_7261) - Notification of Potential Non-compliances	JBS&G	X		Email 13/06/2024 notifying DCCEEW of potential non-compliances with EPBC 2015/7261.
C09	C09_ 2015_7621 Gingin Regional Landfill variation of conditions _SEC_OFFICIAL_	JBS&G	X		Email to DCCEEW 12/06/2025 regarding EPBC 2015/7621 Variation of Conditions proposed By DCCEEW.
C10	C010_Fernview_Licence_Groundwater Monitoring Report_Lodgement	JBS&G	X		Internal JBS&G email dated 13/02/2026 regarding the lodgement of the AACR to the DWER.
E01	E01_CCHOS 06 stockpiled topsoil and vegetation	Fernview	X		Marked up aerial photograph showing soil stockpiles in south west and south east areas of project site.
E02	E02_CCHOS 13 Incident Register	Fernview	X		Incident Report Register recording zero incidents for the period 06/04/2020 to 05/04/2025.
E03	E03_2025 Clearing Calcs	JBS&G	X		Vegetation clearing calculations for the Fernview Landfill dated 11/11/2025.
E04	E04_Fernview website screenshot	Fernview	X		Screenshot of Fernview Landfill website, taken on 17/02/2026/
G01	G01_67366_A3L_01_Proposed Footprint Boundary	JBS&G	X		Figure showing revised footprint boundary including 10.06ha of existing cleared areas before action commencement.
G02	G02_67366_01_A3L_02_Revised Fence Location	JBS&G	X		Figure showing Gingin landfill fenced area.
G03	G03_67366_A3L_03_Original Boundary Clearing Calcs	JBS&G	X		Figure showing Carnaby Black Cockatoo foraging habitat that has been cleared within and outside of the proposed footprint boundary.
G04	G04_Premises Boundary Plan	iwProjects	X		Fernview Landfill Facility Premises Boundary Plan [FV-SK01 Rev A] 23/03/2022.
G05	G05_Landfill Area	Nearmaps	X		Nearmaps image showing landfill area of 2.87 ha.
G06	G06_Implementation outside of Schedule 2 Area	JBS&G	X		Aerial Image showing MS796 Schedule 2 Area in red with landfill implementation areas in green within the schedule 2 area and yellow implemented outside the Schedule 2 area.
M01	M01_Gingin Landfill Independent Audit Evidence Request Response Rev 1	Fernview	X		Tom Rudas response to JBS&G request for evidence on 02/06/2025.

Code	Reference	Author	Electronic	Hard-copy	Topic
M02	M02_Gingin Landfill ACR Evidence Request Response Rev 0	Fernview	X		Kelton Reyneke response to JBS&G request for evidence on 18/09/2024.
P01	P01_IMG_0020	JBS&G	X		Photograph of weighbridge installed at the Fernview Landfill site, dated 22/09/2025.
P02	P02_IMG_0025	JBS&G	X		Photograph of administration building installed at the Fernview Landfill site, dated 22/09/2025.
P03	P03_IMG_0019	JBS&G	X		Photograph of weighbridge office installed at the Fernview Landfill site, dated 22/09/2025.
P04	P04_IMG_0027	JBS&G	X		Photograph of utilities (solar panels) installed at the Fernview Landfill site, dated 22/09/2025.
P05	P05_IMG_0023	JBS&G	X		Photograph of the equipment storage yard constructed at the Fernview Landfill site, dated 22/09/2025.
P06	P06_IMG_0033	JBS&G	X		Photograph of fencing constructed at the Fernview Landfill site, dated 22/09/2025.
R01	R01_2025 Independent Audit	JBS&G	X		Gingin Regional Landfill (EPBC 2015/7621) Environment Protection and Biodiversity Conservation Act 1999 Fernview Environmental Pty Ltd Independent Audit (2025) [67366 Rev 0] 16 June 2025
R02	R02_Carnabys Cockatoo Habitat Offset Strategy_C10-2_MS1073_Final	Fernview Environmental	X		Carnaby's Cockatoo Habitat Offsets Strategy Fernview Landfill Lot 98 Wannamal Road South, Cullula, Shire of Gingin [V1.0.0.0] 08/11/2019.
R03	R03_Feral and Pest Animal Management Plan Rev 3	Terrestrial Ecosystems	X		Feral and Pest Animal Management Plan for the Fernview Class II Waste Management Facility [Version 3] January 2019.
R04	R04_Fire Management Plan 151022 BB Rev 1	Bowman & Associates	X		Fernview Landfill – Fire Management Plan prepared by Bowman & Associates Pty Ltd for Aurigen Group Limited [151022 BB Version 1] 22/10/2015.
R05	R05_ACR 2025 Rev 0	JBS&G	X		Gingin Regional Landfill (EPBC 2015/7621). *Environment Protection and Biodiversity Conservation Act 1999.* Fernview Environmental Pty Ltd. Annual Compliance Report (2025). JBS&G Australia Pty Ltd. Report no: 67366, Rev 0. 1 July 2025.
R06	R06_Gingin Landfill Part V AER 2024	JBS&G	X		Gingin Regional Landfill (MS796), Class II Landfill, Lot 7778 Diagram 209805, 1189 Wannamal Road South, Cullula, Shire

Code	Reference	Author	Electronic	Hard-copy	Topic
					Of Gingin. *Environmental Protection Act 1986.* Fernview Environmental Pty Ltd. Part V Annual Environmental Report. JBS&G Australia Pty Ltd, 67366, Rev 0. 8 October 2025.
R07	R07_Fernview_Compliance Assessment Plan	Veolia	X		Compliance Assessment Plan (CAP). Fernview Landfill. Lot 7778 Wannamal Road South, Cullula, Shire Of Gingin. Veolia Environmental Services. 8 September 2009.
R08	R08_Works Approval Compliance Report 2 May 24	iwProjects	X		Fernview Gingin Landfill Cell 1 and Leachate Pond Construction Compliance Report prepared for Fernview Environmental Pty Ltd [Final] 02/05/2024.
R09	R09_CQA Validation Report May 2024 (V4)	Terra firma laboratories	X		Fernview Landfill Cell 1 And Leachate Pond CQA Validation Report prepared for M8 Sustainable Pty Ltd [11117_V4] 01/05/2024.
R10	R10_COMPLIANCE ASSESSMENT REPORT_2018-2019	Fernview Environmental	X		Compliance Assessment Report, Fernview Landfill, Lot 98, Wannamal Road South, Cullula, Shire Of Gingin, Dated 17/10/2019.
R11	R11_COMPLIANCE ASSESSMENT REPORT_2019-2020	Fernview Environmental	X		Compliance Assessment Report, Fernview Landfill, Lot 98, Wannamal Road South, Cullula, Shire Of Gingin, Dated 11/11/2020.
R12	R12_Compliance Groundwater Monitoring Report	JBS&G	X		Cullalla Landfill Facility - October 2025. Compliance Monitoring. Fernview Environmental Report. Report No: 173,428 (Rev A). Dated, 10 February 2026.
R13	R13_Fernview Landfill –Decommissioning and Post Closure Management Plan	Fernview Environmental	X		Fernview Landfill –Decommissioning and Post Closure Management Plan by Fernview Environmental Pty Ltd, dated 24/08/2020.

Appendix G Groundwater Monitoring Report

Proposed Fernview Landfill, Groundwater Quality and Flow Hydrogeological Assessment Cullalla, WA

Report written for:

Fernview Pty Ltd

March 2024

Stass Environmental

Environmental Science & Engineering

Stass Environmental

Environmental Science & Engineering

ABN 73 976 537 552

Author: Andre Stasikowski

Reviewer: IW

Approved by: AWS

Date: March 2024

Distribution: Fernview Vr 1.1

As this is an electronic version of the Report, the signed copy is available in the hardcopy of the Report.

Table of Contents

Environmental Science & Engineering
ABN 73 976 537 552

March 2024

Proposed Fernview landfill,

Groundwater Quality and Flow

Hydrogeological Assessment

Cullalla, WA

1. INTRODUCTION

Fernview Pty Ltd (Fernview) lease a site at Cullalla in Western Australia which is currently undergoing a Works Approval (WA)/Licence Application process by the Department of Water and Environment Regulation (DWER).

As part of the conditional approval by DWER, a requirement has been issued that the 7 (seven) groundwater monitoring bores, some of which were installed in 2006/2007 are to be monitored regularly for static water level and water quality.

To this end, Fernview asked that Stass Environmental conduct groundwater sampling events as per DWER Works Approval conditions.

This report reviews all data available for the site since intensive groundwater monitoring of flow and water quality initiated in 2019. The first survey discovered that a number of monitoring bores were dry or damaged. In due course, these were all replaced (redrilled) and the full monitoring programme continued in earnest from 2020 onwards.

2. Regional Hydrogeological Setting

The proposed landfill lies on the souther part of the Dandaragan Plateau between the Gingin Scarp to the west and the Barberton Plateau between the Muchea and Darling Faults to the east, some 7 km northeast of Gingin (Figure 1). The site lies above a subdued synclinal structure of Upper Cretaceous sediments of the Coolyena Group, on the southern toe of the Swan Syncline. The Upper Cretaceous sediments - referred to as a minor aquifer

- are not well understood, as little investigation of these has been carried out (Moncrieff, 1989; Kay and Diamond., 2001) and groundwater in these is not used apart from on isolated rural developments. However, recent investigations (Diamond, 2000; Kay and Diamond, 2001; ATA Environmental, 2006) have provided both regional and local interpretations of the stratigraphy and hydrogeology which are relevant in establishing a reasonably consistent conceptual model of groundwater flow beneath the site and allow an assessment of potential impact of the landfill on groundwater and associated surface water resources.

Within this region, the stratigraphic succession is recorded as shown in Table 1.

The thicknesses of the stratigraphic units vary considerably in this relatively small region on the Dandaragan Plateau. It seems likely that at the proposed landfill site the reportedly thin Surficial Deposits - ferruginous sands with some lateritisation - grade into the underlying weathered Poison Hill Greensand. The Upper Cretaceous sediments of the Coolyena Group are often treated as a single unconfined and minor aquifer unit referred to as the Mirrabooka aquifer, although Kay and Diamond (2001) suggest the Mirrabooka member is absent in the region of the site. Thus for consistency this aquifer is referred to as the Poison Hill aquifer, consisting of Poison Hill Greensand, Gingin Chalk and Molecap Greensand member units. This unconfined aquifer is underlain by the Kardinya Shale. The latter reportedly is a thick sequence of shales with some silt and sandstone, confining the underlying Leederville Formation aquifer in the region of the site.

Regional groundwater flow within the Poison Hill aquifer at the proposed landfill site is estimated to be southwest (perpendicular to the isopotential contours), based on limited borehole data presented in Figure 1, from Kay and Diamond (2001). It is apparent from Figure 1 that the Poison Hill aquifer sediments pinch out to the west near the Gingin Scarp, whilst the Kardinya shale which separates the unconfined aquifer from the Leederville Formation, extends farther to the west and southwest to the Gingin Scarp. Thus from available evidence, there is no direct connection between the Poison Hill aquifer sediments and Leederville aquifer within the region around the landfill.

It also seems likely that groundwater within the Poison Hill aquifer discharges into the Gingin Brook catchment either as springs or possibly eventually into the river several kilometers away from the landfill. Kay and Diamond (2001) and Rutherford et al (2005) indeed suggest that within the Red Gully Subarea, the unconfined aquifer discharge eventually into the river system.

Geological Age/ Stratigraphic group	Stratigraphic Formation	Member	Description	Hydrogeological importance
Quaternary	Holocene	Surficial deposits	**Derived from weathering and reworking of Upper Cretaceous**	
Upper Cretaceous **Coolyena Group**	Lancelin Formation*	Poison Hill Greensand	Weathered ferruginous sandy clays	**Minor aquifer**
		Gingin Chalk	Carbonate rich mudstone / claystone	**Semi (?) confining bed**
		Molecap Greensand	Glauconitic silty sandstone	**Minor aquifer**
	Osborne Formation	Mirrabooka Sandstone	Sitlstone / sandstone	**Minor aquifer**
		Kardinya Shale	Glauconitic shale, siltstone, sandstone	**Confining bed**
Lower Cretaceous Warnboro Group	**Leederville Formation**	**undifferentiated**	**Sandstone, shales.**	**Major aquifer**

Table 1. Summary of regional stratigraphy near the Fernview Farm site after Kay and Diamond, 2001.

** Kay and Diamond (2001) indicate that the Lancelin Formation only occurs to the west of the Gingin Scarp, and this is separate from but contemporaneous with the Gingin Chalk and Molecap Greensand, grading into these to the east.*

3. Local Hydrogeology at the Proposed Landfill

Drilling local to the site has been carried out and reported in Diamond (2000) where deep bores were emplaced to investigate groundwater in the Leederville Formation, as well as into the unconfined Upper Cretaceous aquifer at the same location some 1km south of the proposed landfill. More recent drilling by ATA Environmental (2006) has also been carried out as part of an assessment of the proposed landfill site. Both sets of information have been used to assist with definition of local groundwater conditions within the regional context described above.

3.1 Site Stratigraphy

Drilling - lkm south of the site (boreholes RG2A and RG2B), from Diamond (2000) describe the stratigraphic succession through to the Leederville Formation and underlying Parmelia Formation. There is little detail given of sediments in the Poison Hill aquifer in this report, these being collectively referred to as clayey sand (cream to light grey, fine to medium grained, subangular, poorly sorted with cream to white clay), with no distinction between any specific Member unit. However, a summary log for bore RG2A is provided and reproduced from Diamond (2000) in Table 2.

Depth (m.bgl)	Stratigraphic units		
0-6	Quaternary (Surficial deposits)		
6-25	Poison Hill Greensand		**Coolyena group**
25-34	Gingin Chalk		
34-63	Molecap Greensand		
63-148	Kardinya Shale	Osborne Formation	
148-196	Henley Sandstone		
196-254	Pinjar Shale	Leederville Formation	**Wamboro Group**
254-450	Wanneroo Member		
450-472	Marginiup Member		
472-490	Parmelia (Sandstone) Formation		

Table 2. Summary log for Bore RG2A, from Diamond (2000).

m.bgl - metres below ground level

The log in Table 2 differs from the more general and regional succession in Table 1 by recognising the presence of the Henley Sandstone below the significant depth of Kardinya Shale, and in differentiating the Leederville Formation into its constituent Member units.

The stratigraphic data in Table 2 clearly corroborate regional information that in the vicinity of the proposed landfill, the unconfined Poison Hill aquifer is not in hydraulic continuity with the main groundwater yielding unit of the Leederville aquifer - the Wanneroo Member. The latter is clearly confined by a considerable thickness of Kardinya Shale of the Osborne Formation and Pinjar Shale of the Leederville Formation.

Thus, the main focus for assessing potential impacts from the proposed landfill is groundwater in the unconfined Poison Hill Aquifer.

Some detail of the shallow Quaternary and Upper Cretaceous sediments has been provided by recent drilling by ATA Environmental, in preliminary investigations by air- core drilling at the site to depths of 29 mbgl. Detailed logs of six boreholes indicate mainly medium to coarse sands, mostly ferruginised (cream to red brown coloured) with lateritised horizons at shallow depth (variously 2-5 mbgl) within the Surficial Deposits, as described in Moncrieff (1989) and Kay and Diamond (2001).

The Upper Cretaceous sediments (Poison Hill Greensand) are clearly weathered to the drilled depth in each hole, as described by Kay and Diamond (2001), and it is unclear from the bore logs where the boundary is between the Surficial Deposits and the weathered Greensand. Indeed, as the Surficial Deposits are themselves weathered and reworked Upper Cretaceous (Moncrieff, 1989); it seems likley that the boundary between the two is gradational and not easily determined. Certainly there is no obvious change in lithology or geophysical logs which define a stratigraphic boundary as such. The absence of any boundary indicates that the Surficial Deposits and upper weathered Poison Hill Greensand form a single vadose zone for the unconfined aquifer beneath the proposed landfill site.

3.2 Historical Groundwater levels

The historical literature shows that piezometric head of water in the Leederville aquifer was measured in bore RG2A at 11Om AHD, 51m below surface and above the upper surface of the Kardinya Shale. This again suggests that the Kardinya Shale confines groundwater in the Leederville aquifer.

Bore RG2B was drilled to provide water supply for drilling of the deeper bore RG2A, and taps groundwater in the Poison Hill aquifer. Groundwater levels within this bore were recorded at 18.26m below casing, or ~143m AHD within the Poison Hill Greensand in November 2000.

None of the bores drilled at the proposed landfill in February 2006 intercepted groundwater, although bore BH2 was estimated to have been within 2-3m of the water table (Table 3). Later drilling in September 2006 (MB1-4 and FLV4) was more successful and rest water levels (RWLs) were measured on two occasions where it was possible in September and December 2006, as shown in Table 3. Two bores, MBl and MB4 were drilled into groundwater but it was concluded that these bores partially collapsed during emplacement of screens and casing, as both bores were found to be dry when tested.

Water table contours for September 2006 for the area to the southeast of the proposed landfill have been estimated using data from bores MB2, MB3 and FLV4, and are shown in Figure 3. These show a shallow gradient (0.0016) and a groundwater flow direction to the west-south west, corresponding reasonably closely to that estimated by Kay and Diamond (2001) for the area of the site. It is possible that groundwater flow is more southerly beneath the main proposed landfill as shown by dashed lines in Figure 3, based on regional flow directions in Figure 2, from Kay and Diamond (2001). However, it would be useful to try and

confirm this either by determination of RWLs in regional bores such as RG2A, or by further drilling.

Groundwater flow beneath the site, either west-south-west or more southerly, indicates a general flow direction towards Gingin Brook, where it would be anticipated that groundwater would discharge. Given the distance between the site and the headwaters of Gingin Brook of several kilometers, there is no likely adverse impact from the landfill on Gingin Brook. There are minor streams to the west of the proposed site, such as Boonaring Brook, although groundwater flows from the proposed site would not discharge to these streams, given the likely southerly flow.

ATA bore	Elevation (m.AHD)	Groundwater RWL (m. AHD)		Drilled depth (m.AHD)
Bores drilled in February 2006				
BH2	-170*	-143.5**		-146
BH3	-185*	-143.7**		-156
BH6	-185*	-143.5**		-156
BHl	-195*	-		-167
BH5	-200*	-144**		-172
BH4	-220*	-		-193
Bores drilled in September 2006				
		8 Sept 2006	20 Dec 2006	
MB1 (GG1)	180.37	dry	dry	147.37
MB2 (GG2)	183.51	144.01	144.99	137.51
MB3 (GG3)	168.01	143.53	144.54	139.51
MB4 (GG4)	189.73	dry	dry	143.73
FLV4 (Prod Bore)	**157.445**	**144.17**	**-**	116.45

Table 3. Estimated (approximate) groundwater levels at bore locations for bores drilled in February 2006, groundwater rest water levels , bore elevation at RG2B of 161m AHD and distance from the lower site boundary to the bore of approximately 1 km.

AHD - Australian Height Datum bgl - below ground level

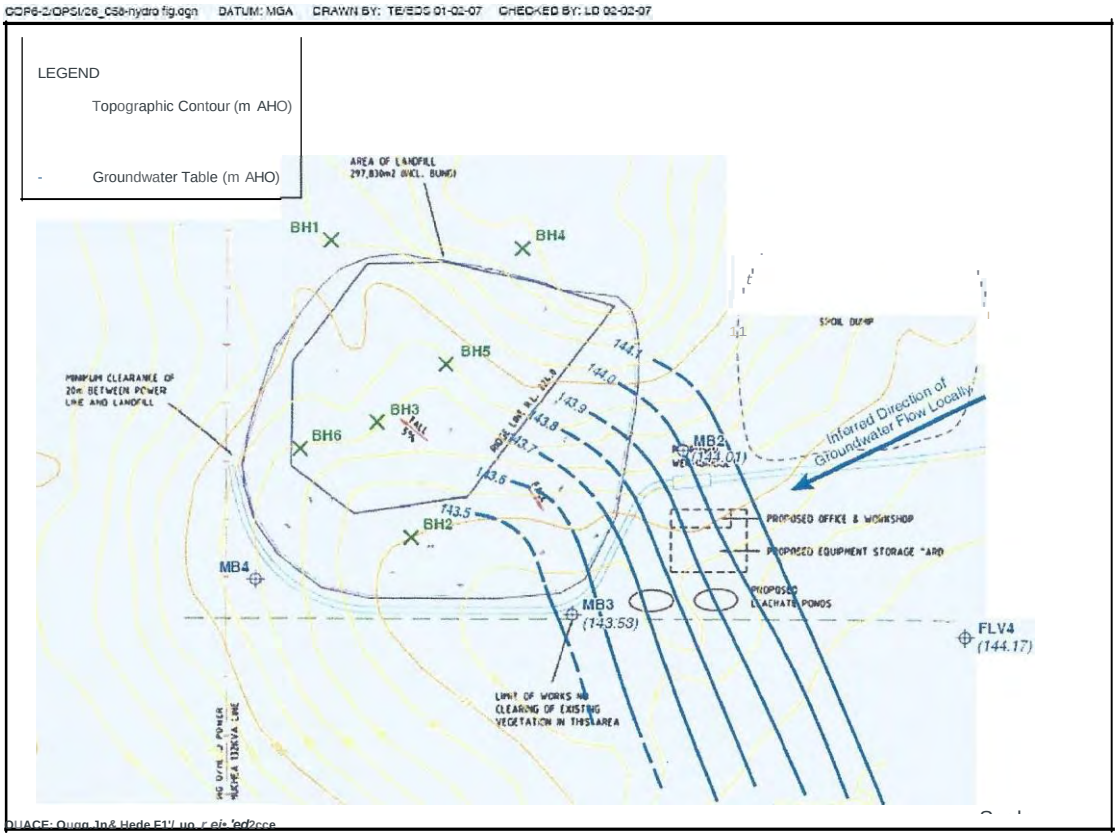
**RWL estimated where possible from groundwater table contours for September 2006

The estimates in Table 3 indicate that groundwater is shallowest beneath the lower, southern end of the proposed site (bore BH2 and MB3), where the depth of the unsaturated zone is ~26 m and 24.5 m respectively. Groundwater is present at much greater depths below the current surface higher in the catchment. At BH3 and BH6 the unsaturated zone is ~4lm deep and at BH5 the estimates in Table 3 indicate a depth of 56m. These compare with more accurate estimates of depth of unsaturated zone from later drilling (Table 3) of 24 m at MB3 on the southeastern edge of the proposed landfill and nearly 40m at MB2 to the east of the proposed site. Bore FLV4 which is at a lower topographic level some 800m to the southwest of the site shows an unsaturated zone thickness of 13 m (Table 3).

In all cases there is a considerable depth of vadose zone of 25 m or more beneath the site, providing considerable protection to groundwater quality from any proposed, lined landfill.

Given the estimated groundwater gradient to the west-south-west, any subsurface contamination from leakage through a landfill liner or other leachate discharge, if sufficient to reach groundwater would flow towards the Gingin Brook catchment. The likely flow distance to the Brook is several kilometers. Dilution and dispersion of any contamination over this distance would be sufficient to preclude any impact on water in Gingin Brook.

A search for known groundwater abstraction bores within the vicinity of the site identified five such bores, three immediately to the east which will be used as an abstraction bores for the proposed landfill and two bores approximately 1km to the south of the proposed landfill. For the bores to be impacted by low levels of contamination from the lined site, these would need to be immediately down-gradient of the site (i.e. to the west-south-west), and well within 500m radius. Neither of these bores would be impacted by any contamination, given their positions and distance from the site.



Inferred Groundwater Contours (2006) - Crisalis Environmental.

Bores marked as MB are renamed GG in current document.

3.3 General Conclusions from Historical Review

In the vicinity of the proposed landfill, the unconfined Poison Hill aquifer is not in hydraulic with the main groundwater yielding unit of the Leederville aquifer - the Wanneroo Member.

The main focus for assessing potential impacts from the proposed landfill was identified as the groundwater in the unconfined Poison Hill Aquifer;

Bore RG2B was drilled to provide a water supply for drilling of the deeper bore RG2A, and taps into groundwater in the Poison Hill aquifer. Groundwater levels within this bore were recorded at 18.26m below casing, or ~143m AHD within the Poison Hill Greensand in November 2000;

Hydraulic conductivity of the Poison Hill aquifer was determined in bore BH3 using a slug test and Hvorslev analysis, as 3.1 m/d. The hydraulic gradient was determined from reduced groundwater levels in all monitoring bores at the site in July 2008, being on average 0.0013 to the southwest;

There are no surface water bodies present on the site, the nearest surface water body is Gingin Brook which has its headwaters located 3.5 km to the south-west of the site;

Boonanarring Brook which extends into the Boonanarring Nature Reserve is located approximately 5 km to the west of the site. Red Gully Creek is some 15 km to the northwest, and the Moore River 25 km directly to the north. Lake Beermullah and White Lake are approximately 15km to the east, with Wannamal Lake lying approximately 15km to the northeast;

Any potential subsurface contamination of leachate, if sufficient to reach groundwater, would flow generally in a west-south-west direction towards the Gingin Brook catchment. However, as the flow distance to Gingin Brook is 3.5 kilometres, the dilution and dispersion of any contamination over this distance would be sufficient to preclude any impact on water in Gingin Brook.

4. GROUNDWATER ASSESSMENT ON 2020 to 2024 DATA

Seven monitoring bores are located at the Fernview landfill site (see Fig 1). These were re-surveyed in 2022. The co-ordinates and Australian Height Datum level at the top of casing for each bore was determined as:

Bore ID	Easting	Northing	RL AHDm
GG1	403310	6546530	180.660
GG2	402820	6545834	183.455
GG3	402638	6545562	168.010
GG4	402127	6545628	189.680
GG5	402146	6545788	188.470
GG6	402411	6545560	171.755
GGN7	402818	6545561	164.930

`

These datum levels are slightly different from some of the measurements done in 2006, and are used preferentially in the current report as these are considered more accurate.

Bores GG1, GG3, GG2 and GG7 (new bore in the same location is GGN7) have been re-drilled due to the old bores having been vandalised or were not of sufficient depth. The bore logs, including the geological log for updated bores GG1, GG3, GG2 and GGN7 as well as the ATA Environmental (2006) bores are provided in the Appendix D.

Groundwater monitoring has been carried out quarterly over the last 2 years at all 7 bores to end of 2022. Field measurements and data for these groundwater

monitoring events are provided in the Appendix. All field instrumentation was calibrated on the morning of each monitoring event.

4.1.1 Methodology

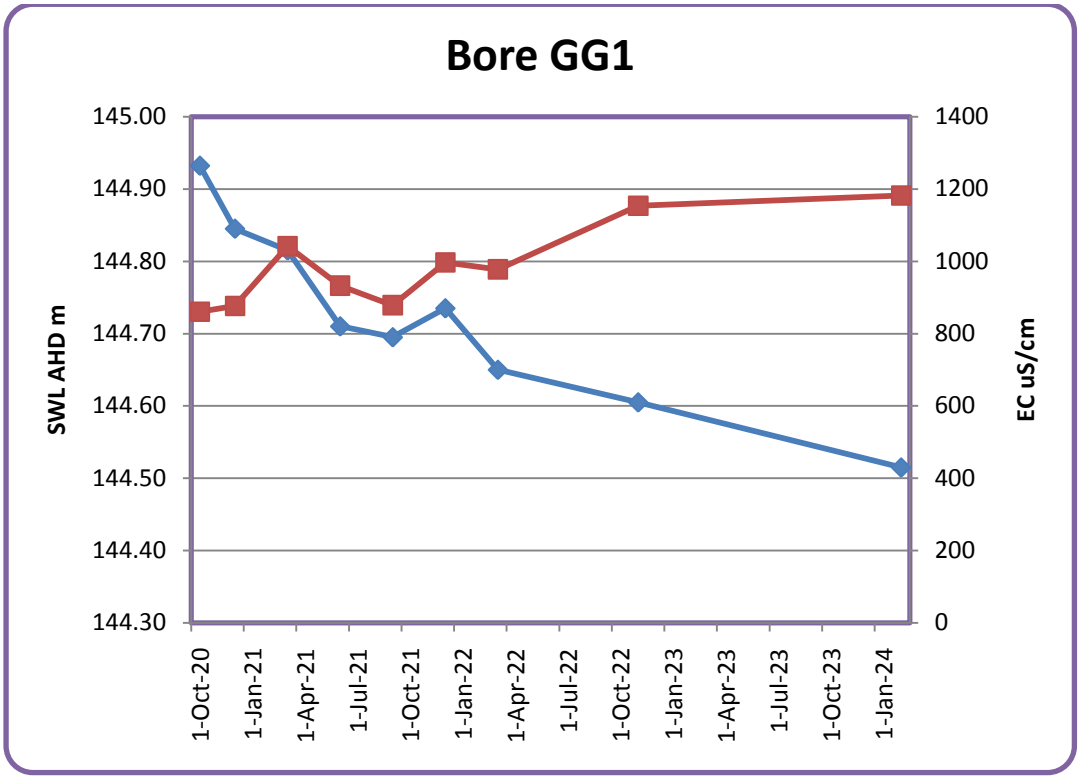
The field surveys were carried four times a year, as per DWER works approval conditions. A calibrated pH, REDOX, DO and Electrical Conductivity water quality meters were used to get in situ measurements of:

- pH
- Electrical Conductivity and water temperature
- Oxidation/Reduction potential
- DO; and
- TDS

The bores were first checked for groundwater level, which was recorded and then an electric submersible pump (powered by 14.8V lithium batteries) was lowered into the bore to predetermined sampling depth. Groundwater was pumped at a rate of 12L/min from deeper bores and this went up to +15L/min in the shallower bores. Approximately 60L of water was pumped from each bore during which time water physio-chemical parameters (pH and electrical conductivity/temperature) were also monitored. When water quality stabilised, groundwater was pumped directly into laboratory supplied pre-preserved sampling bottles which were labelled with bore ID and date. These were then placed in an Esky on ice blocks for transport to laboratory.

At this time selected bore was also used as a duplicate bore for laboratory analyses. Pump equipment was rinsed at the end of day with distilled water (by submerging the pump in a 10L container and pumping all the water out. The last 1L was divided into sampling bottles for laboratory analyses as the "rinsate" sample).

The following plots present the trends in groundwater level and quality (using TDS as a marker) and water level variations over time.


Bore GG1
SWL AHD m
EC uS/cm
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144.90
144.80
144.70
144.60
144.50
144.40
144.30
1400
1200
1000
800
600
400
200
0
1-Oct-20
1-Jan-21
1-Apr-21
1-Jul-21
1-Oct-21
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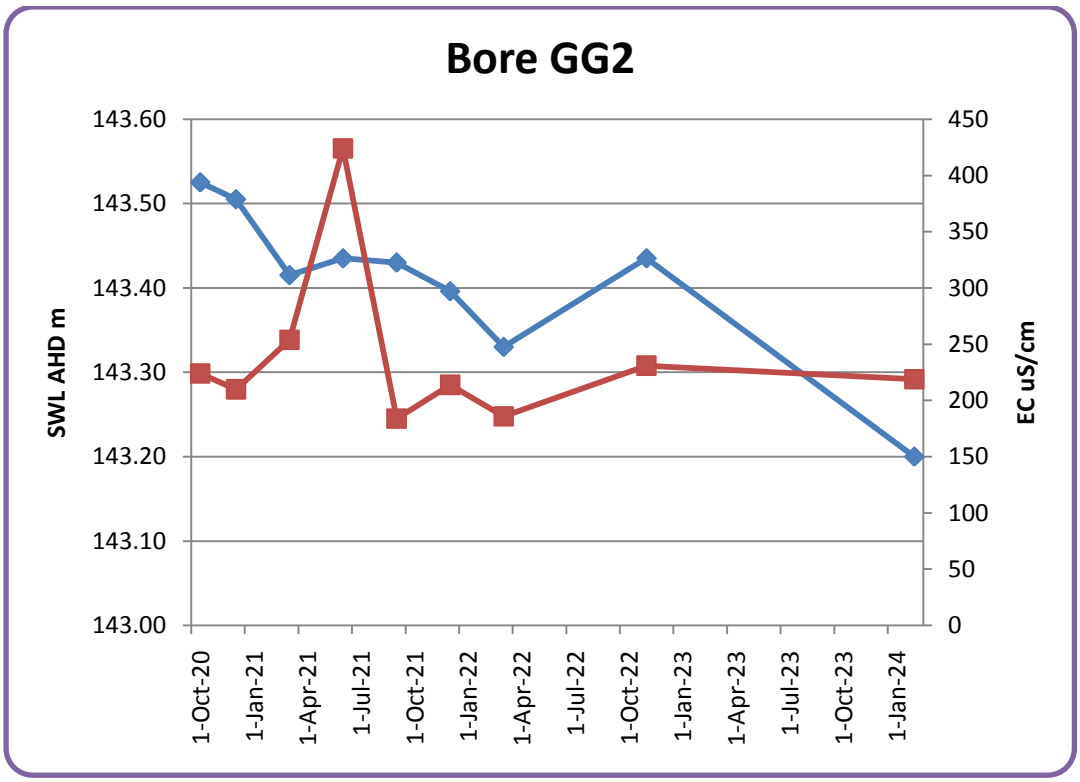
Bore GG2
SWL AHD m
EC uS/cm
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143.50
143.40
143.30
143.20
143.10
143.00
450
400
350
300
250
200
150
100
50
0
1-Oct-20
1-Jan-21
1-Apr-21
1-Jul-21
1-Oct-21
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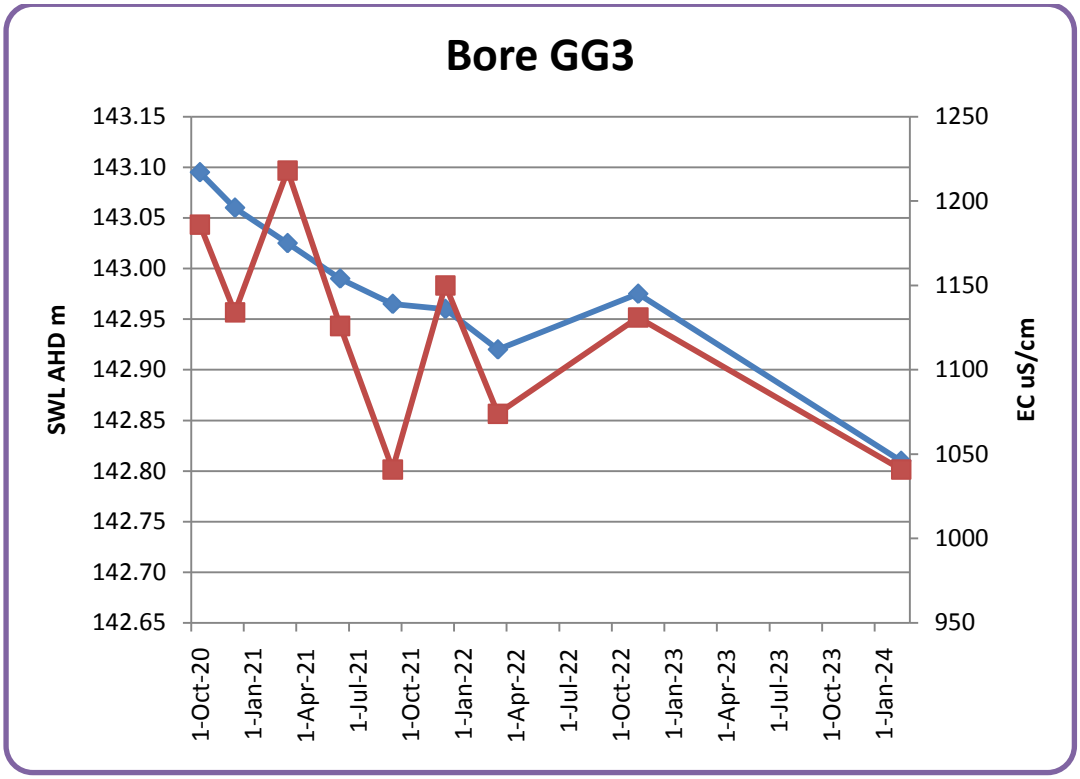
1-Jan-24


Bore GG3
SWL AHD m
EC uS/cm
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143.10
143.05
143.00
142.95
142.90
142.85
142.80
142.75
142.70
142.65
1250
1200
1150
1100
1050
1000
950
1-Oct-20
1-Jan-21
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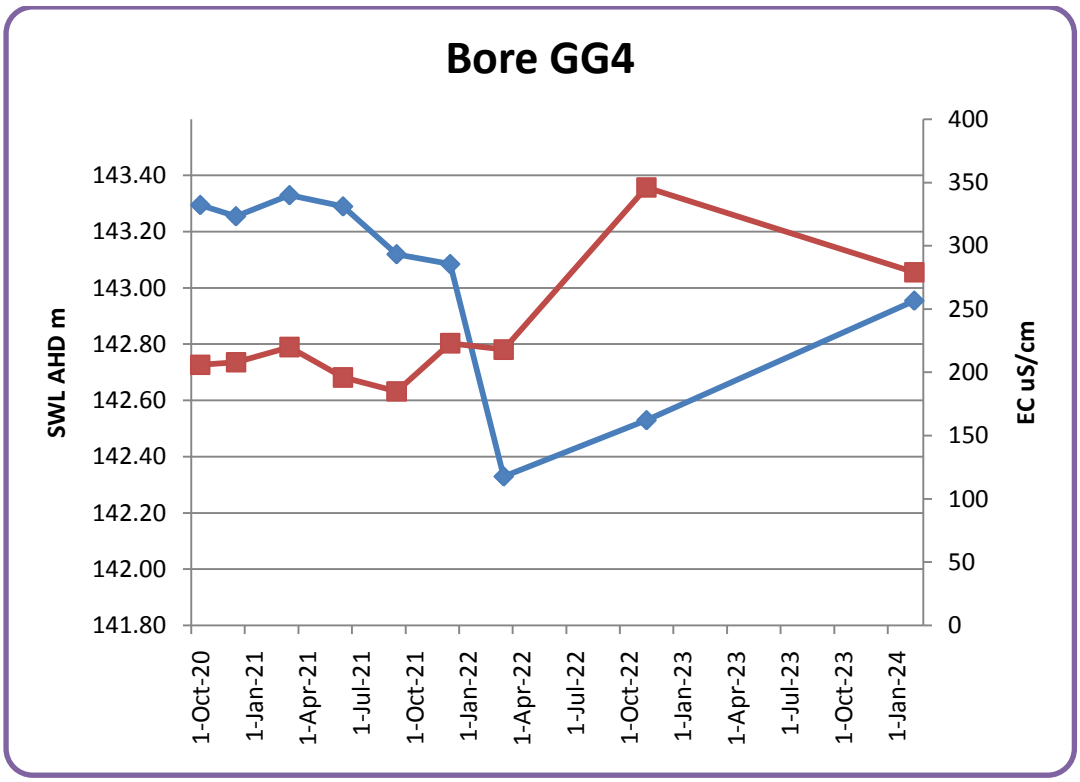
1-Jan-24


Bore GG4
SWL AHD m
EC uS/cm
143.40
143.20
143.00
142.80
142.60
142.40
142.20
142.00
141.80
400
350
300
250
200
150
100
50
0
1-Oct-20
1-Jan-21
1-Apr-21
1-Jul-21
1-Oct-21
1-Jan-22
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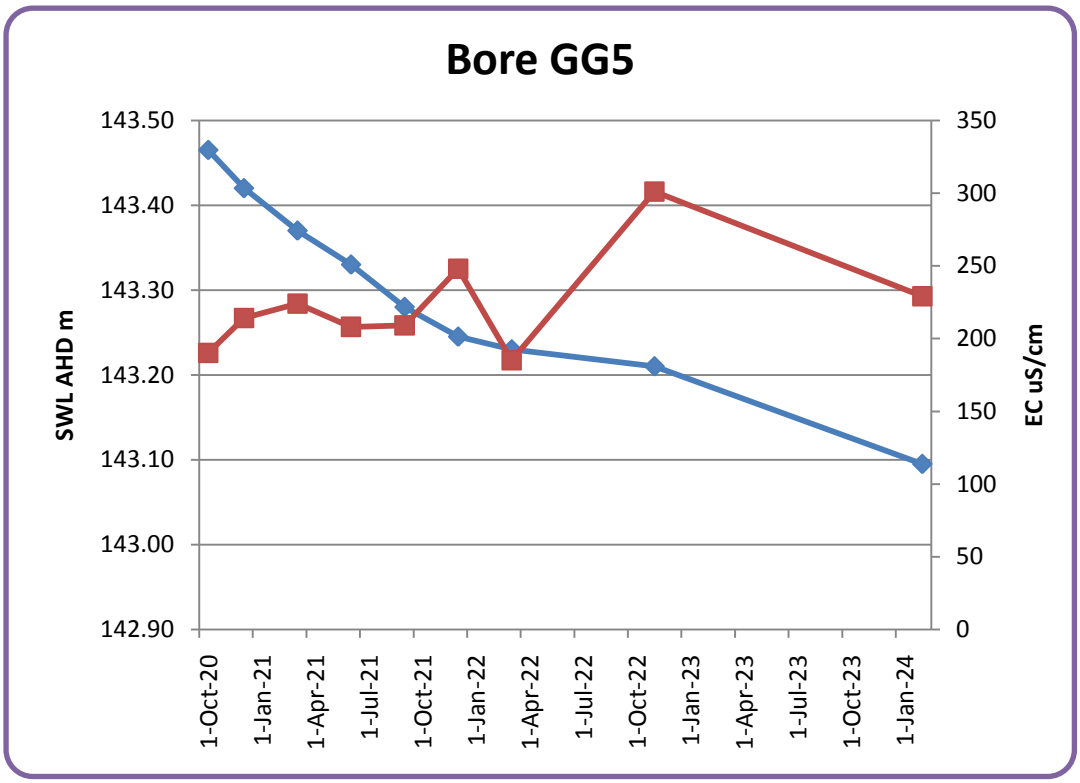
1-Oct-23
1-Jan-24


Bore GG5
SWL AHD m
EC uS/cm
143.50
143.40
143.30
143.20
143.10
143.00
142.90
350
300
250
200
150
100
50
0
1-Oct-20
1-Jan-21
1-Apr-21
1-Jul-21
1-Oct-21
1-Jan-22
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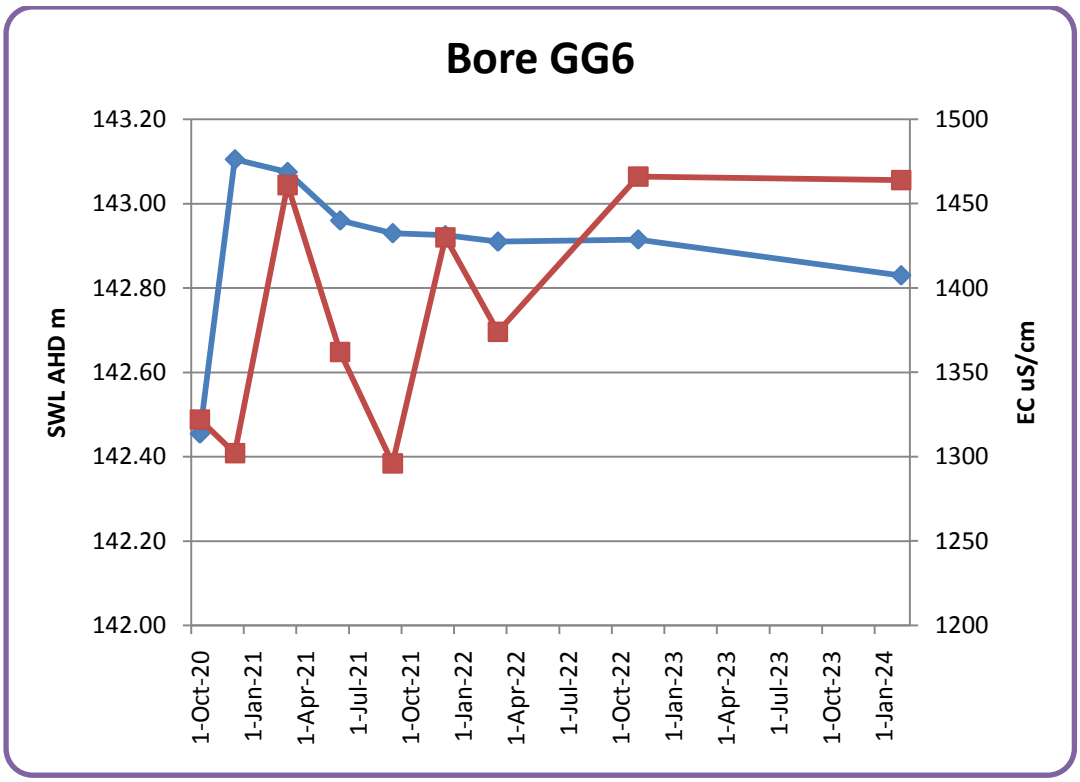
Bore GG6
SWL AHD m
EC uS/cm
143.20
143.00
142.80
142.60
142.40
142.20
142.00
1500
1450
1400
1350
1300
1250
1200
1-Oct-20
1-Jan-21
1-Apr-21
1-Jul-21
1-Oct-21
1-Jan-22
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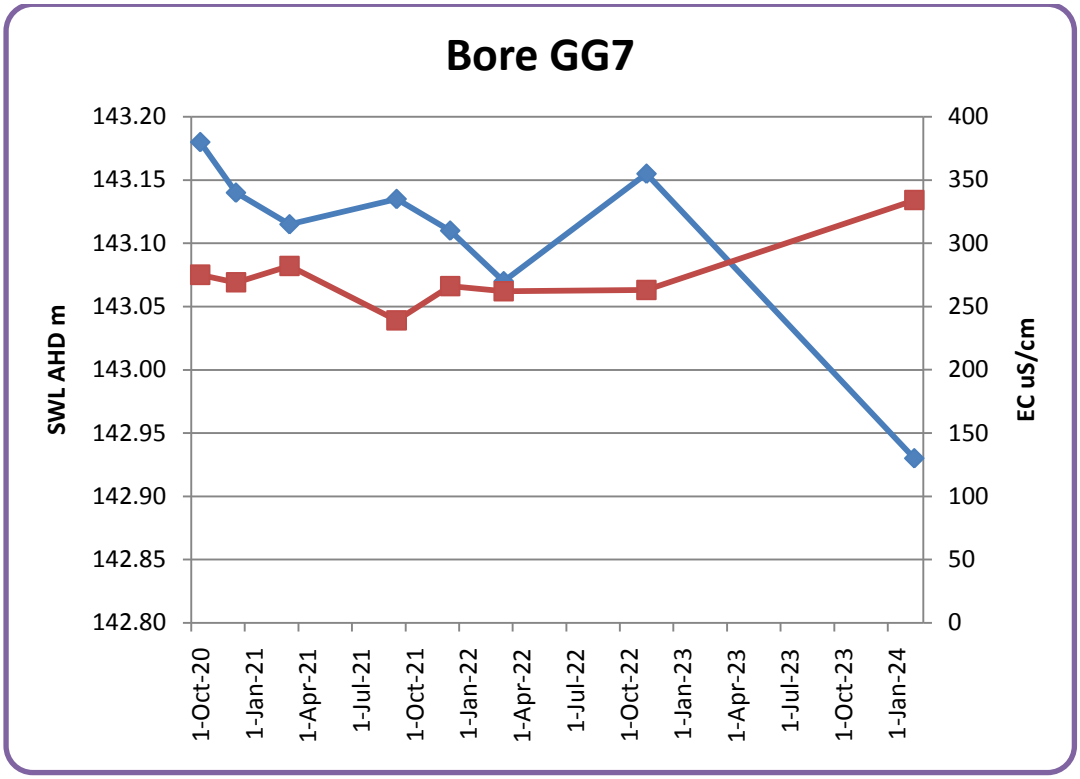
1-Jul-22
1-Oct-22
1-Jan-23
1-Apr-23
1-Jul-23
1-Oct-23
1-Jan-24



4.2 Groundwater Flow Direction

Groundwater flow direction was determined by plotting the groundwater AHDm contour levels on an aerial photograph of the site and establishing the direction of water table gradient at right angles to the contours. This indicated the groundwater flow direction across the site.

Figures 2 to 6 show groundwater contour maps over 5 different monitoring events between 2020 to 2024. At each event the flow direction is nearly identical. Review of water levels at other monitoring events confirmed that groundwater level fluctuations are less than a metre overall and the flow direction does not alter. Since 2020, a gradual decline in water levels is observed.

In conclusion, the flow direction across the site is consistent and corresponds with ATO Environmental findings in 2006, i.e. a flow direction to the south west.

The plots showing water level and EC concentration at the monitoring bores (previous report section) indicate that overall the groundwater levels are slowly falling around the site especially evident in the northern bores (GG4 and GG5).

Salinity (as TDS) remains largely consistent over the monitoring period.

5. GROUNDWATER QUALITY

5.1 Laboratory Analysis

5.1.1 Analytes

All groundwater and quality control samples were analysed using National Association of Testing Authorities (NATA) registered methods and analytical techniques for the following determinants (as per DWER Works Approval).

- Major anions and cations, pH, conductivity, DO, , REDOX, ammoniacal nitrogen and total dissolved solids (TDS);
- Heavy metals including arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury;
- Total Petroleum Hydrocarbons (TPH)
- Pesticides and Volatile Fatty Acids

The chain-of-custody documentation and analytical data as presented to Eurofins/ARL laboratory appears within Appendix C.

5.1.2 Quality Control

The following sections describe the testing methodologies and quality assurance/quality control (QA/QC) procedures used for analysis of the water samples obtained during the field activities.

Laboratory Control Samples, Spike Recoveries, Duplicates and Blanks

Laboratory control and spiked spike samples were analysed by Eurofins for all analytes (where applicable). All recovery results were within recommended control limits, indicating the results of the sample analyses are adequate for the purposes of this report, with a general tendency to slightly overestimate the concentrations of each individual analyte. All laboratory blank samples reported concentrations less than the PQL.

Laboratory duplicate analysis was conducted for heavy metals, cations, anions, ammoniacal nitrogen and total nitrogen. All RPDs were well within acceptable limits.

5.2 Water Quality Assessment

Two distinct groundwater quality zones appear to be present at the site. Water quality was assessed by comparing to NEPM 2013 Schedule B2 and DWER Contaminated Sites Guidelines 2014

Groundwater quality to the west (bores GG4 and GG5) and east (Bores GG7 and GG2) show a very good water quality profile with salinities in the range of 100 to

200 mg/l. No heavy metal or any other contaminants are reported from these bores over the period of survey (2020 to 2022). This corresponds with ATO Environmental findings in 2006 which were:

Groundwater quality is generally very good, with pH varying from 5.8-6.2, low TDS (up to 440mg/L) and general water type being sodium-chloride dominated. There are generally low concentrations of nutrients. The highest total nitrogen is 3mg/L, mainly consisting of nitrate and organic-N. Ammonium-N is present in low concentrations. Trace metal ions are all within freshwater criteria, and all the trace organic contaminants (hydrocarbons - BTEX/PAH, pesticides and PCBs) are undetected.

Downgradient of the site (south boundary Bore GG6 and GG3) as well as the northern bore GG1 represent a second water quality zone which appears affected by salinity and to some degree minor concentrations of heavy metals, some of which are in excess of DWER Contaminated Site Guidelines 2014..

The Works Approval demanded a very rigorous water quality laboratory analyses regimen, including a verity of hydrocarbon substances, chemical oxygen demand and heavy metal analyses. All results between 2020 and 2024 indicated an absence of these determinants (none recorded above laboratory analyses limit values), confirming that water quality in the unconfined upper aquifer is good with respect to industrial chemicals.

The increased salinity in groundwater on the western boundary of the site may be attributed to a leakage from another, perhaps deeper aquifer which is in contact with naturally occurring paleo-saline waters.

6. GROUNDWATER CONDITIONS

6.1 Groundwater Hydraulics

Ground water was inferred to be flowing in a south westerly direction, based on the measured depth to groundwater in each monitor well and the results of the level survey. Figure 2 to 6 illustrate the direction of groundwater flow based on lines of equal potential derived from the groundwater elevation in each monitor well. The groundwater level data for these figures was obtained from the 5 distinct monitoring events monitoring events so as to be comparable.

The ground water (superficial aquifer) appears to exist underneath the whole of the proposed landfill. The flow direction is to the south west, with a gradient of 0.00145 (1.45 m head difference over a distance of 1 km).

The groundwater appears to be present as an unconfined aquifer.

Based on the lithology of the sediments observed during drilling, the hydraulic conductivity of the upper layers is low, estimated in the region of 1 to a maximum of 5 m/d (Freeze and Cherry, 1979 − clayey sand to slightly silty sand).

6.2 Ground Water Calculations of Flow and Fate

Darcy's Law is the basic equation which describes fluid flow through porous media. The Darcy velocity equation is:

$$V = -K(\Delta H/\Delta L)$$

where;

K - is the conductivity term in m/day
V – is the velocity term in m/day
H- is the head term in metres
L – is distance in metres.

The flux inflow from the site would be expected along the full breadth of the site (1000 m). The ground water elevation difference is 1.45 m, so the gradient can be calculated as 0.00145.

Hydraulic conductivity is as 3.1 m/day (measured by ATA Environmental in 2006) to allow for the worst case conditions scenario. Porosity is assumed at 15%.

From this, the output to the calculation is that:

- Linear flow velocity is 0.03 m/day
- Darcy Flux is – 0.0045 m^3/day/m

6.3 Conceptual Hydrogeological Model

A conceptual groundwater model has been derived from a review of previous reports relating to the drilling, construction and test pumping of the monitoring boreholes, as well as the recent installation and monitoring of piezometer (GGN7) in the area.

The major elements of the model are:

- Potentially, up to 40m of superficial formation sands and silts forming a unconfined primary aquifer system (from literature review);
- Groundwater flow in the superficial aquifer moves north east to south west in response to the regional groundwater gradient;
- Groundwater flow in the superficial aquifer is primarily controlled by the strike of the bedding, particularly;
- The ground water gradient in the upper, unconfined aquifer is in the order of 0.00145
- The geological materials at the surface are sand to fine sand.

6.4 Compliance with Works Approval Conditions

A Works Approval (WA) has been issued for the site in 2019 and updated in 2022. The WA contains a number of clauses which refer to groundwater monitoring during the period of development works (WA). The following is a compliance assessment against these conditions from the period of 2019 to 2022.

6.4.1 Condition 4(g)includes a groundwater monitoring well construction report detailing as constructed design, soil logs, survey details (vertical top of casing and horizontal position of each well), development procedures and other relevant information;

Groundwater monitoring wells have been constructed on the site since 2006 to 2020. Some of the earlier monitoring bores (GG4 and GG5) are still in use and details of their construction, geological logs and survey details are provided in Appendix D.

During a review of monitoring bores in 2019, some of the earlier bores were found to be dry and had to be redrilled (GG1, GG2 and GG3). Again, the construction details for these bores and soil logs are provided in Appendix D.

In 2019, bore GG7 was found to have been damaged and unusable and had to be re-installed. The bore was redrilled in early 2020 by Stass Environmental and the construction log for this bore with all relevant information as required by Condition 4(g) is provided in Appendix D.

6.4.2 Condition 4(i) contains the results of the groundwater monitoring required under Condition 9 and includes an interpretive summary and assessment of ambient groundwater quality monitoring results against relevant assessment levels for water as specified in the Assessment and Management of Contaminated Sites Guideline.

Groundwater quality monitoring events were undertaken on a quarterly basis since 2019. Laboratory certificates from these monitoring events are provided from 2020 to 2024 in Appendix B. The results of these analyses have been consistent over the period of 2019 to 2024, hence data from 2020 onwards is provided but earlier data is available on request.

The only departure from the WA required analyses is that barium (Ba) has been omitted in favour of boron (B) in some of the monitoring events. This has now been rectified on the Chain of Custody lab submission forms and all future monitoring will include barium as well. Review of barium concentrations in groundwater for monitoring events where it was analysed, shows that concentrations were in the 0.03 to <0.02 mg/l range (DWER Contaminated Sites drinking water guideline is 2 mg/l).

Section 5 of this report provides the water quality assessment.

6.4.3 9. The Works Approval Holder must monitor the locations specified in Column 1 for the parameters specified in Column 2 of Table 5, at the frequency specified in Column 5, and in accordance with the method specified in Column 6.

Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**	**Column 6**
Location	**Parameter**	**Units**	**Averaging period**	**Frequency**	**Method**
GG1, GG2, GG3, GG4, GG5, GG6 and GG7 as depicted in the Monitoring Locations Map in Schedule 1	Standing water level[1]	m(AHD)	Spot sample	Quarterly	Refer to Condition 12 and 13
	Field Parameters		Spot sample	Quarterly	
	pH[1]	pH units			
	Electrical conductivity[1]	µS/cm			
	Dissolved oxygen[1]	%			
	Oxidation/ Reduction Potential[1]	mV			
	Temperature[1]	°C			
	Laboratory Parameters		Spot sample	Quarterly	
	pH[1] Electrical conductivity[1] Total Dissolved Solids[1]	pH units µS/cm mg/L			
	Major ions: sodium, potassium, calcium, magnesium, chloride, sulphate, alkalinity (carbonate, bicarbonate, total alkalinity)	mg/L			
	Nutrients: nitrate, nitrite, ammonia, Total N, Total P, BOD, COD, TOC	mg/L			
	Metals and metalloids: arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, vanadium and zinc	mg/L			
	Organics: Total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (BTEX), polycyclic aromatic hydrocarbons (PAH), Total Phenolics	mg/L			
	Pesticides: OCP, OPP	mg/L	Spot sample	Annual	
	Other: Volatile fatty acids (VFA)	mg/L			

6.4.4 10. The Works Approval Holder must undertake the water monitoring specified in Condition 9 (Table 5) commencing no more than one month after the issue of this Works Approval.

Table 5 in the WA was used as the guide for all groundwater monitoring at the site. Review of the bore monitoring network was undertaken in February 2019 and full groundwater quality and static water level monitoring was initiated in June 2019, after additional bores were re-installed to WA conditions.

Two monitoring events were missed during 2022 (June and September 2022) due to unavailability of resources. This was remedied by November 2022 monitoring event which showed that site conditions remained consistent with all other monitoring events. These are provided in Appendix B.

6.4.5 11. The Works Approval holder must ensure that all laboratory samples taken in accordance with Condition 9 are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

All laboratory samples were provided to MGT Eurofins laboratories in Perth who have and continue to hold NATA accreditation.

6.4.6 12. Groundwater sampling methodology must be undertaken in accordance with AS/NZS 5667.11:1998 and Schedule B2 of the Assessment of Site Contamination NEPM.

Groundwater sampling methodology followed AS 5667.11.1998 and updates in Schedule B2 of NEPM, as described in Section 4.11 of this report.

6.4.7 13. The Licence Holder must adhere to the following field quality assurance and quality control procedures as specified in Schedule B2 of the Assessment of Site Contamination NEPM:

(a) *decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;*

De-ionized water was run through the submersible sampling pump between each monitoring bore site.

(b) *field instrument calibration for instruments used on site;*

All field instrumentation was calibrated according to manufacturers specifications on the morning of the sampling even and checked again on return to office.

(c) *blind replicate samples and rinsate blanks must be collected in the field and sent to the relevant laboratory to determine the precision of the field sampling and laboratory analytical program;*

Duplicate bore samples (blind replicate) were taken during each monitoring event on a selected bore and included in the Chain of

Custody (CoC) to the laboratory. De-ionized rinsate sampling pump water (rinsate blank) was also obtained and included in the CoC.

(d) *completed field monitoring sheets/sampling logs for each sample collected, showing date, time, location, initials of sampler, sampling method, depth sample was collected from, SWL before and after sampling, purge volume, observations of sample (e.g. colour, turbidity, odour, presence of sheen, effervescence etc.), field analysis results, duplicate type/location (if relevant) and site observations and weather conditions; and*

Field forms showing results of the field testing are provided in Appendix B. SWL are provided prior to sampling, as per AS 5667.11 approved methodology. Post sampling SWL's were not taken as these can prove misleading (as bore recharge is dependent on bore geological conditions which vary between bores). Weather conditions were not recorded as they are irrelevant to groundwater quality and measurements at the time of sampling.

(e) *chain-of-custody documentation must be completed which details the following information: site identification; the sampler; nature of the sample; collection time and date; analyses to be performed; sample preservation method; departure time from site; dispatch courier(s); and arrival time at laboratory.*

Chain of custody documentation is in accordance with this condition, bar for recording the time of departure from the field and arrival at laboratory. Samples for each monitoring event were delivered to laboratories on the morning after the monitoring event, by Stass Environmental.

7. Conclusions

The conclusions to the study remain largely the same as previously published by ATA Environmental (2006) in that:

1. Groundwater at the site is deep and generally between 20 and 50 m below ground level.
2. The aquifer is unconfined.
3. Groundwater quality is good with no industrial (i.e. pesticide, hydrocarbon or heavy metal) contaminants, largely meeting Contaminated Sites Guidelines (2014) Ecological and Drinking water quality guidelines..
4. Groundwater flows from north east to south west across the site
5. Groundwater monitoring bores are well placed to monitor any potential impacts from the landfill.
6. Any potential subsurface contamination of leachate, if sufficient to reach groundwater, would flow generally in a west-south-west direction towards the Gingin Brook catchment. However, as the flow distance to Gingin Brook is 3.5 kilometres, the dilution and dispersion of any contamination over this distance would be sufficient to preclude any impact on water in Gingin Brook.

8. Glossary of Terms

Abstraction Pumping groundwater from an aquifer.

AHD Australian Height Datum; equivalent to: Mean Sea Level (MSL) + 0.026 m; Low Water Mark Fremantle (LWMF) + 0.756 m.

Alluvium Unconsolidated sediments transported by streams and rivers and deposited.

AMG Australian Map Grid.

Anticline Sedimentary strata folded in an arch.

Aquifer A geological formation or group of ormations able to receive, store and transmit significant quantities of water.

Confined A permeable bed saturated with water and lying between an upper and a lower confining layer of low permeability.

Baseflow Portion of river and streamflow coming from groundwater discharge.

Basement Competent rock formations underneath sediments.

Bore Small diameter well, usually drilled with machinery.

bns Below natural surface.

Colluvium Material transported by gravity downhill of slopes.

Confining bed Sedimentary bed of very low hydraulic conductivity.

Conformably Sediments deposited in a continuous sequence without a break.

Conductivity The flow through a unit crosssectional area of an aquifer under a unit hydraulic gradient.

Dewatering Abstraction of groundwater from bores to assist in mining.

Evapotranspiration A collective term for evaporation and transpiration.

Gradient The rate of change of total head per unit distance of flow at a given point and in a given direction.

Head The height of the free surface of a body of water above a given subsurface point.

Hydraulic Pertaining to groundwater motion.

Flux Flow.

Fault A fracture in rocks or sediments along which there has been an observable displacement.

Formation A group of rocks or sediments which have certain characteristics in common, were deposited about the same geological period, and which constitute a convenient unit for description.

Porosity The ratio of the volume of void spaces, to the total volume of a rock matrix.

Potentiometric An imaginary surface representing the total head of groundwater and defined by the level to which water will rise in a bore.

Specific yield The volume of water than an unconfined aquifer releases from storage per unit surface area of the surface.

Semi-confined A semi-confined or a leaky aquifer is saturated and bounded above by a semi-permeable layer and below by a layer that is either impermeable or semi-permeable.

Semi-unconfined Intermediate between semiconfined and unconfined, when the upper semi-permeable layer easily transmits water.

Unconfined A permeable bed only partially filled water and overlying a relatively impermeable layer. Its upper boundary is formed by a free watertable or phreatic level under atmospheric pressure.

Transmissivity The rate at which water is transmitted through a unit width of an aquifer under a unit hydraulic gradient.

Transpiration The loss of water vapour from a plant, mainly through the leaves.

Watertable The surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere.

Well Large diameter bore, usually dug by hand.

9. LIMITATIONS

This report is restricted to the agreed-upon Scope of Services. No representations or warranties are made concerning the nature of any other substance on the Property, other than the visual observations and analytical data as stated in this report.

In preparing this report, Stass Environmental has relied upon certain verbal information and documentation provided by the Client and/or third parties. Except as discussed, Stass Environmental did not attempt to independently verify the accuracy or completeness of that information.

The total professional liability of Stass Environmental will not exceed twice the amount of professional fees charged for the project, excluding reimbursements and expenses, or any other agreed amount between Stass Environmental and the Client. If the Client wishes to obtain additional professional indemnity for the particular project, then Stass Environmental shall co-operate with the Client to obtain such increased or special coverage at the Clients cost.

APPENDIX A
Figures
Groundwater flow and depth

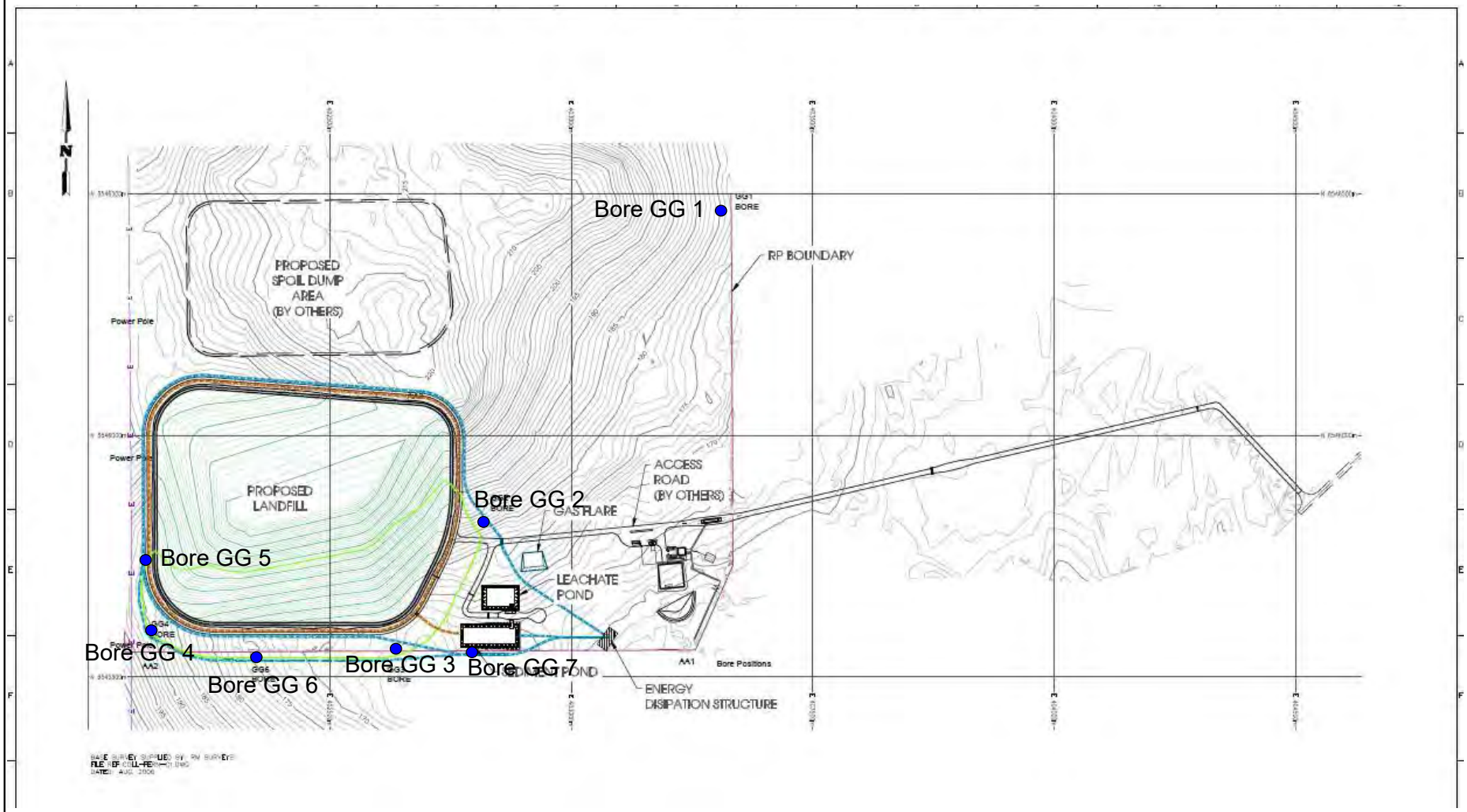


Figure 1 : Site Plan of Proposed Landfill showing bore locations

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Figure 2 Groundwater flow direction December 2020 - Fernview Cullalla Site

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Figure 3 Groundwater flow direction March 2021 - Fernview Cullalla Site

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Figure 4 Groundwater flow direction March 2022 - Fernview Cullalla Site

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Figure 5 Groundwater flow direction November 2022 - Fernview Cullalla Site

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Figure 6 Groundwater flow direction February 2024 - Fernview Cullalla Site

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APPENDIX B
Field Measurements and Notes
Lab Analyses Certificates and CoC's

Fernview Environmental - Cullalla
Groundwater Monitoring Record
2020 to 2024

Date	Bore ID	Easting	Northing	Ground level	SWL btoc	SWL mbgl	SWL AHDm	pH	EC mV
1-Oct-20	GG1	403310	6546530	180.66	36.228	35.728	144.93	6.2	861
22-Dec-20		403310	6546530	180.66	36.315	35.815	144.85	6.01	877
25-Mar-21		403310	6546530	180.66	36.345	35.845	144.82	5.86	1042
18-Jun-21		403310	6546530	180.66	36.45	35.95	144.71	6.33	933
24-Sep-21		403310	6546530	180.66	36.465	35.965	144.70	5.68	879
10-Dec-21		403310	6546530	180.66	36.425	35.925	144.74	6.14	997
18-Mar-22		403310	6546530	180.66	36.51	36.01	144.65	7.41	978
25-Nov-22		403310	6546530	180.66	36.555	36.055	144.61	5.83	1154
16-Feb-24		403310	6546530	180.66	36.645	36.145	144.52	5.58	1182
1-Oct-20	GG2	402820	6545834	183.46	40.43	39.93	143.53	6.63	224
22-Dec-20		402820	6545834	183.46	40.45	39.95	143.51	6.53	210
25-Mar-21		402820	6545834	183.46	40.54	40.04	143.42	6.09	254
18-Jun-21		402820	6545834	183.46	40.52	40.02	143.44	6.05	424
24-Sep-21		402820	6545834	183.46	40.525	40.025	143.43	5.89	184
10-Dec-21		402820	6545834	183.46	40.559	40.059	143.40	6.52	214
18-Mar-22		402820	6545834	183.46	40.625	40.125	143.33	7.49	186
25-Nov-22		402820	6545834	183.46	40.52	40.02	143.44	6.4	231
16-Feb-24		402820	6545834	183.46	40.755	40.255	143.20	5.91	219
1-Oct-20	GG3	402638	6545562	168.01	25.415	24.915	143.10	6.16	1186
22-Dec-20		402638	6545562	168.01	25.45	24.95	143.06	6.25	1134
25-Mar-21		402638	6545562	168.01	25.485	24.985	143.03	6.1	1218
18-Jun-21		402638	6545562	168.01	25.52	25.02	142.99	6.43	1126
24-Sep-21		402638	6545562	168.01	25.545	25.045	142.97	5.9	1041
10-Dec-21		402638	6545562	168.01	25.55	25.05	142.96	6.28	1150
18-Mar-22		402638	6545562	168.01	25.59	25.09	142.92	6.82	1074

Date	Bore ID	Easting	Northing	Ground level	SWL btoc	SWL mbgl	SWL AHDm	pH	EC mV
25-Nov-22		402638	6545562	168.01	25.535	25.035	142.98	6.36	1131
16-Feb-24		402638	6545562	168.01	25.7	25.2	142.81	6.2	1041
1-Oct-20	GG4	402127	6545628	189.68	46.885	46.385	143.30	6.68	206
22-Dec-20		402127	6545628	189.68	46.925	46.425	143.26	5.94	208
25-Mar-21		402127	6545628	189.68	46.85	46.35	143.33	5.86	220
18-Jun-21		402127	6545628	189.68	46.89	46.39	143.29	6.68	196
24-Sep-21		402127	6545628	189.68	47.06	46.56	143.12	6.26	185
10-Dec-21		402127	6545628	189.68	47.095	46.595	143.09	6.3	223
18-Mar-22		402127	6545628	189.68	47.85	47.35	142.33	7.14	218
25-Nov-22		402127	6545628	189.68	47.85	47.15	142.53	6.71	346
16-Feb-24		402127	6545628	189.68	47.225	46.725	142.96	5.72	279
1-Oct-20	GG5	402146	6545788	188.47	45.505	45.005	143.47	6.83	190
22-Dec-20		402146	6545788	188.47	45.55	45.05	143.42	6.5	214
25-Mar-21		402146	6545788	188.47	45.6	45.1	143.37	5.93	224
18-Jun-21		402146	6545788	188.47	45.64	45.14	143.33	6.43	208
24-Sep-21		402146	6545788	188.47	45.69	45.19	143.28	5.62	209
10-Dec-21		402146	6545788	188.47	45.725	45.225	143.25	5.97	248
18-Mar-22		402146	6545788	188.47	45.74	45.24	143.23	6.91	185
25-Nov-22		402146	6545788	188.47	45.76	45.26	143.21	7.12	301
16-Feb-24		402146	6545788	188.47	45.875	45.375	143.10	5.31	229
1-Oct-20	GG6	402411	6545560	171.76	29.8	29.3	142.46	6.7	1322
22-Dec-20		402411	6545560	171.76	29.15	28.65	143.11	6.09	1302
25-Mar-21		402411	6545560	171.76	29.18	28.68	143.08	5.79	1461
18-Jun-21		402411	6545560	171.76	29.295	28.795	142.96	6.16	1362
24-Sep-21		402411	6545560	171.76	29.325	28.825	142.93	5.85	1296
10-Dec-21		402411	6545560	171.76	29.33	28.83	142.93	6.09	1430
18-Mar-22		402411	6545560	171.76	29.345	28.845	142.91	6.42	1374
25-Nov-22		402411	6545560	171.76	29.34	28.84	142.92	6.36	1466

Date	Bore ID	Easting	Northing	Ground level	SWL btoc	SWL mbgl	SWL AHDm	pH	EC mV
16-Feb-24		402411	6545560	171.76	29.425	28.925	142.83	6.38	1464
1-Oct-20	GG7	402818	6545561	164.93	22.25	21.75	143.18	6.7	275
22-Dec-20		402818	6545561	164.93	22.29	21.79	143.14	6.06	269
25-Mar-21		402818	6545561	164.93	22.315	21.815	143.12	5.35	282
18-Jun-21		402818	6545561	164.93					
24-Sep-21		402818	6545561	164.93	22.295	21.795	143.14	6.28	239
10-Dec-21		402818	6545561	164.93	22.32	21.82	143.11	6.47	266
18-Mar-22		402818	6545561	164.93	22.36	21.86	143.07	6.93	262
25-Nov-22		402818	6545561	164.93	22.275	21.775	143.16	6.09	263
16-Feb-24		402818	6545561	164.93	22.5	22	142.93	5.34	334

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 16 February 2024

FIELD SHEET No: 1

Site name: Fernview Cullala

BORE ID	GG1	GG2	GG3	GG4
Time		7:30 am.		
Depth to water (m)	36.645	~~40~~.755	25.700	47.225
Sampling depth (m)	40	45	30	52
Purge volume (litres)	60L	60L	60L	to empty.
pH	5.58	5.91	6.20	5.72
Elect. Conductivity µS/cm	1182	219	1041	279
Salinity (mg/l)	591	109.5	520.5	139.5
REDOX mV	194	161	179	164
Temperature (C)	19.8	19.0	20.9	18.9
Dissolved Oxygen (mg/l)	30%	22%	33%	28%
Comments	clear no odour.	clear no odour.	slight yellow color no odour	clear no odour.

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 16 February 2024

FIELD SHEET No: 2

Site name: Fernview Cullala

BORE ID	GG5	GG6	GG7	
Time				
Depth to water (m)	45.875	29.425	22.500	
Sampling depth (m)	52	35.5		
Purge volume (litres)	~~60~~ to empty	60L	to empty	
pH	5.31	6.38	5.34	
Elect. Conductivity µS/cm	229	1464	334	
Salinity (mg/l)	114.5	732	167	
REDOX mV	180	148	188	
Temperature (C)	19.0	20.4		
Dissolved Oxygen (mg/l)	21%	18%	38%	
Comments	clear no odour.	slightly discoloured yellow/brown no odour	slightly silty no odour.	

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 25 November 2022

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG1	GG2	GG3	GG4
Time	7:30 am.	8:15		
Depth to water (m)	36.555	40.520	25.535	47.150
Sampling depth (m)	44	45	31	50
Purge volume (litres)	to empty	60L	60L	to empty
pH	5.83	6.40	6.36	6.71
Elect. Conductivity µS/cm	1154	231	1131	346
Salinity (mg/l)	547	116	565	173
REDOX mV	112	170	−9	146
Temperature (C)	23.6	20.2	21.4	20.8
Dissolved Oxygen (mg/l)	31.1%	35%	22%	26%
Comments	clear slight odour	clear no odour.	clear strong odour sulphur	clear no odour
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.				

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 22 December 2020

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG 5	GG 4	GG6	GG 3
Time	8 am			
Depth to water (m)	45.550	46.925	29.150	25.450
Sampling depth (m)	52.00	52.0	38.00	38.00
Purge volume (litres)	60L (45min @ 12L/min)	60L	60L	60L
pH	6.50	5.94	6.09	6.25
Elect. Conductivity µS/cm	214	208	1302	1134
Salinity (mg/l)	107	104	653	567
REDOX mV	121	115	118	74
Temperature (C)	22.4	19.9	19.2	19.9
Dissolved Oxygen %	62%	56.9%.	46.8%	48.2%
Comments				
	clear no odour	clear some dust sediment	clear sulphur odour	clear no odour.

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 22 December 2020

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG2	GG7	GG1	
Time			15:45	
Depth to water (m)	40.450	22.290	36.315	
Sampling depth (m)	52.0	26.0	52.0	
Purge volume (litres)	60L	60L	60L	
pH	6.53	6.06	6.01	
Elect. Conductivity µS/cm	210	269	877	
Salinity (mg/l)	105	135	439	
REDOX mV	46	71	75	
Temperature (C)	20.1	19.8	19.6	
Dissolved Oxygen %	45.1%	41.2%	45%.	
Comments				
	clear no odour	white silt apparent no odour	slightly cloudy smelly.	

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 1. 10. 2020

FIELD SHEET No:

Site name: Fernview Cullalla

BORE ID	GG2	GG6	GG5	GG4
Time				
Depth to water (m)	40.43	29.80	45.505	46.885
Sampling depth (m)	44	34	48	48
Purge volume (litres)	60L	60L	60L	60L
pH	6.63	6.70	6.83	6.68
Elect. Conductivity µS/cm	224	1322	190	206
Salinity (mg/l)	112	661	94.9	103
REDOX mV	32	-20	14	46
Temperature (C)	19.4	19.8	20.2	20.3
Dissolved Oxygen (mg/l)				
Comments				
	clear	clear no odour	clear no odour	clear no odour

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 1. 10. 2020

FIELD SHEET No:

Site name: Fernview Cullalla

BORE ID	GG3	GG7	GG1	
Time				
Depth to water (m)	25.415	22.250	36.228	
Sampling depth (m)	27.5	28	40	
Purge volume (litres)	60L	60L	60L	
pH	6.16	6.70	6.20	6.20
Elect. Conductivity µS/cm	1186	275	861	861
Salinity (mg/l)	593	137	430	430
REDOX mV	63	63	−117	−117
Temperature (C)	19.6	19.3	20.1	20.1
Dissolved Oxygen (mg/l)				
Comments				
	Clear slight odour	some silt no odour	←	clear slight odour.

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 23 March 2020

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG 1	GG5	GG4	GG6
Time	8:30 am			
Depth to water (m)	36.260	45.430	46.790	29.060
Depth to bottom (m)				
Sampling depth (m)	42	50	50	33
Purge volume (litres)	60L	55L	60L	60L
pH	6.57	6.84	6.85	6.31
Elect. Conductivity µS/cm	907	185	216	1465
Salinity (mg/l)	453	95	108	733
REDOX mV	-138	-36	-12	-117
Temperature (C)	20.1	20.3	20.7	20.6
Dissolved Oxygen (mg/l)	1.88	2.10	2.0	2.20
Comments	clear	clear	clear to slightly silty	clear

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE ....23..... March 2020

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG3	GG2		
Time				
Depth to water (m)	25.350	40.120		
Depth to bottom (m)				
Sampling depth (m)	28.5	46		
Purge volume (litres)	60L	60L		
pH	6.66	6.90		
Elect. Conductivity µS/cm	1378	235		
Salinity (mg/l)	687	117		
REDOX mV	-159	-60		
Temperature (C)	20.4	20.3		
Dissolved Oxygen (mg/l)	1.65	2.40		
Comments	clear sulphur smell	clear.		

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 24/06/2020

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG2 RL 189.5	GG5 RL 189.9	GG4A +46.5 RL ~~202.7~~ 189	GG6 RL 179.7
	402823/6545832	402147/6545790	402130/6545632	402413/6545562
Time				
Depth to water (m)	40.466	46.47		29.065
Sampling depth (m)	42.0	48	48	+46.5
Purge volume (litres)	60L	60L	60L	60L
pH	6.39	5.83	5.61	5.99
Elect. Conductivity µS/cm	232	188.8	214	1411
Salinity (mg/l)	116	94.4	107	705
REDOX mV	75	123	137	−18
Temperature (C)	19.9	20.6	21.0	19.4
Dissolved Oxygen (mg/l)			4.56	1.65
Comments				
Bore dpth	44.5 clear no odour.	51 clear no odour.	clear no odour some silt	clear surplus swell

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 24/06/2020

FIELD SHEET No: 2

Site name: Fernview Cullalla RL 183.2

BORE ID	GQ3	GQ1		
	402634/6545558	No access		
Time				
Depth to water (m)	25.375			
Sampling depth (m)	29			
Purge volume (litres)	60L			
pH	6.30			
Elect. Conductivity µS/cm	1275			
Salinity (mg/l)	638			
REDOX mV	-49			
Temperature (C)	19.3			
Dissolved Oxygen (mg/l)	1.59			
Comments				
	duplicate taken slight odour clear.			

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18 December 2019

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG5	GG4	GG6	GG3
Time	7:30 am			
Depth to water (m)	45.400	46.770	29.040	25.290
Depth to bottom (m)	~~50~~	~~50~~		
Sampling depth (m)	~~50~~ 50	~~50~~ 50	33.5	28.5
Purge volume (litres)	60L	60L	60L	60L
pH	6.75	6.18	6.43	6.25
Elect. Conductivity µS/cm	316	238	1572	1534
Salinity (mg/l)	158	119	786	767
REDOX mV	105	90	-126	-140
Temperature (C)	21.3	21.9	20.6	20.4
Dissolved Oxygen (mg/l)	1.95	2.09	2.09	2.37
Comments	clear	sediment heavy yellow	grey clear smelly	grey smelly

Duplicate Sample is SE3D

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18 December 2019

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG2	GG 1		
Time				
Depth to water (m)	40.300	36.155		
Depth to bottom (m)				
Sampling depth (m)	46	42		
Purge volume (litres)	60L	60L		
pH	6.84	6.35		
Elect. Conductivity µS/cm	222	932		
Salinity (mg/l)	111	465		
REDOX mV	−40	−78		
Temperature (C)	20.8	21.6		
Dissolved Oxygen (mg/l)	1.37	2.08		
Comments	clear no odour	grey slight smell		

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Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 25 November 2022

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG5	GG6	GG7	
Time	9:30 am.			
Depth to water (m)	45.760	29.340	22.275	
Sampling depth (m)	50	45	28	
Purge volume (litres)	to empty	to empty	60L	
pH	7.12	6.36	6.09	
Elect. Conductivity µS/cm	301	1466	263	
Salinity (mg/l)	150	733	132	
REDOX mV	141	−9	58	
Temperature (C)	24.5	23.5	21.7	
Dissolved Oxygen (mg/l)	28%	24%	28%	
Comments 14.8 volt submersible pump with flow cell. All instruments calibrated on the day.	some sediment clear no odour	clear no odour	fine sediment no odour	

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18 March 2022

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG5	GG6	GG7	
Time				
Depth to water (m)	45.740	29.345	22.360	
Depth to bottom (m)				
Sampling depth (m)	50	45	20	
Purge volume (litres)	60L	60L	60L	
pH	6.91	6.42	6.93	
Elect. Conductivity µS/cm	185.9	1376	262	
Salinity (mg/l)	93	688	131	
REDOX mV	94	85	60	
Temperature (C)	23	21	21	
Dissolved Oxygen (mg/l)	19	21	35	
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.	clear, odourless, colourless.	↓	↓	

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18 March 2022

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG1	GG2	GG3	GG4
Time				
Depth to water (m)	36.510	40.625	25.590	47.850
Sampling depth (m)	45	45	31	50
Purge volume (litres)	60L	60L	60L	60L
pH	7.41	7.49	6.82	7.14
Elect. Conductivity µS/cm	978	186.9	1074	218
Salinity (mg/l)	498	93.5	537	109
REDOX mV	24	47	67	61
Temperature (C)	24	21	22	23
Dissolved Oxygen ~~(mg/l)~~ %	30.2	25	20	19
Comments	Clear, no colour, no odour.	→	Clear, no color, slight sulphur smell.	Clear. no colorr, no odour.
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.				

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 10 December 2021

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG1	GG2	GG3	GG4
Time	8:30 am.			
Depth to water (m)	36.425	40.559	25.550	47.095
Sampling depth (m)	44	45	32	50
Purge volume (litres)	60L	60L	60L	60L
pH	6.14	6.52	6.28	6.30
Elect. Conductivity µS/cm	997	214	1150	223
Salinity (mg/l)	499	107	575	112
REDOX mV	84	77	90	78
Temperature (C)	22.1	21.6	20.8	20.2
Dissolved Oxygen (mg/l)	53%	46%	46%	62%
Comments	clear slight sulphur odour.	clear no odour.	clear no odour	clear no odour
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.				

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 10 December 2021

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG5	GG6	GG7	
Time				
Depth to water (m)	45.725	29.330	22.320	
Depth to bottom (m)	65.0	~~N~~ NA	30	
Sampling depth (m)	50	35	25	
Purge volume (litres)	60L	60L	60L	
pH	5.97	6.09	6.47	
Elect. Conductivity µS/cm	248	1430	266	
Salinity (mg/l)	124	715	133	
REDOX mV	110	110	83	
Temperature (C)	19.6	20.2	21.1	
Dissolved Oxygen (mg/l)	55%	58%	65%	
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.	clear no odour.	clear some odour.	slight sediment no odour.	

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 24 September 2021

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG1	GG2	GG3	GG4
Time	9:30 am.			
Depth to water (m)	36.465	40.525	25.545	47.060
Sampling depth (m)	42	45	32	50
Purge volume (litres)	60L	60L	60L	60L
pH	5.68	5.89	5.90	6.26
Elect. Conductivity µS/cm	8790	1840	1041	185
Salinity (mg/l)	4380	924	521	93
REDOX mV	222	190	232	198
Temperature (C)	21.6	20.8	21.0	21.3
Dissolved Oxygen (mg/l)	46%	52%	39%	62%
Comments	clear some sulphur odour	clear some odour	clear with slight yellow/brown colour medium odour	clear slight odour
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.				

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 24 September 2021

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG5	GG6	GG7	
Time				
Depth to water (m)	45.690	29.325	22.295	
Depth to bottom (m)	/	/	30.0	
Sampling depth (m)	50	35	25.0	
Purge volume (litres)	60L	60L	60L	
pH	5.62	5.85	6.28	
Elect. Conductivity µS/cm	209	1296	239	
Salinity (mg/l)	105	648	119	
REDOX mV	230	258	215	
Temperature (C)	19.8	19.8	20.6	
Dissolved Oxygen (mg/l)	592.	510%	730%	
14.8 volt submersible pump with flow cell. All instruments calibrated on the day.	clear minimal odour.	clear light yellow water brown some odour	clear no odour.	

Note:
Centrifugal Hurricane/Monsoon 14.8 Volt submersible pumps used. All instrumentation calibrated on day of sampling event

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18 June 2021

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GG2	GG4	GG5	GG6
Time	9:30 a.m.			
Depth to water (m)	40.520	46.890	45.640	29.295
Sampling depth (m)	46	48	48	38
Purge volume (litres)	60L	60L	60L	60L
pH	6.05	6.68	6.43	6.16
Elect. Conductivity µS/cm	424	196.9	208	1362
Salinity (mg/l)	212	98.8	104	680
REDOX mV	80	126	151	152
Temperature (C)	16.5	16.6	17.0	17.5
Dissolved Oxygen %	72%	59%	6%	69%
Comments				
	clear no odour.	clear no odour.	clear some sediment	clear slightly discoloured

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 18/6/21

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GG 3	GG 2	GG 1	
Time				
Depth to water (m)	25.520	Buried by construction	36.450	
Sampling depth (m)	30		42	
Purge volume (litres)	60L		60L	
pH	6.43		6.33	
Elect. Conductivity µS/cm	1126		933	
Salinity (mg/l)	563		468	
REDOX mV	116		106	
Temperature (C)	16.6		16.4	
Dissolved Oxygen %	64%		69%	
Comments				
	clear slight straw yellow color.		clear no color.	

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 25 MARCH 2021

FIELD SHEET No: 1

Site name: Fernview Cullalla

BORE ID	GW1	GW2	GW5	GW4
Time	9.15 am			
Depth to water (m)	36.345	40.540	45.600	46.850
Sampling depth (m)	42.0	46.0	48.00	48.00
Purge volume (litres)	60 L	60L	60L	60L
pH	5.86	6.09	5.93	5.86
Elect. Conductivity µS/cm	1042	254	224	220
Salinity (mg/l)	521	126	112	110
REDOX mV	121	129	138	140
Temperature (C)	22.4	19.8	20.5	20.5
Dissolved Oxygen %	73 (6.17mg/l)	69%	64%	60%
Comments				
	clear	clear	clear	slightly cloudy

Stass Environmental
Environmental Science & Engineering

GROUND WATER QUALITY AND REST LEVEL

DATE 25 March 2021

FIELD SHEET No: 2

Site name: Fernview Cullalla

BORE ID	GW6	GW3	GW7	
Time				
Depth to water (m)	29.180	25.485	22.315	
Sampling depth (m)	38.0	30.00	28.00	
Purge volume (litres)	60L	60L	60L	
pH	5.79	6.10	5.35	
Elect. Conductivity µS/cm	1461	1218	282	
Salinity (mg/l)	731	609	141	
REDOX mV	157	137	120	
Temperature (C)	20.1	19.2	20.1	
Dissolved Oxygen %	69%	52%	64%	
Comments				
	slightly yellow smelly	slightly brown/grey smelly	cloudy but settles quickly	

Field set up

Stass Environmental
PO BOX 11
KALAMUNDA
WA 6926

NATA Accredited
Accreditation Number 2377
Site Number 2370

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Andre Stasikowski**

Report **1069825-W**
Project name FERNVIEW GROUNDWATER MONITORING FEBRUARY 2024
Project ID Fernview Groundwater
Received Date Feb 19, 2024

Client Sample ID			**GG1**	**GG2**	**GG3**	**GG6D**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**L24-Fe0044667**	**L24-Fe0044668**	**L24-Fe0044669**	**L24-Fe0044670**
Date Sampled			**Feb 16, 2024**	**Feb 16, 2024**	**Feb 16, 2024**	**Feb 16, 2024**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C15-C28	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
TRH C29-C36	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
TRH C10-C36 (Total)	0.04	mg/L	< 0.04	< 0.04	< 0.04	< 0.04
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
BTEX						
4-Bromofluorobenzene (surr.)	1	%	81	78	80	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
TRH >C10-C16 less Naphthalene (F2)[N01]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GG1	GG2	GG3	GG6D
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L24-Fe0044667	L24-Fe0044668	L24-Fe0044669	L24-Fe0044670
Date Sampled			Feb 16, 2024	Feb 16, 2024	Feb 16, 2024	Feb 16, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	61	58	58	65
p-Terphenyl-d14 (surr.)	1	%	72	70	70	83
Phenols (Halogenated)						
2-Chlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.6-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.6-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Chloro-3-methylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pentachlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachlorophenols - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total Halogenated Phenol*	0.01	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Methyl-4.6-dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Methylphenol (o-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
3&4-Methylphenol (m&p-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dinoseb	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenol-d6 (surr.)	1	%	33	36	63	54
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C16-C34	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C34-C40	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C40 (total)*	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Alkalinity	5	mg CaCO3/L	14	6.5	38	44
Ammonia-N	0.02	mg/L	0.5	0.79	0.26	0.23
Bicarbonate	5	mg CaCO3/L	14	6.5	38	44
Biochemical Oxygen Demand	5	mg/L	< 5	< 5	< 5	< 5
Carbonate	5	mg CaCO3/L	< 5	< 5	< 5	< 5
Chemical Oxygen Demand (COD)	25	mg/L	< 25	< 25	47	< 25
Chloride	5	mg/L	320	33	270	390
Conductivity	10	uS/cm	1100	200	1000	1400
Hydroxide	5	mg CaCO3/L	< 5	< 5	< 5	< 5
Nitrate-N	0.01	mg/L	0.07	5.2	0.06	0.02
Nitrite-N	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
NOx-N	0.01	mg/L	0.08	5.2	0.07	0.03
pH	0.1	pH Units	6.0	5.9	6.5	6.5
Sulfate	1	mg/L	31	2.9	27	46

Client Sample ID			GG1	GG2	GG3	GG6D
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L24-Fe0044667	L24-Fe0044668	L24-Fe0044669	L24-Fe0044670
Date Sampled			Feb 16, 2024	Feb 16, 2024	Feb 16, 2024	Feb 16, 2024
Test/Reference	LOR	Unit				
Total Dissolved Solids	5	mg/L	370	83	320	570
Total Kjeldahl Nitrogen	0.2	mg/L	0.4	0.7	0.6	0.8
Total Nitrogen	0.2	mg/L	0.5	5.9	0.7	0.8
Total Organic Carbon	5	mg/L	< 5	< 5	< 5	< 5
Total Phosphorus	0.01	mg/L	0.24	0.15	0.22	0.22
Hardness mg equivalent CaCO3/L	5	mg/L	100	14	66	110
Alkali Metals						
Calcium	0.5	mg/L	7.7	0.6	3.0	4.5
Magnesium	0.5	mg/L	20	3.0	14	23
Potassium	0.5	mg/L	5.9	0.6	4.6	5.0
Sodium	0.5	mg/L	160	30	150	220
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	0.005	0.008
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.007	0.006
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iron (filtered)	0.01	mg/L	1.4	< 0.01	3.1	5.1
Lead (filtered)	0.001	mg/L	< 0.001	0.002	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.062	< 0.005	0.041	0.013
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	0.007	0.012	< 0.005	< 0.005

Client Sample ID			GG4	GG5	GG6	GG7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L24-Fe0044671	L24-Fe0044672	L24-Fe0044673	L24-Fe0044674
Date Sampled			Feb 16, 2024	Feb 16, 2024	Feb 16, 2024	Feb 16, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.02	mg/L	< 0.02	0.83	< 0.02	< 0.02
TRH C15-C28	0.04	mg/L	< 0.04	6.0	< 0.04	< 0.04
TRH C29-C36	0.04	mg/L	< 0.04	2.5	< 0.04	< 0.04
TRH C10-C36 (Total)	0.04	mg/L	< 0.04	9.33	< 0.04	< 0.04
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
BTEX						
4-Bromofluorobenzene (surr.)	1	%	78	77	81	80

Client Sample ID			GG4	GG5	GG6	GG7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L24-Fe0044671	L24-Fe0044672	L24-Fe0044673	L24-Fe0044674
Date Sampled			Feb 16, 2024	Feb 16, 2024	Feb 16, 2024	Feb 16, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
TRH >C10-C16 less Naphthalene (F2)[N01]	0.02	mg/L	< 0.02	2.1	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	63	60	59	56
p-Terphenyl-d14 (surr.)	1	%	87	95	102	78
Phenols (Halogenated)						
2-Chlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.6-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.6-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Chloro-3-methylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pentachlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachlorophenols - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total Halogenated Phenol*	0.01	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Methyl-4.6-dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Methylphenol (o-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
3&4-Methylphenol (m&p-Cresol)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dinoseb	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenol-d6 (surr.)	1	%	57	58	59	34
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GG4	GG5	GG6	GG7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			L24-Fe0044671	L24-Fe0044672	L24-Fe0044673	L24-Fe0044674
Date Sampled			Feb 16, 2024	Feb 16, 2024	Feb 16, 2024	Feb 16, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.02	mg/L	< 0.02	2.1	< 0.02	< 0.02
TRH >C16-C34	0.05	mg/L	< 0.05	6.7	< 0.05	< 0.05
TRH >C34-C40	0.05	mg/L	< 0.05	0.98	< 0.05	< 0.05
TRH >C10-C40 (total)*	0.05	mg/L	< 0.05	9.78	< 0.05	< 0.05
Alkalinity	5	mg CaCO3/L	< 5	< 5	44	9.9
Ammonia-N	0.02	mg/L	0.04	0.05	0.28	0.05
Bicarbonate	5	mg CaCO3/L	< 5	< 5	44	9.9
Biochemical Oxygen Demand	5	mg/L	< 5	< 5	< 5	< 5
Carbonate	5	mg CaCO3/L	< 5	< 5	< 5	< 5
Chemical Oxygen Demand (COD)	25	mg/L	28	< 25	< 25	< 25
Chloride	5	mg/L	50	37	400	69
Conductivity	10	uS/cm	250	220	1500	330
Hydroxide	5	mg CaCO3/L	< 5	< 5	< 5	< 5
Nitrate-N	0.01	mg/L	4.6	5.7	0.03	3.4
Nitrite-N	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
NOx-N	0.01	mg/L	4.6	5.7	0.03	3.4
pH	0.1	pH Units	5.9	5.9	6.5	6.3
Sulfate	1	mg/L	9.4	9.8	46	8.3
Total Dissolved Solids	5	mg/L	54	94	600	89
Total Kjeldahl Nitrogen	0.2	mg/L	< 0.2	< 0.2	0.7	< 0.2
Total Nitrogen	0.2	mg/L	4.6	5.7	0.7	3.5
Total Organic Carbon	5	mg/L	< 5	< 5	< 5	< 5
Total Phosphorus	0.01	mg/L	0.13	0.12	0.27	0.11
Hardness mg equivalent CaCO3/L	5	mg/L	18	14	98	28
Alkali Metals						
Calcium	0.5	mg/L	0.8	0.7	4.2	1.3
Magnesium	0.5	mg/L	3.9	3.1	21	6.1
Potassium	0.5	mg/L	0.7	0.6	4.6	1.2
Sodium	0.5	mg/L	34	31	200	42
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.008	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.006	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iron (filtered)	0.01	mg/L	0.02	0.01	5.1	< 0.01
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	0.014	0.010
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	0.001
Vanadium (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	0.016	< 0.005	< 0.005

Client Sample ID			R1
Sample Matrix			**Water**
Eurofins Sample No.			**L24-Fe0044675**
Date Sampled			**Feb 16, 2024**
Test/Reference	LOR	Unit	
Conductivity	10	uS/cm	< 10
pH	0.1	pH Units	5.6
Total Dissolved Solids	5	mg/L	< 5
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05
Cadmium (filtered)	0.0001	mg/L	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron (filtered)	0.01	mg/L	< 0.01
Lead (filtered)	0.001	mg/L	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001
Vanadium (filtered)	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Welshpool	Feb 19, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Welshpool	Feb 19, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	Feb 19, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Welshpool	Feb 19, 2024	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Welshpool	Feb 19, 2024	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water by GC MSMS			
Phenols (non-Halogenated)	Welshpool	Feb 19, 2024	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water by GC MSMS			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	Feb 19, 2024	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Alkalinity	Welshpool	Feb 19, 2024	14 Days
- Method: ARL037 - Alkalinity in Water			
Bicarbonate	Welshpool	Feb 19, 2024	14 Days
- Method: ARL037 - Alkalinity in Water			
Carbonate	Welshpool	Feb 19, 2024	14 Days
- Method: ARL037 - Alkalinity in Water			
Hydroxide	Welshpool	Feb 19, 2024	14 Day
- Method: ARL037 - Alkalinity in Water			
Ammonia-N	Welshpool	Feb 19, 2024	28 Days
- Method: ARL303 - Ammonia in Water by Discrete Analyser			
Nitrate-N	Welshpool	Feb 19, 2024	28 Days
- Method: ARL313/319 - NOx in Water by Discrete Analyser			
Nitrite-N	Welshpool	Feb 19, 2024	2 Days
- Method: ARL311 - Nitrite in Water by Discrete Analyser			
NOx-N	Welshpool	Feb 19, 2024	28 Days
- Method: ARL313/319 - NOx in Water by Discrete Analyser			
Total Kjeldahl Nitrogen	Welshpool	Feb 19, 2024	28 Day
- Method: ARL No. 330 - Persulfate Method for Simultaneous Determination of TN & TP			
Total Nitrogen	Welshpool	Feb 19, 2024	28 Days
- Method: ARL No. 330 - Persulfate Method for Simultaneous Determination of TN & TP			
Total Phosphorus	Welshpool	Feb 19, 2024	28 Days
- Method: ARL308 - Total Phosphorus in Water by Discrete Analyser			
Biochemical Oxygen Demand	Welshpool	Feb 19, 2024	2 Days
- Method: ARL No. 011 - Biochemical Oxygen Demand			
Chemical Oxygen Demand (COD)	Melbourne	Feb 20, 2024	28 Days
- Method: LTM-INO-4220 Determination of COD in Water			
pH	Welshpool	Feb 19, 2024	1 Day
- Method: ARL014 - pH in Water			
Total Organic Carbon	Melbourne	Feb 20, 2024	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Welshpool	Feb 19, 2024	28 Days
- Method:			
Heavy Metals (filtered)	Welshpool	Feb 19, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Chloride	Welshpool	Feb 19, 2024	28 Days
- Method: ARL305 - Chloride in Water by Discrete Analyser			
Sulfate	Welshpool	Feb 19, 2024	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: ARL301 - Sulfate in Water by Discrete Analyser			
Conductivity	Welshpool	Feb 19, 2024	28 Days
- Method: ARL019 - Conductivity and Salinity in Water			
Total Dissolved Solids	Welshpool	Feb 19, 2024	7 Days
- Method: ARL No. 017 - Total Dissolved Solids			
Eurofins Suite B11D: Na/K/Ca/Mg and Hardness			
Hardness mg equivalent CaCO3/L	Welshpool	Feb 19, 2024	28 Months
- Method: APHA 2340B Hardness by Calculation			
Alkali Metals	Welshpool	Feb 19, 2024	6 Months
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Received: Feb 19, 2024 10:10 AM
Due: Feb 26, 2024
Priority: 5 Day
Contact Name: Andre Stasikowski

Project Name: FERNVIEW GROUNDWATER MONITORING FEBRUARY 2024
Project ID: Fernview Groundwater

Eurofins Analytical Services Manager : Elden Garrett

Sample Detail						Biochemical Oxygen Demand	Chemical Oxygen Demand (COD)	Iron (filtered)	pH	Total Organic Carbon	Vanadium (filtered)	Eurofins Suite B4A	Eurofins Suite B11D: Na/K/Ca/Mg and Hardness	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,	Total Dissolved Solids (TDS)	Eurofins Suite B19D	Eurofins Suite B11E
Perth Laboratory - NATA # 2377 Site # 2370						X		X	X		X	X	X	X	X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254							X			X							
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	GG1	Feb 16, 2024		Water	L24-Fe0044667	X	X	X	X	X	X	X	X	X	X	X	X
2	GG2	Feb 16, 2024		Water	L24-Fe0044668	X	X	X	X	X	X	X	X	X	X	X	X
3	GG3	Feb 16, 2024		Water	L24-Fe0044669	X	X	X	X	X	X	X	X	X	X	X	X
4	GG6D	Feb 16, 2024		Water	L24-Fe0044670	X	X	X	X	X	X	X	X	X	X	X	X
5	GG4	Feb 16, 2024		Water	L24-Fe0044671	X	X	X	X	X	X	X	X	X	X	X	X
6	GG5	Feb 16, 2024		Water	L24-Fe0044672	X	X	X	X	X	X	X	X	X	X	X	X
7	GG6	Feb 16, 2024		Water	L24-Fe0044673	X	X	X	X	X	X	X	X	X	X	X	X
8	GG7	Feb 16, 2024		Water	L24-Fe0044674	X	X	X	X	X	X	X	X	X	X	X	X
9	R1	Feb 16, 2024		Water	L24-Fe0044675			X	X		X			X	X		
Test Counts						8	8	9	9	8	9	8	8	9	9	8	8

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.02			0.02	Pass	
TRH C15-C28	mg/L	< 0.04			0.04	Pass	
TRH C29-C36	mg/L	< 0.04			0.04	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.001			0.001	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.6-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.001			0.001	Pass	
Pentachlorophenol	mg/L	< 0.001			0.001	Pass	
Tetrachlorophenols - Total	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.003			0.003	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.001			0.001	Pass	
2-Nitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.001			0.001	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.001			0.001	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.002			0.002	Pass	
Phenol	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.02			0.02	Pass	
TRH >C16-C34	mg/L	< 0.05			0.05	Pass	
TRH >C34-C40	mg/L	< 0.05			0.05	Pass	
Method Blank							
Alkalinity	mg CaCO3/L	< 5			5	Pass	
Ammonia-N	mg/L	-0.00013			0.02	Pass	
Bicarbonate	mg CaCO3/L	< 5			5	Pass	
Carbonate	mg CaCO3/L	< 5			5	Pass	
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Chloride	mg/L	< 5			5	Pass	
Conductivity	uS/cm	< 10			10	Pass	
Hydroxide	mg CaCO3/L	< 5			5	Pass	
Nitrate-N	mg/L	-0.00035			0.01	Pass	
Nitrite-N	mg/L	< 0.01			0.01	Pass	
NOx-N	mg/L	-0.00035			0.01	Pass	
Sulfate	mg/L	< 1			1	Pass	
Total Dissolved Solids	mg/L	< 5			5	Pass	
Total Nitrogen	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Total Phosphorus	mg/L	< 0.01			0.01	Pass	
Hardness mg equivalent CaCO3/L	mg/L	< 5			5	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron (filtered)	mg/L	< 0.01			0.01	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Vanadium (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	101			70-130	Pass	
TRH C10-C14	%	95			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	111			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
o-Xylene	%	103			70-130	Pass	
Xylenes - Total*	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	103			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	99			70-130	Pass	
Benzo(a)pyrene	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	%	96			70-130	Pass	
Benzo(g.h.i)perylene	%	93			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	
Chrysene	%	84			70-130	Pass	
Dibenz(a.h)anthracene	%	84			70-130	Pass	
Fluoranthene	%	107			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	110			70-130	Pass	
Naphthalene	%	113			70-130	Pass	
Phenanthrene	%	102			70-130	Pass	
Pyrene	%	114			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	112			25-140	Pass	
2.4-Dichlorophenol	%	82			25-140	Pass	
2.4.5-Trichlorophenol	%	100			25-140	Pass	
2.4.6-Trichlorophenol	%	92			25-140	Pass	
2.6-Dichlorophenol	%	85			25-140	Pass	
4-Chloro-3-methylphenol	%	88			25-140	Pass	
Pentachlorophenol	%	109			25-140	Pass	
Tetrachlorophenols - Total	%	104			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	105			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	116			25-140	Pass	
2-Nitrophenol	%	81			25-140	Pass	
2.4-Dimethylphenol	%	96			25-140	Pass	
2.4-Dinitrophenol	%	101			25-140	Pass	
2-Methylphenol (o-Cresol)	%	111			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	105			25-140	Pass	
4-Nitrophenol	%	96			25-140	Pass	
Dinoseb	%	109			25-140	Pass	
Phenol	%	95			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Chemical Oxygen Demand (COD)	%	100			70-130	Pass	
Conductivity	%	101			80-120	Pass	
Total Organic Carbon	%	100			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	102			80-120	Pass	
Magnesium	%	104			80-120	Pass	
Potassium	%	100			80-120	Pass	
Sodium	%	102			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	102			80-120	Pass	
Beryllium (filtered)	%	94			80-120	Pass	
Boron (filtered)	%	95			80-120	Pass	
Cadmium (filtered)	%	90			80-120	Pass	
Chromium (filtered)	%	98			80-120	Pass	
Cobalt (filtered)	%	95			80-120	Pass	
Copper (filtered)	%	94			80-120	Pass	
Iron (filtered)	%	97			80-120	Pass	
Lead (filtered)	%	93			80-120	Pass	
Manganese (filtered)	%	95			80-120	Pass	
Mercury (filtered)	%	98			80-120	Pass	
Nickel (filtered)	%	96			80-120	Pass	
Selenium (filtered)	%	94			80-120	Pass	
Vanadium (filtered)	%	97			80-120	Pass	
Zinc (filtered)	%	96			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	L24-Fe0044667	CP	%	99			70-130	Pass	
TRH C10-C14	L24-Fe0042860	NCP	%	91			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	L24-Fe0044667	CP	%	92			70-130	Pass	
Toluene	L24-Fe0044667	CP	%	88			70-130	Pass	
Ethylbenzene	L24-Fe0044667	CP	%	82			70-130	Pass	
m&p-Xylenes	L24-Fe0044667	CP	%	95			70-130	Pass	
o-Xylene	L24-Fe0044667	CP	%	81			70-130	Pass	
Xylenes - Total*	L24-Fe0044667	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L24-Fe0044667	CP	%	92			70-130	Pass	
TRH C6-C10	L24-Fe0044667	CP	%	98			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
Pentachlorophenol	L24-Fe0047522	NCP	%	99			30-130	Pass	
Tetrachlorophenols - Total	L24-Fe0047522	NCP	%	91			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	L24-Fe0047522	NCP	%	101			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dinitrophenol	L24-Fe0030978	NCP	%	89			30-130	Pass	
Dinoseb	L24-Fe0047522	NCP	%	113			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	L24-Fe0042860	NCP	%	91			70-130	Pass	
Spike - % Recovery									
				Result 1					
Nitrate-N	B24-Fe0038417	NCP	%	91			70-130	Pass	
Total Nitrogen	L24-Fe0042301	NCP	%	114			70-130	Pass	
Total Organic Carbon	M24-Fe0037521	NCP	%	97			70-130	Pass	
Total Phosphorus	L24-Fe0042301	NCP	%	108			80-120	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	L24-Fe0038725	NCP	%	85			75-125	Pass	
Magnesium	L24-Fe0038725	NCP	%	92			75-125	Pass	
Potassium	L24-Fe0038725	NCP	%	85			75-125	Pass	
Sodium	L24-Fe0038725	NCP	%	77			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	L24-Fe0044668	CP	%	95			70-130	Pass	
Acenaphthylene	L24-Fe0044668	CP	%	108			70-130	Pass	
Anthracene	L24-Fe0044668	CP	%	94			70-130	Pass	
Benz(a)anthracene	L24-Fe0044668	CP	%	106			70-130	Pass	
Benzo(a)pyrene	L24-Fe0044668	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	L24-Fe0044668	CP	%	102			70-130	Pass	
Benzo(g.h.i)perylene	L24-Fe0044668	CP	%	93			70-130	Pass	
Benzo(k)fluoranthene	L24-Fe0044668	CP	%	97			70-130	Pass	
Chrysene	L24-Fe0044668	CP	%	87			70-130	Pass	
Dibenz(a.h)anthracene	L24-Fe0044668	CP	%	86			70-130	Pass	
Fluoranthene	L24-Fe0044668	CP	%	117			70-130	Pass	
Fluorene	L24-Fe0044668	CP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	L24-Fe0044668	CP	%	118			70-130	Pass	
Naphthalene	L24-Fe0044668	CP	%	110			70-130	Pass	
Phenanthrene	L24-Fe0044668	CP	%	103			70-130	Pass	
Pyrene	L24-Fe0044668	CP	%	110			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	L24-Fe0044668	CP	%	97			30-130	Pass	
2.4-Dichlorophenol	L24-Fe0044668	CP	%	99			30-130	Pass	
2.4.5-Trichlorophenol	L24-Fe0044668	CP	%	84			30-130	Pass	
2.4.6-Trichlorophenol	L24-Fe0044668	CP	%	98			30-130	Pass	
2.6-Dichlorophenol	L24-Fe0044668	CP	%	86			30-130	Pass	
4-Chloro-3-methylphenol	L24-Fe0044668	CP	%	97			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	L24-Fe0044668	CP	%	92			30-130	Pass	
2-Nitrophenol	L24-Fe0044668	CP	%	81			30-130	Pass	
2.4-Dimethylphenol	L24-Fe0044668	CP	%	104			30-130	Pass	
2-Methylphenol (o-Cresol)	L24-Fe0044668	CP	%	84			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	L24-Fe0044668	CP	%	81			30-130	Pass	
4-Nitrophenol	L24-Fe0044668	CP	%	82			30-130	Pass	
Phenol	L24-Fe0044668	CP	%	92			30-130	Pass	
Spike - % Recovery									
				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ammonia-N	L24-Fe0044668	CP	%	91			80-120	Pass	
Nitrite-N	L24-Fe0044668	CP	%	90			80-120	Pass	
NOx-N	L24-Fe0044668	CP	%	120			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	L24-Fe0044667	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C15-C28	L24-Fe0044667	CP	mg/L	< 0.04	< 0.04	<1	30%	Pass	
TRH C29-C36	L24-Fe0044667	CP	mg/L	< 0.04	< 0.04	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4-Dichlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4.5-Trichlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4.6-Trichlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.6-Dichlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chloro-3-methylphenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pentachlorophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachlorophenols - Total	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	L24-Fe0044667	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Nitrophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4-Dimethylphenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4-Dinitrophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Methylphenol (o-Cresol)	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Nitrophenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dinoseb	L24-Fe0044667	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phenol	L24-Fe0044667	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L24-Fe0044667	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C16-C34	L24-Fe0044667	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C34-C40	L24-Fe0044667	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Alkalinity	L24-Fe0041120	NCP	mg CaCO3/L	< 5	< 5	<1	30%	Pass	
Ammonia-N	L24-Fe0044667	CP	mg/L	0.5	1.0	14	20%	Pass	
Bicarbonate	L24-Fe0041120	NCP	mg CaCO3/L	< 5	< 5	<1	20%	Pass	
Carbonate	L24-Fe0041120	NCP	mg CaCO3/L	< 5	< 5	<1	20%	Pass	
Chloride	L24-Fe0044667	CP	mg/L	320	320	<1	30%	Pass	
Hydroxide	L24-Fe0041120	NCP	mg CaCO3/L	< 5	< 5	<1	20%	Pass	
Nitrate-N	L24-Fe0044667	CP	mg/L	0.07	0.07	<1	30%	Pass	
Nitrite-N	L24-Fe0044667	CP	mg/L	< 0.01	< 0.01	<1	20%	Pass	
NOx-N	L24-Fe0044667	CP	mg/L	0.08	0.08	<1	20%	Pass	
Sulfate	L24-Fe0044667	CP	mg/L	31	41	28	30%	Pass	
Total Nitrogen	L24-Fe0041937	NCP	mg/L	230	240	5.0	30%	Pass	
Total Organic Carbon	M24-Fe0037520	NCP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	L24-Fe0038724	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Magnesium	L24-Fe0038724	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Potassium	L24-Fe0038724	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Sodium	L24-Fe0038724	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L24-Fe0044668	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L24-Fe0044668	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	L24-Fe0044668	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	L24-Fe0044668	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	L24-Fe0044668	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	L24-Fe0044668	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	L24-Fe0044668	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L24-Fe0044668	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
TRH C6-C10	L24-Fe0044668	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron (filtered)	L24-Fe0044671	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium (filtered)	L24-Fe0044671	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	L24-Fe0044671	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury (filtered)	L24-Fe0044671	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	L24-Fe0044671	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vanadium (filtered)	L24-Fe0044671	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	L24-Fe0044671	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids	L24-Fe0044673	CP	mg/L	600	580	3.4	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Conductivity	L24-Fe0044674	CP	uS/cm	330	330	<1	20%	Pass	
pH	L24-Fe0044674	CP	pH Units	6.3	6.1	3.1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

Elden Garrett	Analytical Services Manager
Douglas Todd	Senior Analyst-Inorganic
Douglas Todd	Senior Analyst-Metal
John Horwood	Senior Analyst-Organic
John Horwood	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Sam Becker	Senior Analyst-Inorganic

Kim Rodgers
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request

APPENDIX C
Works Approval Conditions

Monitoring

9. The Works Approval Holder must monitor the locations specified in Column 1 for the parameters specified in Column 2 of Table 5, at the frequency specified in Column 5, and in accordance with the method specified in Column 6.

Table 5: Ambient groundwater monitoring requirements

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Location	**Parameter**	**Units**	**Averaging period**	**Frequency**	**Method**
GG1, GG2, GG3, GG4, GG5, GG6 and GG7 as depicted in the Monitoring Locations Map in Schedule 1	Standing water level[1]	m(AHD)	Spot sample	Quarterly	Refer to Condition 12 and 13
	Field Parameters		Spot sample	Quarterly	
	pH[1]	pH units			
	Electrical conductivity[1]	µS/cm			
	Dissolved oxygen[1]	%			
	Oxidation/ Reduction Potential[1]	mV			
	Temperature[1]	°C			
	Laboratory Parameters		Spot sample	Quarterly	
	pH[1] Electrical conductivity[1] Total Dissolved Solids[1]	pH units µS/cm mg/L			
	Major ions: sodium, potassium, calcium, magnesium, chloride, sulphate, alkalinity (carbonate, bicarbonate, total alkalinity)	mg/L			
	Nutrients: nitrate, nitrite, ammonia, Total N, Total P, BOD, COD, TOC	mg/L			
	Metals and metalloids: arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, vanadium and zinc	mg/L			
	Organics: Total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (BTEX), polycyclic aromatic hydrocarbons (PAH), Total Phenolics	mg/L			
	Pesticides: OCP, OPP	mg/L	Spot sample	Annual	
	Other: Volatile fatty acids (VFA)	mg/L			

[1] Condition 11 does not apply to in-field parameters

10. The Works Approval Holder must undertake the water monitoring specified in Condition 9 (Table 5) commencing no more than one month after the issue of this Works Approval.

11. The Works Approval holder must ensure that all laboratory samples taken in accordance with Condition 9 are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

12. Groundwater sampling methodology must be undertaken in accordance with AS/NZS 5667.11:1998 and Schedule B2 of the Assessment of Site Contamination NEPM.

13. The Licence Holder must adhere to the following field quality assurance and quality control procedures as specified in Schedule B2 of the Assessment of Site Contamination NEPM:

    (a) decontamination procedures for the cleaning of tools and sampling equipment before sampling and between samples;

    (b) field instrument calibration for instruments used on site;

    (c) blind replicate samples and rinsate blanks must be collected in the field and sent to the relevant laboratory to determine the precision of the field sampling and laboratory analytical program;

    (d) completed field monitoring sheets/sampling logs for each sample collected, showing date, time, location, initials of sampler, sampling method, depth sample was collected from, SWL before and after sampling, purge volume, observations of sample (e.g. colour, turbidity, odour, presence of sheen, effervescence etc.), field analysis results, duplicate type/location (if relevant) and site observations and weather conditions; and

    (e) chain-of-custody documentation must be completed which details the following information: site identification; the sampler; nature of the sample; collection time and date; analyses to be performed; sample preservation method; departure time from site; dispatch courier(s); and arrival time at laboratory.

APPENDIX D
Geological Logs of Monitoring Bores

Project No: COP-2006-002-OPSI
Bore Hole No: BH 1

Project: Fernview Farm
Logged By: GMA

Client: Collex
Checked By:

Site Location: Cullalla (Gingin)
Date Logged: 22/02/06

ATA Environmental
environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Light grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	2	***QUARTZ SAND*** Dark yellowish orange, fine to medium grained, well to moderatedly rounded, well sorted quartz sand - homogenous throughout.					
	6	***QUARTZ SAND SAND and LATERITE GRAVEL*** Pale yellow, fine to medium grained, well to moderatedly rounded, well sorted quartz sand with 20% pebble to gravel sized (upto 4mm) laterite fragments. (Paleochannel?)					
	9	***QUARTZ SAND*** Pale yellow, fine to coarse grained, very well rounded, poorly sorted quartz sand, with minor (1-5%) pebble to gravel sized laterite fragments.					
	11	***QUARTZ SAND*** Light brown becoming pale red, fine to medium grained, well rounded, well sortedquiartz sand.					
	13	***QUARTZ SAND*** Light brown becoming pale red, fine to medium grained, well rounded, well sorted quartz sand.					
	15						

Drilled By: Orbit
Northing: 6546167

Drill Method: Aircore
Easting: 402252

Elevation: 0

Project No: COP-2006-002-OPSI
Bore Hole No: BH 1
Project: Fernview Farm
Logged By: GMA
Client: Collex
Checked By:
Site Location: Cullalla (Gingin)
Date Logged: 22/02/06

ATA Environmental
environmental scientists
ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	16	***QUARTZ SAND*** Light brown becoming pale red, fine to medium grained, well rounded, well sorted quartz sand, with 20% coarse grained, very well rounded quartz sand					
	17						
	18						
	19	***QUARTZ SAND*** Light brown becoming pale red, fine to medium grained, well rounded, well sorted quartz sand.					
	20						
	21						
	22						
	23						
	24	***QUARTZ SAND*** Pale yellow brown to light red brown, fin to medium grained, well rounded, well sorted quartz sand with trace to minor (5%) clay.					
	25						
	26						
	27						
	28	***End of Borehole***					
	29						
	30						

Drilled By: Orbit
Drill Method: Aircore
Elevation: 0

ATA Environmental
environmental scientists

Northing: 6546167
Easting: 402252

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 2**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 22/02/06

ATA Environmental
environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Light grey to grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	1	***QUARTZ SAND*** Moderate brown, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	2						
	3						
	4	***QUARTZ SAND*** Moderate yellow, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	5						
	6						
	7	***QUARTZ SAND*** Pale yellow becoming whitish yellow, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	8						
	9	***QUARTZ SAND*** Whitish grey to pale brown, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	10						
	11						
	12						
	13						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

Northing: 6545686

Easting: 402381

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 2**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 22/02/06

ATA Environmental
environmental scientists

ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24	***End of Borehole***					
	25						
	26						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

ATA Environmental
environmental scientists

Northing: 6545686

Easting: 402381

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 3**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 22/02/06

ATA Environmental
environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Grey to light grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	1	***QUARTZ SAND*** Moderate yellow, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	2						
	3						
	4						
	5						
	6						
	7						
	8	***QUARTZ SAND*** Moderate yellow to dark yellow brown, fine to medium grained, well to moderatedly rounded, well sorted quartz sand plus 10% coarse to gravel sized laterite fragments (Paleochannel?)					
	9						
	10						
	11	***QUARTZ SAND*** Whitish grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	12	***QUARTZ SAND*** Pale reddish grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	13						
	14						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

Northing: 6545874

Easting: 402326

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 3**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 22/02/06

ATA Environmental
environmental scientists

ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	15						
	16						
	17						
	18						
	19						
	20	***QUARTZ SAND*** Pale yellow to light grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand with trace to minor silt.					
	21						
	22						
	23						
	24						
	25						
	26						
	27	***End of Borehole***					
	28						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

ATA Environmental
environmental scientists

Northing: 6545874

Easting: 402326

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 4**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 23/02/06

ATA Environmental
environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Whitish grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	1						
	2	***QUARTZ SAND*** Whitish yellow, fine grained, well rounded, well sorted quartz sand.					
	3	***QUARTZ SAND and LATERITE*** Moderate red brown, medium grained, well to moderatedly rounded, well sorted quartz sand plus 50% lateritised coarse grained sand.					NOTE laterite outcrop in the gereneral area of this hole is actually a lateritised coarse grained quartz sand.
	4						
	5	***QUARTZ SAND*** Whitish grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	6						
	7	***QUARTZ SAND*** Moderate to pale yellow, fine to coarse grained, well to moderatedly rounded, well sorted quartz sand.					
	8						
	9	***QUARTZ SAND*** Pale brown, coarse to medium grained, well to moderatedly rounded, poorly sorted quartz sand.					
	10						
	11	***QUARTZ SAND*** Pale brown, fine to medium grained, well to moderatedly rounded, well sorted silty quartz sand					
	12						
	13						
	14						

Drilled By: Orbit | Northing: 6546154

Drill Method: Aircore | Easting: 402561

Elevation: 0 | Page: 1 of 2

Project No: COP-2006-002-OPSI | **Bore Hole No:** BH 4

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 23/02/06

ATA Environmental
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ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27	***End of Borehole***					
	28						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

ATA Environmental
environmental scientists

Northing: 6546154

Easting: 402561

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 5**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 23/02/06

ATA Environmental
environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Whitish grey, fine to medium grained, well to moderatedly rounded, well sorted quartz sand.					
	1	***QUARTZ SAND*** Dark yellowish orange, fine to coarse grained, well rounded, poorly sorted quartz sand plus 5-10% coarse to gravel sized laterite fragments.					
	4	***QUARTZ SAND*** Pale red, fine to medium grained well rounded, well sorted quartz sand.					
	13						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

Northing: 6545967

Easting: 402439

Project No: COP-2006-002-OPSI
Bore Hole No: BH 5
Project: Fernview Farm
Logged By: GMA
Client: Collex
Checked By:
Site Location: Cullalla (Gingin)
Date Logged: 23/02/06

ATA Environmental
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ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	14						
	15	***QUARTZ SAND*** Dark yellowish orange, fine to medium grained well rounded, well sorted quartz sand					
	16						
	17						
	18						
	19						
	20						
	21						
	22	***QUARTZ SAND*** Whitish yellow, fine to medium grained well rounded, well sorted quartz sand					
	23						
	24	***End of Borehole***					
	25						
	26						

Drilled By: Orbit
Drill Method: Aircore
Elevation: 0

ATA Environmental
environmental scientists

Northing: 6545967
Easting: 402439

Project No: COP-2006-002-OPSI
Bore Hole No: BH 6

Project: Fernview Farm
Logged By: GMA

Client: Collex
Checked By:

Site Location: Cullalla (Gingin)
Date Logged: 23/02/06

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environmental scientists
Dilhorn House
2 Bulwer Street
PERTH WA 6000

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	0	Ground Surface					
	0	***SOIL/QUARTZ SAND*** Light grey, fine, well to moderatedly rounded, well sorted quartz sand.					
	1						
	2	***QUARTZ SAND*** Dark yellowish orange, fine to coarse grained, well rounded, poorly sorted quartz sand.					
	3						
	4	***QUARTZ SAND*** Dark yellowish orange, fine to coarse grained, well rounded, poorly sorted quartz sand plus 20% peble to gravel sized laterite fragments.					
	5						
	6	***QUARTZ SAND*** Moderate reddish brown, fine to medium grained well rounded, well sorted quartz sand					
	7						
	8	***QUARTZ SAND*** Dark reddish brown, fine to medium grained well rounded, well sorted quartz sand					
	9						
	10						
	11						
	12						
	13						

Drilled By: Orbit
Drill Method: Aircore
Elevation: 0

Northing: 6545832
Easting: 402201

Project No: COP-2006-002-OPSI | **Bore Hole No: BH 6**

Project: Fernview Farm | **Logged By:** GMA

Client: Collex | **Checked By:**

Site Location: Cullalla (Gingin) | **Date Logged:** 23/02/06

ATA Environmental
environmental scientists

ATA Environmental
2 Bulwer Street
Perth, Western Australia

Geological Unit	Depth (m)	Description	Graphic Log	USCS	Water Level	Sample	Remarks
	14						
	15						
	16						
	17						
	18	***QUARTZ SAND*** Grey to yellowish grey, fine to coarse grained, well rounded, poorly sorted quartz sand.					
	19						
	20						
	21						
	22						
	23						
	24	***End of Borehole***					
	25						
	26						

Drilled By: Orbit

Drill Method: Aircore

Elevation: 0

ATA Environmental
environmental scientists

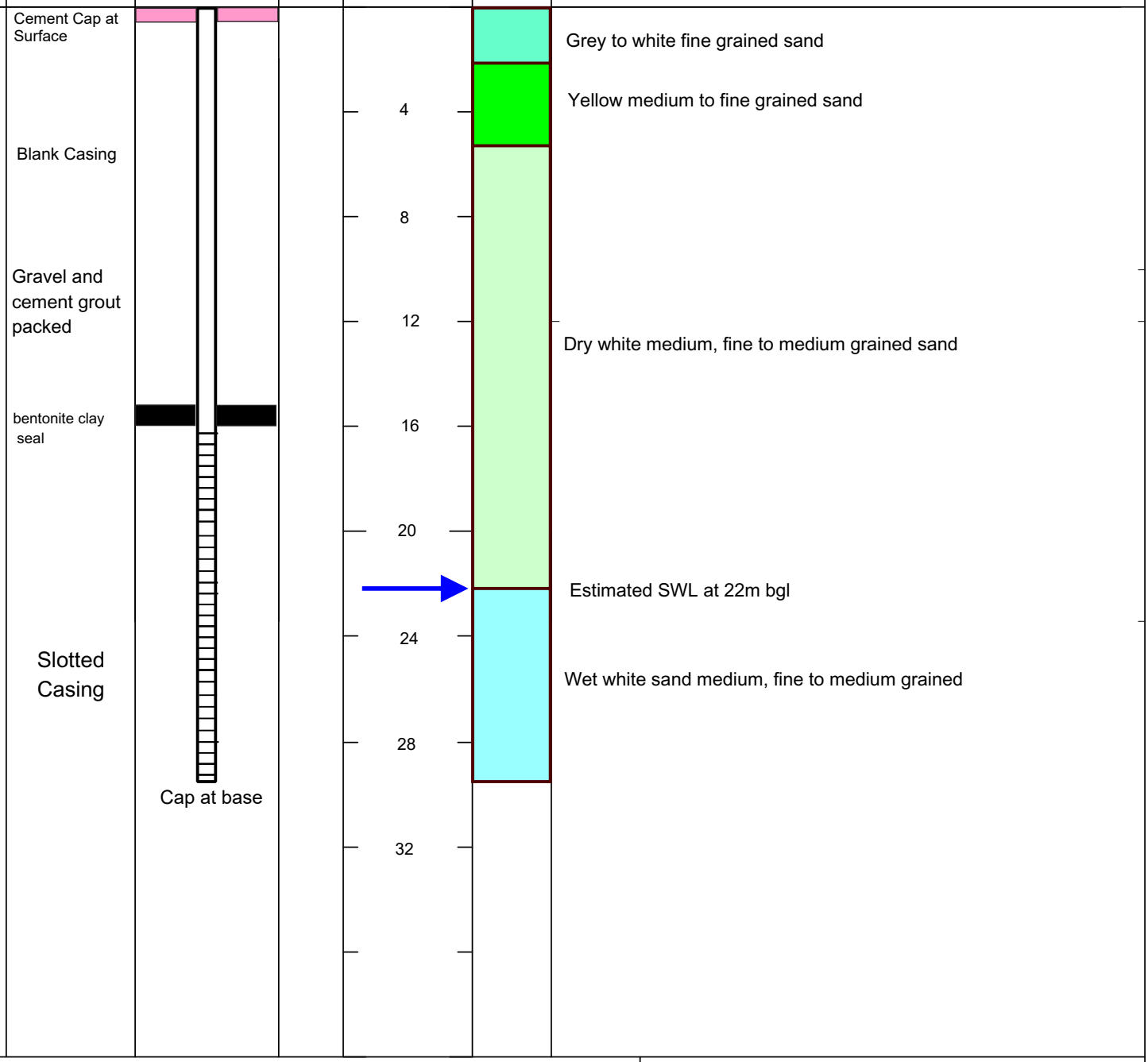
Northing: 6545832

Easting: 402201

Stass Environmental

Coords: 402818 East by 6545561 North, RL 164.930 mAHD TOC

Drill Rig: GP 110 Auger Rig	Date Drilled: 21 July 2020	Logged By: A Stass
Boring Dia: DHH 220 mm	Boring Number: GGN7	



Completion Notes:

Piezometer GGN7

Class 12, 55 mm blank PVC casing from 0 to 16 mbgs;
Class 12, 55 mm, slotted, PVC casing from 16 to 29 mbgs
1 m bentonite seal above slotted casing
Gravel and cement grout above bentonite seal;

Piezometer was capped at base.

Site:

Fernview Landfill, Cullalla, WA

Project No.: Fernview

- Geological and construction log of GGN7

WESTERN DRILLING PTY LTD

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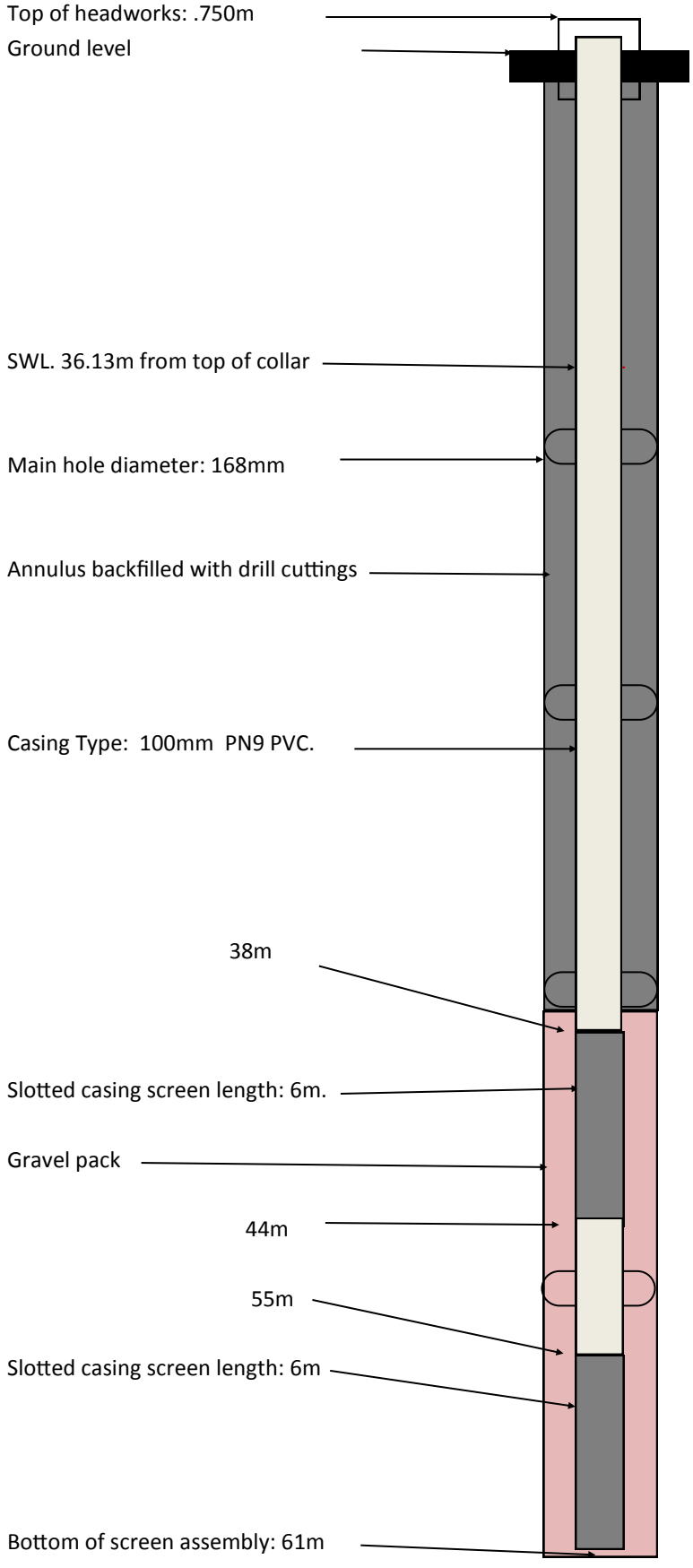
BORE COMPLETION REPORT

CONTRACT No:
Contractor: Western Drilling
Rig: UDR 1000
Hole size: 168mm

Bore No: GG1c
Date: 16-05-2019
CO-ORDS:

PROJECT: Fernview Eviromental
SITE ID: Cullala
DATE STARTED: 9-5-2019
DATE FINNISHED:14-5-2019



Bore head protector concreted in place. (RED)

0 - 2m Sandy Gravel

2 - 30m White to grey clay with fine sand layers.

30 - 38m Fine grey sand.

38 - 53m Green sandy clay some minor sand layers

53 - 54m Black clay.

54 - 60m Grey fine sand with shale layers.

60 - 61m Shale.

.

Bore development: The bore was flushed of all drilling mud and then jetted with a well cleaning solution. Airlift to clean up.

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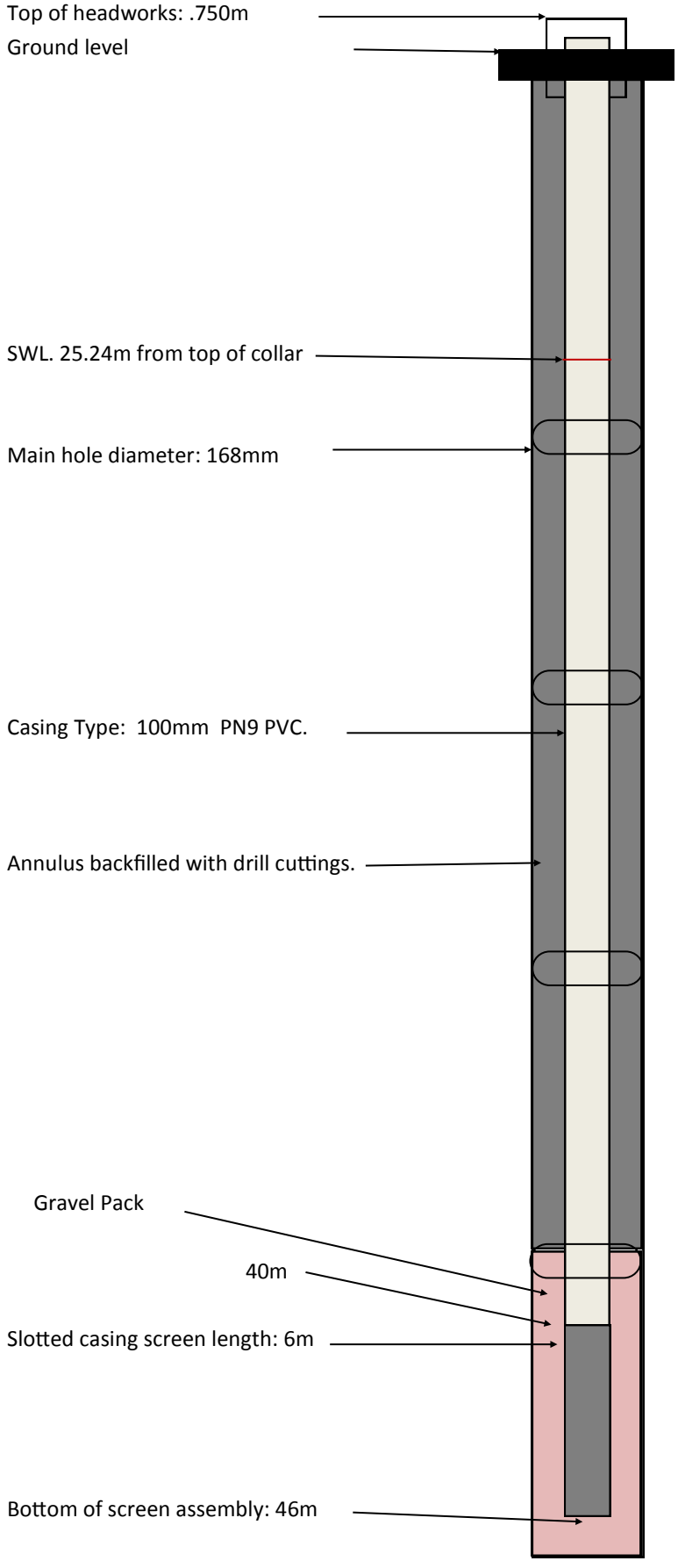
BORE COMPLETION REPORT

CONTRACT No:
Contractor: Western Drilling
Rig: UDR 1000
Hole size: 168mm

Bore No: GG3b
Date: 16-05-2019
CO-ORDS:

PROJECT: Fernview Eviromental
SITE ID: Cullala
DATE STARTED: 6-5-2019
DATE FINNISHED:7-5-2019



Bore head protector concreted in place. (RED)

0 - 2m Sandy Gravel

2 - 9m White to grey clay with fine sand layers.

9 - 12m Brown clay.

12 - 24m White and yellow sandy clay.

24 - 41m Fine white sandy clay.

41 - 44m Fine white clayee sand.

.44 - 46m Fine grey sand.

46 - 47m Green clay sandy.

Bore development: The bore was flushed of all drilling mud and then jetted with a well cleaning solution. Airlift to clean up.

WESTERN DRILLING PTY LTD
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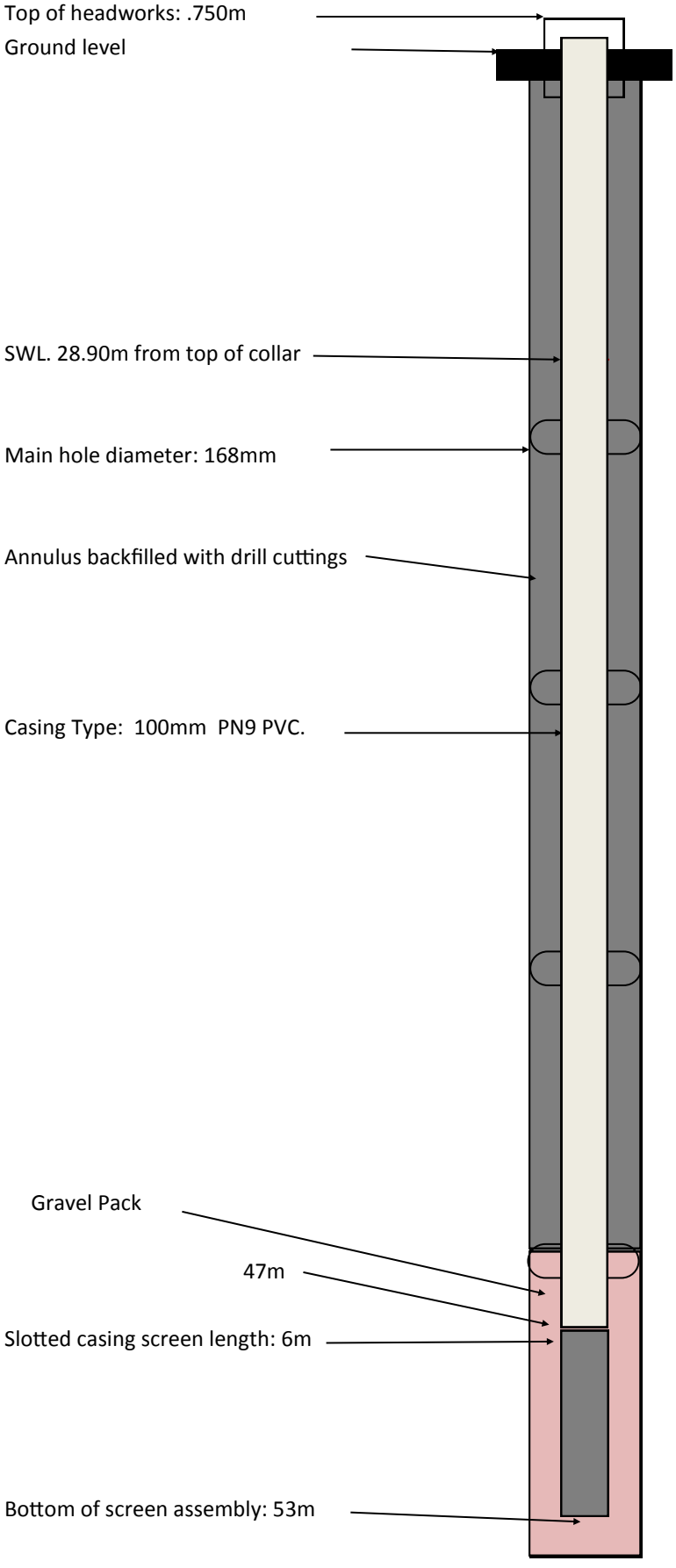
BORE COMPLETION REPORT

CONTRACT No:
Contractor: Western Drilling
Rig: UDR 1000
Hole size: 168mm

Bore No: GG3b
Date: 16-05-2019
CO-ORDS:

PROJECT: Fernview Eviromental
SITE ID: Cullala
DATE STARTED: 29-4-2019
DATE FINNISHED:29-4-2019



Bore head protector concreted in place. (RED)

0 - 2m Light yellow sand.

2 - 30m White fine clayee sand

30 - 41m Fine white sand.

41 - 53m Fine to medium grey sand.

53 - 56m Dark green sandy clay.

Bore development: The bore was flushed of all drilling mud and then jetted with a well cleaning solution. Airlift to clean up.

Document Distribution

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