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## REPORT ON

# ENVIRONMENTAL AUDIT OF CONSENT CONDITIONS WOODLAWN BIOREACTOR TARAGO, NEW SOUTH WALES

Submitted to :

Veolia Environmental Services Pty Ltd  
Corner Unwin and Shirley Streets  
Rosehill, NSW 2142

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## **1.0 INTRODUCTION**

Golder Associates Pty. Ltd. (Golder) was commissioned by Veolia Environmental Services Pty Ltd (VES) to undertake an Environmental Audit of Development Consent conditions (DA 31-02-99) for the Woodlawn Bioreactor, Collector Road, Tarago, NSW. The work was as per our proposal P77623084A, dated 2 August 2007 and your acceptance, dated 21 September 2007.

This report includes the auditing methodology, assumptions and main Audit findings. The main Audit instrument is a spreadsheet in Excel format that addresses each Development Consent condition. This spreadsheet is attached to this report in Appendix A.

## **2.0 METHODOLOGY**

### **2.1 Site Information**

The Audit comprises operations at the Woodlawn Bioreactor Facility at Collector Road, Tarago and the Intermodal Facility, Bungendore Road, Tarago.

### **2.2 Scope of Work**

The scope of work for the Audit comprised review of various management plans and a Site visit. In particular the scope of work comprised:

- Desktop review of Consent Conditions and Environmental Management Plans (EMP's) (construction and operation);
- Development of an audit tool, which describes the consent condition, identifies the information required to confirm compliance, lists audit findings, lists actions required / planned, and lists timing;
- Site visits on 31 October and 01 November 2007 by Colm Molloy, certified Lead Environmental Auditor (RAB QSA) and Daniel Dohle, Waste Engineer. Information about the Audit Team is included in Appendix B of this report. As part of the Site visit, Golder visited the Woodlawn Bioreactor Facility, associated infrastructure such as the landfill gas treatment plant, water storage ponds, the landfill and the intermodal facility;
- Completion of the Audit tool covering the consent conditions and EMP's;
- Evaluation of compliance with consent conditions;
- Evaluation of compliance with EMP's (construction and operation);
- Preparation of a summary report (this report) that provides an opinion covering compliance to the audit standards (Consent Conditions, EMP – construction and operation);
- Provision of audit tables as Appendix A to this report; and
- Submission of draft report to VES.

### **2.3 Information Sources**

During the Audit, Golder has reviewed various information sources. In particular, these comprised:

- The Development Consent Conditions (DA 31-02-99);
- The Environmental Protection Licence – 11436 (EPL);
- The current LEMP (Veolia 2004) and associated management plans;
- The previous LEMP (Veolia 2001);

- A previous Condition Compliance Report (Veolia 2007);
- The VES complaints register;
- VES environmental monitoring notes;
- Technical Manuals for the Landfill Gas Flare by Haase Energietechnik GmbH;
- VES correspondence with DECC, Department of Planning, Mulwaree Shire Council, RTA and others; and
- various other notes, computer programs and documents provided by VES.

The review of documentation was combined with a Site Visit conducted by Colm Molloy, certified Lead Environmental Auditor (RAB QSA) and Daniel Dohle, Waste Engineer.

### 3.0 AUDIT FINDINGS

Detailed Audit findings are listed in the Audit Tool attached to this report in Appendix A.

The Audit concluded that VES is in general compliance with the Development Consent Conditions (DA 31-02-99) for the Woodlawn Bioreactor Facility. While assessing compliance with the conditions, we have encountered some partial compliances, non-compliances and potential areas for improvement of the Site operations. These areas for improvement are summarised in Table A below.

**Table A: Areas for improvement**

Condition No.	Area for improvement
4(a)	An assessment of alternative waste technologies may need to be undertaken by 05 September 2009.
8(b)	VES may wish to review and optimise the bioreactor performance. It may be appropriate to undertake a landfill gas resource estimate based on the information available, to plan further infrastructure and income from gas conversion.
15(f)	We recommend that a more detailed PCLRMP be prepared prior to Site closure.
18(a), (b)	There is no Audit finding as date of commencement of construction has not been provided to the Auditor.
22	We recommend that VES continually review environmental legislation to ensure continuing compliance with this condition.
39	The LEMP does not refer to the required intermediate (90 days) cover material thickness (30 cm). We understand that cover material trials have been carried out and that intermediate cover is applied to the landfill, but material type and the thickness are not described in the LEMP. We recommend addressing this condition and obtaining approval for the use of alternative cover materials and cover thickness if required.
40	We understand that cover material trials have been carried out and that intermediate cover is applied to the landfill, but material type and the thickness are not described in the LEMP. We recommend addressing this condition and obtaining approval for the use of alternative cover materials and cover thickness if required.
45	We recommend that VES carry out design calculations for pipe stability.
46	We recommend that VES carry out design calculations for pipe stability.
47	During past monitoring rounds, non-compliances of the environmental monitoring program as per the EPL have occurred. We understand that the EPL has been amended since. We recommend ensuring ongoing compliance with the EPL.
53	We recommend finalising compacted clay liner CQA documentation and making this information available for review.
57	We recommend that a groundwater geochemical model be compiled to

	assist in assessment of water reuse at the Site.
70(d)	There is no Audit finding as date of commencement of construction has not been provided to the Auditor.
113, 115	This is technically a non-compliance as odour has been noticed by residents. It is the Auditor's opinion that VES is managing odour sufficiently and that odour complaints are dealt with appropriately. Odour management should continue and be improved where possible.
139(c)	The monitoring frequency required in the condition is not achieved.
139(d)	It is recommended that this element be addressed.
153	There is no mention of the requirements of this condition (protection of the 'diuris aequalis').
154	This condition (consultation with the NSW Fisheries prior to works adjacent to aquatic habitats) is not addressed in the LVMP. However, this is only required if works are carried out adjacent to aquatic habitats. It is unclear whether this has occurred.
156	This topic is not covered in the Landscape & Vegetation Mgt Plan - however it is understood that the stream is ephemeral and has been dry during significant portions of the year. Therefore this condition is not considered relevant to the encountered site conditions.
159(c)	The cost estimate required in the condition has not been provided.

Table A is not an exclusive list of audit findings and should be read in conjunction with the Audit Tool in Appendix A.

#### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

It is the Auditor's opinion that VES is in general compliance with the Development Consent Conditions (DA 31-02-99) for the Woodlawn Bioreactor Facility.

The Auditor notes that some conditions have been partially complied with and some conditions have not been complied with as outlined in Table A. The Auditor recommends that these conditions be assessed as to their validity or by rectification of processes and compliance with the condition.

The Auditor has highlighted some areas in which VES may wish to act to reduce the likelihood of future non-compliances with the DA conditions. These areas of improvement are summarised in Table A. In particular, the Auditor considers that a review of the bioreactor performance and a geochemical groundwater and surface water model may be of benefit for the overall performance of the Site.

## **5.0 LIMITATIONS**

Your attention is drawn to the following limitations, which must be read in conjunction with this report. This report has been prepared in accordance with the agreement between Veolia Environmental Services (VES) and Golder Associates Pty Ltd (Golder Associates). The services performed by Golder Associate have been conducted in a manner consistent with the level of quality and skill generally exercised by members of its profession and consulting practice. No warranty or guarantee of site conditions is intended.

This report is solely for the use of the client and any reliance on this report by third parties shall be at such party's sole risk as it may not contain sufficient information for purposes of other parties or for other uses. This report shall be presented in full and may not be used to support any other objective than those set out in the report, except where written approval with comments are provided by Golder Associates. Golder Associates will not be responsible for the real or perceived decrease in a property value, its salability or ability to gain financing suffered by any third party as a result of decisions made or actions based on this report.

The information in this report is considered to be accurate at the date of issue in accordance with the current conditions of the site. It is based solely on the site conditions encountered at the time of the site visit, supplemented by the historical information and data described in the report. No assurance is made regarding changes in conditions subsequent to the time of the investigation.

In evaluating the property, Golder Associates has relied in good faith on information provided by individuals as noted in this report. We believe that the information provided by the various personnel interviewed and information from documents cited is accurate and has been accurately interpreted; however Golder does not provide any guarantees in this regard.

We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons interviewed or contacted. It should be noted that the results of an investigation of this nature should, in no way, be construed as a warrant that the site is free from any and all impacts from past or current practise. This assessment was carried out using information available from various agencies and no assurance is made regarding the accuracy or completeness of this information.

No sampling or chemical analysis of any kind at or in the vicinity of the subject site was conducted as part of this assessment.

**GOLDER ASSOCIATES PTY LTD**



Daniel Dohle  
Environmental Engineer



Colm Molloy  
Associate

DD,CPM/cpm/dd

## 6.0 REFERENCES

NSW DECC, *Environmental Protection Licence 11436*, 14 August 2007

Veolia Environmental Services, *Annual Environmental Management Report – SML20*, June 2007

Veolia Environmental Services, *Woodlawn Bioreactor - Condition Compliance Report*, May 2007

Veolia Environmental Services, *Woodlawn Bioreactor, Landfill Environmental Management Plan*, 2004

Veolia Environmental Services, *Woodlawn Bioreactor, Landfill Environmental Management Plan*, April 2001

**Appendix A**  
**Audit Assessment Tool**

No.	Wording	Condition	Compliance	Comment
	<b>GENERAL WORDING</b>			
	<b>Adherence to terms of DA and EIS</b>			
1	Development shall be carried out in accordance with: (a) DA No. 31-02-99; (b) the EIS prepared by Woodward-Clyde Pty Ltd, dated February 1999; (c) the EIS Supplementary Report prepared by Woodward-Clyde Pty Ltd, dated March 1999; and (d) the Amended DA and accompanying information prepared by Woodward-Clyde, dated 12 November 1999, except as modified by the following conditions. In the event of an inconsistency between this consent and DA No. 31.02.99 (and accompanying EIS and other supporting documents), this consent shall prevail.			The overall conclusion of our independent audit is that the development meets the conditions set in the Deve
	<b>Deferred Commencement</b>			
2	In accordance with section 80(3) of the EP&A Act, this consent shall not operate until the Applicant satisfies the Minister that it has been awarded a valid contract for the long-term supply of waste, sourced from Sydney, at a rate of at least 150,000 tonnes per annum.	Yes		This has been confirmed in a DUAP letter dated 05/09/2002 confirming compliance. We understand that only waste from Sydney is deposited at the facility.
	<b>Duration of the Consent</b>			
3	Approval is granted for 20 years from the date of commencement of landfilling operations, subject to the input rate variations as specified in Condition 4.	Yes		Landfilling commenced on 05 September 2004 - current operations are within this duration.
	<b>Input Rate Variations</b>			
4	The proposed landfill shall not exceed the annual input rates in Table 1, unless otherwise approved by the Minister. The Minister shall give such approval if the need for additional capacity is demonstrated by an independent public assessment of landfill capacity and demand in the Sydney Region. The assessment shall: (a) take into account the status of alternative technologies for putrescible waste management and be undertaken at five-yearly intervals; (b) be completed one year before commencement of each five year period, as set out in Table 1, or at any other time at the request of the Applicant, with the first review due four years from the date of operational commencement; and (c) be undertaken by an independent person or organisation, to be appointed by the Minister, with the costs to be funded by the Applicant.	Yes		
		Yes		Independent assessment of NSW waste infrastructure has been undertaken as part of the Wright Commission. It is understood that this body will report in 2008 - however the development of the landfill is
		Yes		The licensee conducts volumetric surveys on a half-yearly basis. An electronic Container weight register is maintained. As per 30/10/2007, 1,104,350 t of waste have been deposited at the facility.
	Table 1: Maximum Input Rates			
	<b>Years from date of operational commencement</b>	<b>Maximum Input Rate</b>		
	0-5	400,000 tpa		
	6-10	360,000 tpa		
	11-15	325,000 tpa		
	16-20	290,000 tpa		
5	In any event, no more than 500,000 tonnes shall be landfilled at the site in any one year.	Yes		6-monthly volumetric surveys have been reviewed. These indicate that the 500,000 tonnes limit has not been exceeded
	<b>Compliance with Requirements of the Director-General and Prescribed Conditions</b>			
6	The Applicant shall comply with all reasonable requirements of the Director-General in respect of the implementation of any measures arising from reports submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.	Yes		There is no evidence of non-compliance encountered during this audit.
7	The Applicant shall comply with all relevant conditions prescribed in Part 7 of the Environmental Planning and Assessment Regulation 1994, as required by Section 80A (11) of the Act.			Section 80 of the Environmental Planning and Assessment Regulation 2000 states the following: "The notice for a development application for designated development under section 79 (1) (d) of the Act: (a) must be published on at least 2 separate occasions, and (b) must appear across 2 or 3 columns in the display section of the newspaper, and (c) must be headed in capital letters and bold type "DEVELOPMENT PROPOSAL", and (d) must contain the same matters as are required for a notice under section 79 (1) (b) of the Act."  Golder understands that the DA application process has included appropriate notification, and appropriate records of this kept by Veolia.
	<b>Obligation to minimise harm to the environment</b>			
8	The Applicant shall: (a) take all practicable measures to prevent and minimise harm to the environment as a result of the construction, operation, post closure and, where relevant, the decommissioning of the development; and (b) take all practicable measures to operate the landfill as a bioreactor, to ensure to the maximum extent practicable, the biological decomposition of all organic waste and productive capture of methane.	Yes		The licensee has developed an LEMP that contains various management plans to minimise the impact on the environment. Evidence during our audit visit indicates the plan appears to be implemented. The LEMP
		Yes		The licensee has developed a Bioreactor Performance Management Program including an Action Plan to ensure that the biological decomposition of organic waste is maximised. This includes leachate management and leachate recirculation, application of daily cover, provision of gas collection network and
	<b>Structural adequacy</b>			
9	Detailed plans and specifications relating to the design and construction of all structural elements associated with the proposed development shall be submitted to the Principal Certifying Authority (PCA) prior to the commencement of construction works. Such plans and specifications shall be accompanied by certification provided by a practicing professional structural engineer or an accredited certifier certifying the structural adequacy of the proposed building design and compliance with the Building Code of Australia (BCA).	Yes		We understand that this has been undertaken, and that development consent and occupation certificates have been provided by Council. No plans have been reviewed. Plans submitted to MSC on 12/3/03, construction certificate issued by MSC on 2/5/06.
	<b>Verification of Construction</b>			
10	Upon completion of building works and prior to the issue of an occupation certificate, a certificate prepared by a suitably qualified person or a compliance certificate issued by an accredited certifier, is to be submitted to the PCA certifying that the following building components, where relevant, have been completed in accordance with approved plans and specifications: (a) footings; (b) concrete structures, including ground floor and any subsequent floors, and retaining walls and columns; (c) framing and roof structure; (d) fire protection coverings to building elements required to comply with the BCA; and (e) mechanical ventilation. The certificate/s shall demonstrate at what stage of construction inspections were undertaken.	Yes		We understand that this has been undertaken, and that development consent and occupation certificates have been provided by Council. No plans have been reviewed. As built drawings from Maunsell have been viewed, which verify that appropriate engineering design and validation have been undertaken.
	<b>Dispute Resolution</b>			
11	In the event that the Applicant, Council, a government authority other than the Department or the PCA cannot agree on the specification or requirements applicable under this consent, the matter shall be referred by either party to the Director-General or, if not resolved, to the Minister, whose determination of the disagreement shall be final and binding on the parties.	Yes		No evidence of non-compliance. Approval and consent have been achieved, and therefore this issue is now considered obsolete with respect to this Audit.
	<b>ENVIRONMENTAL MANAGEMENT</b>			
	<b>Environmental Services</b>			
12	The Applicant shall employ or contract suitably qualified environmental services throughout the duration of landfilling/construction and rehabilitation activities. The Applicant shall nominate an Environmental Management Representative/s (EMR/s) as the principle person responsible for overseeing environmental management of the project and supervision of environmental services. The EMR's/EMR's' qualifications, experience and appointment shall be to the satisfaction of the Director-General. The EMR/s shall have the authority to stop work if an adverse impact on the environment has occurred or is likely to occur. The EMR/s shall: (a) be responsible for the preparation or certification of all environmental	Yes		At present, the appointed EMR is Justin Houghton, who works on Site. The role of the EMR is established within the LEMP, and Mr Houghton is a suitable and appropriate person to fulfil this role. The Environmental Management of the Site is outlined in the LEMP.
		Yes		

	management plans and procedures;		
	(b) be responsible for considering and advising on matters specified in the conditions of this consent and compliance with such matters;	Yes	
	(c) oversee the receipt of, and response to, complaints about the environmental performance of the project;	Yes	
	(d) facilitate an induction and training program in environmental awareness and responsibility required under the Environment Protection Licence (EPL), both generally and specific to the Applicant's activities for all persons involved with construction, operation, monitoring and rehabilitation activities at all sites. The training program must be implemented annually from the commencement of the development and evaluated every three years; and	Yes	The LEMP (sec. 6.2 p28) outlines an induction/training program for all employees (including subcontractors). This program comprises: Environmental Policy, the LEMP and related documents, Site environmental objectives and targets, understanding individual authorities and responsibilities, significant project aspects, impacts and controls, potential consequences of departure from procedures, emergency procedure and response, understanding legal obligations.
	(e) be present on-site during any critical construction or operational activities as defined in the relevant Landfill Environmental Management Plan (LEMP).	Yes	The EMR role is a fulltime position, based on the Woodlawn facility. The Site Manager replaces the EMR when the EMR is on leave.
	<b>Landfill Environmental Management Plan</b>		
13	Prior to the Applicant applying to the EPA for an EPL under the Protection of the Environment Operations Act 1997, the Applicant must prepare a comprehensive Landfill Environmental Management Plan (LEMP) in accordance with the EPA's Environmental Guidelines: Solid Waste Landfills. The LEMP shall incorporate all relevant plans and protocols as required by the conditions of this consent. The LEMP shall accompany the application for an EPL. (EPA GTA)	Yes	LEMP has been prepared and reviewed, and has been submitted to EPA (now DECC). This LEMP now forms part of the application. We understand that the document is under constant review.
	<b>Licence Application</b>		
14	Prior to applying to the EPA for an EPL, the Applicant must be able to demonstrate that all works required to be addressed to ensure the geo-technical stability of the premises have been undertaken in accordance with: (a) the recommendations of the report prepared by BFP Consultants P/L, dated 17 December 1998, entitled Woodlawn Landfill – Geo-technical Study; and (b) the requirements of the NSW Department of Mineral Resources. (EPA GTA)	Yes	This has been undertaken. Geotechnical monitoring is carried out on a continuous basis as per the Geotechnical Stability monitoring Plan. Specifically, geotechnical stability monitoring has been undertaken at the site prior to the DA application - this monitoring was undertaken by Barrett Fuller Pty Ltd and has formed the basis of the geotechnical stability component of the LEMP and the EPL for the site.
15	The Applicant must prepare a post closure landfill rehabilitation management plan (PCLRMP). The PCLRMP must be documented in the LEMP and must address the following:	Yes	PCLRMP has been prepared and is part of the LEMP
	(a) closure strategies in the event that landfilling activities conclude prior to filling of the mine void;	Yes	The PCLRMP describes three options for early closure (sec 5.1, p.20). The options mainly differ in the location of storage dams for 'clean' and 'dirty' water and indicate that a range of remediation options exist. Section 6.1, p.25 states that the final capping layer will be as per Benchmark Technique 28 of the NSW EPA Environmental Guidelines: Solid Waste Landfills
	(b) site capping and revegetation in accordance with benchmark technique 28 of the Environmental Guidelines: Solid Waste Landfills;	Yes	Section 2, p.11 of the PCLRMP states that 'all leachate collection, gas collection, stormwater sediment controls, monitoring and reporting practices will be maintained to a standard equivalent to that employed during the operational life of the bioreactor'.
	(c) post closure environmental monitoring;	Yes	The PCLRMP describes three options for early closure (sec 5.1, p.20). The options mainly differ in the location of storage dams for 'clean' and 'dirty' water and indicate that a range of remediation options exist. The PCLRMP refers to ED3 in sections 2.1.3, 5.2.2 and 7. It is stated that ED3 will be managed in accordance with Consent Condition 70 and after closure primarily through evaporation. It is stated that " a general scope of works could include: progressively reducing catchment, dewatering pond, removing contaminated layer of sediment, utilising wall material for other rehabilitation efforts, sowing seed, liming, enriching soil using biosolids. "
	(d) post closure management of surface water in the event that the void is not filled with waste.	Yes	The PCLRMP states in sections 2.1 and 3.3 that 'all leachate collection, gas collection, stormwater sediment controls, monitoring and reporting practices will be maintained to a standard equivalent to that employed during the operational life of the bioreactor' . No specific mention is made of the bioreactor process.
	(e) post closure management of Evaporation Dam No 3 (ED3);	Yes	Section 2.1.6, p.12 states that 'The gas management and control systems installed during the operation of the site will continue to operate until the active gas generation phase is completed.'
	(f) post closure leachate management, including the management of the bioreactor process	Yes/No	Section 3.3, p.15 of the PCLRMP states that 'all leachate collection, gas collection, stormwater sediment controls, monitoring and reporting practices will be maintained to a standard equivalent to that employed during the operational life of the bioreactor'.
	(g) post closure landfill gas management;	Yes	Section 4.1 states that financial assurances have been provided to the NSW DECC commensurate with the ongoing environmental management and rehabilitation responsibilities for the bioreactor and associated activities. The financial assurance consists of: a bank guarantee (to be adjusted annually) and an accumulating fund generated by monies set aside annually. We understand that the funds required have been established by an independent review.
	(h) post closure maintenance; and	Yes	
	(i) the estimated costing for these works must be provided and should be based on a nominal period of at least 50 years after the landfill ceases to accept waste. The actual duration of this period will be determined from actual monitoring data at the time. (EPA GTA)	Yes	
	<b>Community Liaison Committee</b>		
16	Prior to the commencement of construction, the Applicant shall establish a Community Liaison Committee (CLC) comprising representatives of the Applicant, the local community, Council and Supervisory Licensee. Representatives of relevant government agencies may be invited to attend meetings of the Committee as required. The Chairperson and procedures for the Committee including frequency of meetings shall be determined by the Committee.	Yes	Golder understands that a Community liaison committee exists. We understand that the committee is consulted on a regular basis. The AEMR states that the Community Liaison committee met on 20/7/06, 19/10/06, 25/01/07, 24/05/07 and 12/06/07 (during the 2006/2007 monitoring period) and that a new committee was elected in May 2007.
	<b>Annual Environmental Management Report</b>		
17	In order to facilitate the integration of the environmental management of the subject land and the Woodlawn mine site, the Applicant shall liaise with the holder of the Woodlawn mining lease in relation to the formulation and review of the Annual Environmental Management Report (AEMR) for the mine. The AEMR shall comply with the requirements of the Director-General of the Department of Mineral Resources and be subject to review by all relevant government agencies.	Yes	The AEMR (2006-2007) has been reviewed. We understand that the AEMR has been provided to all relevant government agencies for review. We consider that the AEMR has been prepared in accordance with Department of Primary Resources, Guidelines to the Mining, Rehabilitation and Environmental Management Process, 2006.
	<b>Conditions Compliance Reports</b>		
18	The Applicant shall submit to the Director-General, the EPA, DLWC and Council Conditions Compliance Reports as follows:	Yes	The compilation of CCR's is outlined in the LEMP, Section 4.4.1 p.20: We understand that these reports (Conditions Compliance Report May 2007) were submitted to DIPNR, DECC, & Council
	(a) at least one month prior to the commencement of construction works for the purposes of landfilling, or within such period as otherwise agreed to by the Director-General;	Partial	Date of commencement of construction works unknown to Auditor Pre- Construction Condition Compliance Report included in original LEMP dated 23/4/01 - Maunsell/McIntyre.
	(b) at least one month prior to the commencement of construction works for the purposes of the intermodal transfer facility, or within such period as otherwise agreed to by the Director-General;	Partial	Date of commencement of construction works unknown to Auditor Pre- Construction Condition Compliance Report included in original LEMP dated 23/4/01 - Maunsell/McIntyre.
	(c) every two years following the date of commencement of construction for the purposes of landfilling activity, or within such period as otherwise agreed to by the Director-General.	Yes	The most recent CCR (May 2007) has been reviewed. Date of commencement of construction works unknown to Auditor
	<b>Independent Environmental Audits</b>		
19	Every three years following the date of this consent, or at periods otherwise agreed to by the Director-General, and until such time as agreed to by the Director-General, the Applicant shall arrange for an independent audit of the environmental performance of the development. The audits shall:	Yes	Current Environmental Audit carried out by Golder Associates - this is within three years of commencement of construction
	(a) be conducted pursuant to ISO 14010 – Guidelines and General Principles for Environmental Auditing, ISO 14011 – Procedures for Environmental Monitoring and any specifications of the Director-General;	Yes	
	(b) be conducted by a suitably qualified independent person approved by the Director-General;	Yes	Auditor is Colm Molloy, Lead Auditor, Golder Associates Pty Ltd.
	(c) assess compliance with the requirements of this consent;	Yes	
	(d) assess the implementation of the LEMPs and review the effectiveness of the environmental management of the development; and	Yes	
	(e) be carried out at the Applicants' expense.	Yes	
	The audits shall be submitted to the Director-General, the EPA, DLWC, Council and the Community Liaison Committee.		
	The Applicants shall comply with all reasonable requirements of the Director-General in respect of any measures arising from or recommended by the audits and within such time as agreed to be the Director-General.		
	<b>SITE REHABILITATION</b>		
	<b>Whole of Site Rehabilitation</b>		
20	The filling of the Woodlawn mine void with waste and the final rehabilitation of the land subject to the DA shall be undertaken in a manner which is complementary with the rehabilitation of the Woodlawn mine site. Details of integrated rehabilitation	Yes	Described in Section 7 of the PCRMP, the Mining Operations Plan (MOP) and the AEMR. Various rehabilitation measures, trials and research are described. This includes the rehabilitation of disturbed land

	shall be provided in the Rehabilitation Management Plan prepared in accordance with Condition 22.		at the western ridge of the mine void and Hickory Paddock. A part of the Site is currently subject to a mining license held by Tri Origin. Rehabilitation of these parts of the Site are under discussion.
21	Activities associated with landfilling must not impede or limit the rehabilitation works on any part of the Woodlawn Mine site.  <b>Rehabilitation Management Plan</b>	Yes	Described in Section 7 of the PCRMP, the Mining Operations Plan (MOP) and the AEMR. Landfilling activities do not appear to impede or limit the rehabilitation works.
22	The Applicant shall prepare and implement a Rehabilitation Management Plan (RMP) which addresses areas designated for revegetation and rehabilitation as well as areas deemed not to require such treatment. The RMP shall address, but not necessarily be limited to the following matters:	Yes	PCRMP included in LEMP. The Landscape and Vegetation Management Plan (LVMP) outlines revegetation for the intermodal facility and the bioreactor area. Pest and Weed Management is outlined. The areas mentioned appear revegetated, but no evidence of weed management has been reviewed.
	(a) clear identification of proposed new rehabilitation works to be undertaken by the Applicant, details of the Woodlawn Mine site rehabilitation works being undertaken by the mine leaseholder, and a clear definition of the respective obligations of the parties;	Yes	As per Condition 20
	(b) an outline of financial arrangements for site rehabilitation works proposed in the plan	Yes	Section 4 of the PCRMP outlines financial assurances. In regards to the bioreactor rehabilitation, Collex/Veolia has provided the EPA with a bank guarantee, which has been determined by an independent review of costing (annually adjusted). Collex/Veolia has also provided the EPA with an accumulating fund generated by monies set aside annually in respect of post closure works. In regards to the Whole of mine site rehabilitation, Collex/Veolia has provided the Department of Mineral Resources with financial assurance in form of a bank guarantee.
	(c) the rehabilitation standards to be adopted;	Yes	Section 6 of the PCRMP describes standards for site capping, revegetation, ED3 rehabilitation and site decommissioning. In particular, the NSW EPA Environmental Guidelines for Solid Waste Landfills (1996) are referred to. We consider that the standards used are compliant with current environmental regulations.
	(d) a rehabilitation schedule (to be reviewed on a regular basis);	Yes	Section 6.5 of the PCRMP mentions that "the schedule for the rehabilitation of the bioreactor is reliant upon the final landform and proposed end use of the Site, and will, therefore, be determined closer to the time of rehabilitation". We consider this approach appropriate.
	(e) a post-establishment maintenance and monitoring program for rehabilitated areas;	Yes	Section 2 of the PCRMP outlines environmental monitoring of the bioreactor after Site closure. The proposed monitoring guidelines are NSW DECC guidelines such as the NSW EPA Environmental Guidelines: Solid waste Landfills (1996).
	(f) procedures for the removal of all derelict buildings and infrastructure;	Yes	Section 6.4 of the PCRMP states that "site decommissioning activities would be dependant upon the final end landuse for the Site". We consider this approach reasonable.
	(g) closure strategies in the event that landfilling activities conclude prior to the capacity of the mine void being filled; and	Yes	Three early Closure Strategies are outlined in Section 5.1 of PCRMP. These options vary mainly in the way that surface water is managed in the mine void. These options appear to comply with Condition 22(g).
	(h) integration of rehabilitation works with the rehabilitation of the Woodlawn mine site.	Yes	Section 7 of the PCRMP outlines that the waste filling activities are not to impede or limit the mine rehabilitation works. The AEMR outlines mine rehabilitation works undertaken such as the rehabilitation of disturbed land (Western ridge of mine void and Hickory Paddock, plant area), rehabilitation trials (Tailings Dams). Planned rehabilitation activities are outlined.
	The RMP shall be included in the LEMP.	Yes	
23	The Applicant must obtain approval from the End of Mine Life Steering Committee and the EPA to disturb, obtain or use materials from the Woodlawn Mine site for the construction, operation and rehabilitation of the landfill, intermodal facility, haul roads and any other infrastructure at the premises.	Yes	We understand that this approval has been obtained as part of the initial DA application and consent process.
24	The Applicant shall liaise with the holder of the Woodlawn mining lease in the preparation of a Mining Operations Plan (MOP) in accordance with the requirements of the Department of Mineral Resources  <b>EPA Financial Assurance</b>	Yes	We understand that this has been undertaken. Collex/Veolia now takes responsibility for the whole of mine Site rehabilitation (since 2007), and therefore the landfill and mine licensing are operated by a single body.
25	The Applicant shall provide to the EPA financial assurance commensurate with the ongoing environmental management and rehabilitation responsibilities for the landfill and associated activities. The financial assurance shall consist of:	Yes	
	(a) an unconditional and irrevocable bank guarantee, or other form of financial assurance acceptable to the EPA. The financial assurance is to be adjusted annually so that it keeps pace with inflation for so long as the EPA requires it to remain in place. The amount of the assurance will be determined by an independent review of the costings applicable to activities identified in the LEMP and Conditions 55 and 159; and		See bank guarantee No. 5034238003. See comments in condition 22(b). A DECC letter, dated 13/09/2007 states that the bank guarantee is required for longer.
	(b) an accumulating fund generated by monies set aside annually on deposit, or other form of financial assurance acceptable to the EPA which will have to be increased in a similar way, in respect of post closure works and responsibilities. The initial and ongoing annual deposit into this fund will be determined by an independent expert review of the costings applicable to activities identified in Condition 15. The financial assurance shall be maintained during the operation of the facility and thereafter until such time as the EPA notifies the Applicant in writing that it is satisfied that the premises have been appropriately rehabilitated and are environmentally secure. Written approval must be obtained from the EPA for any changes to the financial assurance detailed in this condition.		DECC correspondence from 01/08/2007 and 06/08/2007 indicates that Veolia is discussing the 2007 financial assurance, which was due on 06/09/2007.
	<b>WASTE SOURCES AND TYPES</b>		
26	All waste shall be sourced from the Sydney region. All waste received at the waste management facility shall be transported by rail to the intermodal facility.	Yes	From our visit to the bioreactor and the intermodal facility and review of waste transport documents, we understand that the waste deposited at the Woodlawn bioreactor is sourced from the Sydney region. The waste is transported to transfer stations in Sydney, transferred to railway containers, transported via railway to the intermodal facility and then trucked to the bioreactor. This is further outlined in Section 5.2 of the LEMP.
27	The only wastes that can be disposed of at the premises are as follows:		
	(a) inert waste and solid waste defined in Schedule 1 of the Protection of the Environment Operations Act 1997 or waste that is assessed and classified as inert or solid waste following the technical assessment procedure outlined in Technical Appendix 1 of the Waste Guidelines;	Yes	We understand that only the types of waste outlined in Conditions 27(a), 27(c) and 27(d) are deposited at the bioreactor. There is no indication that other wastes are deposited at the Site. A "Screening and Recording of Waste Received" Procedure is in place.
	(b) asbestos waste (including asbestos waste in bonded matrix and asbestos fibre and dust waste resulting from the removal of thermal or acoustic insulating materials or from processes involving asbestos material, and dust from ventilation collection systems) disposed of in accordance with clause 29 (5) of the Protection of the Environment Operation (Waste) Regulation 1996;	Yes	We understand that no asbestos waste is currently deposited at the Site.
	(c) tyres in accordance with the EPA's tyre disposal specification; and	Yes	We understand that only the types of waste outlined in Conditions 27(a), 27(c) and 27(d) are deposited at the bioreactor. There is no indication that other wastes are deposited at the Site.
	(d) other types of waste as expressly approved by the EPA. (EPA GTA)	Yes	We understand that only the types of waste outlined in Conditions 27(a), 27(c) and 27(d) are deposited at the bioreactor. There is no indication that other wastes are deposited at the Site.
	<b>WASTE MANAGEMENT PROCEDURES</b>		
28	There shall be no storage of sludges nor overnight storage of containerised waste, on the intermodal facility site. This condition may be varied with the written approval of the EPA if it is required by police; and /or because the operation, personnel or equipment are endangered. (EPA GTA)  <b>Waste Transportation</b>	Yes	There is no evidence that overnight storage of waste has occurred at the intermodal facility. The scheduling of
29	All containers must be designed, constructed and maintained to prevent the emission of offensive odour and be water tight to prevent the leakage of leachate from waste containers during transport and handling activities. (EPA GTA)	Yes	A Container Quality Assurance Program is in place and appears to be followed. No evidence of leachate leakage at the intermodal facility and the road to the bioreactor was observed.
30	All pressure relief valves on the containers must be designed to meet the environmental requirements of condition 29. (EPA GTA)	Yes	We understand that this has been undertaken
31	A Quality Assurance Program must be developed and implemented to ensure compliance with Condition 29. The program must include but need not necessarily be limited to the following:	Yes	We understand that this has been undertaken
	(a) Container integrity;		
	(b) integrity and performance of rubber seals;		
	(c) Performance of mechanisms to filter and remove odour where required including cleaning and performance testing; and		
	(d) Container cleaning. (EPA GTA)		

32	A protocol must be developed and implemented to manage incidents involving spillage of waste. The protocol must include but should not necessarily be limited to procedures identifying immediate cleaning of the site, disinfection and reporting protocols. (EPA GTA)	Yes	The Emergency Management Plan outlines emergency response procedures for liquid and solid spills. These appear to be sufficient to comply with Condition 32.
<b>Control of Incoming Wastes</b>			
33	The Applicant must develop procedures to screen deliveries of waste to ensure compliance with Condition 27. The procedure must be documented in the LEMP. (EPA GTA)	Yes	The LEMP, Appendix A outlines a "Screening and Recording of Waste Received" Procedure.
34	The Applicant shall use its best endeavours to ensure that all waste received at the intermodal facility is containerised.	Yes	No uncontainerised waste was observed at the intermodal facility. The procedures for waste transport to the bioreactor outline that containers are loaded from the railway carriages to trucks. No uncontainerised waste should occur at the intermodal facility if these procedures are followed.
<b>OPERATIONAL STAGING AND LANDFILL MANAGEMENT</b>			
35	The Applicant shall prepare a landfilling schedule consistent with the concept detailed in figure 4.10 in the EIS. Details of the landfill schedule and shall be provided in the LEMP.	Yes	A landfilling schedule is outlined in the LEMP, Section 5.1.1 p23. This schedule is consistent with Condition 4(c). We have reviewed the electronic container weight register, the schedule appears to be followed.
<b>Cover Material</b>			
36	Cover material must be virgin excavated natural material, unless otherwise approved in writing by the EPA. (EPA GTA)	Yes	DECC correspondence from 06/01/2006 outlines the use of alternative daily cover materials. We understand that various trials have been undertaken with different daily cover materials.
37	Cover material must be of a quality that will not inhibit the biological decomposition of the landfilled waste. (EPA GTA)	Yes	We understand that various trials have been undertaken with different daily cover materials. No evidence of daily cover material affecting the decomposition of waste has been found.
38	Cover material must be applied to a minimum depth of 15 centimetres over all exposed landfilled waste, prior to ceasing operations at the end of each day, unless otherwise approved in writing by the EPA. (EPA GTA)	Yes	The LEMP, Section 5.1.1 p23 outlines that at least 150 mm of soil or an approved alternative cover be placed over the waste at the end of each day. This appears to be undertaken.
39	Cover material must be applied to a depth of 30 centimetres over surfaces of the landfilled waste which are exposed for more than 90 days, unless otherwise approved in writing by the EPA. (EPA GTA)	Partial	The LEMP does not comment on this condition. We understand that this is undertaken, and that studies are
40	At least two weeks supply of cover material must be available at the premises under all weather conditions, unless otherwise approved in writing by the EPA. (EPA GTA)	Partial	The LEMP, Section 5.1.1, page 23 outlines that at least two weeks supply of cover material will be available on the Site at all times. We understand that trials have been undertaken for alternative daily cover, and that
<b>Landfill Gas</b>			
41	The Applicant shall ensure to the maximum practical extent the quantity of landfill gas that is collected and treated.	Yes	The Bioreactor Performance Monitoring Program and the Gas Management Plan outline a wide range of measures to maximise the quantity of landfill gas generation. These appear to be implemented.
42	The Applicant must ensure that any flare, power station or other proposed landfill gas treatment or beneficial re-use system is designed to provide a destruction efficiency of hydrocarbons, organic air toxics and odours of not less than 98%. (EPA GTA)	Yes	The landfill gas flare has been designed to UK Env. Agency Guidelines. The plant specifications indicate that a destruction efficiency of 98% of the required compounds can be achieved. A review of continuously recorded operational parameters (flow, temperature) indicates that the required destruction rate has been achieved.
43	The flare system must be designed, installed and operated so that hydrocarbons, organic air toxics and odours are destroyed in accordance with Condition 42. The system must be provided with automatic ignition system and automatic shut-off gas valve. Scrubbers or other suitable treatment must be provided if it is required to remove hydrogen sulfide in order to comply with Condition 42. The system must be installed progressively during the operation of the landfill. (EPA GTA)		The flare system was commissioned in Nov 2006, and initially relatively low flows of CH <sub>4</sub> were recorded. Currently, the system achieves a flow rate of 600m <sup>3</sup> /hr and 1000°C, which the EPL deems sufficient to achieve 98% destruction of the required compounds. Veolia trials to use magnetite as daily cover to reduce H <sub>2</sub> S production rather than to install a scrubber at the flare. A review of continuously recorded operational parameters (flow, temperature) indicates that the required destruction rate has been achieved.
44	Any landfill gas condensate must be collected and returned to the leachate recycling system. (EPA GTA)	Yes	The Gas Management Plan, Section 2.6, outlines gas condensate collection. Condensate is collected at a knock-out vessel and returned to the mine void.
45	The landfill gas extraction and utilisation system must be designed and installed to withstand forces created by the weight and settlement of waste in the landfill.	Partial	The Gas Management Plan, Section 2.3 and Appendix A outline the design of the gas extraction system. However, no design calculations in regards to pipe stability have been reviewed.
46	All pipe work carrying landfill gas adjacent to the haul road must be designed and installed so it is protected from damage as a result of haulage activities. (EPA GTA)	Partial	The Gas Management Plan, Section 2.3 and Appendix A outline the design of the gas extraction system. However, no design calculations in regards to pipe stability have been reviewed. We understand that all pipes are buried and designed and protected from vehicular traffic.
<b>WATER QUALITY AND MANAGEMENT</b>			
<b>Waste Management Facility Site</b>			
47	The premises and the activities carried out therein must not pollute surface water or groundwater. (EPA GTA)	Partial	Surface Water and groundwater monitoring generally complies with the EPL. Some licence non-compliances in regards to monitoring frequencies have been noted. The DECC has also issued a non-compliance in regards to stormwater quality. We understand that since then, the licence has been amended.
<b>Groundwater and Leachate Management</b>			
48	The mine void must be managed to ensure the groundwater gradient directs groundwater flows towards the mine void, unless otherwise approved in writing by the EPA. (EPA GTA)	Yes	The Leachate Management Plan, Section 2.1 outlines groundwater management. Currently, an estimated 0.5 - 2 L/s of groundwater is considered to flow into the mine void. When waste reaches the higher levels of the void (i.e. 20m below surface level), a liner is to be constructed around the pit and depressurisation to occur where necessary. Initial groundwater monitoring at the site indicated that there would be an inward
49	Maintenance of the groundwater gradient post closure of active landfill operations (including a period of after-care) must ensure that impact of any degraded residue from the landfill on groundwater represents no threat to human health or the environment.	Yes	Section 3.2 of the PCRMP outlines that one of the objectives of the post closure management is to ensure that bioreactor does not pollute the surrounding environment. Section 3.3 of the PCRMP mentions that all post-closure environmental controls (including leachate) are to be maintained at the same level as during the operational stage of the Site.
50	A leachate collection/storage/recirculation/treatment system must be designed, installed and operated to:	Yes	We understand that a leachate collection system exists as described in the Leachate Management Plan.
	(a) accept other waste-waters and contaminated storm-waters generated as a result of the operation of the facility;	Yes	Various waste water collection, storage and treatment systems for other waste-waters and contaminated stormwaters exist on Site.
	(b) efficiently operate, notwithstanding the settlement of the waste;	Yes	We understand that the system operates efficiently, and that further studies are being undertaken to resolve
	(c) ensure that all liquid (including rainwater, surface water, groundwater and leachate) introduced into the waste is monitored to determine its chemical composition and quantity;	Yes	Surface water, groundwater and leachate is monitored as per the EPL. See Condition 47.
	(d) ensure that liquid is not deliberately stored in the landfilled waste, unless it is necessary for the efficient decomposition of the landfilled waste.	Yes	Leachate management appears to be carried out in accordance with the leachate management Plan and the BPMP.
	(e) ensure that leachate can be recirculated within the biologically active zones of the landfilled waste; and	Yes	The Leachate Management Plan, Section 3.2 outlines the leachate recirculation system. We understand from Site observation that leachate circulation is conducted by direct face application.
	(f) comply with Conditions 48 and 8(b).	Yes	
	Details of this system must be documented in the LEMP. (EPA GTA)	Yes	
51	A barrier system must be designed and installed on the surfaces identified in condition 52 to limit the quantity of groundwater flowing into the mine void and to contain leachate over the period of time that the landfilled waste poses a potential environmental risk. The system must be documented in the LEMP. (EPA GTA)	Yes	The Barrier System & Quality Assurance Plan (BSQAP), Section 3 describes the barrier system to comprise a 900mm compacted clay liner with a hydraulic conductivity of less than 1x10 <sup>-9</sup> m/s and a HDPE erosion protection layer for the side slopes. We understand that this system has been installed at the base and localised joints, fracture zones and adits/portals where required. The requirement has been removed from the EPL in August 2007.
52	The Applicant shall install the barrier system on the following surfaces of the mine void wherever these surfaces do not meet the performance requirements of Condition 53:		
	(a) the base and the top elevation of the mine void; and	Yes	Completed at the base
	(b) the localised joints, fracture zones and adits/portals.	Yes	Completed where required.
53	The barrier system must at least achieve the performance of a 900 mm thick recompacted clay liner with an in-situ coefficient of permeability of less than 10 <sup>-9</sup> metres per second.	Yes	We understand that this has been undertaken. We understand that CQA documentation is not yet finalised and has not been reviewed.
54	A Construction Quality Assurance Plan (CQAP) for the barrier system shall be prepared and included in the LEMP.	Yes	A CQAP is included in Section 10 of the BSQAP.
55	The Applicant shall prepare a Leachate Contingency Management Plan (LCMP) that addresses, but not necessarily be limited to the following matters:		The LCMP forms part of the Leachate Management Plan
	(a) the removal of leachate from the waste and its treatment to remove any metals or compounds at concentrations which may inhibit the biological processes of the bioreactor landfill, prior to discharging the leachate back into the landfilled waste;	Yes	The BPMP and the Leachate Management Plan mentions the monitoring of heavy metals in leachate and in waters added to the bioreactor. The removal of leachate from the bioreactor via the extraction system is described, however, there is no mention of removal of specifically heavy metal impacted water.

	(b) the storage of leachate external to the landfilled waste in the mine void;	Yes	Leachate storage ponds and tanks are described in the Leachate Management Plan and the attached drawings. Our Site observations are in conformance with the Plan
	(c) method/s for removing leachate from the waste and disposing of it to ensure effective operation of the bioreactor landfill and to ensure that the groundwater gradient directs groundwater flows into the mine void; and	Yes	We understand that the leachate extraction system has been constructed as per the design drawings.
	(d) an estimate of the full costs for implementing each aspect of this plan. (EPA GTA)	Yes	Cost estimates per litre of leachate have been provided (15 cents per litre and \$9,000 per storage tank).
56	The Applicant must not import water or other liquids into the mine void, unless otherwise approved by the EPA, except for first flush waters collected at the Intermodal Facility site and waters contained in ED3. (EPA GTA)	Yes	The Leachate Management Plan outlines no import of water to the mine void unless approved by the EPA.
57	The Applicant shall develop a plan (known as bioreactor water management plan) which addresses the treatment of water, prior to any water being added (other than by direct rainfall) to the landfilled waste. This plan shall be included in the LEMP.  <u>Surface Water Management</u>	Yes	The leachate Management Plan outlines initial water treatment options. We understand that Veolia is undertaking further studies to investigate water treatment options.
58	There must be no discharge of waters from the area subject to the Development Application, unless more than 210mm of rain falls within a 72 hour time period (1 in 100 year ARI of 72 hours duration). (EPA GTA)	Yes	The ED3 Mgt Plan and the attached water balances describe the Site as a zero discharge site.
59	At the commencement of waste being received into the mine void the volume of water stored in ED3 shall be no greater than 40 ML.	Yes	From review of Veolia communication, we understand that this condition has been complied with and is now considered to be a redundant condition.
60	The Applicant shall install drainage so that the West Ridge Catchment shall not drain into the mine void.	Yes	Section 4.1 of the ED3 Management Plan and Section 2.4.2 of the SWMS state that this work has been completed.
61	Contaminated water shall only be applied for dust suppression in the mine void, and in any areas around the perimeter of the void where any contaminated water will drain back into the void.	Yes	We understand that this condition is complied with.
62	The evaporation of water by spraying shall not result in the drifting of the sprayed liquid from the area subject to the DA and also shall not cause any adverse impact to public health. The proposed method for the spray evaporation of water shall be documented in the LEMP.		We understand that evaporation of water is undertaken at the dams. From review of the community complaints register, we understand that complaints are closely monitored and the evaporation process amended if required.
63	ED3 shall not receive water stored in the Waste Rock Dam.	Yes	We understand that this does not occur.
64	Stormwater in the mine void must only be discharged into ED3, or otherwise used for operational purposes within the landfill, as approved in writing by the EPA. (EPA GTA)	Yes	We understand that this condition has been complied with.
65	Stormwater collected in the mine void may only be transferred into ED3 provided that: (a) The Applicant can always comply with condition 58; (b) the concentration of ammonia in the stormwater to be transferred does not exceed 0.03 mg/L and the concentration of total organic carbon in the stormwater does not exceed 1 mg/L; and (c) the stormwater to be transferred contains no leachate, unless otherwise approved in writing by the EPA. (EPA GTA)	Yes	This condition has been amended as per DECC notice of variation to the EPL 11436, dated 06/07/2006.
66	The Applicant must design and implement a Stormwater Management Scheme for the premises demonstrating compliance with Conditions 47, 48, 58, 63, 64, 65, and 8(b). This plan must be documented in the LEMP. (EPA GTA)	Yes	Surface water management scheme and ED3 Management Plan have been compiled and appear to be implemented based on our Site visit and review of the plans.
67	Vehicles leaving the area subject to the DA shall not track materials to external surfaces. Details of the equipment or facilities must be specified in the LEMP (EPA GTA)	Yes	A wheel wash exists at the Site. External surfaces did not appear impacted at the time of our Site visit. The wheel wash is described in Section 5.2.3 of the Ambient Air Monitoring Plan (AAMP).
68	Containers used for transporting waste must only be washed at the container wash facility as frequently as is necessary to minimise environmental impacts from the containers. The container wash down facility must be designed, installed and operated with the aim to collect, treat and dispose of any wash down waters to the leachate collection system. Any collected solids must be returned to the active tipping face. The container wash down facility must be documented in the LEMP. (EPA GTA)	Yes	The container wash down is described in Section 5.2.3 of the AAMP.
69	Impervious bunds must be constructed around all fuel, oil and chemical storage areas and the bund volume must be large enough to contain 110 per cent of the volume held in the largest container. The bund must be designed and installed in accordance with the requirements of the EPA Environment Protection Manual Technical Bulletin Bunding and Spill Management. (EPA GTA)  <u>ED3-Management</u>	Yes	One double skinned AST exists at the Site. No construction drawings have been reviewed.
70	The Applicant must prepare a management plan for ED3 to ensure that: (a) the dam is maintained to prevent the leakage of stored acid mine drainage waters in order to protect groundwater and surface water; (b) adequate capacity is retained in ED3 to meet the environmental performance requirements in condition 58 (c) measures are identified to maintain adequate capacity within a suitable time period after receiving water from a rainfall event; (d) there is an emergency plan for the management of water in excess of the capacity of ED3; (e) the sources of water that are collected or received in ED3 are identified; and (f) the quantity of water (in cubic metres per hour) from each source that reports to ED3 is monitored and compared in graphical format with rainfall data. The plan must be documented in the LEMP.  <u>Waste-water Management</u>	Yes Yes Yes Yes Yes Yes	ED3 Mgt Plan ED3 Mgt Plan As per section 4.2 of the ED3 Mgt Plan, the capacity of ED3 with freeboard is 287 ML. We understand that Veolia maintains adequate capacity in ED3 in case of a storm event and is monitored monthly. The ED3 management Plan summarises a water balance for the Site, indicating that even a high rainfall year, adequate capacity for the design rainfall event is maintained. Section 4.7 of the ED3 Management Plan outlines emergency procedures in case of dam structural fault or failure and Dam overflow. Options include an increase in capacity of ED3 and use of other storage ponds on Site. The catchment areas that contribute to ED3 are: ED3 surface area and Stormwater from the mine void. As per Section 4.5 of the ED3 Management plan, the volume of water pumped from the mine void is recorded and the volume of water stored in ED3 is calculated on a monthly basis.
71	The sewage management system must be designed, installed and operated to meet the following criteria: (a) Prevention of Public Health Risk. Unacceptable public health risks must not occur resulting from human contact with the waste-water or flows discharged from the waste-water management system. Indicator faecal coliforms must be reduced to acceptable levels by an acceptable disinfection method determined in consultation with the EPA and NSW Department of Health. Consultation must be undertaken with NSW Health on the performance of the system. (b) Protection of Lands. The application of waste-water to land must not result in the deterioration of the quality of the land through soil structure degradation, salinisation, waterlogging, chemical contamination or soil erosion. (c) Protection of Surface Waters. Surface waters must not become contaminated by any flows discharged from the waste-water management system including waste-water, rainfall runoff, contaminated subsurface runoff or contaminated groundwater. (d) Protection of Groundwaters. Underground water resources must not become contaminated by either the waste-water, or any flows discharged from the waste-water management system. (e) Community Amenity. Unreasonable interference and nuisance to the public, due to odour, dust, insects, and noise above existing background levels and arising from the operation of the waste-water management system must be avoided. (f) Resource Utilisation. The useful resources of waste-water, including nutrients, organic matter and water must be identified and utilised to the maximum extent possible within the bounds posed by the other environmental and health performance criteria referred to in (a) to (e) above. (EPA GTA)	Yes	A wastewater Management Plan (WWMP) was compiled by Morse McVey. No non-conformance with the WWMP was observed. An Aerated Wastewater Treatment System (AWTS) has been designed by Morse McVey. The system is designed to use the existing sewer drainage network to convey sewer to the treatment system. Following treatment, the secondary treated wastewater is irrigated. Mulwaree Shire Council has issued a licence on 08 October 2003 (application No: 012/487) to operate the designed AWTS under the conditions of achieving certain performance standards. These standards appear to be met. We are not aware of non-compliances to the licence. Refer to 71(a) Refer to 71(a) Refer to 71(a) Refer to 71(a) Refer to 71(a)
72	Waste-water must only be applied to utilisation areas in conformance with Condition 71. (EPA GTA)	Yes	The irrigation area is located near the AWTS in the vicinity of the Site entrance area.

73	Spray from waste-water application must not drift beyond the boundary of the waste-water utilisation area to which it is applied. (EPA GTA)	Yes	No reports about drifting spray were found.
74	Waste-water utilisation areas must effectively utilise the waste-water applied to those areas. This includes the use for pasture or crop production, as well as ensuring the soil is able to absorb the nutrients, salts, hydraulic load and organic materials in the solids or liquids. Monitoring of land and receiving waters to determine the impact of waste-water application may be required by the EPA. (EPA GTA)	Yes	The waste-water utilisation areas appear to be managed as per the WWMP.
<b>Intermodal Facility Site</b>			
75	The Applicant shall prepare and implement a Stormwater Management Scheme for the premises in accordance with the environment protection licence. The Scheme shall include measures to mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities and meet Condition 76 (EPA GTA)	Yes	We have visited the Intermodal Facility and its associated infrastructure and reviewed the Stormwater Management Scheme (SWMS) including associated as-built drawings (Maunsell 2003). The facility appears to be built and operated as outlined in the drawings and the SWMS.
76	Container handling, transfer and storage areas including any hardstand areas must be paved and sealed and be provided with a first flush stormwater management system designed to capture 15mm of stormwater for each square meter of catchment area. The paved and sealed areas including first flush system must also extend to include any rail unloading areas, stormwater detention pond, oil/water separator and container loading areas. (EPA GTA)	Yes	We have visited the Intermodal Facility and its associated infrastructure and reviewed the Stormwater Management Scheme (SWMS) including associated as-built drawings (Maunsell 2003). The facility appears to be built and operated as outlined in the drawings and the SWMS. VES has obtained approval to irrigate the collected stormwater as no significant contamination was detected in the first flush water.
77	There must be no discharge of contaminated stormwater from the premises under dry weather conditions or storm event(s) of less than 1:100 year, 24 hour duration, average recurrence interval. (EPA GTA)	Yes	No such discharge has been evidenced
78	All areas that involve the handling of containerised waste including container transfer and handling areas, clean container storage areas and internal roadways must be sealed. (EPA GTA)	Yes	From site observations and as-built drawings (Maunsell 2003) we consider that this condition has been complied with.
<b>Waste Water Management</b>			
79	Contaminated stormwater and any sludges collected at the Crisps Creek intermodal facility must be disposed of at the landfill site. (EPA GTA)	Yes	A compost toilet has been built at the facility. The compost toilet has a capacity to handle the ooad without needing cleaning for several years. Waste water issues are addressed in the LEMP Waste Water Management Plan.
80	There must be no vehicle or container wash down at the premises. (EPA GTA)	Yes	We understand that vehicle and container wash down is undertaken at the landfill.
81	The on-site sewerage waste water management system must be designed, installed and operated in a manner consistent with the guidelines Environment and Health Protection for On-site Sewage Management for Single Households. (EPA GTA)	Yes	A compost toilet has been built at the facility. No non-compliance with the relevant standards and guidelines has been observed. The compost toilet has a capacity to handle the ooad without needing cleaning for several years. Waste water issues are addressed in the LEMP Waste Water Management Plan.
<b>Rivers and Foreshore Improvement Act 1948 - Part 3A Permit (DLWC GTAs) General</b>			
82	If any work is being carried out in such a manner that it may damage or detrimentally affect the stream, or damage or interfere in any way with any work, the operation on that section of the stream shall cease immediately upon the oral or written direction of the officer.	Yes	We understand that these works have been undertaken in accordance with this condition. We are not aware of a non-compliance with the Part 3A permit.
83	The Applicant may request in writing any reasons for any direction to cease operations which must be provided within 24 hours of such a request	Yes	We understand that these works have been undertaken in accordance with this condition. We are not aware of a non-compliance with the condition.
84	If the permit conditions have been breached, the permit holder shall restore the site to the satisfaction of the Department. If the necessary works are not completed then the permit holder shall pay a fee prescribed by the Department for the initial breach inspection and all subsequent breach inspections.	Yes	We understand that these works have been undertaken in accordance with this condition. We are not aware of a non-compliance with the condition.
85	Operations shall be conducted in such a manner as not to cause damage or increase the erosion of adjacent stream banks. The permit holder shall carry out any reasonable instructions given by DLWC with a view to preventing damage to the banks.	Yes	Revegetation and erosion protection measures are outlined in Section 2 of the Landscape and Vegetation Management Plan (LVMP). These appear adequate and appear to have been implemented.
86	Any vegetation or other material removed from the area of operations shall be disposed of to an appropriate site where the debris cannot be swept back into the river during a flood.	Yes	According to the LVMP, Section 2.3, trees were mulched, composted and reused as cover. Stripped grass and topsoil were reused. Other materials were disposed off at an off-Site location.
<b>Conditions Specific to the DA</b>			
87	Operations shall be conducted in such a manner that is in accordance with the permit as not to cause damage or increase the erosion of adjacent stream banks. The permit holder shall carry out any reasonable instructions given by DLWC with a view to preventing damage to the banks.	Yes	Works appear to be have been carried out in accordance with the LVMP and the Maunsell (2003) as built drawings.
88	Prior to the commencement of construction, the Applicant shall submit for the approval of DLWC a Soil and Water Management Plan. The Plan shall be prepared by a suitably qualified person and shall cover all works in and near the stream, staging and maintenance requirements. The Plan shall meet the requirements outlined in the NSW Department of Housing's publications (1998) Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater: Treatment Techniques.	Yes	We understand that this has been completed prior to construction. No non-conformance with this condition has been noted.
89	The Applicant shall establish, to the satisfaction of DLWC, a riparian zone on the intermodal facility side of the Mulwaree River for the length of the intermodal facility and any associated works. The riparian zone shall be at least 40 metre in width (measured horizontally from the top of the bank) and consist of local native plant species but shall exclude bridge approaches, bridge, access roads and associated infrastructure in accordance with the Intermodal Construction Works Plan, and Soil and Water Management Plan	Yes	Site observations, the LVMP, concept drawings by Hosking Munro and Maunsell (2003) as-built drawings indicate that the Riparian zine has been established.
90	No exotic trees are to be planted within the stream or within 40 metres from the top of the bank of the stream.	Yes	This has been outlined in the LVMP.
91	Prior to commencing construction works the Applicant shall prepare to the satisfaction of DLWC a "Works Plan" to include Stream Rehabilitation and Vegetation Management. The Plan shall describe the proposed rehabilitation of the stream wherever disturbed, methods to stabilise the bed and banks of the stream, vegetation to be retained, additional plantings of local native vegetation, vegetation maintenance and performance criteria	Yes	There is no mention of a particular Work Plan, but the Stream Zone Rehabilitation has been outlined in Section 2.4 of the LVMP
92	The Applicant shall ensure that the design of the bridge over the Mulwaree River is sensitive to the corridor functions (including current and future functions) of the river and piered approaches or equivalent are to be incorporated into the design.	Yes	The Bridge design is outlined in the LVMP and the Maunsell as-built drawings.
93	Drainage lines to the Mulwaree River are to be in accordance with the requirements of DLWC and designs included in the Intermodal Facility Works Plan are to be approved by DLWC prior to the commencement of construction works	Yes	We understand that the drainage plans outlines in the SWMS, the LVMP and the Maunsell (2003) drainage plans have been approved by the DLWC prior to construction.
<b>NOISE</b>			
<b>Hours of Construction and Operation</b>			
<b>Construction</b>			
94	All construction work at the waste management facility and intermodal facility site that creates audible noise at residential premises must only be conducted between 7:00 am to 6:00 pm on Mondays to Fridays and between the hours of 8:00 am to 1:00 pm on Saturdays. There shall be no construction activities on Sundays or public holidays. (EPA GTA)	Yes	Work hours are outlined in Section 4 of the Noise Management Protocol (NMP)
95	The delivery of material outside the hours of operation permitted by Condition 94	Yes	



	operations in order to mitigate such impacts.		
	<b>Land Acquisition</b>		
109	Within six months of receipt of a written request from Pylara Pty Ltd (ACN 000 077 672), the Applicant shall purchase the whole of the property known as "Pylara", via Tarago. The request may be made at any time after this approval, despite any other conditions. The purchase, including acquisition price, shall be on the terms agreed between the Applicant and Pylara Pty Ltd. The acquisition price shall be fair and reasonable, shall take into account all relevant matters, and shall, at least, include payment for : (a) a sum not less than the current market value of Pylara Pty Ltd's interest in Pylara at the date of this consent, having regard to: (i) the existing use and permissible use of the land in accordance with the applicable planning instruments at the date of the written request; and (ii) the presence of improvements at Pylara and/or any Council approved building or structure which although substantially commenced at the date of request is completed subsequent to that date; and (iii) as if Pylara was unaffected by the Applicant's Development Proposal. (b) reasonable compensation to Pylara Pty Ltd for disturbance allowance and relocation costs within the Mulwaree Shire, or within such other location as may be determined by the Director-General in exceptional circumstances; and (c) Pylara Pty Ltd's reasonable costs for obtaining legal advice and expert witnesses for the purposes of establishing the acquisition price of Pylara and the terms upon which Pylara Pty Ltd is seeking for it to be acquired.	Yes	Pylara has been purchased by Veolia on 23/08/01
110	In the event that the Applicant and Pylara Pty Ltd cannot agree within three months upon the acquisition price of Pylara and/or the terms upon which it is to be acquired under the terms of this consent, then: (a) either party may refer the matter to the Director-General, who shall request the President of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, who shall determine, after consideration of any submissions from the owner's and the Applicant, a fair and reasonable acquisition price for Pylara as described in sub-clause (a) and/or terms upon which it is to be acquired; (b) in the event of a dispute regarding outstanding matters that cannot be resolved, the independent valuer shall refer the matter to the Director-General, recommending the appointment of a qualified panel. The Director-General, if satisfied that there is a need for a qualified panel, shall arrange for the constitution of the panel. The panel shall consist of: (i) the appointed independent valuer, (ii) the Director-General or nominee, and (iii) the president of the Law Society of NSW or nominee. (c) The qualified panel shall advise the independent valuer on the outstanding matters that the independent valuer refers for its consideration, following which the independent valuer shall determine a fair and reasonable acquisition price as described in condition 109 and/or the terms upon which Pylara is to be acquired.	Yes	Pylara has been purchased by Veolia on 23/08/01
111	The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel or the Director-General.	Yes	Pylara has been purchased by Veolia on 23/08/01
112	The Applicant shall, within fourteen days of receipt of a determination by the independent valuer, offer in writing to Pylara Pty Ltd to acquire the relevant land at a price no less than the said acquisition price as determined, and upon any terms set out by the independent valuer.	Yes	Pylara has been purchased by Veolia on 23/08/01
	<b>AIR QUALITY</b> <b>Odour</b> <b>Waste Management Facility Site</b>		
113	There shall be no offensive odour emitted from the premises, in accordance with Section 129 of the Protection of the Environment Act 1997, nor emissions to the atmosphere from the landfill that may adversely affect the health or amenity of the community. (EPA GTA)	Partial	Odour complaints have been recorded in the past. Veolia has addressed these by working closely with the community and encouraging the community to report odour detections. Veolia has conducted odour monitoring at the receptors when odour was detected. Golder understands that the complaints have been used to minimise odour emissions from the landfill. This is part of an ongoing study.
114	A meteorological station shall be installed and operated on the landfill site in accordance with the following Australian Standards: (a) AS 2922-1987 Ambient air – Guide for the siting of sampling units; and (b) AS 2923-1987 Ambient air – Guide for measurement of horizontal wind for air quality applications. The meteorological station shall measure and electronically log wind speed, wind direction, ambient temperature, sigma theta (standard deviation of the horizontal wind direction fluctuation), solar radiation. All parameters must be logged at 15 minute intervals to provide 1-hour average values and the station must be able to provide instantaneous wind speed and direction to assist in investigation of complaints. The meteorological station shall also measure rainfall and evaporation. (EPA GTA)	Yes	A review of the station monitoring software indicates that the Station complies to the relevant Standards.
	<b>Intermodal Facility Site</b>		
115	There shall be no offensive odour emitted from the premises, in accordance with Section 129 of the Protection of the Environment Act 1997. (EPA GTA)	Partial	Please refer to comments for condition 113.
	<b>Dust</b> <b>Waste Management Facility Site</b>		
116	Activities occurring on the waste management facility site during the construction and operational phases must be carried out in a manner that will minimise emissions of dust from the premises. (EPA GTA)	Yes	Various dust mitigation strategies are outlined in the Ambient Air Quality Monitoring Plan (AAQMP), Section 5.2. These include sealed containers, wheel wash, container wash-down facility, minimised truck speed, use of water carts, operator training, waste covering.
117	The Applicant must take all practical steps to manage dust emissions during the construction and operational phase of the waste management facility to minimise off-site impacts of total suspended particulates, lead and dust deposition. (EPA GTA)	Yes	Various dust mitigation strategies are outlined in the Ambient Air Quality Monitoring Plan (AAQMP), Section 5.2. These include sealed containers, wheel wash, container wash-down facility, minimised truck speed, use of water carts, operator training, waste covering. Dust monitoring is undertaken at the Site.
118	The LEMP must detail a system to prevent and suppress all dust emissions to meet the requirements in conditions 116 and 117. (EPA GTA)	Yes	Please refer to comments in regards to conditions 116 and 118.
119	Trucks which are entering and leaving the premises and carrying loads must be sealed or covered at all times, except during loading and unloading. (EPA GTA)	Yes	Golder understands that all trucks are sealed , as per the AAQMP, Section 5, page 17.
120	All internal permanent roadways between the container transfer area and Collector Road must be sealed. (EPA GTA)	Yes	The roads were observed to be sealed.
121	All sealed surfaces intended to carry vehicular traffic must be managed to minimise the quantity of wind blown dust emissions. (EPA GTA)	Yes	
122	All unsealed roads must be treated so that there are no visible dust emissions. Details of treatment measures must be documented in the LEMP.	Yes	Dust management and mitigation strategies are outlined in the AAQMP.
123	A progressive rehabilitation strategy must be prepared and implemented for any unsealed areas of the site to prevent both wind blown dust emissions and contaminated stormwater runoff. This strategy must be documented in the LEMP. (EPA GTA)	Yes	Dust management and mitigation strategies are outlined in the AAQMP.
	<b>Intermodal Facility Site - Construction and Operational Phases</b>		
124	Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises. (EPA GTA)	Yes	All areas are sealed. Other dust mitigation measures are outlined in the AAQMP.
125	The Applicant shall prepare a dust management plan that outlines measures to prevent wind blown dust. The dust management plan must be included as a component of the LEMP. The dust management plan must specify measures to	Yes	Various dust mitigation strategies are outlined in the Ambient Air Quality Monitoring Plan (AAQMP), Section 5.2.1. These include train speed limits, sealed containers, sealing of all roads and minimisation of truck speed.

	prevent wind blown dust during the construction and operational phases.(EPA GTA)		
126	Trucks entering and leaving the premises that are carrying excavated dusty materials including clays, sands and soils must be covered at all times, except during loading and unloading. (EPA GTA)	Yes	Various dust mitigation strategies are outlined in the Ambient Air Quality Monitoring Plan (AAQMP), Section 5.2.1. These include train speed limits, sealed containers, sealing of all roads and minimisation of truck speed.
127	All sealed and unsealed surfaces shall be managed to minimise the quantity of wind blown dust emissions. (EPA GTA)	Yes	Dust management and mitigation strategies are outlined in the AAQMP.
	<b>ENVIRONMENTAL MONITORING (EPA GTAs)</b> <b>Waste Management Facility Site</b> <b>Odour Monitoring</b>		
128	The Applicant must prepare and implement an odour monitoring plan. The plan must be developed in consultation with the EPA and documented in the LEMP.		Odour monitoring is conducted at the affected receptor when a complaint is received. The community is encouraged to report odours. These procedures are outlined in the AAQMP.
	<b>Ambient Air Quality Monitoring</b>		
129	The Applicant must prepare and implement an ambient air quality-monitoring plan. The ambient air quality monitoring plan must be documented in the LEMP. The plan must address but may not necessarily be limited to the following:	Yes	AAMQP
	(a) Monitoring methodologies and standards;	Yes	Monitoring Methodologies and Standards are outlined in Section 4.1 of the AAMQP.
	(b) Monitoring for concentrations of total suspended particulates (TSP), lead and dust deposition rates;	Yes	For at least 12 months following project startup followed by a review dependent on DECC input.
	(c) Locations where monitoring will be carried out;	Yes	Locations DG18, DG22, DG24, DG28 as per Appendix A of the AAQMP.
	(d) Detailed monitoring cycle and the duration of each monitoring cycle; and	Yes	Monitoring Methodologies and Standards are outlined in Section 4.1 of the AAMQP.
	(e) Reporting.	Yes	Air Quality Reports and Odour Records based on odour complaint records
	Monitoring is to be carried out in accordance with Approved Methods for the Sampling and Analysis of Air Pollutants NSW December 1999, or other methods stipulated in the EPL.		
	<b>Landfill Gas Monitoring</b>		
130	The Applicant must prepare and implement a system of monitoring surface and subsurface landfill gas concentrations. Details of the surface and subsurface landfill gas monitoring system must be documented in the LEMP. At a minimum, landfill gas shall be monitored for methane, carbon dioxide, and oxygen. The EPL may require other substances to be monitored.	Yes	A detailed LFG monitoring system is outlined in Table 3.1 of the BPMP. Some monitoring results have been reviewed and the monitoring system appears to be implemented as outlined in the BPMP.
	<b>Groundwater Monitoring</b>		
131	The Applicant shall prepare and implement a groundwater monitoring program that can detect groundwater flow and direction and any occurrence of groundwater pollution. The groundwater monitoring program must be documented in the LEMP. Note: The specific requirements of the monitoring program will be stipulated in the EPL. The program must include details on:	Yes	Comprehensive monitoring program is in place, which is outlined in the Groundwater Monitoring Program (GWMP) A review of the groundwater monitoring program has been carried out in 2007.
	(a) location of bore holes around the perimeter of the mine void and ED3- including the depth at which they are screened to enable access of groundwater;	Yes	
	(b) monitoring the height of the groundwater table;	Yes	
	(c) monitoring the groundwater gradient and to determine the direction of groundwater flow;	Yes	
	(d) monitoring methodologies and standards to be employed;	Yes	
	(e) reporting and assessment of results;	Yes	
	(f) opportunities to integrate the monitoring program with other monitoring programs in the vicinity;	Yes	
	(g) the parameters and substances that are proposed to be monitored, including sampling and analysis frequencies; and	Yes	
	(h) groundwater height should be reported against water table contours around the site to assess any variation over time.	Yes	
	<b>Surface Water Monitoring</b>		
132	The Applicant shall prepare and implement a surface water-monitoring program to monitor the environmental performance of the construction, operation and rehabilitation of the development on surface water. The surface water-monitoring program must be documented in the LEMP. Note: The specific requirements of the monitoring program will be stipulated in the EPL. The program must include details on:	Yes	Comprehensive monitoring program in place, which is outlined in Section 4 of the SWMS. A review of the surface water monitoring program has been carried out in 2007.
	(a) Monitoring locations including:	Yes	
	(i) Crisps Creek;	Yes	
	(ii) Allianoyonyiga Creek;	Yes	
	(iii) ED3; and	Yes	
	(iv) rainwater collected in the mine void;	Yes	
	(b) monitoring methodologies and standards to be employed;	Yes	
	(c) monitoring frequency based on rainfall events and creek flow assessment;	Yes	
	(d) an assessment of the contribution of surface water pollution from the Woodlawn Waste Management Facility as distinct from the Woodlawn Mine site;	Yes	
	(e) the quantity of water relocated from the mine void into ED3;	Yes	
	(f) the quantity of water relocated from ED3 into the mine void;	Yes	
	(g) the chemical composition of liquids added to the landfilled waste;	Yes	
	(h) the quantity of water that reports to ED3, including its sources;	Yes	
	(i) the quantity of water removed and/or discharged from ED3, including its destination;	Yes	
	(j) the total quantity of water contained in ED3;	Yes	
	(k) the parameters and substances that are proposed to be monitored, including sampling and analysis frequencies;	Yes	
	(l) reporting and assessment of results; and	Yes	
	(m) opportunities to integrate the monitoring program with other monitoring programs in the vicinity.	Yes	
	<b>Leachate Monitoring</b>		
133	The Applicant shall prepare and implement a leachate quality and quantity monitoring program. The program must be documented in the LEMP. Note: The specific requirements of the monitoring program will be stipulated in the EPL. The program must include details on:	Yes	The leachate monitoring program is outlined in the BPMP.
	(a) monitoring locations;	Yes	
	(b) monitoring methodologies and standards to be employed;	Yes	
	(c) monitoring frequency	Yes	
	(d) the height of the saturation level in the waste;	Yes	
	(e) the parameters and substances which are proposed to be monitored (eg redox potential, metals); and	Yes	
	(f) reporting and assessment of results.	Yes	
134	The Applicant shall notify the EPA as soon as practicable after becoming aware that the height of the saturation level in the waste is above the height of the groundwater table that surrounds the mine void.	N/A	
	<b>Environmental Performance of the Bioreactor Landfill</b>		
135	A Bioreactor Performance Monitoring Program (BPMP) must be developed and implemented which will:	Yes	It is the Auditors opinion that the BPMP addresses this condition to a satisfactory standard.
	(a) assess the efficiency of the decomposition of the landfilled waste;		
	(b) assess the optimum leachate recirculation program;		
	(c) assess the optimum water injection program;		
	(d) assess the effect of the saturation depth of the leachate on bioreactor performance; and		
	(e) assess the quantity of methane and carbon dioxide (and the relative proportions) that are emitted by the biological decomposition of the landfilled waste;		
	The BPMP must also include monitoring of the quantity of rainwater that passively infiltrates into the landfilled waste, the quantity and chemical composition of water that is deliberately added to the landfilled waste, and the quantity of leachate in the landfilled waste.		

	The Bioreactor Performance Monitoring Program must be documented in the LEMP.		
	<b>Noise Monitoring</b>		
136	Noise levels must be monitored to confirm performance and to assess compliance with Condition 99. A noise-monitoring program must be developed and implemented. The noise-monitoring program must be submitted to the EPA for review. The program must be documented in the LEMP. The program must include details on: (a) methodologies for noise monitoring; (b) location of noise monitoring; and (c) frequency of noise monitoring.	Yes	Section 3 of the Noise Management Protocol (NMP) outlines noise monitoring and applicable methodologies.
	<b>Geo-technical Stability</b>		
137	The geo-technical stability of the premises must be monitored in accordance with the recommendations of the report prepared by BFP Consultants P/L dated 17 December 1998, titled Woodlawn Landfill – Geo-technical Study. The monitoring program must be documented in the LEMP.	Yes	Geotechnical Monitoring is carried out as per the Golder Geotechnical Monitoring Program.
	<b>Reporting</b>		
138	The Applicant must provide an annual return to the EPA in relation to the development as required by any licence under the POEO Act 1997 in relation to the development. In the return, the Applicant must report on the annual monitoring undertaken (where the activity results in pollutant discharges), provide a summary of complaints relating to the development, report on compliance with licence conditions and provide a calculation of licence fees (administrative fees and, where relevant, load based fees) that are payable. If load based fees apply to the activity the Applicant will be required to submit load-based fee calculation work-sheets with the return.	Yes	The Auditor understands that Annual returns have been provided to the DECC.
	<b>Intermodal Facility Site Water Monitoring Program</b>		
139	A surface water-monitoring program must be developed and implemented. The program must include details on but need not necessarily be limited to the following: (a) monitoring locations including: (i) Crisps Creek; (ii) Mulwaree River; and (iii) the bypass from the first flush structure(s); (b) the monitoring methodologies and standards to be employed; (c) monitoring frequency based on rainfall event and creek flow assessment; (d) the quantity of water collected weekly in the first flush structure; (e) reporting and assessment of results; (f) the parameters and substances which are proposed to be monitored; and (g) opportunities to integrate the monitoring program with other monitoring programs in the vicinity. The monitoring program must be documented in the LEMP.	Yes	A Surface Water Management Scheme (SWMS) has been compiled and integrated within the LEMP
	<b>Noise Monitoring</b>		
140	Noise levels must be monitored to confirm performance and to assess compliance with Conditions 100 and 101. A noise-monitoring program must be developed and implemented. The program must include details on: (a) methodologies for noise monitoring; (b) location of noise monitoring; and (c) frequency of noise monitoring. The monitoring program must be documented in the LEMP.	Yes	This has been described in Section 3 of the NMP. However, no noise monitoring results have been reviewed.
	<b>ROADWORKS</b>		
141	Prior to the commencement of construction, the Applicant shall undertake and submit to Council a detailed pavement analysis on the affected sections of Main Road 268 (Bungendore Road) and Collector Road. The Applicant shall fund any necessary rehabilitation work identified in the pavement analysis.	Yes	As per Golder 2002 Pavement Analysis
142	The Applicant shall fund and provide on Main Road 268 (Bungendore Road) a minimum bitumen sealed width of 9.0 metres, incorporating marked fog lines and centre-line as well as any required bus stops.	Yes	Golder understands that this has been undertaken
143	The intermodal facility access road shall be constructed in accordance with Auspec specifications and shall have a 7.0 metre wide sealed bitumen pavement for two way roads and 5.0 metres on one way roads.	Yes	Golder understands that this has been undertaken
144	In accordance with the "Mulwaree Section 94 Contributions Plan", the Applicant shall provide a financial contribution to Council towards extraordinary road damage accept as may be waived by Council. The contribution is to be paid quarterly in arrears.	Yes	Golder understands that this has been undertaken
145	Prior to the commencement of landfilling operations, the Applicant shall fund and undertake to the satisfaction of Council and the Roads and Traffic Authority the following works: (a) rehabilitation of the pavement at the intersection of Bungendore and Collector Roads; (b) provision of a right turn bay at the intersection of Bungendore and Collector Roads for south-bound traffic turning into Collector Road; (c) construction of a right turn bay on Bungendore Road for right-turning traffic into the Intermodal Facility. (MSC GTA); and (d) paving of the following areas with an asphalt concrete overlay: (i) intersection of the Intermodal access road and Main Road 268 (ii) intersection of Main Road 268 and the Collector Road (iii) intersection of the Collector Road and the access road to the landfill site.	Yes	Golder understands that this has been undertaken
146	The access point to the Intermodal Facility at Bungendore Road shall be constructed to a design and standard to the Roads and Traffic Authority (RTA) and Council specifications and shall have a minimum sight distance of 225 metres in both directions. (MSC GTA)	Yes	Golder understands that this has been undertaken
147	The access point to the Waste Management Facility site at Collector Road shall be constructed to accommodate B-doubles. (MSC GTA)	Yes	Golder understands that this has been undertaken
148	The Applicant shall liaise with Council in relation to upgrading the existing warning signposting at the junction of Bungendore and Collector Roads to better inform through traffic of the side road junction and turning trucks. (MSC GTA)	Yes	Golder understands that this has been undertaken
	<b>LANDSCAPING AND VEGETATION MANAGEMENT</b>		
149	The Applicant shall prepare a Landscaping and Vegetation Management Plan for both the Waste Management Facility and Intermodal Facility sites. The Plan shall be prepared by a suitably qualified person and shall address, but not be limited to, the following matters: (a) details of likely vegetation loss, means to minimise such loss and additional tree planting to offset this loss; (b) proposed plant species; and (c) details on landscaping treatment at the intermodal facility site, with particular attention to minimising the visibility of the facility from residences and public vantage points.	Yes	A Landscaping and Vegetation Management Plan (LVMP) has been provided as an Appendix to the LEMP.
150	The Plan shall be prepared to the satisfaction of the Director-General and Council and shall be submitted at least three months prior to the commencement of landfilling operations.	Yes	We understand that the Plan has been reviewed and approved by the Director General prior to commencement of landfill operations.
	<b>AGRICULTURAL RISKS</b>		
151	The Applicant shall prepare to the satisfaction of NSW Agriculture a contingency	Yes	The documented Emergency Management Plan, Section 4, contains information concerning agricultural

	plan for agricultural risks in the event of an incident such as an accident during the transportation of waste from Sydney.		risks. This plan should be provided to appropriate agricultural authorities to close out this issue.
152	As part of the LEMP, the Applicant shall prepare a plan to manage pests, diseases, vermin, and declared noxious weeds. The plan shall also address measures to manage bird pests in order to minimise the risk of any transfer of contaminants from the waste management facility site to regional waterways and water supply reservoirs. The plan shall also address the recommendations of the report prepared by Kinsella Consulting entitled "Potential for Transport of Pests and Diseases of Plants and Animals from North Sydney to Tarago in Municipal Wastes", dated February 1999 and included as Appendix L of the EIS. (EPA GTA)  <b>FLORA AND FAUNA</b> <b>Terrestrial Flora and Fauna</b>	Yes	There is a Pest & Weed Mgt Plan within LVMP. Agricultural Contingencies have been outlined in Section 4 of the Emergency Management Plan.
153	The Applicant shall consult with NPWS on measures to conserve the population of the vulnerable orchard ( <i>Diuris aequalis</i> – Buttercup Doubletail) in retained natural woodland on land within the Woodlawn mine site that is subject to the DA or areas potentially affected by the operation of the waste management facility.  <b>Aquatic Flora and Fauna</b>	Partial	This topic is not covered in the Landscape & Vegetation Mgt Plan - however it is understood that attempts to identify this species at the Site have proven unsuccessful. This issue could be closed out by a report documenting such assessment.
154	The Applicant shall consult NSW Fisheries prior to the commencement of any works (including, but not limited to channel realignment, dredging, reclamation, culverts, road crossings, pipelines and weirs) in or adjacent to aquatic habitats.	Partial	This topic is not covered in the Landscape & Vegetation Mgt Plan - however it is understood that the stream is ephemeral and has been dry during significant portions of the year. Therefore this condition is not relevant to the encountered site conditions.
155	The Applicant shall undertake all practicable measures to maintain and, where possible, enhance existing habitat features in the Mulwaree River and Crisps Creek, including gravel beds, riffles, pools, snags and aquatic and riparian vegetation.	Yes	The LVMP outlines habitat enhancement for the area. There is no evidence of non-compliance
156	The Applicant shall, in consultation with NSW Fisheries, ensure that the bridge from the Intermodal Facility over Mulwaree River is designed so that fish passage, instream flow and stream bed continuity are maintained.  <b>HERITAGE AND ARCHAEOLOGY</b> <b>Non-Aboriginal Heritage</b>	Partial	This topic is not covered in the Landscape & Vegetation Mgt Plan - however it is understood that the stream is ephemeral and has been dry during significant portions of the year. Therefore this condition is not relevant to the encountered site conditions.
157	In the event that any items potentially of non-Aboriginal heritage significance are identified on the subject land during the carrying out of works, the Applicant shall arrange for a suitably qualified archaeologist to inspect the item/s, determine the level of significance of the item/s and advise on appropriate management measures.  <b>CONTINGENCY PLANNING</b> <b>Emergency Management Plan</b>	N/A	This has not occurred to date, and is therefore not relevant to the terms of this Audit
158	In relation to activities, which in the event of a disruption to operations may result in significant pollution being emitted, the Applicant must: (a) conduct an assessment to determine the potential internal and external causes of disruption of operations at the premises; (b) determine how these disruptions would impact on operations; and (c) identify the pollution that would result due to the disruption of operations and what impact the pollution would have on the health of the community and the environment.	Yes Yes Yes	Emergency management plan has been compiled and is included as part of the LEMP for the facility. Emergency management plan has been compiled and is included as part of the LEMP for the facility. Emergency management plan has been compiled and is included as part of the LEMP for the facility.
159	In relation to matters identified in Condition 158, as part of the LEMP, the Applicant must prepare an Emergency Management Plan. The Plan shall address, but not necessarily be limited to: (a) identification of threats to the environment and/or public health that could arise in relation to the construction and operation of Waste Management Facility and Intermodal Facility including the transportation of waste. These threats may include fire (waste transportation or within the landfill), overflow, dam failure, power or other utility failure, natural disaster etc; (b) identification of strategies to minimise and ameliorate the effects of any groundwater surface water pollution identified from the groundwater and surface water monitoring programs; (c) an estimate of the cost of implementation; (d) actions to effectively respond to the disruption of operations so the risk of pollution is minimised; (e) a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution; and (f) ensuring that all relevant employees are familiar with the emergency management plan. The Applicant should regularly review the adequacy of the plan obtaining expert advice as required.  <b>COMPLAINTS PROCEDURE</b>	Yes Yes Yes No Yes Yes Yes Yes	Emergency management plan has been compiled and is included as part of the LEMP for the facility. Potential hazards have been identified in Section 2.1 of the Emergency Management Plan. These are: Fire, explosion, overflow/spillage, dam failure, natural disaster, surface water and groundwater contamination, traffic accident, geotechnical instability. no cost estimate has been provided.
160	Prior to the commencement of construction, the Applicant shall establish a free-call telephone line that operates 24 hours per day 7 days per week on which complaints about the subject development can be registered. The Applicants shall record details of all complaints received and actions taken in response to complaints in an up-to-date log book. The Applicants shall ensure that an initial response to complainants is provided within 24 hours and detailed response within 10 days of the complaint being lodged. The system must also be provided with a complaint verification procedure which correlates potential sources of odours with an operation or activity by assessing relevant meteorological data.	Yes	Number is functional and diverted at night to the Clyde transfer Station Complaints are recorded and kept in a complaints register.
161	The complaints register shall be available for inspection upon request by the Director-General, EPA, DLWC, and the CLC.	Yes	Complaints register has been inspected by Golder

**Appendix B**  
**Important Information about Your Environmental Site**  
**Assessment**

## Important Information About Your

# Environmental Site Assessment

*These notes have been prepared by Golder Associates Pty Ltd using guidelines prepared by ASFE; The Association of Engineering Firms Practising in the Geosciences, of which Golder Associates Pty Ltd is a member. They are offered to help you in the interpretation of your Environmental Site Assessment (ESA) report.*

### Reasons For Conducting An ESA

ESA's are typically, though not exclusively carried out in the following circumstances :

- as pre-acquisition assessments, on behalf of either purchaser or vendor, when a property is to be sold;
- as pre-development assessments, when a property or area of land is to be redeveloped or have its use changed, for example, from a factory to a residential subdivision;
- as pre-development assessments of greenfield sites, to establish "baseline" conditions and assess environmental, geological and hydrogeological constraints to the development of, for example, a landfill; and
- as audits of the environmental effects of an ongoing operation.

Each of these circumstances requires a specific approach to the assessment of soil and groundwater contamination. In all cases, however, the objective is to identify and if possible quantify the risks which unrecognised contamination poses to the proposed activity. Such risks may be both financial, for example, clean-up costs or limitations on site use, and physical, for example, health risks to site users or the public.

### The Limitations of An ESA

Although the information provided by an ESA can reduce exposure to such risks, no ESA, however diligently carried out, can eliminate them. Even a rigorous professional assessment may fail to detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled.

### An ESA Report Is Based On A Unique Set of Project Specific Factors

Your environmental report should not be used :

- When the nature of the proposed development is changed, for example, if a residential development is proposed instead of a commercial one;

- When the size or configuration of the proposed development is altered;
- when the location or orientation of the proposed structure is modified;
- When there is a change of ownership; or
- For the application to an adjacent site.

To help avoid costly problems, refer to your consultant to determine how any factors which have changed subsequent to the date of the report may affect its recommendations.

### ESA "Findings" Are Professional Estimates

Site assessment identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise its impact. For this reason, owners should retain the services of their consultants through the development stage, to identify variations, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

### Subsurface Conditions Can Change

Subsurface conditions are changed by natural processes and the activity of man. Because an ESA report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on an ESA report whose adequacy may have been affected by time. Speak with the consultant to learn if additional tests are advisable.

### ESA Services Are Performed For Specific Purposes And Persons

Every study and ESA report is prepared in response to a specific Brief to meet the specific needs of specific individuals. A report prepared for a consulting civil engineer may not be adequate for a construction contractor, or even some other consulting civil engineer. A report should not be used by other persons for any purpose, or by the client for a different purpose. No individual other than the client should apply a report even apparently for its intended purpose without first conferring with the consultant. No person should apply a report for any purpose other than that originally contemplated without first conferring with the consultant.

### **An ESA Report Is Subject To Misinterpretation**

Costly problems can occur when design professionals develop their plans based on misinterpretations of an ESA. To help avoid these problems, the environmental consultant should be retained to work with appropriate design professionals to explain relevant findings and to review the adequacy of their plans and specifications relative to contamination issues.

### **Logs Should Not Be Separated From The Engineering Report**

Final borehole or test pit logs are developed by environmental scientists, engineers or geologists based upon their interpretation of field logs (assembled by site personnel) and laboratory evaluation of field samples.

Only final logs are customarily included in our reports. These logs should not under any circumstances be redrawn for inclusion in site remediation or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimise the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To reduce the likelihood of boring log misinterpretation, the complete report must be available to persons or organisations involved in the project, such as contractors, for their use. Those who do not provide such access may proceed under the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing all the available information to persons and organisations such as contractors helps prevent costly construction problems and the adversarial attitudes which may aggravate them to disproportionate scale.

### **Read Responsibility Clauses Closely**

Because an ESA is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are not exculpatory clauses designed to foist liabilities onto some other party. Rather, they are definitive clauses which identify where your consultant's responsibilities begin and end. Their use helps all parties involved recognise their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your ESA report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.