DEVELOPMENT ASSESSMENT REPORT
BLACKMANS FLAT WASTE MANAGEMENT FACILITY

PREPARED FOR
CITY OF LITHGOW COUNCIL

AUGUST 2006

GEOLYSE

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GEOLYSE

Report Title:	***Development Assessment Report***
Project:	Blackmans Flat Waste Management Facility
Client:	*City of Lithgow Council*
Report No.:	*205158_REO_001*
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Introduction

1.1 BACKGROUND

1.1.1 INTRODUCTION

Geolyse Pty Ltd has been commissioned by the City of Lithgow Council to undertake an assessment of the Development Application (DA) for the Blackmans Flat Waste Management Facility (WMF). As Council is both the applicant and the consent authority for this DA, Council sought the services of an independent consultant to assess and make a recommendation for determination of the application.

The assessment has been prepared pursuant to Section 79C of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and provides recommendations for determination of the DA.

1.1.2 THE SUBJECT SITE

The subject site is comprised of the parcels of land outlined in **Table 1.1**. Its location is illustrated in **Figure 1.1** attached at **Appendix A**.

Table 1.1 - The Subject Site

Property Description	Owner
Lot 42 DP 751636	City of Lithgow Council
Lot 1 DP 1049889	City of Lithgow Council
Part Lot 15 DP 804929	Springvale Coal (to be transferred to Delta Electricity then Council)
Part Lot 67 DP 751636	Springvale Coal (to be transferred to Delta Electricity then Council)
Part Lot 37 DP 827626	Wallerawang Collieries (to be transferred to Council)
Part Lot 1 DP 88503	Springvale Coal (to be transferred to Delta Electricity then Council)
Crown Road between Part Lots 67 and 37	Crown Lands

The subject site has an area of approximately 46ha and is situated on the western side of the Castlereagh Highway directly north of Blackmans Flat. The site is approximately 16km north of Lithgow, 8km by road from the Wallerawang Power Station. Access to the site is gained from the Castlereagh Highway via a small section of the currently unsealed Springvale Coal Haul Road and an unsealed fire trail.

The site is located on the Old Western Main Colliery site, and has been the subject of previous underground and open cut mining operations. The northern part of the site contains a void: the result of previous mining operations. A dam, known as the DML Dam, is located in the north eastern part of the site. Directly south of the void and the dam is an area of stockpiled overburden which is surrounded by an area of remnant vegetation. Much of the site is devoid of vegetation; however some areas of rehabilitation plantings have occurred.

Figure 2.2 attached, at **Appendix A**, illustrates the subject site.

1.1.3 THE LOCALITY

The subject site is located in a rural area comprised of rural industries of grazing and forestry as well as coal mining and power generation. Directly to the north of the subject site is the Castlereagh Highway and rural and forested land. The newly approved Pine Dale Coal Mine is located to the north east beyond the highway and the settlement of Blackmans Flat to the east. Springvale Coal Services facilities, stockpile area, overland conveyor and Lamberts Gully Open Cut mine are situated to the south of the site. Delta Electricity's Ash Disposal landfill is located to the west of the subject site, with the Mount Piper Power Station located beyond the ash disposal.

1.2 PROPOSED DEVELOPMENT

The proposed development includes:

- Establishment of the Waste Management Facility (WMF) including preparation of the mine void for landfilling, and construction of a waste transfer station and recycling facility, weighbridge, road access, and associated developments.
- Landfilling of solid and inert waste with a 'dry tomb' in the order of 35,000 to 40,000 tonnes per annum for a period of approximately 15 years.
- Storage and transfer of recyclable waste including scrap metal, glass and plastics, paper and cardboard, green waste and other recoverable materials.
- Figures 5.1 to 5.8 attached at **Appendix A** provide illustration of the proposed development.
- Once the perimeter wall stabilisation works and placement of the required landfill lining system are completed, a void of approximately 720,000m³ would be available for landfilling. With settling of the waste, it is anticipated that the facility would cater for approximately 750,000m³ of waste.
- The proposed development is Designated Development by virtue of being (*inter alia*):
- Waste management facilities or works that store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste and:

  (a) that dispose (by landfilling, incinerating, storing, placing or other means) of solid or liquid waste:

(iv) that comprises more than 200 tonnes per year of other waste material, or

(d) that are located:
(iii) within a drinking water catchment, or

The WMF will accept between 35,000 and 40,000 tonnes of waste per annum and is located within the Sydney Drinking Water Catchment.

The proposed development is Integrated Development by virtue of requiring approvals from:

- The NSW Department of Environment and Conservation (DEC) for 'Scheduled Development Works' under ss 43(a), 43(b), 47, 48 and 55 of the *Protection of the Environment Operations Act 1997* (POEO Act); and
- The NSW Roads and Traffic Authority (RTA) for an approval under s. 138 of the *Roads Act 1993* (Roads Act).

1.3 SCOPE OF THIS REPORT

This report provides an assessment of the proposed development in accordance with Section 79C of the EP&A Act.

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:
(i) any environmental planning instrument, and
(ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority, and
(iii) any development control plan, and
(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and
(v) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),
that apply to the land to which the development application relates,
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.

A list of the documentation reviewed as part of this assessment is contained within the list of references attached to this report.

1.4 STRUCTURE OF REPORT

This Development Assessment Report is structured as follows to reflect the provisions of Section 79C of the EP&A Act:

- **Section 2** provides an assessment of the proposed development in relation to the provisions of Section 79C(1)(a). There are no draft Environmental Planning Instruments (EPIs) or Development Control Plans applicable to the subject site. There are no known Planning Agreements applicable. None of the relevant provisions of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) apply to the proposed development;
- **Section 3** provides an assessment of the likely impacts of the proposed development (pursuant to Section 79C(1)(b));
- **Section 4** considers the suitability of the site for the proposed development (pursuant to Section 79C(1)(c));
- **Section 5** of this report provides a summary of the public and authority submissions received during the referral and notification periods (79C(1)(d)).
- **Section 6** provides an assessment of the matters of public interest in relation to the proposed development (79C(1)(e)).
- **Section 7** concludes the report with a recommendation for determination of the Development Application.

1.5 CRITICAL DATES/APPLICATION HISTORY

Table 1.2 - Chronological History of the Development Application

Date	Action
07 Sept 2005	Development Application lodged
15 Sept 2005	Internal referrals to: • Building Surveyor • Development Engineer • Environmental External referrals to: • Lithgow Rural Fire Services (RFS) • Roads & Traffic Authority (RTA) • Sydney Catchment Authority (SCA) • Department of Environment & Conservation (DEC) • Department of Planning (DOP)
16 Sept – 21 Oct 2005	Notification period
No date	Advice provided from environmental officer advising no comment to be provided on DA as the DA was prepared by the environmental staff.
20 Sept 2005	Letter received from SCA acknowledging receipt of DA

Table 1.2 - Chronological History of the Development Application

Date	Action
27 Sept 2005	Submission received
29 Sept 2005	• Submission received • Letter received from DEC, requesting additional information and 'stop the clock' notice
10 Oct 2005	Community Information Session held
11 Oct 2005	Submission received
14 Oct 2005	• Notification period extended to 07 Nov 2005 • Letter received from RTA, requesting imposition of consent conditions
18 Oct 2005	Submission received
21 Oct 2005	Letter sent from Council to DEC responding to requested additional information
28 Oct 2005	• Letter received from Western Region Development Committee (WRDC), requesting imposition of consent conditions • Letter received from DEC, requesting additional information and a further 'stop the clock' notice
02 Nov 2005	Submission received
03 Nov 2005	Submission received
07 Nov 2005	Two (2) submissions received
08 Nov 2005	Six (6) submissions received
25 Nov 2005	• Letter sent from Council to RTA • Letter received from RTA acknowledging receipt of Council's letter dated 25 Nov 2005
01 Dec 2005	Two (2) submissions received
05 Dec 2005	Letter sent from Council to DEC providing information requested
14 Dec 2005	Letter received from SCA, requesting additional information and a 'stop the clock' notice
22 Dec 2005	Letter received from DEC providing its GTAs
22 Mar 2006	• Letter received from RTA stating no further comments • Letter received from WRDC stating no further comments
27 Mar 2006	Additional information provided to SCA
12 Apr 2006	Referral from Building Surveyor
10 May 2006	Geolyse request for additional information
13 May 2006	Additional information provided from applicant in response to Geolyse request
2 June 2006	Additional information provided to SCA from applicant in relation to the GCL
9 June 2006	Additional information provided to SCA from application in relation to the DML Dam
15 June 2006	Referral from Development Engineer
19 June 2006	SCA's letter of concurrence

Note: Reference to 'submission(s) received' refers to those submission received as a response to the statutory notification and exhibition period. It is not a reference to submissions received from State Government Agencies.

Environmental Planning Instruments

2.1 LOCAL ENVIRONMENTAL PLANS

2.1.1 LITHGOW CITY LOCAL ENVIRONMENTAL PLAN 1994

Zoning

The subject site is located within the 1(a) Rural (General) Zone under *Lithgow City Local Environmental Plan 1994* (Lithgow LEP). The objective of the 1(a) zone is:

… to promote the proper management and utilisation of natural resources by:

(a) protecting, enhancing and conserving:
- *(i) rural land, in particular prime crop and pasture land, in a manner which sustains its efficient and effective agricultural production potential,*
- *(ii) soil, by controlling and locating development in accordance with soil capability,*
- *(iii) forests of existing and potential commercial value for timber production,*
- *(iv) valuable deposits of minerals, coal and extractive materials, by controlling the location of development for other purposes in order to ensure the efficient extraction of those deposits,*
- *(v) trees and other vegetation in environmentally sensitive areas, where the conservation of the vegetation is significant for scenic amenity or natural wildlife habitat or is likely to control land degradation,*
- *(vi) water resources for use in the public interest, preventing the pollution of water supply catchment and major water storages,*
- *(vii) localities of significance for nature conservation, including places with rare plants, wetlands and significant wildlife habitat, and*
- *(viii) items of heritage significance,*

(b) preventing the unjustified development of prime crop and pasture land for purposes other than agriculture,

(c) facilitating farm adjustments,

(d) minimising the cost to the community of:
- *(i) fragmented and isolated development of rural land, and*
- *(ii) providing, extending and maintaining public amenities and services,*

(e) providing land for other non-agricultural purposes, in accordance with the need for that development, and

(f) providing for the separation of conflicting land uses.

The proposed development is a waste management facility. It is permissible with consent in the 1(a) zone and is not antipathetic to the zone objective.

Development in Rural Areas

Clause 11 of Lithgow LEP contains matters for consideration for development in the 1(a) zone. These include (*inter alia*):

> *the effect that the proposed development would have on:*
> *(a) the present use of the land, and the potential for sustained agricultural production of so much (if any) of the land as is prime crop and pasture land,*
> *(b) vegetation, timber production, land capability and water resources (including the quality of the water, stability of water courses, ground water storage and riparian rights),*
> *(c) the future recovery from known or prospective areas of valuable deposits of minerals, coal, petroleum, sand, gravel or other extractive materials,*
> *(d) the protection of areas of nature conservation significance or of high scenic or recreational value, and of items of heritage significance,*
> *(e) the cost of providing, extending and maintaining public amenities and services,*
> *(f) development on adjoining land and on other land in the locality, including any cumulative impact, and*
> *(g) the future expansion of settlements in the locality.*

In relation to (a), the subject site has been substantially altered through its past mining use. The proposed development will not impact on agricultural production.

With reference to (b), the vegetation impacted upon by the proposed development is previously regenerated vegetation. Providing the management measures recommended in the EIS are implemented, impacts on vegetation are considered not to be significant. The development would not adversely impact on timber production or land capability. The DEC has assessed the application and has issued General Terms of Approval (GTA) for the required Environmental Protection Licence (EPL) and the Sydney Catchment Authority (SCA) has assessed the application and granted its conditional concurrence. The issue of the GTAs and concurrence indicates adequate measures will be in place to protect water resources.

In relation to (c), the subject site has been selected as being suitable for the proposed development due to the mine being at the end of its life. In this regard, the proposed development will not adversely impact on prospective mining.

With reference to (d), the proposed development will not adversely impact on the protection of areas of nature conservation significance, or high scenic/recreational value, or items of heritage significance.

The proposed development, in reference to (e), will not require the provision, extension of maintenance of public amenities or services.

In relation to (f), the DEC has assessed the application and has issued GTAs for the required EPL. The issue of the GTAs indicates adequate measures will be in place to protect local amenity in terms of noise and air quality.

With reference to (g), based on the 1(a) Rural General zoning, the future expansion of the Blackmans Flat settlement is unlikely. Further, the nature of the industries in the locality would not be conducive to such an expansion.

Development along Arterial Roads

Clause 26 of Lithgow LEP states:

> *(1) Development on land fronting an arterial road must not be carried out unless:*
> *(a) direct access to that land is provided from a road other than the arterial road, wherever practicable, and*
> *(b) in the opinion of the Council, the safety and efficiency of the arterial road will not be adversely affected by:*
> *(i) the design of the access to the proposed development,*
> *(ii) the emission of smoke or dust from the proposed development, or*
> *(iii) the nature, volume or frequency of vehicles using the arterial road to gain access to the proposed development.*

The subject site gains access to the Castlereagh Highway from the Springvale Coal haul road and an existing fire trail. The latter two are private access roads and would need to be dedicated to Council as public roads. The Castlereagh Highway (Mudgee Road) is an arterial road as defined by Lithgow LEP. The RTA and the Western Regional Development Committee (WRDC) have assessed the proposed development and have raised no concerns regarding the proposed access, subject to conditions. These conditions are outlined in **Section 3.2**. Air quality from the proposed development would be appropriately managed through conditions on the required EPL to be issued by the DEC.

Heritage

Part 4 of Lithgow LEP addresses heritage. There are no items of heritage significance listed in Schedule 1 of Lithgow LEP that are on or within the vicinity of the subject site.

As part of the EIS submitted with the DA, a study was undertaken of Indigenous and non-Indigenous heritage. Specifically, Section 13.4.1 of the EIS states that there were no archaeological sites and/or areas of archaeological potential identified in the study undertaken. The EIS identifies that discussions were conducted with relevant indigenous community groups and/or representatives and it was determined that no further assessment of the site was recommended prior to commencement of works.

2.2 REGIONAL ENVIRONMENTAL PLANS

2.2.1 DRINKING WATER CATCHMENTS REGIONAL ENVIRONMENTAL PLAN NO. 1

The *Drinking Water Catchments Regional Environmental Plan No. 1* (DWC REP) was gazetted on 9 June 2006. This plan applies to all land within the 'hydrological catchment' (i.e. the area covered by

the Sydney Drinking Water Catchment), which includes the subject site. Clause 30 of DWC REP states *inter alia*:

> *This plan does not apply to:*
>
> *(a) a development application or an application for approval of an activity that was made to a consent authority or a determining authority and that was not finally determined before the commencement of this plan, or*

As this DA was made on 7 September 2005, the DWC REP does not apply.

2.3 STATE ENVIRONMENTAL PLANNING POLICIES

2.3.1 STATE ENVIRONMENTAL PLANNING POLICY NO. 11 – TRAFFIC GENERATING DEVELOPMENTS

The proposed development is defined as a 'Regional Depot' for the purposes of Schedule 1 of *State Environmental Planning Policy No. 11 – "Traffic Generating Developments"* (SEPP 11).

Pursuant to Clause 7(3) of SEPP 11, a consent authority is required to refer developments listed in Schedule 1 of SEPP 11 to the RTA for comment. The DA was referred to the RTA for comment on 15 September 2005, however the referral did not specify the referral was in relation to a development listed under Schedule 1 of SEPP 11. The RTA provided the following comments in relation to this referral, in its letter received by Council on 18 October 2005.

> *The Roads and Traffic Authority (RTA) does not oppose the proposed development but offers the following comments for consideration in setting Conditions of Consent.*
>
> - *The developer is to comply with all points raised by the Western Region Development Committee. The committee will be sending out separate correspondence.*
> - *The developer is to submit engineering construction plans as well as a pavement design for associated works.*
> - *A formal agreement in the form of a Works Authorisation Deed (WAD) may be required between the developer and the RTA should the developer wish to undertake "private financing and construction" of the access with the Mid Western Highway. This agreement is necessary on works in which the RTA has a statutory interest.*
> - *A Road Occupation Licence* [is required from the RTA]. *A Traffic Management Plan is to be submitted as part of this application.*

The following comments were provided by the WRDC on 12 October 2005 in relation to the proposed development:

> *While the committee does not oppose the planned development, comments are offered for consideration when determining conditions of consent for the development and are made with*

due consideration to the anticipated life of the development and growth in the region. The comments are as follows:

- *The intersection of the access road and the Castlereagh Highway should be constructed to allow protected turns from the highway, that is, type 'CHR' and type 'AUL' (RTA Design Guide) treatments that cater for deceleration and storage of the vehicle types accessing the site;*
- *Warning signage including symbolic 'Side Road' series W2-4 and 'Truck' series W5-22 warning signs of minimum size 'B', installed approximately 200m in advance of the intersection facing approaching highway traffic;*
- *Consideration be given to a rural seagull treatment to allow an acceleration lane for right turning vehicles entering the highway;*
- *Any new pavement forming part of or joining the highway to be in accordance with current RTA specifications for road pavements and to suit existing pavement and levels;*
- *A road safety audit be conducted of the highway intersection and public access to the site before opening and any remedial works completed before opening;*
- *All works to be carried out in accordance with relevant Government Acts and Regulations.*

These comments need to be imposed as conditions of any consent granted for the proposed development. Further discussions have been held with the RTA in relation to the standard of treatment required for the intersection upgrade as the conditions imposed above result in some uncertainty as to the standard required. The following condition was agreed upon:

The design and construction by the developer, at its own expense and to the satisfaction of the NSW Roads and Traffic Authority and Council, the intersection of the access road and the Castlereagh Highway. Detailed construction plans of the proposed intersection shall be prepared and submitted to the NSW Roads and Traffic Authority for approval prior to the issue of the Construction Certificate.

The minimum acceptable design standard for the intersection shall provide protected turns from the highway (Right turn Type CHR and Left turn Type AUL in accordance with the RTA's Road Design Guide) and treatments catering for the deceleration and storage of vehicle types and numbers accessing the site. The design of the intersection shall also give adequate consideration to the adjacent access road to the Pine Dale Coal Mine.

2.3.2 STATE ENVIRONMENTAL PLANNING POLICY NO. 33 – HAZARDOUS AND OFFENSIVE DEVELOPMENT

Potentially Hazardous or Potentially Offensive Development

State Environmental Planning Policy No. 33 – "Hazardous and Offensive Development" (SEPP 33) is an enabling instrument that aims to ensure the merits of a proposal are properly assessed prior to determination (NSW Government Department of Planning 1994).

Potentially Hazardous Industry is defined as:

> *…a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*
> *(a) to human health, life or property, or*
> *(b) to the biophysical environment,*
> *and includes a hazardous industry and a hazardous storage establishment.*

The EIS identifies the proposed development as potentially hazardous due to "the potential risk (if no mitigation measures were to be employed) of hazardous or toxic waste material being dumped" (HLA 2005b:83). However, in Section 5.6.3 of the EIS, it clearly states that hazardous wastes would be not accepted at the site. The EIS identifies three (3) types of hazardous materials that may be stored on site: lubricating oils, herbicides and pesticides, and petrol. Subsequent correspondence from the applicant dated 7 June 2006 advises that the storage quantity of each of these materials is below the threshold limits of SEPP 33 (HLA 2006B). In this regard, the proposed development is not defined as potentially hazardous and therefore a preliminary hazard analysis (PHA) is not required.

Potentially Offensive Industry is defined as:

> *…a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.*

The proposed development is identified by the EIS as being potentially offensive by virtue of requiring an EPL from the DEC. The DEC has issued its GTAs for the required EPL. In issuing its GTAs, the DEC is confident the proposed development can achieve the required licence conditions to ensure the development does not result in a significant level of offence. In this regard the development is not an offensive industry.

2.3.3 STATE ENVIRONMENTAL PLANNING POLICY NO. 58 – PROTECTING SYDNEY'S WATER SUPPLY

Aims

Clause 3 of *State Environmental Planning Policy No. 58 – "Protecting Sydney's Water Supply"* (SEPP 58) contains the aims for the policy, which are:

(a) to ensure that development in the hydrological catchment from which Sydney draws its drinking water supply does not have a detrimental impact on water quality, and

(b) to provide a concurrence or notification role for the Chief Executive of the Sydney Catchment Authority in relation to development in the hydrological catchment that is likely to have an impact on water quality, and

(c) to ensure that there is a consistent approach to the assessment and control of development in the hydrological catchment that is likely to have an impact on water quality.

By virtue of issuing its concurrence, the SCA indicates the proposed development is not antipathetic to these objectives.

Matters for Consideration

In fulfilling its assessment function, Council is required to consider the matters outlined in Clause 10 of SEPP 58. These matters are:

(a) whether the development or activity will have a neutral or beneficial effect on the water quality of rivers, streams or groundwater in the hydrological catchment, including during periods of wet weather,

(b) whether the water quality management practices proposed to be carried out as part of the development or activity are sustainable over the long term,

(c) whether the development or activity is compatible with relevant environmental objectives and water quality standards for the hydrological catchment when these objectives and standards are established by the Government.

Pursuant to Clause 11 of SEPP 58, the application was referred to the Chief Executive (CE) of the SCA. In assessing the application, the SCA was required to consider the above matters in accordance with Clause 11(3) of SEPP 58. By virtue of providing its conditional concurrence as outlined below, the above matters have duly been considered and appropriately addressed.

Concurrence of the Chief Executive of the Sydney Catchment Authority

Designated Development that is carried out within the 'hydrological catchment' is listed in Schedule 1 of SEPP 58 as requiring consent from the relevant consent authority (being City of Lithgow Council). Further, Clause 11 of SEPP 58 requires concurrence, for such development, from the CE of the SCA to be gained prior to Council granting consent to the proposed development. The DA was referred to the SCA for comment on 15 September 2005. The SCA requested additional information from Council on 13 December 2005, which was provided to the SCA on 27 March 2006. Conditional concurrence was provided by the Chief Executive of the SCA on 19 June 2006.

Likely Impacts of the Development

3.1 CONTEXT AND SETTING

3.1.1 LANDSCAPE, VIEWS, SCENIC QUALITY

The topography of the subject site is such that it will provide substantial screening to the development to take place within the subject site. The primary views to and from the site will be from the transfer station area to the village of Blackmans Flat and the Castlereagh Highway. Due to the separation between the site and these view points and the proposed vegetative screening, it is not considered that the proposed development will have a significant adverse impact on the landscape, views or scenic quality.

3.1.2 CHARACTER AND AMENITY OF THE LOCALITY

The locality is characterised by large open cut mining operations and power stations which surround the locality of Blackmans Flat. The topography of the subject site combined with existing and proposed landscaping will provide sufficient screening of the proposed development. Providing noise and air quality are appropriately managed and comply with the DEC's requirements, the proposed development is not considered to be inconsistent with the character and amenity of the locality.

3.1.3 COMPATIBILITY OF LAND USES

As described above, the land uses surrounding the subject site are coal mines, power stations, and dwellings within the locality of Blackmans Flat. It is unlikely that there will be any incompatibility in land uses between the proposed development and the existing coal mines and power stations. Additional heavy vehicles on the commonly used roads may be an impact; however the roads and intersections will be designed to support the proposed development and are therefore considered to be compatible.

In relation to the proposed development and the existing dwellings in Blackmans Flat, the primary areas for potential incompatibility can be reduced to three issues: noise, odour, and dust. Acceptable levels of impact of these are discussed in **Sections 3.8** and **3.10** of this report. Set criteria for noise levels and air quality are considered to be an appropriate benchmark by which to determine compatibility of land uses. As the proposed development achieves the required levels for noise generation and air quality, it can therefore be deduced that the proposed development is a compatible land use for the existing environment, providing the recommended and required mitigation measures are employed correctly and appropriately.

3.2 TRANSPORT, TRAFFIC AND ACCESS

3.2.1 ACCESS

Chapter 14 of the EIS is dedicated to the assessment of traffic and transport. This assessment concludes (HLA 2005c:165-167):

- A minor increase (7% above current AADT volumes) in traffic volumes on the Castlereagh Highway both during construction and operation.
- This increase would be within the capacity of this type of road.
- The development would result in a significant increase in the use of the intersection of the site access road and the Castlereagh Highway.
- The intersection is recommended to be upgraded to the RTA's "Road Design Guide" layout for "CHR" right turn treatment and "AUL" left turn treatment.
- Traffic management measures are to be put in place during construction and operation to ensure there would be no interference with school bus services.
- Additional mitigation measures are proposed in Section 14.4 of the EIS to ensure potential adverse impacts are adequately ameliorated.

Both the RTA and the WRDC have assessed the proposed development in terms of its traffic impacts. The development is considered satisfactory, in traffic terms, subject to conditions as outlined in **Section 5.2.3**.

3.2.2 PARKING

No specific parking rates are provided with the Greater Lithgow City Council's *Off Street Car Parking Development Control Plan* (DCP) for a waste management facility. The most similar use for the proposed employees of the facility would be 'offices', which under the DCP requires one (1) space per 40m² of gross floor area. However, as much of the employees work is undertaken outside, the floor area of the building provided is not representative.

A total of twelve (12) parking spaces are provided, which is considered more than adequate for the six (6) employees. Sufficient area exists for the loading and unloading of the public's vehicles adjacent to the various waste category disposal areas.

In this regard, the provision of parking is considered appropriate for the proposed development.

3.3 UTILITIES

3.3.1 WATER SUPPLY

Council's water main is located in Noon Street, Blackmans Flat and has adequate capacity to service the site.

3.3.2 ELECTRICITY

Mains power can be connected from the Castlereagh Highway. Integral Energy has advised that Council would need to make an application to Integral Energy and seek design details for the connection.

3.4 HERITAGE

There are no items of heritage significance that will be impacted upon by the proposed development.

3.5 OTHER LAND RESOURCES

The proposed development would not adversely impact on productive agricultural land as it has been substantially disturbed by previous mining activities. No further mining is proposed for the subject site.

The subject site is located within the Sydney Drinking Water Catchment. The SCA is a concurrence authority for development in this catchment. Its comments are provided in **Section 5.2.1**. By virtue of issuing its concurrence, no adverse impacts are anticipated from the proposed development on the catchment area.

3.6 WATER

3.6.1 TREATMENT, REUSE AND DISPOSAL OF WASTE WATER

An aerated or aerobic wastewater treatment system is to be utilised for the management of waste water from the staff amenities building. The effluent is to be irrigated within a defined area, identified as being to the north of the northern weighbridge and associated sealed road. The 'Assessment for the Siting of an Effluent Management System' concludes:

> *Provided the guidelines detailed in the report are followed, it is considered that the proposed effluent management scheme for the staff amenities building will not result in adverse environmental impacts in the cleared land, native vegetation, watercourses/waterbodies and groundwaters or impede on usage of the waste management facility as a whole* (Blue Mountains Geological and Environmental Services 2003:18).

The SCA has assessed the DA and has provided conditional concurrence, including a requirement for the on-site wastewater and effluent management system to be designed, installed and operated in accordance with the above report.

3.6.2 WATER QUALITY AND POLLUTION OF WATER BODIES

The impacts of the proposed development on surface and ground water have been assessed by both the DEC and SCA. The following table illustrates the surface and ground water monitoring locations.

Table 3.1 - Water Monitoring Locations

Type of Monitoring Point	Description of Location	EPA Identification No.
Leachate quality	Leachate collection tank(s)	8
Groundwater quality monitoring	PZ01, PZ02D, PZ03, PZ04 and PZ02S on Figure 4 of Hydrological Investigation Report (HLA 2005e)	9-13
Ambient water monitoring	DML dam	14

Source: DEC GTAs

The DA was referred to the DEC as the development is integrated by virtue of requiring an EPL. In its appropriate regulatory authority role for licensing, the DEC is required to take into consideration the matters contained within Section 45 of the *Protection of Environment Operations Act 1997* (POEO Act). These matters include *inter alia*:

(b) the objectives of the EPA as referred to in section 6 of the Protection of the Environment Administration Act 1991,

(c) the pollution caused or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment,

(d) the practical measures that could be taken:

(i) to prevent, control, abate or mitigate that pollution, and

(ii) to protect the environment from harm as a result of that pollution,

In relation to (b) above, the objectives of the EPA include *inter alia*:

(b) to reduce the risks to human health and prevent the degradation of the environment, by means such as the following:

- *promoting pollution prevention,*
- *adopting the principle of reducing to harmless levels the discharge into the air, water or land of substances likely to cause harm to the environment,*

The DEC has issued its GTAs for the EPL required for the proposed development. In relation to surface and groundwater management the GTAs include measures such as requiring design, construction, operation and maintenance of the facility in accordance with EPA approved plans and regular monitoring of surface and ground waters. By virtue of issuing its GTAs, the DEC has

considered the above matters and in this regard is satisfied that providing the development operates within its licence conditions, it will not have an adverse impact on the environment including water quality.

The SCA granted conditional concurrence to the proposed development as outlined in **Section 5.2.1** of this report. The reasons provided by the SCA for the imposition of its conditions included *inter alia*:

> *…to assist in ensuring that the proposed works and operation of the site, including water management practices:*
> - *will have a neutral or beneficial effect on water quality;*
> - *will be sustainable over the long term; and*
> - *are consistent with relevant environmental objectives and water quality standards.*

In this regard, the SCA is satisfied that the proposed development, subject to imposition of its conditions, will not adversely impact on water quality within the Sydney Drinking Water Catchment.

3.6.3 IMPACTS OF FLOODING

Leachate Storage System

Leachate from the landfill and stormwater from the waste management and inert waste areas would be directed to the leachate storage tank.

The Leachate Storage System is to be designed and managed to retain a minimum freeboard in the tanks to enable containment of a 25 year ARI 24 hour storm event without overflowing. If leachate exceeds this level, the excess is to be removed from site and disposed of at a licensed treatment facility.

DML Dam

Surface waters are to be diverted away from the landfill area and to the DML dam. HLA has advised (2006a) that the DML dam is estimated to have the capacity to contain floods in excess of a 500 year ARI event. This capacity is considered to be acceptable as water quality concerns primarily arise from frequent storms of up to 1-2 year ARI events (HLA 2006a). In this regard, impacts from these smaller events can be appropriately managed on site due to the capacity of the dam.

3.7 SOILS

A soil and water management plan is required to be provided as part of the GTA's issued by DEC. This plan will address erosion and sediment control for the subject site. Further, conditions will be imposed on the required EPL to ensure avoidance of sedimentation and pollution of water bodies caused through soil erosion. Adequate measures will therefore be employed to ensure adverse impacts on soils or waterways as a result of soil erosion are minimised.

3.8 AIR & MICROCLIMATE

Meteorological data from Delta Electricity's Mount Piper Power Station, specifically wind data, was used for modelling the assessment of air quality impacts: notwithstanding the erroneous inclusion of wind rose data from the Bureau of Meteorology's Birdwood Street station in Appendix P to the EIS. This explains the slight disparity in the description of wind directions contained within the EIS (Section 11.1) and that provided in Appendix P (Section 4).

3.8.1 ODOUR

An Air Quality assessment was undertaken for the proposed development by Holmes Air Science (2002). This was supported by an addendum report prepared by HLA Envirosciences in 2005. These reports form Appendix Q of the EIS. Odour impacts were assessed using AUSPLUME, an advanced Gaussian dispersion model. The following conclusion was drawn from the odour assessment.

> *Maximum levels as high as 10 odour units are predicted to occur at the nearest residences to the north and south of the site. The 99th percentile level plot shows that impacts at most residences would comply with the urban 2 odour unit goal, although there are some residences to the south where predicted odour levels are close to the 3 odour unit 99th percentile level. It is unlikely that these residences would experience odour annoyance. A goal of 4 odour units, which relates to an exposed population of 125-500 people, has been used for this project.*

Notwithstanding the predictive nature of odour modelling, and the lack of certainty in outputs, the assessment undertaken has demonstrated, to the satisfaction of the DEC, that the appropriate criterion of 4 odour units at the 99th percentile is likely.

> *In summary the results of the modelling indicate that the landfill operations are unlikely to cause an odour nuisance in the surrounding areas* (Holmes Air Sciences 2005:11).

3.8.2 PARTICULATE MATTER

The EIS identifies relevant air quality goals for suspended particulate matter and dust deposition. These are provided in the tables below.

Table 3.2 - Air Quality Goals

Pollutant	Goal
Total Suspended Particulate Matter (TSP)	90 µg/m^3 (annual mean)
Particulate Matter <10 µm (PM_{10})	30 µg/m^3 (annual mean) 50 µg/m^3 (24-hour mean)

Table 3.3 - Dust Deposition Guidelines

Existing Deposition (g/m^2/month)	Maximum Acceptable Increase (g/m^2/month annual average)	
	Residential, Suburban Land Use	Rural, Semi-Rural Urban, Commercial & Industrial Land Uses
2	2	2
3	1	2
4	0	1

Following a request for clarification from the DEC, HLA has acknowledged that it was "generally agreed that due to the location of existing coal mines and power station infrastructure, the existing background air quality was likely to exceed DEC limits" (HLA 2005h).

The assessment of air quality impacts concludes that with uncontrolled operations and unfavourable meteorological conditions the WMF could contribute to already elevated particulate matter concentrations at nearby sensitive receptors.

However, HLA concludes that with the incorporation of mitigation measures into the development, these measures should ensure that particulate matter concentrations are within DEC guidelines. Apart from adoption of operational procedures at the WMF intended to minimise dust emissions, the DEC's EPL also includes the requirement for five (5) dust monitoring points. The results of this monitoring, as with all monitoring required in the EPL, will provide publicly available information on compliance.

3.8.3 LANDFILL GAS (METHANE)

Landfill gas (methane) will be monitored as part of the DEC's EPL at surface and sub-surface levels.

3.9 FLORA AND FAUNA

3.9.1 SECTION 5A ASSESSMENT

Section 79C of the EP&A Act requires the consideration of Section 5A of the EP&A Act. Section 5A states:

> *(1) For the purposes of this Act and, in particular, in the administration of sections 78A, 79B, 79C, 111 and 112, the following must be taken into account in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats:*
> *(a) each of the factors listed in subsection (2),*
> *(b) any assessment guidelines.*

(2) The following factors must be taken into account in making a determination under this section:

(a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

(b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

(d) in relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

(e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

(f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

(g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

An assessment under Section 5A was undertaken by HLA as part of an Ecological Assessment for the proposed development.

It was determined that the establishment and operation of the WMF will not result in an significant impact on threatened species, populations or ecological communities, or their habitats either locally or for the South Eastern Highlands Bio-Region (HLA 2005a).

The Ecological Assessment has been reviewed and its findings are considered to be logical.

3.9.2 OTHER IMPACTS ON FLORA AND FAUNA

The subject site is highly disturbed as a result of past mining activities. Parts of the site have been rehabilitated and revegetated. The proposed development will involve clearing of some of this vegetation, particularly in the location of the waste transfer station. Without the implementation of ameliorative measures this clearing is likely to result in adverse impacts. However, a suite of measures have been proposed to minimise impact on the vegetation and habitat values of the study area and locality. These measures are provided in Section 10.5 of the EIS and include such things as limiting development and associated machinery to development envelopes, identification and retention where possible of hollow bearing trees, installation of nest boxes, provision of compensatory habitat at a ratio of 2:1 for that land cleared, management programs for exotic flora and fauna, and ongoing monitoring.

Providing the mitigation measures provided in Section 10.5 of the EIS are implemented, the proposed development is not anticipated to have an adverse impact on flora and fauna as a result of proposed development.

3.9.3 EXOTIC FLORA AND FAUNA

The potential feral animal problem associated with establishment of a waste facility on the site is addressed within Section 6 of the Ecological Assessment and Section 19 of the EIS. The applicant has identified that this is a common issue associated with waste facilities and has provided measures for management within the LEMP. The measures include:

- Continuous monitoring of the number of vermin and weeds be undertaken; and
- A Vermin and Pest Control Plan be implemented as part of the LEMP for the site. This would involve minor pest problems being addressed by site personnel and major problems be dealt with by specialist exterminators.

As part of its GTAs for the EPL, the DEC has also required that pests, vermin and weeds be controlled at the premises.

3.10 NOISE AND VIBRATION

3.10.1 NOISE

The Noise Impact Assessment (HLA 2002 & 2005f) establishes and identifies project specific noise levels in terms of compliance with construction noise, operational noise on-site, and road traffic noise. Both construction and road traffic noise meet EPA requirements.

Operational noise will be restricted to day time periods only. Hence sleep arousal and inversion/drainage air flow considerations are not relevant. The project specific noise level is 40dB(A) $L_{eq(15\ minute)}$. The assessment states that noise control measures would need to be implemented at this stage for compliance. Measures include acoustic barrier mounds.

All modelled scenarios had bulldozer/compactor and excavator working a cell (at various depths), a truck dumping rubbish and a truck entering the site.

The DEC has determined on the basis of this assessment that an enforceable EPL limit of 40dB(A) $L_{eq(15\ minute)}$ can be applied. Compliance with this EPL condition will protect the acoustic amenity of the locality.

3.10.2 VIBRATION

An assessment of off-site vibration impacts is not provided in the EIS. However, it is considered reasonable to assume that the construction and operation of the WMF would not result in off-site impacts. The construction and operation of the WMF would not require any blasting and the use of plant and equipment with the potential to generate off-site vibration would be limited.

To this end, it is noted that the Mine Subsidence Report (Mine Subsidence Engineering Consultant Pty Ltd (MSEC) 2005) confirms that some drilling and blasting was undertaken within study area to remove overburden to expose the coal seam for open cut extraction between 1996 and 1998. It also seems like there was some drilling and blasting to remove the interburden between Lidsdale seam and lower Lithgow seam (MSEC 2005).

3.11 NATURAL HAZARDS

Geological Instability

A report was prepared as part of the EIS by MSEC (2005) to address "The Potential for Ongoing Subsidence of the Underground Mine Workings and Consideration of Alternative Methods for Stabilisation of the Highwalls of the Open Pit Prior to Construction of the Landfill Cells". From this report it is understood that there are two (2) coals seams that have been mined in the study area. This first seam to be mined on the site was the Lithgow seam, which is approximately 2m in height. The majority of this seam was mined through underground mining activity. The Lidsdale seam, which lays above the Lithgow seam, is approximately 1-1.5m thick and was removed along with the remaining Lithgow seam pillars by open cut operations. These works resulted in the current void proposed for use as the landfill. It is understood that no previous mining activities have occurred beneath the current finished floor level of the mine void.

This report states:

> *The current situation beneath the highwalls of the open pit void is not clearly defined, but based upon the available mining data, the strata behind the Highwalls is certainly not supported on pillars or pillar remnants that can be relied upon to remain stable in the long term. Additionally, the strata have in some cases already been fractured and we know that large voids exist beneath the Highwalls. Further collapse of the strata both above the extracted pillar areas and where supported on very small pillars cannot be ruled out.*

> *…This presents two major problems for the proposed landfill facility in that the possible failure of pillars beneath highwalls could result in subsidence, fissuring and rock falls, which could jeopardise the safety of operatives working in the landfill area and compromise the integrity of the leachate barrier membrane, with the potential for a loss of leachate into the local groundwater system. Further subsidence above the old underground mine workings could also impact adversely on any structures that are built on the surface.*
>
> *…The highwalls of the open pit void can not, therefore, be relied upon to provide long term support to the proposed landfill cells and leachate barrier and currently represent a potential source of danger to personnel and machinery working in the open pit void* (MSEC 2005:16).

The report concludes:

> *It is not possible to guarantee the long term stability of the highwalls by trimming their faces back to a more stable position or by grouting up the voids in the strata beneath and behind them. Even if it was possible to identify all of the voids that are present, it would not be possible to guarantee that all of them could be filled or grouted and there would still be an element of doubt regarding the long term stability of the highwalls and their capacity to provide support to the landfill cells.*
>
> *The highwalls can, however, be trimmed back to increase their stability and to ensure that any future subsidence behind them would not result in falls of rock from the highwall faces that could present a danger to operatives working in the landfill area.*
>
> *Option 4, which is described in Section 3.5, was considered to be the safest and most cost effective solution of the alternative options that were considered, since it provides for stabilisation of the highwall faces to remove any potential danger to operatives working in the landfill, but does not rely on the highwalls to provide support to the landfill cells. Instead, it provides an independent perimeter bund wall to contain the landfill cells that can be properly engineered and can be guaranteed to remain stable in the long term* (MSEC 2005:23).

Option 4 has been adopted for the proposed development. The above mentioned report was reviewed by Professor James Galvin (Mining Engineering at UNSW) who has personal knowledge of the bord and pillar mining that occurred at Western Main Colliery and has recognised expertise in the stability of coal pillars.

The review concludes:

> *…concurs with the conclusions drawn in* [the] *report regarding the stability of the highwalls in the long term. The conceptual plan for preventing any highwall movement in the long term from impacting on the safety of the landfill site and the integrity of the leachate barriers is considered feasible from a technical perspective* (Galvin, J.M. 2005:3).

In this regard, suitable measures have been undertaken to provide stability to the site.

Bushfire

The Landfill Environmental Management Plan (LEMP) outlines measures for dealing with bushfire. The application was referred to NSW Rural Fire Service for comment. No response was received.

3.12 SAFETY, SECURITY AND CRIME PREVENTION

Sufficient fencing and signage have been proposed to discourage unauthorised entry. Adequate measures have been provided to restrict the public from entry to unauthorised areas of the facility.

3.13 SOCIAL IMPACT IN THE LOCALITY

A large proportion of adverse social impact associated with landfills is perceived. Providing the facilities are managed appropriately, off site negative externalities will be minor, if at all creating an adverse social impact. The facility will be visually inconspicuous. Combined with existing developments in the locality, the proposed development is unlikely to result in any noticeable additional adverse social impacts providing it is managed in accordance with the relevant environmental standards.

3.14 ECONOMIC IMPACTS

General Comments

The EIS states:

> *The direct economic effects of the development are of a minor nature. The landfill is a replacement for existing regional landfills with no significant long term additional employment opportunities. However should the proposal not proceed, regardless of the location, the economic cost to dispose of waste over long distances would not incur significant costs to Council and the local and wider community.*

Property Values

There is no conclusive evidence that indicates that a landfill does or does not adversely impact on property values. However, the proper management, operation, and maintenance of such a facility is an important factor in maintaining local amenity.

3.15 CONSTRUCTION IMPACTS

Preparatory construction works to establish the WMF would potentially generate impacts comparable to those arising from the WMF's operation. These impacts are considered to be manageable, subject to adoption of all requisite safeguards and implementation of mitigation measures during the construction phase.

3.16 CUMULATIVE IMPACTS

Cumulative impacts can take effect over a number of different forms, including:

- Time crowded effects, where individual impacts occur so close in time that the effects of one are not dissipated before the next;
- Space crowded effects, where individual impacts occur so close in space that the effects overlap;
- Nibbling effects, where often minor impacts erode environmental conditions; and
- Synergistic, being different types of disturbances interacting to produce an effect which is greater or different than the sum of the separate effects.

Space crowded effects would be the primary issue for residents of Blackmans Flat. This is illustrated by concern raised in submissions relating to the impact of extension of existing mines and collieries in the locality in conjunction with the proposed development.

3.16.1 SPACE CROWDED EFFECTS

There are a number of activities occurring in the vicinity of Blackmans Flat that have caused concern (raised by way of submission to this Development Application) in relation to cumulative impacts. These are primarily: the extension to the Lambert's Gully Mine (located to the south west of the subject site); the Pine Dale Coal Mine (to the east of the subject site across the Castlereagh Highway), Angus Place Colliery and Invincible Colliery.

Angus Place Colliery and Invincible Colliery are considered to be a sufficient distance away from the subject site to substantially contribute to cumulative impacts.

Pine Dale Coal Mine was approved by Council in December 2005 to remove the pillars remaining from previous underground mining operations. It was granted a five (5) year operational period with potential for extension on the proviso of compliance with relevant environmental and planning requirements. Further, a condition of consent required the haul route to be relocated from the Castlereagh Highway to within the subject site within six months of the commencement of operations. The development is licensed by the NSW EPA (EPL 4911). The licence contains conditions that seek to limit negative externalities such as noise and air pollution.

Subsequent to the Pine Dale approval, the Department of Planning approved an extension to the Lamberts Gully Mine in May 2006. As part of both the environmental assessment undertaken by the proponent (International Environmental Consultants Pty Ltd 2006) and the Environmental Assessment Report prepared by the Director General of the Department of Planning (NSW Government Department of Planning 2006), cumulative impacts of Blackmans Flat Waste Management Facility, Pine Dale Coal Mine and Lamberts Gully Mine extension were considered. The Director General concluded:

> *Consequently, the Department is satisfied that the project* [Lamberts Gully] *would not be a significant contributor to cumulative impacts on the residential amenity of the Blackmans Flat area. Notwithstanding, the Department believes that the Proponent should be required to implement rigorous monitoring programs for noise and blasting, and air quality to ensure it can demonstrate compliance with relevant DEC criteria* (NSW Government Department of Planning 2006:15).

In granting consent to the Lamberts Gully Mine extension the Department considered the Blackmans Flat WMF as part of the cumulative impacts. By virtue of this approval, the department has indicated that cumulative impacts from all three facilities considered are acceptable. Further, the DEC has issued its GTAs for the required EPL which includes conditional limits to ensure the development is appropriate managed.

Overall, the proposed development is not considered to be a primary contributor to cumulative impacts in the locality as adverse impacts can be appropriately managed on site.

Suitability of the Site

4.1 DOES THE PROPOSAL FIT THE LOCALITY

There are a number of matters to consider in order to determine whether the proposal fits into the locality. These are discussed below.

4.1.1 PRINCIPLES OF SITE SELECTION

Section 4 of the NSW Department of Urban Affairs and Planning's (DUAP) "EIS Guideline: Landfilling" (the guideline) (1996) provides principles of site selection for landfilling. The guideline states that:

> *Consideration must be given to whether:*
>
> - *the location has been identified in any strategic waste management plan*
> - *the land use is permissible*
> - *environmentally sensitive areas are avoided*
> - *the use is compatible with nearby land uses*
> - *initial site investigations indicate the site is fundamentally suitable for landfill.*

Each of these principles is discussed below.

Strategic Waste Management Plan

Lithgow City Council prepared a *Solid Waste Management Strategy* in 2001. The strategy focuses on the *Waste Avoidance and Resource Recovery Act 2001*'s hierarchy of principles: minimisation, recycling, resource recovery, and disposal.

The strategy identifies the need to find a suitable location for a new and centralised waste disposal facility as the existing Lithgow Solid Waste Disposal Depot is/was reaching the end of it's feasible life and maintenance of the existing rural waste disposal depots "is difficult to justify" (Lithgow City Council 2001:19).

Recommendation 20 of the strategy states:

> *Council purchase a suitable area of land for a new central waste management depot to commence operation within three years to replace the Lithgow Solid Waste Disposal Depot. The preferred option being the mining void at the Springvale/Western Main Colliery.*

In this regard, the proposed development is consistent with the *Solid Waste Management Strategy*.

Permissibility

The proposed development is permissible with consent, as outlined in **Section 2.1.1**.

Avoidance of Environmentally Sensitive Areas

Table 1 to Section 4 of the guideline outlines environmentally sensitive areas to be avoided for siting of landfills. The subject site is not in an area of those listed in the table. However, it is located within the Sydney Drinking Water Catchment. The SCA, in its concurrence role under SEPP 58, has assessed the application and has issued conditional concurrence. This indicates that sufficient measures have been taken to ensure the development will not adversely impact on the drinking water catchment and therefore the site is suitable for development in these terms.

Compatibility of Nearby Land Uses

This is discussed in **Section 3.1.3**.

Is the Site Fundamentally Suitable for Landfill?

The subject site is appropriately zoned for the proposed development. It provides a site that does not require substantial preparatory works to facilitate the development. It is appropriately/adequately buffered from conflicting land uses. Despite being located within the Sydney Drinking Water Catchment the site can be adequately designed to provide surety against any adverse impacts on the water supply.

4.1.2 IS THE AIR QUALITY AND MICROCLIMATE APPROPRIATE FOR THE DEVELOPMENT?

As outlined in **Section 3.8**, the existing background air quality can exceed DEC requirements. However, by issuing GTAs for the development, the DEC has indicated that the WMF should be able to operate without compromising air quality goals.

4.1.3 ARE AMBIENT NOISE LEVELS SUITABLE FOR THE DEVELOPMENT?

By virtue of the DEC issuing its GTAs for the proposed development the ambient noise levels are considered to be suitable for the proposed development.

4.2 ARE THE SITE ATTRIBUTES CONDUCIVE TO DEVELOPMENT

4.2.1 NATURAL HAZARDS

The site is potentially subject to subsidence due to previous mining activities on site. This issue has been explored in **Section 3.11**. It has been determined that sufficient preparatory works can be undertaken to ensure any potential subsidence does not compromise the integrity of the facility.

4.2.2 IMPACT ON MINERAL AND EXTRACTIVE RESOURCES

The subject site has already been mined extensively and is therefore unlikely to provide any future use in terms of mineral exploits. The proposed development is therefore not considered to prejudice the future use of the site for mineral and extractive resources.

Submissions Received

5.1 PUBLIC SUBMISSIONS

The DA was publicly exhibited and notified from 16 September 2005 to 21 October 2005. Upon receipt of submissions requesting additional time to provide further submissions, the notification period was extended to 7 November 2005.

Table 5.1 provides a summary of the issues raised during the notification period. A total of sixteen (16) submissions were received. Of these three (3) requested additional time in which to prepare a submission, one (1) was neither for or against the proposed development, and the remaining thirteen (13) raised objection to the development.

Comments are provided in relation to the issues. A complete outline of the submissions is located in **Appendix A**.

Table 5.1 - Submission Issues

Issue	Comment
Permissibility & Legal Requirements	
The development is a commercial development which is prohibited in the 1(a) zone.	The proposed development is a 'waste management facility' and not a commercial premises. It is a facility with the primary function to store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste, which operates to fulfil Council's service provision role under Chapter 6 of the *Local Government Act* 1993, rather than a commercial type business.
A preliminary hazard analysis was not prepared (SEPP 33)	Not required, as outlined in **Section 2.3.2**.
The location of the landfill is not consistent with the locational principles of *EIS Practice Guideline: Landfilling*.	This matter is discussed in **Section 4.1.1** and is considered to be suitable for the proposed development.
Incorrect definition that the proposed development will be a 'solid waste landfill'.	The proposed development is classified as a Solid Waste Landfill Class 1.
Council should have its own discharge licence and discharge point that is separate to Springvale's.	The WMF will operate with its own EPL and its own monitoring points, as detailed in **Section 3.6.2**.
Is it legal for council to consent to this development and is it within the current guidelines/requirements for the 1(a) zone?	Waste management facilities are not prohibited within the 1(a) zone and are therefore permissible with consent.
Alternative Sites	
Alternative sites not looked at	Alternatives considered in Section 4 of EIS
Alternative locations have fewer social and environmental impacts than the proposed site.	Alternatives considered in Section 4 of EIS
Residents should be given a clear idea of the alternative options considered.	Alternatives considered in Section 4 of EIS

Table 5.1 - Submission Issues

Issue	Comment
Noise Impacts	
Traffic noise	Traffic noise is assessed in **Section 3.2**. It is considered acceptable
Construction noise	Construction noise is assessed in **Section 3.15**. It is considered acceptable
Operation noise	Operational noise is assessed in **Section 3.10**. It is considered acceptable
Exacerbated by temperature inversions	Not relevant as the facility operations during day period hours only.
Traffic Impacts	
Additional traffic	Traffic impacts are assessed in **Section 3.2**. It is considered acceptable
Air Quality Impacts	
Odour	
• From operation	Odour impacts are assessed in **Section 3.8**. It is considered acceptable.
• Impacts exacerbated by temperature inversions	The AUSPLUME modeling makes provision for this.
Dust	
• Access road is unsealed and will cause dust problems	Section 5.4.6 of the EIS states that the access road from Castlereagh Highway to the transfer station will be sealed.
Flora and Fauna Impacts	
Impact on Endangered Ecological Community (Temperate Highland Peat Swamps)	The subject site is not in an area identified, by the Department of Environment & Heritage, as where this EEC is likely to occur. Further, the topographical characteristics of the subject site are not conducive to supporting the community.
Increased feral animals through dumping	A management plan will be established for the control of animal dumping, as outlined in **Section 3.9.3**.

Table 5.1 - Submission Issues

Issue	Comment
Noxious weed and feral animal infestation	A management plan will be established for the control of weeds, animal dumping, and feral animals as outlined in **Section 3.9.3**.
Inadequate fencing to keep out feral animals	A management plan should be established for the control feral animals as outlined in **Section 3.9.9**
How much native vegetation is to be cleared	Vegetation to be cleared is comprised of regenerating native vegetation and not mature vegetation.
Water Quality	
Groundwater pollution from factures in sub surface geology resulting from blasting associated with mining.	See comment in **Section 3.6**
Geotextile clay barrier will be ineffective in preventing leachates into the groundwater.	See comment in **Section 3.6**
Reductions in water pressure and quality	Council has advised that there is sufficient water supply capability in the area to support the proposed development.
Significant risk from toxic leachate to adversely impact on water quality, ecosystem health and Greater Blue Mountains National Park.	See comment in **Section 3.6**
Health and Safety	
Traffic and road safety from poor existing roads, lack of deceleration/passing lanes	RTA and WRDC have reviewed the application and have advised that it is satisfactory subject to conditions outlined in **Section 3.2** of this report.
Safety of crossing the road	It is expected that the proposed development will result in a 7% increase in AADT, which is well below the capacity of the Castlereagh Highway (section 14.3.1 of EIS). In terms of safety, the primary concern is expected to be related to school bus operation. The applicant has advised that traffic management measures are to be put in place during preparation, construction and operation of the facility to ensure there is no interference with bus services at those times.

Table 5.1 - Submission Issues

Issue	Comment
Risk for human and environmental health from combination of methane, coal waste, coal seams, highly inflammable tyres, oil for recycling, green waste, and stockpiles of recyclable materials.	No green waste is to be disposed of at the facility, which will minimise the methane produced by the facility. Surface and subsurface monitoring of landfill gases will be undertaken. LEMP prepared and measures recommended from it employed to ensure minimisation of risk and adverse impacts from the development, as well as suitable procedures for dealing with any adverse impacts.
Based on the potential risk for subsidence of the high walls and unquantifiable level of risk from such, the development should not be considered.	Can be appropriately managed, see **Section 3.11**
Insufficient information has been provided in relation to hazards: what will occur in the event of release of toxic substances; natural hazards; occupational hazards; etc	Assessment of Hazards is provided in Section 16 of the EIS. The mitigation measures, combined with the conditions required by both the DEC and SCA are considered sufficient to address any potential issues.
Safeguards against the spread of agricultural pests and diseases	A management plan should be established for the control of weeds, animal dumping, and feral animals.
Environmental Management	
The rehabilitation plan is inadequate and unacceptable	The development will be undertaken in accordance with the LEMP which includes a closure plan including rehabilitation of the site and management measure for throughout the life of the project to ensure impact on vegetation outside of the development area is avoided.
Environmental impacts will exceed acceptable limits	The DEC has assessed the application. Subject to conditions the DEC satisfied, by virtue of issuing its GTAs, that the environmental impacts can be acceptably managed.
Inadequate buffers provided	Sufficient buffers have been provided between the development and the nearest residential receptor as outlined in **Sections 3.8** and **3.10**.
Rubbish dumping	A management plan as part of the LEMP will be established for the control of rubbish dumping.
Integrity of the GCL barrier is questionable and too prone to being compromised.	The GCL barrier has been assessed by the DEC and SCA and is considered to be adequate for the proposed development.

Table 5.1 - Submission Issues

Issue	Comment
Questionable that all excess leachate will be captured given known volumes of underground water. Concerned the quantities will compromise the GCL barriers and enter the groundwater.	The GCL barrier has been assessed by the DEC and SCA and is considered to be adequate for the proposed development.
Adverse impacts from disposal of untreated leachate by injection spraying. The location provides no alternative methods for treating the leachate.	The DEC has assessed the application, including, the proposed leachate injection spraying and has raised no concerns.
Risk of waste falling off or being blown off vehicles	A management plan shall be developed for addressing waste being dumped or falling off loads adjacent to the subject site. However, covering of waste on private vehicles is a matter separate to the operation of the facility and is enforced by the DEC.
Previous experience with rehabilitation of mines does not provide confidence that the waste facility will be rehabilitated appropriately	The proposed development will be subject to rehabilitation requirements separate to any other developments. Rehabilitation of the facility will be required in accordance with any consent issued for the development and the LEMP.
Is there any evidence that the proposed linings will prevent leachates leaking and causing contamination	The GCL barrier has been assessed by the DEC and is considered to be adequate for the proposed development.
What happens if the design of the bunds and landfill cells determines that they are not adequate for their purpose?	The concept plans proposed have been designed by suitably qualified persons and have been determined as adequate for the purpose.
Will the leachate management system and stormwater diversion drainage systems work in large floods?	Addressed in **Section 3.6.3**
The overlapping sections of the linings are not considered to be a successful means of preventing leachates escaping, especially with the uneven surface of the sub-base layer	The GLC barrier has been assessed by both DEC and SCA and is considered to be adequate for the proposed development.
Existing problems with asbestos disposal.	Asbestos is to be disposed of, by virtue of conditions within the GTA's issued by DEC, in accordance with Clause 42 of the *Protection of the Environment Operations (Waste) Regulation 2005*.

Table 5.1 - Submission Issues

Issue	Comment
What are the procedures for ensuring recyclables are not land filled? And who will monitor this?	Council provides the facilities for households to recycle waste. Education and awareness are key components to ensuring recycling is maximised. The facility will have operational management plans to ensure waste is directed to its correct location for disposal/recycling.
A soil and water management plan should be available for public comment	Both DEC and SCA have conditioned that a Soil and Water Management Plan be prepared. The general principles of soil and water management have been outlined in the DA and accompanying EIS and therefore it is not necessary that the plan be available for public comment.
Buffer zones are to be provided and planted with native vegetation.	Additional plantings would be provided along the access road to minimise visual impacts on Blackmans Flat.
Economic Impacts	
Adverse impact on property values	See comments in **Section 3.14**.
Result in a greater burden for tax payers because of increased haulage distances and higher costs of fuel.	The proposed facility has a fairly central location within the LGA. People using the facility may have to travel further than they currently do to access the facility. However, the location of the facility is in a more suitable location with less on and off site impacts than the seven (7) landfill ans three (3) transfer stations currently operating.
Cumulative Impacts	
Fails to take into account cumulative impacts from existing developments	Cumulative impacts are addressed in Section 20 of the EIS, with additional comments provided in **Section 3.16** of this report.
Increased and cumulative traffic impacts on Castlereagh Highway and Great Western Highway	Both the RTA and WRDC have assessed the application and have no concerns in relation to this matter, subject to conditions.
Cumulative impacts of the development not considered, including leachate from landfill adding to existing leachate from fly ash dams.	Both DEC and SCA have assessed the application and by virtue of issuing their GTA's/Concurrence, are of the option that there will be no adverse impacts resulting from the proposed development, including management of leachate.

Table 5.1 - Submission Issues

Issue	Comment
Site Suitability	
Proposal is incompatible with the surrounding land use.	This matter is addressed in **Section 4** and is the site is considered to be suitable for the proposed development
Public Input	
Lack of public consultation	The development was publicly exhibited and notified as outlined in **Section 1.5**. This included an additional two week time period and a community information session as a result of public concern
Public consultation process not extensive as it might have been and should undertake further consultation with affected residents, interest groups and wider community.	Council has notified the Development Application in accordance with their understanding of notification/advertisement requirements.
Incorrect Information	
Closer to existing residences than stated in EIS (200m instead of 1km)	The proposed development does appear to be closer than 1km from the nearest residential receptor. However the applicant has advised that the models used for air and noise impact assessment were based on co-ordinate locations of both the development and nearest residential receptor, which would provide an accurate distance between the two. In this regard, the reference to 1km in text is simply a nominal reference and its accuracy will not impact on the assessments made.
Other	
Over reliance on engineering solutions (GCL barriers, leachate collection and recirculation systems) to protect water quality.	The DEC sees these as suitable for the proposed development.
Over reliance on regulatory requirements, licence conditions, and monitoring, which has proven in the past to be ineffective.	Issues are related to compliance and not the assessment of the DA. Licenses are required for operation of the development.
Adverse impact on tourism in the area.	No evidence to support this claim.

Table 5.1 - Submission Issues

Issue	Comment
Numerous changes have occurred in the Blackmans flat locality since the site selection process. The site should be reassessed based on the changes, as the site fails to meet the criteria of being: • Technically appropriate; • Socially sensitive; • Locally sensitive; and • Best practicable environmental option that meets or exceeds all benchmarks.	The proposed development and the suitability of the subject site have been assessed in this report. The conclusion to which is provided in **Section 7**.
The DAs for the extension of Lambert's Gully Mine and Angus Place Colliery will have a major bearing on cumulative dust, particulate matter, noise, traffic and other impacts on the residents of Blackmans Flat during the life of the proposed landfill.	These matters are discussed in **Section 3.16**.

5.2 SUBMISSIONS FROM AUTHORITIES

5.2.1 SYDNEY CATCHMENT AUTHORITY

As outlined in **Section 2.3.3**, the Sydney Catchment Authority (SCA) is a concurrence authority for the proposed development. The application was referred to the SCA on 15 September 2005. On 13 December 2005, the SCA raised concerns with Council regarding the adequacy of the information provided in the DA, specifically:

- Reassessment of leachate generation taking into account both rainfall and waste moisture content, and an assessment of the implications of the revised leachate generation rate.
- SCA is concerned with the sustainability of the proposed containment system. It recommended that a compacted clay liner 0.6m thick ($K=10^{-9}ms^{-1}$) be used in conjunction with a geo-synthetic clay layer under the leachate sump.
- SCA requires a conceptual Soil and Water Management Plan.
- SCA is concerned about the water quality risks associated with any overtopping if the DML dam, and considers a spillway is required to manage the risks of extreme events.
- The SCA considers the MUSIC modelling (undertaken as part of a neutral or beneficial effects analysis) to be unconvincing and requested a number of issues be addressed.
- There is an opportunity to assist in the stabilisation of the site through the use of garden-waste compost generated on the site or through the use of a similar soil conditioner.
- Management actions associated with the closure of the existing waste disposal sites need to be addressed to ensure these do not pose an ongoing water quality risk.

The applicant provided additional information to the SCA on 27 March 2006 in response to the SCA's letter dated 13 December 2005.

An on site meeting was held on 24 May 2006 with representatives of SCA and the applicant. Further correspondence was sent from HLA Envirosciences (on behalf of the applicant) to the SCA on 2 and 9 June 2006 providing additional information on the GCL and DML Dam.

The SCA issued conditional concurrence to the DA on 19 June 2006. The conditions to be imposed on any consent issued for the proposed development are:

General

1. *Except as expressly provided by these conditions and the Department of Environment & Conservation's General Terms of Approval, the Blackmans Flat Waste Management Facility is be designed and operated in accordance with:*
    - *The recommendations of the Environmental Impact Statement (95) and associated reports prepared by the HLA-Envirosciences (dated 5 September 2005);*

- *All additional information provided to the Department of Environment and Conservation including information in letters from HLA-Envirosciences (dated 21 October 2005 and 30 November, 2005);*
- *The Environmental Guidelines: Solid Waste Landfills, Environment Protection Authority (1996);*

On-site Wastewater and Effluent Management

2. *The on-site wastewater and effluent management system for the staff amenities building is to be designed, installed and operated as set out in the report by Blue Mountains Geological and Environmental Services (dated January 2003), being Appendix H of the Environmental Impact Statement. The onsite wastewater management system is to be maintained as set out in points 18, 19 and 20 of Section 4.2.3 of the draft Landfill Environmental Management Plan (EIS Appendix 0);*

Landfill Environmental Management Plan

3. *The draft Landfill Environmental Management Plan (LEMP), being Appendix D of the EIS is to be amended to include the changes to operation of the landfill set out in these concurrence conditions and the Department of Environment and Conservation's General Terms of Approval and POEO licence. A copy of the amended LEMP is to be forwarded to the Sydney Catchment Authority for its approval prior to the commencement of operations;*
4. *A copy of the Storm Event Contingency Plan (Section 6.2.2 of the draft LEMP) is to be forwarded to the Sydney Catchment Authority for its approval for inclusion in the LEMP;*
5. *Sydney Catchment Authority shall be added to following notification/reporting tables in the LEMP:*
    - *Table 3 in Procedure ON — Accident Notification Requirements for Spills (Section 2.3.2 Appendix-A draft LEMP); -*
    - *Table 8 in Procedure 0N5 under Reporting To documents relating to Environmental Performance and Annual Monitoring Report, incident Report, Rehabilitation Plan and Environmental Design Verification Report (Section 6.3 Appendix-A draft LEMP);*
6. *The Sydney Catchment Authority shall be consulted in the preparation of Procedure GN6 — Site Maintenance (Section 7 Appendix-A draft LEMP);*
7. *Any proposed future changes to the LEMP relating to water quality — i.e. surface water, groundwater, leachate management, basal layer and capping must be approved by the Sydney Catchment Authority before their incorporation into the LEMP;*
8. *The Sydney Catchment Authority's conditions of concurrence and the POEO licence conditions are to be appended to the LEMP;*

Water Quality & Flow Monitoring and Reporting

9. *A water quality and flow monitoring and reporting program, including surface and groundwater is to be developed in consultation with the Sydney Catchment Authority and the Department of Environment and Conservation for incorporation into the LEMP. The program is to be developed in sufficient time to enable monitoring prior to the commencement of construction activities;*
10. *The Sydney Catchment Authority is to be provided with copies of all water quality monitoring reports dealing with surface waters, groundwater and leachate (see Sections 4.2.4, 4.3.4, and 4.4.4 of the draft LEMP; and Table 8 Section 6.3 Appendix- A of the draft LEMP);*

Barrier Layers

11. The barrier layers are to be constructed as set out in Section 5.4.2 of the EIS, Sections 2.2.4, 2.4.5 and 2.4.6 of the draft LEMP, and the letter from HLA-Envirosciences to the Department of Environment and Conservation (dated 30 November 2005) except that:

- *In the leachate sump two geosynthetic clay liners (GCL5) are to be used;*
- *The two GCLs shall be separated by at least 200mm of a suitable fill material, to reduce the likelihood of puncture of both liners;*
- *The quality of the GCL liners and the nature and suitability of the fill is to be chosen in consultation with the Sydney Catchment Authority;*

Leachate Drainage System and Sump

12. The leachate drainage system and sump is to be constructed as shown in Figures 5.3 and 5.4 attached to a letter from HLA-Envirosciences to the Department of Environment and Conservation (dated 30 November 2005) except that:

- *The leachate sump barrier layer shall be constructed as indicated in Condition 9 above;*
- *A strategy is to be devised in consultation with the Sydney Catchment Authority to limit the head of leachate on the liner in the sump;*

Leachate Storage System

13. The leachate storage tanks and associated infrastructure are to be constructed as set out in Section 5.4.3 of the EIS, and are to be managed so as to retain a minimum freeboard in the tanks that enables the containment of a 25-year ARI 24-hour storm event without overflowing.

14. Visual and audio alarms are to be installed that indicate when the minimum freeboard level (as specified in condition 13 above) in the leachate storage tanks is exceeded. Leachate shall then to be removed and transported to a licensed treatment facility;

Landfill Capping System

15. The landfill capping is to be constructed as set out in Section 5.9.2 of the E and Section 2.8 of the draft LEMP;

Waste Transfer Facility, Vehicle Wash Area and Shaker Ramp

16. All runoff and water from the waste transfer facility, the bunded vehicle wash area and shaker ramp near the gatehouse is to be collected and treated as leachate;

DML Dam

17. The DML stormwater dam crest is to be lowered by 1 .5m from its current level to allow the gradient of the downstream face to be flatter;

18. The crest and the downstream face of the dam is to be protected from the result of overtopping by methods such as Eco-celi or Eco-flex systems;

Soil and Water Management Plan

19. A detailed Soil and Water Management Plan (SWMP) is to be prepared consistent with Landcom's Soils and Construction: Managing Urban Storm water (2004) manual - the "Blue Book", except that all sediment dams are to be sized to contain all runoff from the 90"' percentile 5-day rainfall event. The SWMP is to be developed in consultation with the Sydney Catchment Authority and incorporated in the LEMP;

Incident Management

20. The Sydney Catchment Authority is to be notified promptly of any major water quality or environmental incidents or other incidents that are likely to lead to major water quality or environmental impacts;

Environmental Performance & Impact Reporting

21. A copy of the Annual Return to be prepared for the Department of Environment & Conservation in support of the annual license renewal, shall be submitted to the Sydney Catchment Authority. The technical studies required as part of the report are to be prepared by independent and appropriately-qualified specialists.

Existing Landfill Operations

22. All existing landfills within the Sydney Catchment Authority area of operations are to be closed within 6 months after the commencement of operations of the Blackmans Flat Waste Disposal Facility. The closure plans for these existing landfills are to be developed in consultation with the Sydney Catchment Authority;

Landfill Closure Plan

23. When a landfill closure plan for the Blackmans Flat Waste Disposal Facility is proposed, it is to be prepared in consultation with the Sydney Catchment Authority;

Changes to the design or operation of this application

24. Any proposed changes to the operation the landfill or waste transfer station must be referred to the Sydney Catchment Authority prior to their implementation for the concurrence of its Chief Executive.

5.2.2 DEPARTMENT OF ENVIRONMENT AND CONSERVATION

The DA and two (2) copies of the EIS were forwarded to the DEC for comment on 15 September 2005. The DEC encompasses the roles of the former NSW Environment Protection Authority, NSW National Parks and Wildlife Service, Resource NSW, and Botanic Gardens Trust.

Three (3) letters have been received from the Department DEC. The first two (2) letters requested additional information. Once the requested information was received by DEC, the third letter from the DEC provided it's General Terms of Approval in relation to the required Environmental Protection Licence. The DEC has advised that the conditions included in its letter containing the GTAs must be included in any consent issued.

The GTAs include requirements for amendments to the LEMP to provide detailed designs of the leachate system, location of air quality, water and noise monitoring points, limit conditions for air, water and noise pollution, and requirements for monitoring and reporting.

Due to the length of the GTAs, a copy of is attached at **Appendix C**.

5.2.3 ROADS AND TRAFFIC AUTHORITY

The DA was referred to the Roads and Traffic Authority (RTA) pursuant to Clause 7(3) of SEPP 11. Comments were received from the RTA and WRDC and neither raise objection to the proposed development, subject to conditions as outlined in **Section 2.3.1.**

5.2.4 DEPARTMENT OF PLANNING

The application was referred to Department of Planning on 15 September 2005. No response has been received.

5.2.5 RURAL FIRE SERVICE

The application was referred to Rural Fire Service on 15 September 2005. No response has been received.

5.3 INTERNAL COUNCIL REFERRALS

5.3.1 DEVELOPMENT ENGINEERING

The DA was referred to Council's Development Engineer, who raised no concern to the proposed development subject to the following conditions:

- All Development shall be constructed in accordance with Lithgow City Councils "Subdivision and Development Code" adopted by Council on the 28 of September, 1992, Minute no.1439.
- Accesses that intersect bitumen roads shall have a minimum 150mm compacted roadbase (DGB 20) or equivalent material, and a minimum 2 coat bitumen seal finish in accordance with Lithgow City Councils "Subdivision and Development Code". At the intersection of the access and Castlereagh Highway the access shall be designed to allow the flow of stormwater across the access.
- A plan of the access from the Castlereagh Highway to the site entry (the main gate) shall be submitted to the Manager of Engineering Services and be approved prior to operation. The access shall be linemarked to show turn lanes, slip lanes and holding points.
- Roads within the Facility shall be a minimum of 8 metres in width (4 metres per lane) and appropriate signage shall be installed to direct users of the Facility as to the safe speeds allowed on site and the route to be taken.
- Soil erosion and sediment control plans are to be submitted to address both long and short term management of all disturbed areas, and to specify methods and structures to be employed to minimize any impact. Such to be approved by Lithgow City Council and in accordance with the Department of Conservation and Land Management "Preparing an Erosion and Sediment Control Plan" and DNR guidelines.
- A plan is to be submitted on how dust control is to be managed. This is to include both short and long term measures.

5.3.2 BUILDING SURVEYOR

The DA was referred to Council's Building Surveyor, who raised no concern to the proposed development subject to the following conditions:

- All excavations associated with erection or demolition of a building must be property guarded and protected to prevent them from being dangerous to life or property.
- A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out:

  (a) stating that unauthorised entry to the work site is prohibited,

  (b) showing the name of person in charge of the work site and telephone number of which that person may be contacted outside working hours,

  (c) stating name and contact details of the Principal Certifying Authority (PCA) being, Lithgow City Council, and

  (d) stating DA 3 88/05.

- Prior to commencing any construction works, the following provisions of the Environmental Planning and Assessment Act 1979 are to be complied with:

  (a) a Construction Certificate is to be obtained in accordance with Section 81 A(2)(a) of the Act, and

  (b) Council is to be notified at least two days prior of the intention to commence building works, in accordance with Section 81A(2)(c) of the Act in Form 7 of Schedule 1 of the Regulations.

- That the external cladding and roofing of the structure are of a natural tone, non- reflective finish.
- That site and building works (including delivery of materials to the property) are carried out between the hours of 7.00 am to 6.00 pm only on Mondays to Saturdays. No building or site works are to be carried out on Sundays and Public Holidays.
- Compliance with the requirements of the Disability Discrimination Act.
- The building works are to be inspected during construction, by the Council and documentary evidence of compliance with the relevant terms of the approval/standards of construction detailed in the Building Code of Australia, is to be obtained prior to proceeding to the subsequent stages of construction, encompassing not less than the following key stages: (Note: copies of the stated documentary evidence are to be submitted to the Council upon completion of each specified stage of construction and prior to occupation of the building.):

  (a) Footings;
  (b) Wall and roof frame;

(c) Wet area flashing;
(d) Stormwater drainage prior to covering connections;
(e) Final.

- That documentary evidence of structural adequacy prepared by an approved practising Structural Engineer are submitted to and approved by Council prior to the commencement of the following work. (Note: any such Certificate is to set forth the extent to which the Engineer has relied on relevant specifications, rules, codes of practice or publications in respect of the construction):

  (a) Sediment control measures;
  (b) Floor;
  (c) Fire rated ceiling construction.

- That upon completion and prior to occupation of the building, a Certificate from an approved practising Structural Engineer shall be submitted to Council certifying that the building has been erected in accordance with the approved structural details and is structurally adequate for the imposed loads.

- That all “wet area” floors, including concrete, shall be flashed to walls with approved material so as to effectively prevent moisture entering the structure. Particular attention is to be paid to the flashing of the shower recess. Any wet area flashing shall comply with AS 3740-1994 “Waterproofing of Wet Areas within Residential Buildings”. Any alternative method must be approved by Council prior to installation.

- That a Septic Tank Application is submitted to and approved by Council prior to commencement of any building work.

- That all plumbing and drainage work be carried out by a licensed plumber and drainer and inspected by Council officers.

- Disabled persons access, carparking and a WC shall be [in accordance with the Building Code of Australia, with details indicating compliance shown on the Construction Certificate plans.

- Details of the essential fire or other safety measures shall be submitted with the Construction Certificate Application.

The Public Interest

6.1 PRINCIPLES OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The principles of Ecologically Sustainable Development (ESD) are a relevant consideration under Section 79C(1)(e) of the EP&A Act. The *Protection of the Environment Administration Act 1991* (POEA Act) identifies that ESD can be achieved by implementation of the following principles (Clause 6(2)):

- the precautionary principle
- inter-generational equity
- conservation of biological diversity and ecological integrity
- improved valuation, pricing and incentive mechanisms

By providing its GTA's for the proposed development, the DEC has indicated that it has considered the principles of ESD in relation to the proposed development. In exercising its functions under Chapter 3 of the *Protection of the Environment Operations Act 1997* (POEO Act), the DEC is to take into consideration those matters outlined in Clause 45 of the POEO Act, which include the above mentioned principles of ESD.

In this regard, by virtue of the issue of the GTAs for the EPL, the proposed development is not considered to be inconsistent with the principles of ESD.

6.2 OTHER MATTERS OF PUBLIC INTEREST

6.2.1 PUBLIC HEALTH AND SAFETY

The proposed development is suitably designed to ensure compliance with noise, air and water quality requirements. Appropriate management measures will be employed to manage other potential adverse impacts from the development which may impact on health and safety including management of feral animals and traffic safety. In this regard, it is held that the proposed development will not adversely impact on the health and safety of the public.

Conclusion

7.1 CONCLUSION

Development consent is being sought for the establishment and operation of the Blackmans Flat WMF. The development proposes to utilise the existing void remaining from previous above and below ground coal mining operations of the Old Western Main Colliery on the western side of the Castlereagh Highway approximately 1km north of the locality of Blackmans Flat. The facility proposes to accept between 35,000 and 40,000 tonnes of waste per annum.

The proposed development, being defined as a 'waste management facility' is permissible with consent in the 1(a) zone under Lithgow City Local Environmental Plan 1994. The development is not antipathetic to the objectives of the 1(a) zone. The use of an existing void in the landscape negates the need for development of a Greenfield site. It also provides an opportunity for the landscape to be rehabilitated once the waste facility has reached the end of its life, thus improving the quality and quantity of vegetation in the locality. The design of the development provides for appropriate protection of natural resources, which is reflected in the general terms of approval being issued by the Department of Environment and Conservation and concurrence being granted by the Sydney Catchment Authority for the proposed development.

As outlined throughout this report, the potential impacts of the development can be mitigated and managed to ensure an acceptable level of environmental performance. In cumulative terms, the development will not be a primary contributor to adverse noise, dust or odour generation in the locality. The subject site and proposed development are located at sufficient distance from the village of Blackmans Flat to ensure land use conflicts are minimised. With regard to all of the above, the subject site is considered to be suitable for the proposed development.

Further, the new waste management facility, adhering to current environmental controls and subsequent closure of existing scattered and aged waste facilities provides a better outcome for the LGA as a whole in terms of environmental and long term cost savings. In this regard, the proposed development is considered to be in the public interest.

7.2 RECOMMENDATIONS

It is recommended that consent be granted to the proposed development, subject to the conditions outlined in the following section. Council's standard conditions should also be imposed.

7.3 CONDITIONS OF CONSENT

7.3.1 Preliminary

General

1.	Development shall take place in accordance with: • *Blackmans Flat Waste Management Facility Environmental Impact Statement*, Volumes 1 - 3 (inclusive) prepared by HLA-Envirosciences Pty Limited, dated September 2005; • Letters from HLA-Envirosciences Pty Limited to the Department of Environment and Conservation, dated 21 October 2005 and 30 November 2005; • *Environmental Guidelines: Solid Waste Landfills*, prepared by the Environment Protection Authority, dated 1996;	DEC/SCA
2.	The applicant shall consult with, as required: • Integral Energy • A local telecommunications carrier regarding their requirements for the provision of services to the development and location of existing services that may be affected by proposed works, either on site or on the adjacent public road/s.	Geolyse
3.	Compliance with the Department of Environment and Conservation's General Terms of Approval for issue of a Environmental Protection Licence under the Protection of the Environment Operations Act 1997 (Notice No. 1054013).	DEC
4.	Compliance with the Sydney Catchment Authority's conditions of concurrence outlined in its letter dated 19 June 2006.	SCA
5.	All building work shall be carried out in accordance with the requirements of the Building Code of Australia.	Prescribed condition

Existing Landfill Operations

6.	All existing landfills within the Sydney Catchment Authority area of operations are to be closed within 6 months after the commencement of operations of the Blackmans Flat Waste Disposal Facility. The closure plans for these existing landfills are to be developed in consultation with the Sydney Catchment Authority.	SCA

7.3.2 Prior to Issue of Construction Certificate

Approvals from other Authorities

7.	The proponent is to satisfy Council or the Principal Certifying Authority that all necessary permits and consents from the relevant approval bodies have been obtained before the issue of any Construction Certificate.	Geolyse

Consistency with Development Consent Plans

8.	The Certifying Authority must ensure that any certified plans forming part of the Construction Certificate, are in accordance with the Development Consent plans as amended by conditions of this consent.	Geolyse

Required Submissions to Certifying Authority

9.	A detailed Soil and Water Management Plan (SWMP) shall be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate. The plan is to be prepared consistent with Landcom's *Soils and Construction: Managing Urban Storm Water* (2004) manual - the "Blue Book", except that all sediment dams are to be sized to contain all runoff from the 90th percentile 5-day rainfall event. The SWMP is to be developed in consultation with the Sydney Catchment Authority and Department of Environment and Conservation and incorporated in the LEMP. The plan shall also address both long and short term management of all disturbed areas, and to specify methods and structures to be employed to minimise any impact.	DEC/SCA/ Council
10.	The Landfill Environmental Management Plan (LEMP), being Appendix D of the EIS is to be amended to include the changes to operation of the landfill set out in the SCA's concurrence conditions and the Department of Environment and Conservation's General Terms of Approval and POEO licence. A copy of the amended LEMP, as approved by the DEC and SCA, is to be forwarded to the Principal Certifying Authority prior to issue of the Construction Certificate.	Geolyse
11.	Details of the essential fire or other safety measures shall be submitted with the Construction Certificate Application.	Council
12.	All Development shall be designed and constructed in accordance with Lithgow City Councils "Subdivision and Development Code" adopted by Council on the 28 of September, 1992, Minute no.1439. In the event of a conflict with requirements of the DEC or SCA, the latter two's requirements shall take precedence.	Council
13.	That the external cladding and roofing of the structure are of a natural tone, non- reflective finish	Council

14.	Disabled persons access, carparking and a WC shall be in accordance with the Building Code of Australia, with details indicating compliance shown on the Construction Certificate plans.	Council

Road Works

15.	All works as listed below shall be shown on the submitted drawings prior to the issue of the Construction Certificate.	
16.	The developer is to submit engineering construction plans as well as a pavement design for associated works.	RTA
17.	A formal agreement in the form of a Works Authorisation Deed (WAD) will be required between the developer and the RTA should the developer wish to undertake "private financing and construction" of the access with the Mid Western Highway. This agreement is necessary on works in which the RTA has a statutory interest.	RTA
18.	A Road Occupation Licence is required from the RTA. A Traffic Management Plan is to be submitted as part of this application.	RTA
19.	The design and construction by the developer, at its own expense and to the satisfaction of the NSW Roads and Traffic Authority and Council, the intersection of the access road and the Castlereagh Highway. Detailed construction plans of the proposed intersection shall be prepared and submitted to the NSW Roads and Traffic Authority for approval prior to the issue of the Construction Certificate. The minimum acceptable design standard for the intersection shall provide protected turns from the highway (Right turn Type CHR and Left turn Type AUL in accordance with the RTA's Road Design Guide) and treatments catering for the deceleration and storage of vehicle types and numbers accessing the site. The design of the intersection shall also give adequate consideration to the adjacent access road to the Pine Dale Coal Mine.	WRDC, RTA & Geolyse
20.	Warning signage including symbolic 'Side Road' series W2-4 and 'Truck' series W5-22 warning signs of minimum size 'B', installed approximately 200m in advance of the intersection facing approaching highway traffic;	WRDC
21.	Any new pavement forming part of or joining the highway to be in accordance with current RTA specifications for road pavements and to suit existing pavement and levels;	WRDC

22.	Accesses that intersect bitumen roads shall have a minimum 150mm compacted roadbase (DGB 20) or equivalent material, and a minimum 2 coat bitumen seal finish in accordance with Lithgow City Councils "Subdivision and Development Code".	Council
23.	A plan of the access from the Castlereagh Highway to the site entry (the main gate) shall be submitted to the Manager of Engineering Services and be approved prior to operation. The access shall be line marked to show turn lanes, slip lanes and holding points.	Council
24.	Roads within the Facility shall be a minimum of 8 metres in width (4 metres per lane) and appropriate signage shall be installed to direct users of the facility as to the safe speeds allowed on site and the route to be taken.	Council

7.3.3 PRIOR TO WORKS COMMENCING

25.	Prior to commencing any construction works, the following provisions of the Environmental Planning and Assessment Act 1979 are to be complied with: (a) a Construction Certificate is to be obtained in accordance with Section 81 A(2)(a) of the Act, and (b) Council is to be notified at least two days prior of the intention to commence building works, in accordance with Section 81A(2)(c) of the Act in Form 7 of Schedule 1 of the Regulations.	Council
26.	Installation of all equipment to monitor noise, air and water quality as per the Department of Environment and Conservation and Sydney Catchment Authority's requirements, prior to any works commencing on site.	Geolyse
27.	That documentary evidence of structural adequacy prepared by an approved practising Structural Engineer are submitted to and approved by Council prior to the commencement of the following work. (Note: any such Certificate is to set forth the extent to which the Engineer has relied on relevant specifications, rules, codes of practice or publications in respect of the construction): (a) Sediment control measures; (b) Floor; (c) Fire rated ceiling construction.	Council

28.	If an earth mound is to mitigate noise impacts emanating from operation of the development above the 925m contour, fully detailed plans shall be provided to and approved by Council for any required earth mounds. These plans shall include landscape plans demonstrating appropriate treatment of the mound to ameliorate any adverse visual impacts. The final landscaping treatment of this area shall be consistent with any rehabilitation plans associated with provision of compensatory habitat on site.	Geolyse

7.3.4 DURING WORKS

29.	All works to be carried out in accordance with relevant Government Acts and Regulations.	WRDC
30.	All works must be undertaken in accordance with the LEMP submitted with the Construction Certificate as approved by the DEC and SCA.	Geolyse
31.	All excavations associated with erection or demolition of a building must be property guarded and protected to prevent them from being dangerous to life or property.	Council
32.	A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out: (a) stating that unauthorised entry to the work site is prohibited, and (b) showing the name of person in charge of the work site and telephone number of which that person may be contacted outside working hours. (c) stating name and contact details of the Principal Certifying Authority (PCA) being, Lithgow City Council. (d) stating DA 3 88/05.	Council
33.	Installation and maintenance of all required erosion and sediment control measures, pursuant to the approved Soil and Water Management Plan, for the entire construction period and until such a time as the disturbed areas are restored by turfing, paving or revegetation.	Geolyse
34.	For the purpose of preserving the amenity of neighbouring occupations, building work including the delivery of materials to and from the site is to be restricted to the hours of: • 7.00am to 6.00pm Mondays to Fridays; • 8.00am to 1.00pm Saturdays; and • At no time on Sundays and/or Public Holidays.	DEC

35.	The building works are to be inspected during construction, by the Council and documentary evidence of compliance with the relevant terms of the approval/standards of construction detailed in the Building Code of Australia, is to be obtained prior to proceeding to the subsequent stages of construction, encompassing not less than the following key stages: (Note: copies of the stated documentary evidence are to be submitted to the Council upon completion of each specified stage of construction and prior to occupation of the building.): (a) Footings; (b) Wall and roof frame; (c) Wet area flashing; (d) Stormwater drainage prior to covering connections; (e) Final.	Council
36.	That all "wet area" floors, including concrete, shall be flashed to walls with approved material so as to effectively prevent moisture entering the structure. Particular attention is to be paid to the flashing of the shower recess. Any wet area flashing shall comply with AS 3740-1994 "Waterproofing of Wet Areas within Residential Buildings". Any alternative method must be approved by Council prior to installation.	Council
37.	That all plumbing and drainage work be carried out by a licensed plumber and drainer and inspected by Council officers.	Council

7.3.5 PRIOR TO ISSUE OF OCCUPATION CERTIFICATE/USE

38.	A Compliance Certificate or similar documentary evidence is to be issued by the Certifying Authority stating that all building and site works have been carried out in accordance with the Development Consent and Construction Certificate.	Geolyse
39.	A road safety audit be conducted of the highway intersection and public access to the site before opening and any remedial works completed before opening.	WRDC
40.	Dedication of all required roads to Council prior to issue of occupation certificate or use of the site, whichever occurs first.	Geolyse
41.	That upon completion and prior to occupation of the building, a Certificate from an approved practising Structural Engineer shall be submitted to Council certifying that the building has been erected in accordance with the approved structural details and is structurally adequate for the imposed loads.	Council

7.3.6 Conditions Relating to Use

General

42.	All works must be undertaken in accordance with the LEMP submitted with the Construction Certificate as approved by the DEC and SCA.	Geolyse

Hours of Operation

43.	For the purposes of preserving the amenity of neighbouring occupations and residents, hours of operation are to be restricted to between 8.00am to 6.00pm seven days a week.	DEC

Lighting

44.	Any lighting on site shall be designed so as not to cause nuisance to residences in the area or to motorists on nearby roads and to ensure no adverse impact on the amenity of the surrounding area by light overspill. All lighting shall comply with the Australian Standard 4282-1997 Control of Obtrusive Effects of Outdoor Lighting.	Geolyse

Landfill Closure Plan

45.	When a landfill closure plan for the Blackmans Flat Waste Disposal Facility is proposed, it is to be prepared in consultation with the Sydney Catchment Authority.	SCA

7.3.7 Advisory Notes

A	Section 97 of the Act provides that an applicant who is dissatisfied with the Council's determination of the Development Application may appeal to the Land and Environment Court within twelve (12) months of the date of determination, or as otherwise prescribed.	Geolyse
B	Section 82A of the Act provides that an applicant may request, within twelve (12) months of the date of determination of the Development Application, that the Council review its determination (this does not apply to integrated or designated development). A fee is required for this review.	Geolyse
C	The applicant and Owner are advised that the Commonwealth Disability Discrimination Act 1992 may apply to this particular proposal. Approval of this application does not imply or confer compliance with this Act. Applicants and owners should satisfy themselves as to compliance and make their own enquiries to the Human Rights and Equal Opportunity Commission. Attention is also drawn to the provisions of Parts 2, 3 and 4 of Australian Standard 1428 - Design for Access and Mobility.	Council

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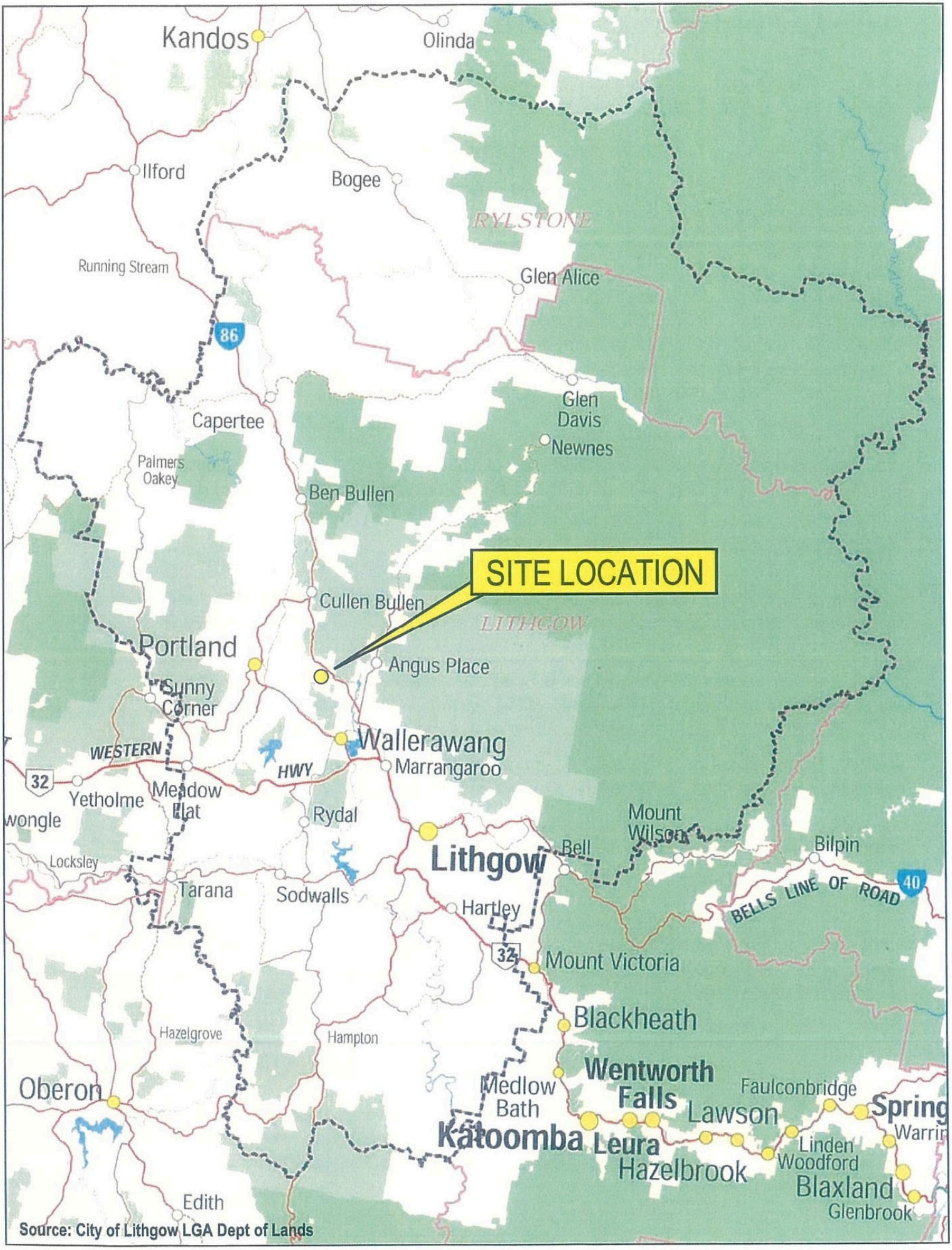
Appendix A

FIGURES

Table A.1 - List of Figures from EIS

Figure No.	Title
1.1	Regional Location Plan
2.2	Aerial Photograph
2.3	Existing Site Layout
5.1	Proposed Site Layout Plan
5.2	Conceptual Landfill Emission Pathways
5.3	Landfill Base Liner and Leachate Sump Detail (as amended Nov 05)
5.4	Leachate Management System (as amended Nov 05)
5.5	Landfill Cap Detail
5.6	Transfer Station Layout
5.7	Landfill Cell Filling Plan
5.8	Proposed Final Profile Contours

Source: HLA 2005b



HLA

REGIONAL LOCATION PLAN
City of Lithgow Council
Blackmans Flat Landfill EIS
Blackmans Flat, New South Wales

FIGURE
1.1

PROJECT-FILE NAME S60279 DATE August 2005 DRAWN amt APPROVED HW

A4

HLA

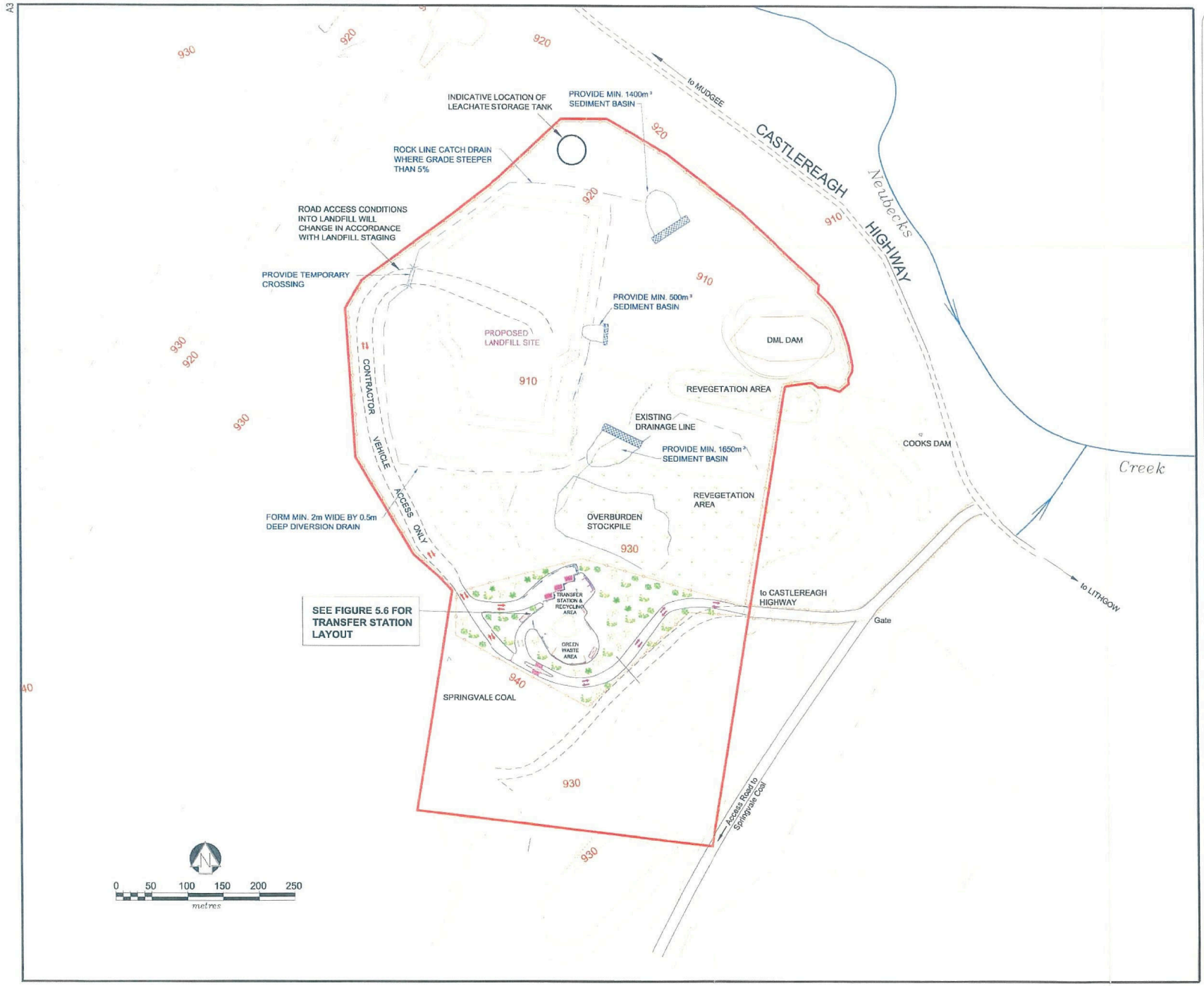
0 1000 2000 3000 4000 5000

metres

AERIAL PHOTOGRAPH
City of Lithgow Council
Blackmans Flat Landfill EIS
Blackmans Flat, New South Wales

FIGURE
2.2

PROJECT-FILE NAME S6027901 DATE August 2005 DRAWN amt APPROVED HW



PROJECT-FILE NAME	S60278
DATE	August 2005
DRAWN	amt
APPROVED	HW

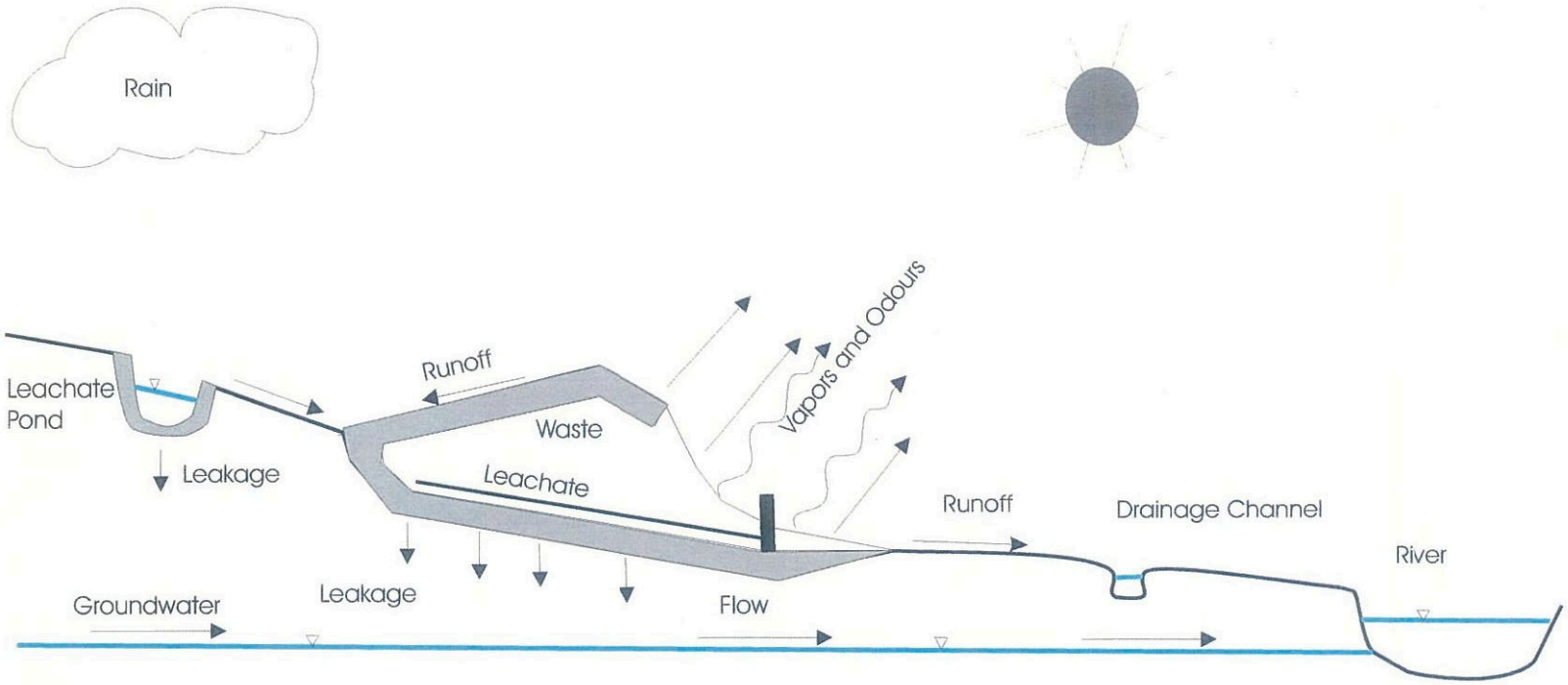
LEGEND

- EXISTING PROPERTY BOUNDARIES
- PROPOSED FENCE
- DIVERSION DRAIN

PROPOSED SITE LAYOUT PLAN
City of Lithgow Council
Blackmans Flat Landfill EIS
Blackmans Flat, New South Wales

HLA

FIGURE
5.1



Not to Scale

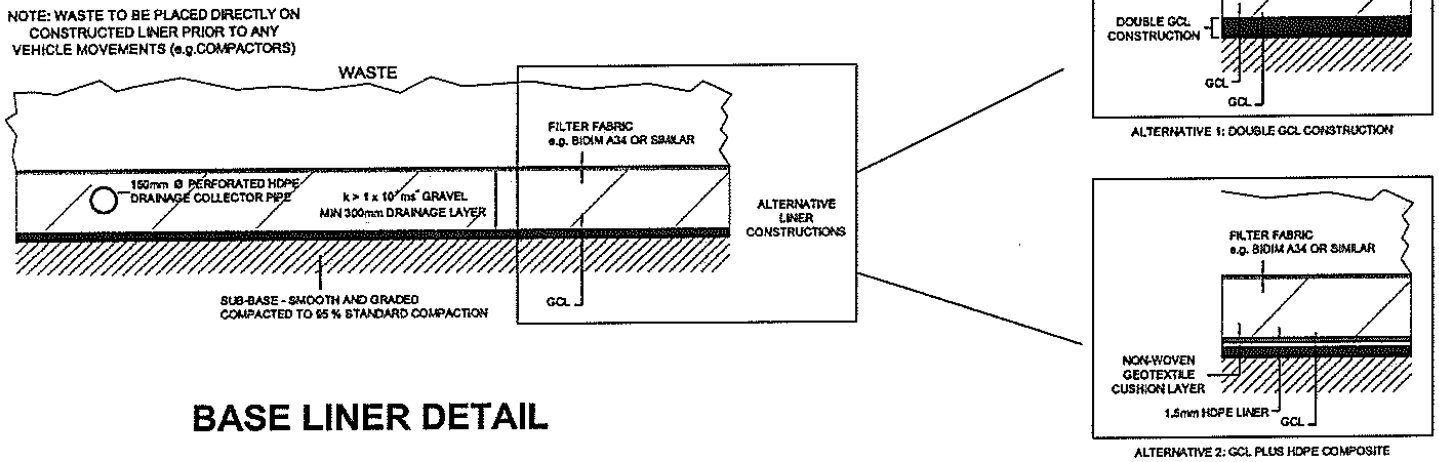
PROJECT-FILE NAME	S6027922
DATE	August 2005
DRAWN	amt
APPROVED	HW

CONCEPTUAL LANDFILL EMISSION PATHWAYS (NTS)

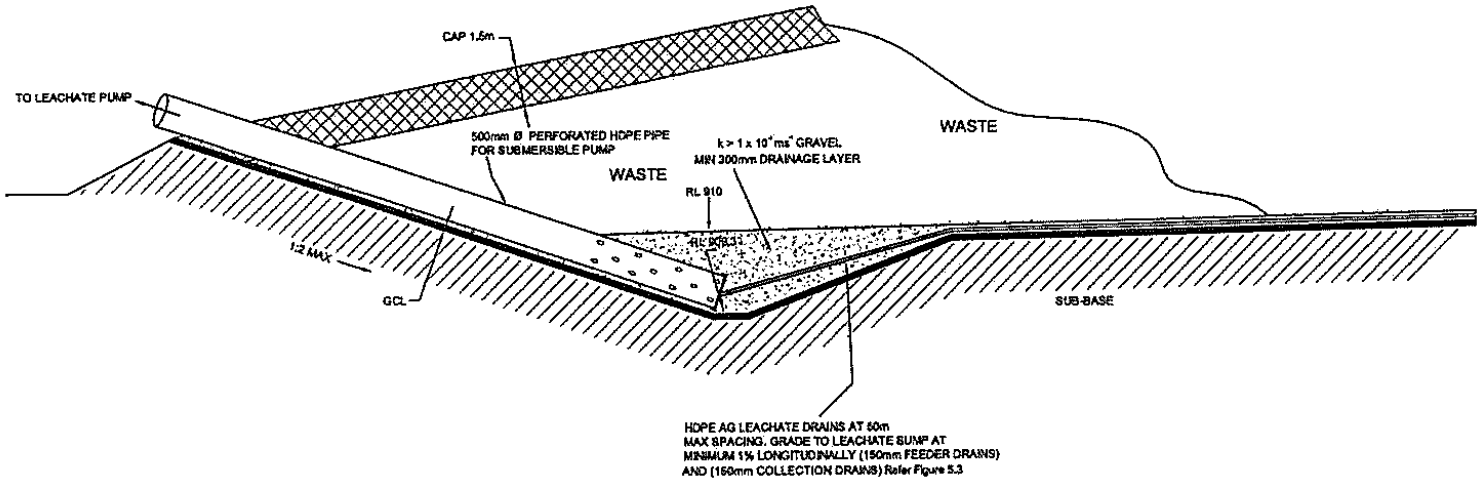
City of Lithgow Council
Blackmans Flat Landfill EIS
Blackmans Flat NSW

HLA

FIGURE
5.2



BASE LINER DETAIL



LEACHATE SUMP DETAIL

PROJECT-FILE NAME S6027931
DATE November 2005
DRAWN SJK
APPROVED

CONCEPTUAL DRAWINGS ONLY
NOT TO BE USED FOR DETAILED DESIGN

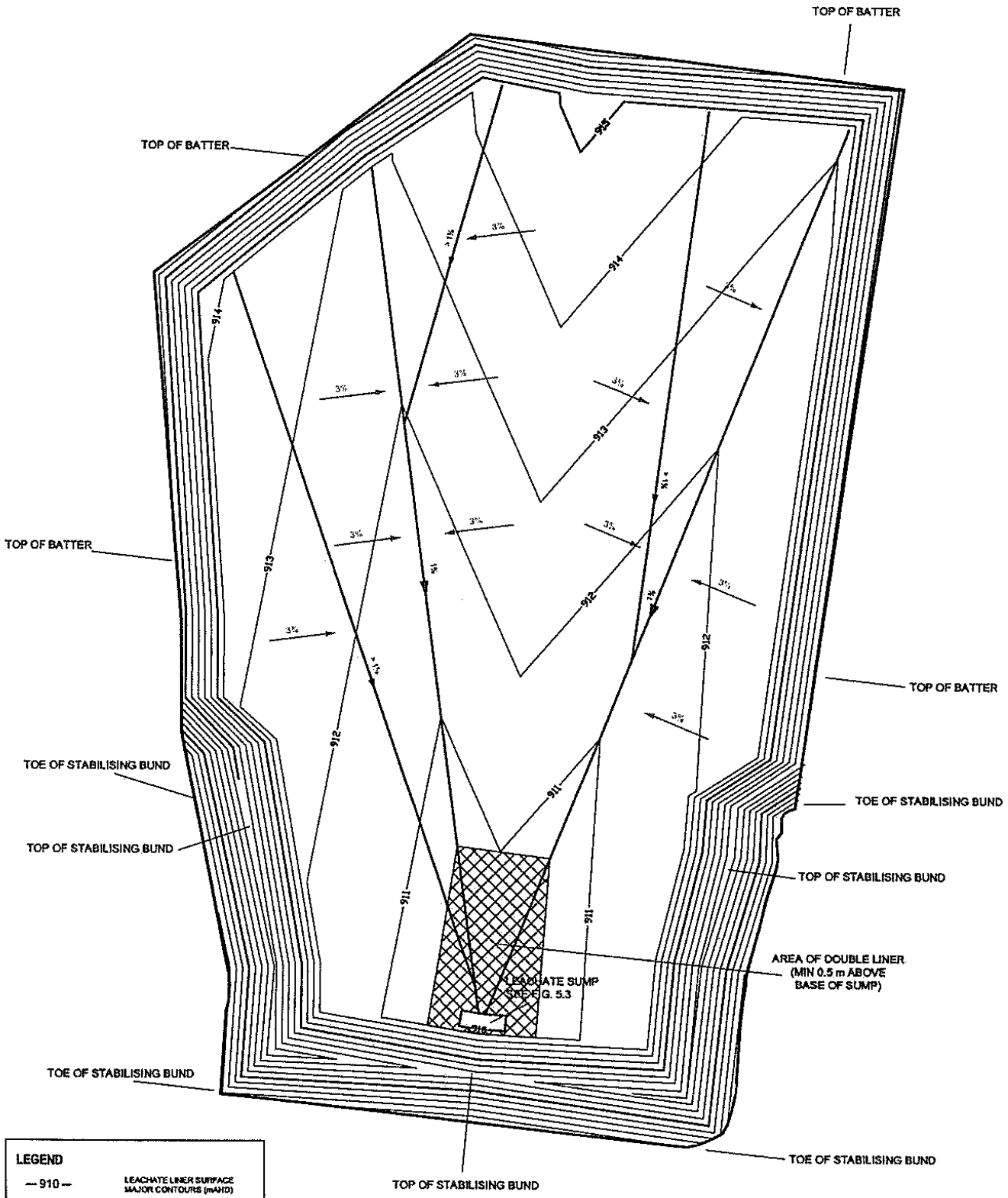
NOT TO SCALE

LANDFILL BASE LINER AND LEACHATE SUMP DETAIL
City of Lithgow Council
Blackman's Flat Landfill EIS
Blackman's Flat, New South Wales

HLA

FIGURE
5.3

A3



LEGEND

910	LEACHATE LINER SURFACE MAJOR CONTOURS (mAHD)
911	LEACHATE LINER SURFACE MINOR CONTOURS (mAHD)
> 1%	LEACHATE COLLECTION DRAINAGE PIPES
1%	LEACHATE FEEDER DRAINAGE PIPES
3%	LEACHATE LINER SURFACE GRADE
	AREA OF DOUBLE LINER

CONCEPTUAL DRAWINGS ONLY
NOT TO BE USED FOR DETAILED DESIGN

HLA

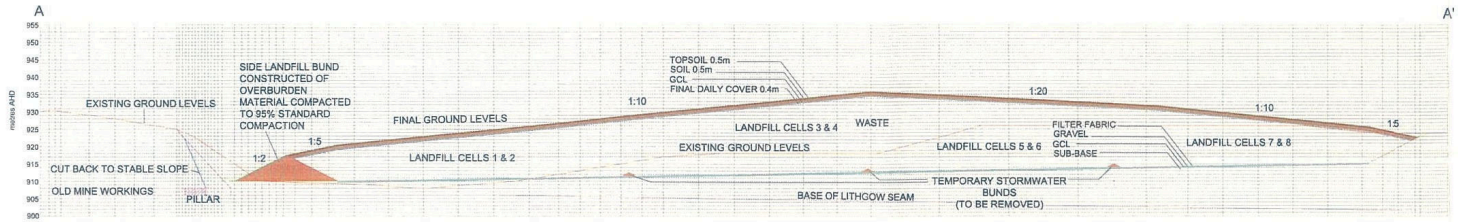
LEACHATE MANAGEMENT SYSTEM
City of Lithgow Council
Blackman's Flat Landfill EIS
Blackman's Flat, New South Wales

0 25 50 75 100 Metres
SCALE 1 : 1,250

FIGURE **5.4**

PROJECT-FILE NAME S6027931 DATE November 2005 DRAWN SJK APPROVED

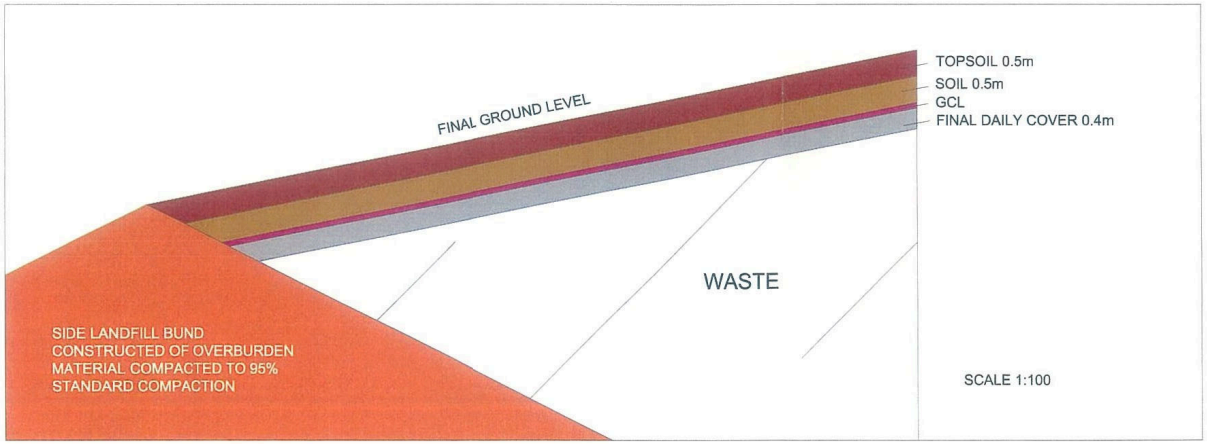
A3



LONGITUDINAL SECTION A-A' THROUGH LANDFILL (SEE FIG 5.8)

0 25 50 75 100 Metres

SCALE 1:1500



LANDFILL CAP DESIGN DETAIL

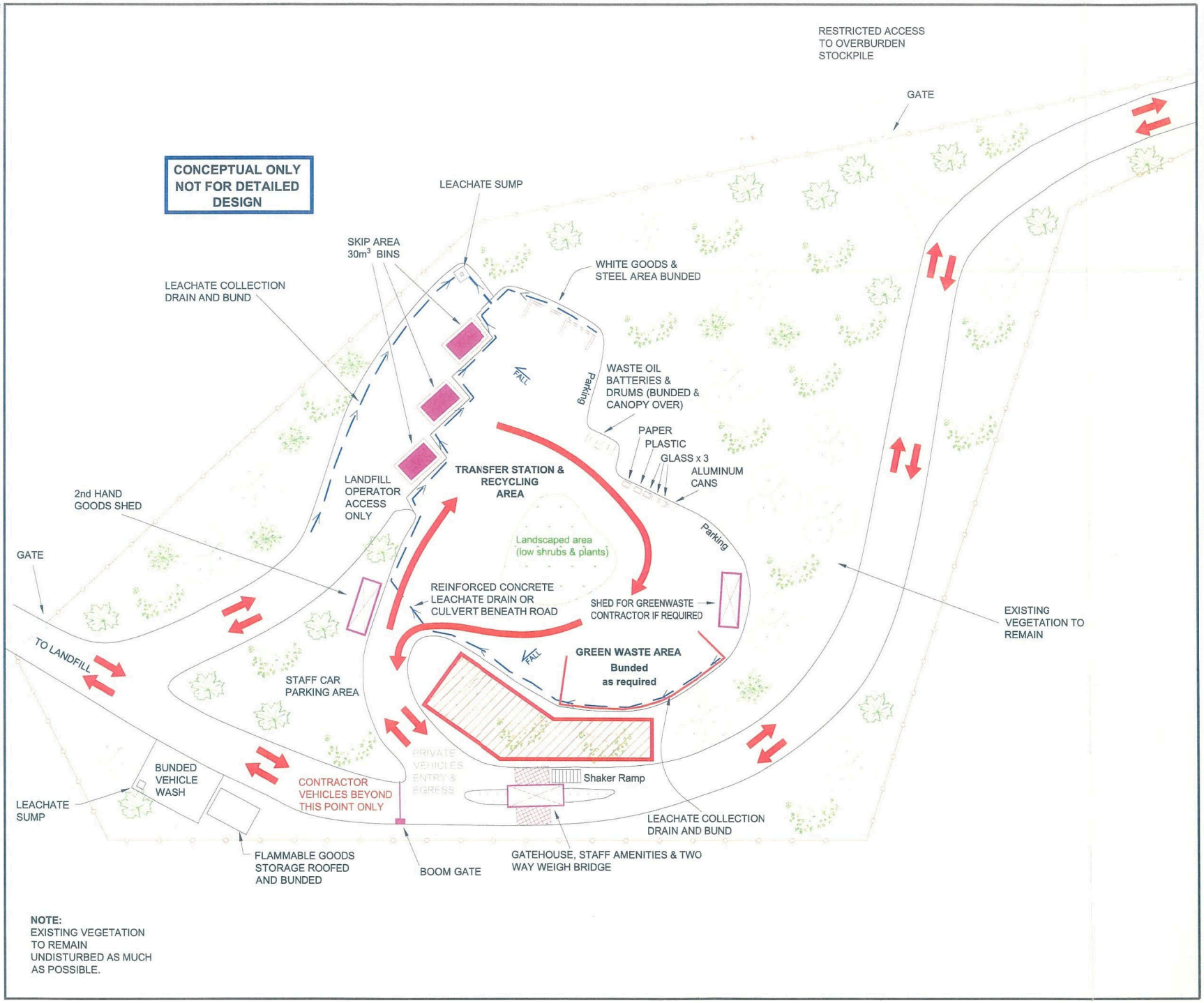
PROJECT-FILE NAME	S6072925
DATE	August 2005
DRAWN	SJK
APPROVED	

CONCEPTUAL DRAWINGS ONLY
NOT TO BE USED FOR DETAILED DESIGN

LANDFILL CAP DETAIL
City of Lthgow Council
Blackman's Flat Landfill EIS
Blackman's Flat, New South Wales

HLA

FIGURE
5.5



NOTE:
EXISTING VEGETATION TO REMAIN UNDISTURBED AS MUCH AS POSSIBLE.

PROJECT-FILE NAME	S6027922
DATE	August 2005
DRAWN	amt
APPROVED	HW

0 25 50
metres

LEGEND

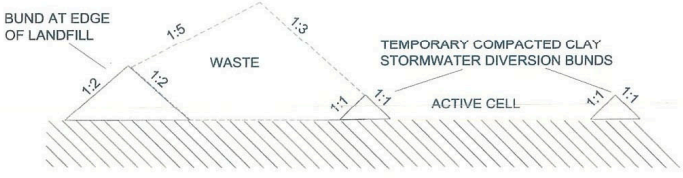
- TRAFFIC MANAGEMENT
- LEACHATE DRAIN, BUND AND DRAINAGE DIRECTION
- RECYCLING CRATES (2m x 2m)
- FALL OF SURFACE
- GATE
- EFFLUENT REUSE AREA ~800m²

TRANSFER STATION LAYOUT
City of Lithgow Council
Blackmans Flat Landfill EIS
Blackmans Flat NSW

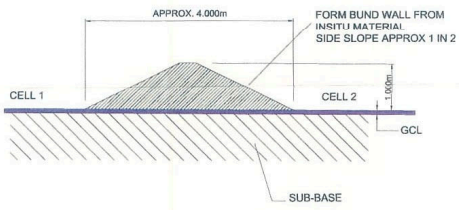
HLA

FIGURE
5.6

A3



FILLING PROCEDURE



STORMWATER DIVERSION BUND INSIDE CELL

DIAGRAMS NOT TO SCALE

HLA

LANDFILL CELL FILLING PLAN
City of Lithgow Council
Blackman's Flat Landfill EIS
Blackman's Flat, New South Wales

CONCEPTUAL DRAWINGS ONLY
NOT TO BE USED FOR DETAILED DESIGN

FIGURE
5.7

PROJECT-FILE NAME **S6072925** DATE **August 2005** DRAWN **SJK** APPROVED

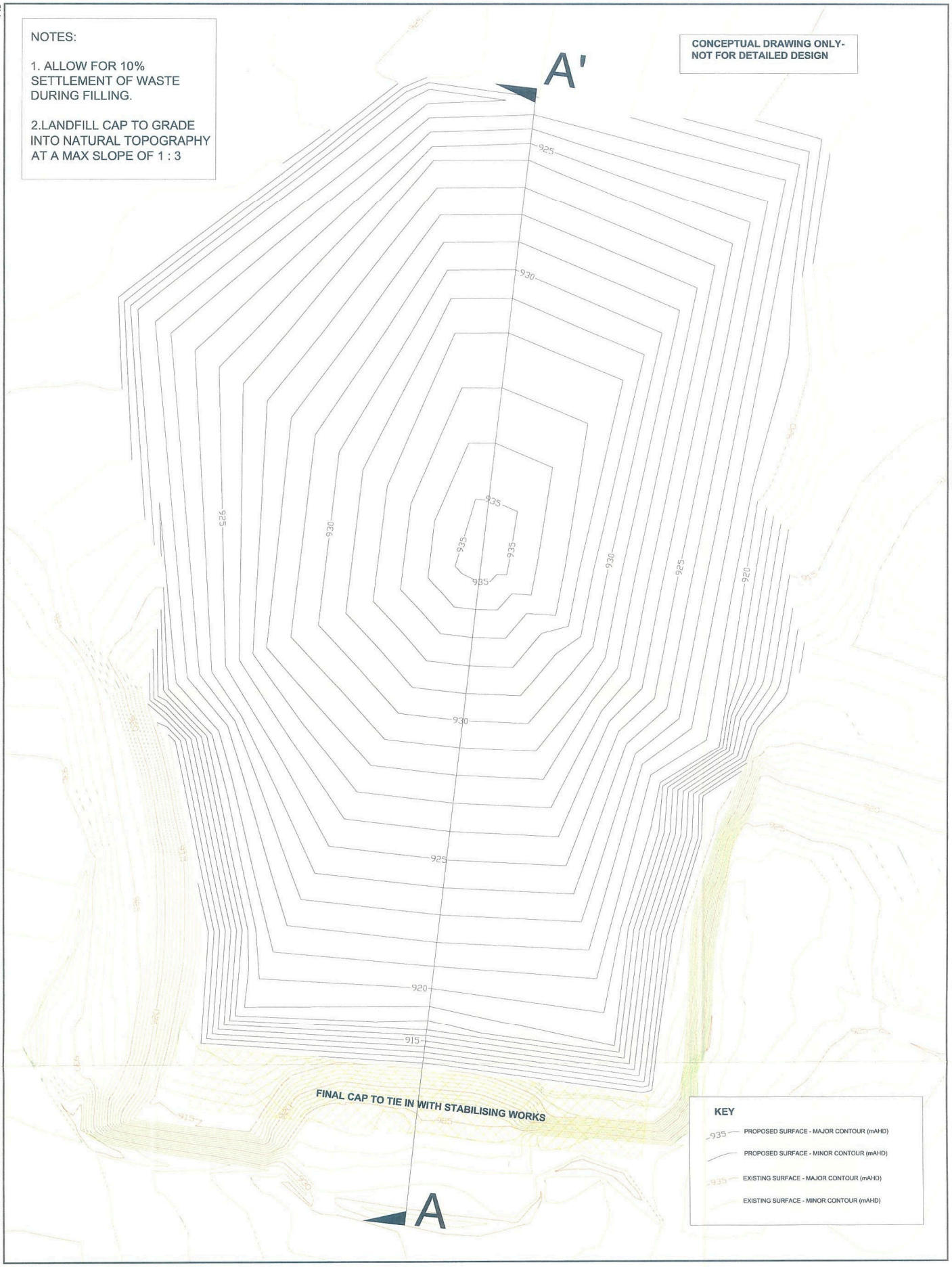
A3

NOTES:

1. ALLOW FOR 10% SETTLEMENT OF WASTE DURING FILLING.

2.LANDFILL CAP TO GRADE INTO NATURAL TOPOGRAPHY AT A MAX SLOPE OF 1 : 3

CONCEPTUAL DRAWING ONLY- NOT FOR DETAILED DESIGN



KEY

- 935 — PROPOSED SURFACE - MAJOR CONTOUR (mAHD)
- PROPOSED SURFACE - MINOR CONTOUR (mAHD)
- 935 — EXISTING SURFACE - MAJOR CONTOUR (mAHD)
- EXISTING SURFACE - MINOR CONTOUR (mAHD)

HLA

PROPOSED FINAL PROFILE CONTOURS
City of Lithgow Council
Blackman's Flat Landfill EIS
Blackman's Flat, New South Wales

N

0 25 50 75 100 Metres

SCALE 1 : 1,250

FIGURE **5.8**

PROJECT-FILE NAME S6027925 DATE August 2005 DRAWN SJK APPROVED

Appendix B

PUBLIC SUBMISSIONS

Table B.1 - Summary of Submissions

Author	Issues
6 Spring Street, LITHGOW	Request for additional time to consider application and prepare submission
18 Clwydd Street, LITHGOW	Request for additional time to consider application and prepare submission
PO Box 431, LITHGOW	Request for additional time to consider application and prepare submission
Anonymous	• Closer to existing residences than stated in EIS (200m instead of 1km) • Alternative sites not looked at • Traffic noise • Odour and noise impacts due to location upwind and upslope of the township of Blackmans Flat • Temperature inversion not adequately addressed • Adverse impacts on Temperate Highland Peat Swamps (approx 3km away) • Will result in a disproportionate share of the burden on the Blackmans flat township • Groundwater pollution from factures in sub surface geology resulting from blasting associated with mining.
144 Valley View Road, DARGUN	• Groundwater pollution from factures in sub surface geology resulting from blasting associated with mining. • Geotextile clay barrier will be ineffective in preventing leachates into the groundwater. • The development is a commercial development which is prohibited in the 1(a) zone. • The rehabilitation plan is inadequate and unacceptable • Environmental impacts will exceed acceptable limits • Inadequate buffers provided • Fails to take into account cumulative impacts from existing developments • A preliminary hazard analysis was not prepared (SEPP 33) • The location of the landfill is not consistent with the locational principles of *EIS Practice Guideline: Landfilling*. • Increased and cumulative traffic impacts on Castlereagh Highway and Great Western Highway. • Incorrect definition that the proposed development will be a 'solid waste landfill'. • Proposal is incompatible with the surrounding land use. • Odour and noise impacts due to location upwind and upslope of the township of Blackmans Flat • Temperature inversion not adequately addressed • Adverse impact on property values • Lack of public consultation

Table B.1 - Summary of Submissions

Author	Issues
1466 Castlereagh Highway, BLACKMANS FLAT	• Adverse impact on property values
8 View Street LIDSDALE	• Odour impacts • Impacts on land and ecology • Lack of public discussion • Adverse impacts on land values
Springvale Coal	Council should have its own discharge licence and discharge point that is separate to Springvale's.
1466 Castlereagh Highway, BLACKMANS FLAT	• Groundwater pollution from factures in sub surface geology resulting from blasting associated with mining. • Geotextile clay barrier will be ineffective in preventing leachates into the groundwater. • The development is a commercial development which is prohibited in the 1(a) zone. • The rehabilitation plan is inadequate and unacceptable • Environmental impacts will exceed acceptable limits • Inadequate buffers provided • Fails to take into account cumulative impacts from existing developments • A preliminary hazard analysis was not prepared (SEPP 33) • The location of the landfill is not consistent with the Locational principles of *EIS Practice Guideline: "Landfilling"*. • Increased and cumulative traffic impacts on Castlereagh Highway and Great Western Highway. • Incorrect definition that the proposed development will be a 'solid waste landfill'. • Proposal is incompatible with the surrounding land use. • Odour and noise impacts due to location upwind and upslope of the township of Blackmans Flat • Temperature inversion not adequately addressed • Adverse impact on property values • Lack of public consultation

Table B.1 - Summary of Submissions

Author	Issues
4 Castlereagh Highway BLACKMANS FLAT	• Odour impacts • Noise impacts from construction, operation and cumulative impacts from recently approved developments • Traffic and road safety from poor existing roads, lack of deceleration/passing lanes • Dust from construction and operation • Vermin and weeds • Increase in illegal dumping of waste • Reductions in water pressure and quality • Loss of property values
16 Noon Street BLACKMANS FLAT	• Odour • Additional traffic • Declining house values • Increased feral animals through dumping • Dust • Noise • Safety of crossing the road • Rubbish dumping • Adverse impacts on the environment • Water quality • Native wildlife
Lithgow Environment Group	• Public consultation process not extensive as it might have been and should undertake further consultation with affected residents, interest groups and wider community. • Significant risk from toxic leachate to adversely impact on water quality, ecosystem health and Greater Blue Mountains National Park. • Technically an inappropriate site given long history of underground mining and blasting. • Over reliance on engineering solutions (GCL barriers, leachate collection and recirculation systems) to protect water quality. • Over reliance on regulatory requirements, licence conditions, and monitoring, which has proven in the past to be ineffective. • Integrity of the GCL barrier is questionable and too prone to being compromised. • Questionable that all excess leachate will be captured given known volumes of underground water. Concerned the quantities will compromise the GCL barriers and enter the groundwater.

Table B.1 - Summary of Submissions

Author	Issues
Lithgow Environment Group	• Cumulative impacts of the development not considered, including leachate from landfill adding to existing leachate from fly ash dams. • Risk for human and environmental health from combination of methane, coal waste, coal seams, highly inflammable tyres, oil for recycling, green waste, and stockpiles of recyclable materials. • Council has not explored options for increasing waste avoidance and minimization. • Noxious weed and feral animal infestation. • Inadequate fencing to keep out feral animals. • Temperate Highland Peat Swamps (EEC) not considered as being impacted upon.
42 Lemnos Street LITHGOW	• Too close to residential houses • Adverse noise from traffic and operation, dust, odour • Risk of waste falling off or being blown off vehicles • Previous experience with rehabilitation of mines does not provide confidence that the waste facility will be rehabilitated appropriately. • Access road is unsealed and will cause dust problems • Pollution potential for the Sydney catchment. • Alternative locations have fewer social and environmental impacts than the proposed site. • Is there any evidence that the proposed linings will prevent leachates leaking and causing contamination • What happens it the design of the bunds and landfill cells determines that they are not adequate for their purpose? • Residents should be given a clear idea of the alternative options considered. • Will the leachate management system and Stormwater diversion drainage systems work in large floods? • The overlapping sections of the linings are not considered to be a successful means of preventing leachates escaping, especially with the uneven surface of the sub-base layer. • Existing problems with asbestos disposal. • What are the procedures for ensuring recyclables are not land filled? And who will monitor this? • Is it legal for council to consent to this development and is it within the current guidelines/requirements for the 1(a) zone? • Based on the potential risk for subsidence of the high walls and unquantifiable level of risk from such, the development should not be considered. • A soil and water management plan should be available for public comment • How much native vegetation is to be cleared. • Buffer zones are to be provided and planted with native vegetation. • What guarantees are there that the mitigation measures will be employed and monitoring will occur.

Table B.1 - Summary of Submissions

Author	Issues
42 Lemnos Street LITHGOW	• Traffic increases are unacceptable. • A landscaping strategy should be instigated immediately to create a buffer zone. • How will dust and road cleanliness and litter be managed? • Insufficient information has been provided in relation to hazards: what will occur in the event of release of toxic substances; natural hazards; occupational hazards; etc • Safeguards against the spread of agricultural pests and diseases • Concerns about the dumping of rubbish • Devaluation of properties • Result in a greater burden for tax payers because of increased haulage distances and higher costs of fuel. • Risks to public health • Cumulative impacts • Adverse impact on tourism in the area.
6 Spring Street LITHGOW	• Too close to residential houses • Adverse noise from traffic and operation, dust, odour • Risk of waste falling off or being blown off vehicles • Previous experience with rehabilitation of mines does not provide confidence that the waste facility will be rehabilitated appropriately. • Maintenance of the remnant vegetation in the centre of the site. • Access road is unsealed and will cause dust problems • Pollution potential for the Sydney catchment. • Alternative locations have fewer social and environmental impacts than the proposed site. • Is there any evidence that the proposed linings will prevent leachates leaking and causing contamination • What happens it the design of the bunds and landfill cells determines that they are not adequate for their purpose? • Residents should be given a clear idea of the alternative options considered. • Will the leachate management system and Stormwater diversion drainage systems work in large floods? • The overlapping sections of the linings are not considered to be a successful means of preventing leachates escaping, especially with the uneven surface of the sub-base layer. • Existing problems with asbestos disposal. • What are the procedures for ensuring recyclables are not land filled? And who will monitor this?

Table B.1 - Summary of Submissions

Author	Issues
6 Spring Street LITHGOW	• Is it legal for council to consent to this development and is it within the current guidelines/requirements for the 1(a) zone? • Based on the potential risk for subsidence of the high walls and unquantifiable level of risk from such, the development should not be considered. • A soil and water management plan should be available for public comment • How much native vegetation is to be cleared. • Buffer zones are to be provided and planted with native vegetation. • What guarantees are there that the mitigation measures will be employed and monitoring will occur? • Traffic increases are unacceptable. • A landscaping strategy should be instigated immediately to create a buffer zone. • How will dust and road cleanliness and litter be managed? • Insufficient information has been provided in relation to hazards: what will occur in the event of release of toxic substances; natural hazards; occupational hazards; etc • Safeguards against the spread of agricultural pests and diseases • Concerns about the dumping of rubbish • Devaluation of properties • Result in a greater burden for tax payers because of increased haulage distances and higher costs of fuel. • Risks to public health • Cumulative impacts
Lithgow Environment Group	Numerous changes have occurred in the Blackmans flat locality since the site selection process. The site should be reassessed based on the changes, as the site fails to meet the criteria of being: • Technically appropriate; • Socially sensitive; • Locally sensitive; and • Best practicable environmental option that meets or exceeds all benchmarks.
1466 Castlereagh Highway BLACKMANS FLAT	The DAs for the extension of Lambert's Gully Mine and Angus Place Colliery will have a major bearing on cumulative dust, particulate matter, noise, traffic and other impacts on the residents of Blackmans Flat during the life of the proposed landfill.

Appendix C

DEC'S GENERAL TERMS OF APPROVAL

ADMINISTRATIVE CONDITIONS

A1. Information supplied to the EPA

A1.1 Except as expressly provided by these general terms of approval, works and activities must be carried out in accordance with the proposal contained in:

- the development application (DA No. 388/05) submitted to the City of Lithgow Council on 15 September 2005;
- the document "Environmental Impact Statement – Blackmans Flat Waste Management Facility, HLA – Envirosciences Pty Limited, 5 September 2005" (the EIS);
- the document "Blackmans Flat Waste Management Facility Draft Landfill Environmental Management Plan, 5 September 2005" (the LEMP); and
- all additional documents supplied to the EPA in relation to the development, including additional information supplied to the EPA in letters dated:
  - i) 21 October 2005 in relation to monitoring, leachate collection and conveyance, and leachate storage and management; and
  - ii) 30 November 2005 in relation to the leachate barrier.

A2. Fit and Proper Person

A2.1 The applicant must, in the opinion of the EPA, be a fit and proper person to hold a licence under the Protection of the Environment Operations Act 1997, having regard to the matters in s.83 of that Act.

A3. Other activities

A3.1 These general terms of approval applies to all other activities carried on at the premises, including:

- Waste storage, transfer, separating or processing
- Sewage treatment systems

A4. Administrative Licence Conditions

A4.1 The applicant must apply for and receive an environment protection licence from the EPA prior to commencing any activity associated with DA388/05.

A4.2 Waste must not be disposed of at the landfill until the EPA has provided the applicant with written approval to commence the disposal of waste.

A4.3 The application referred to in condition A4.1 of this instrument must be accompanied by an amended LEMP which provides:

i) drawings "for construction," specifications, design details, and justification thereof, as well as an implementation and commissioning schedule, for the proposed :

a) liner system of the landfill including its sub grade;

b) leachate collection, conveyance, storage and disposal system; and

c) progressive capping and rehabilitation of the premises; and

ii) a proposed Quality Assurance and Testing Program (QATP) that ensures that the measures referred to in i) a) and b) of this condition will be installed in a manner to achieve their design specifications.

A4.4 The general design of the liner system referred to in i) a) in condition A4.3 must be in accordance with:

i) "Figure 5.3, Leachate Base Liner and Leachate Sump Detail" and "Figure 5, Leachate Management System" provided as attachments to the letter of 30 November 2005 from HLA-Envirosciences Pty Limited; or

ii) an alternative liner system approved in writing by the EPA.

A4.5 The design of the leachate collection, conveyance, storage and disposal system referred to in i) b) of condition A4.3 of this instrument must:

i) allow for the level of leachate above the basal liner to be less than 500mm (or another level approved by the EPA), unless the freeboard in any leachate storage dam would be exceeded by the removal of lecahte from the landfill;

ii) allow for management, without discharge to waters, of all leachate generated during the 90 th percentile wet year;

iii) allow for the level of leachate in any storage dam or tank to be maintained such that there is sufficient freeboard to accept rainfall from the 1:25 year ARI 24 hour duration rainfall event without overflowing;

iv) incorporate high level alarm/s and interlock system/s configured such that the alarm/s are activated and any pump or gravity flow of leachate to any dam or tank is automatically shut down prior to the freeboard in that dam being reduced to less than a capacity to accept rainfall from the 1:25 ARI year 24 hour duration rainfall event; and

v) incorporate a provision for any leachate dams, to be lined with a geosynthetic clay and 1.5 mm thick HDPE composite liner system , or an alternative liner system approved in writing by the EPA.

A4.6 The soil and water management plan required in conditions O4.1 and O5.1 of this instrument must be in accordance with the document "Managing Urban Stormwater (MUS): Soils and Construction, Landcom, March 2004." Further more all sediment dams must be designed and operated to capture run off from the 90th percentile 5 day rainfall event, and the maximum permissible concentration of total suspended solids in any pumped discharge must be less than 50 mg per litre. Any discharges must have a total ammonia concentration lof ess than 0.9 mg/L and a pH between 6.5-8.5.

Note 1:

The EPA will review the amended LEMP with a view to attaching conditions to the applicant's environment protection licence:

i) requiring the installation of the measures referred to and in i) of condition A4.3 of this instrument;

ii) requiring the applicant to provide a report prepared by a suitably qualified person that demonstrates that the control measures referred to in i) a) and b) of condition A4.3 of this

instrument have been installed in accordance with their approved design and EPA requirements;

iii) requiring the applicant to provided a report on the implementation and results of the QATP referred to in ii) of condition A4.3 of this instrument;

iv) requiring the applicant to provide "as constructed' drawings of the installed liner and leachate collection, conveyance and storage system and capping works; and

v) prohibiting disposal of waste in the landfill without the EPA's written approval, which will be based on the receipt, and assessment of the above information to confirm the approved works, except for the final capping, were installed.

Note 2

In relation to the design details of the landfill cap required by i) c) of condition A4.3 the EPA notes that the concept design provided in figure 5.5 of the EIS includes a geosynthetic clay barrier (GCL) within the cap. Please note the EPA has yet to resolve its position on the suitability of a GCL within a landfill cap (see Benson et al), as such if a GCL is proposed in the detailed design the EPA requires suitable justification for its inclusion.

DISCHARGES TO AIR AND WATER AND APPLICATIONS TO LAND

P1.Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this general terms of approval for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the ait from that point.

Air

EPA identification No.	Type of monitoring point	Type of discharge point	Description of location
1-5	Dust monitoring		Locations identified as DG1, DG2, DG3, DG4 and DG5 as provided in the letter to the EPA dated 21 October 2005
6	Ambient air monitoring		Subsurface methane- To be finalised
7	Ambient air monitoring		Surface methane – to be finalised

Water/Land

EPA identification No.	Type of monitoring point	Type of discharge point	Description of location
8	Leachate quality		Leachate collection

	monitoring		tank(s) – to be finalised.
9-13	Groundwater quality monitoring		Locations identified as PZ01, PZ02D PZ03, PZ04 and PZ02S on Figure 4 of the hydrogeological investigation report attached to the EIS for the proposal.
14	Ambient water monitoring		Location identified as DML Dam in figure 9.1 of the EIS for the proposal.

LIMIT CONDITIONS

L1. Pollution of waters

L.1.1 Except as may be expressly provided by a licence under the Protection of the Environment Operations Act 1997 in relation of the development, section 120 of the Protection of the Environment Operations Act 1997 must be complied with in and in connection with the carrying out of the development.

L1.2 The applicant must ensure that the leachate level within the landfill does not exceed 910.5 metres AHD, unless the leachate storage dam/s or tank/s have a freeboard capacity less than or equal the volume of leachate generated from the 1:25 year 24 hours rainfall event, or less than or equal to an alternative freeboard approved in writing by the EPA.

L5. Waste

L5.1 The applicant must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.

L5.2 The applicant must ensure that only the following types of waste are disposed of at the premises:

Type of landfill	Wastes able to be landfilled
Solid Waste Class 1 Landfill	Waste, including putrescible waste, that is assessed as *inert waste* or *solid waste* following the technical assessment procedure outlined in Technical Appendix 1 of the Waste Guidelines or that is specified as

	inert waste or *solid waste* in Schedule 1 of the Protection of the Environment Operations Act 1997 and 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).

Note: The applicant must dispose of asbestos in accordance with Clause 42 of the Protection of the Environment Operations (Waste) Regulation 2005.

L5.3 The total tonnage of waste disposed of at the premises must not exceed 40,000 tonnes from 1 January to 31 December in any year.

L5.4 The total volume of waste disposed of at the premises must not exceed 750,000 cubic metres.

L5.5 The applicant must not dispose of any tyres on the premises which;

(a) have a diameter of less than 1.2 metres; and

(b) are delivered at the premises in a load containing more than 5 whole tyres; and

(c) became waste in the Sydney Metropolitan Area.

L5.6 Tyres from the Sydney Metropolitan Area must not be received at the premises unless:

(a) they have been shredded into pieces measuring no more than 250mm in any direction; or

(b) they have had their walls removed; or

(c) the facility has the capacity, at the time of receiving the tyres, to recycle or reprocess the tyres into a saleable product (including retreading the tyres); or

(d) the facility has the capacity, at the time of receiving the tyres, to shred the tyres or remove the walls from the tyres; or

(e) the tyres are from a domestic load containing no more than 5 tyres having a diameter of less than 1.2 metres.

L6. Noise limits

L6.1 Noise from the premises must not exceed an LAeq (15 minute) noise emission criterion of 40 dB(A), except as expressly provided by these general terms of approval.

L6.2 Noise from the premises is to be measured at the most affected noise sensitive location to determine compliance with this condition

Definition

$L_{Aeq(15\ minute)}$ is the average sound pressure level when measured over a 15 minute period.

Note: Noise measurement

For the purpose of noise measures required for this condition, the L_{Aeq} noise level must be measured or computed at any point at the most affected noise sensitive location over a period of 15 minutes using "FAST" response on the sound level meter.

For the purpose of the noise criteria for this condition, 5dBA must be added to the measured level if the noise is substantially tonal or impulsive in character.The location or point of impact can be different for each development, for example, at the closest residential receiver or at the closest boundary of the development. Measurement locations can be:

1 metre from the facade of the residence for night time assessment;

at the residential boundary;

30 metres from the residence (rural situations) where boundary is more than 30 metres from residence.

L6.3 The noise emission limits identified in L6.1 apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:

- documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions;
- where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.

Note: *To identify targets or noise measures to be taken, use:*

- *the EIS (if it addresses noise matters satisfactorily and clearly expresses targets/mitigation measures to be adopted); or*
- *the Environmental Noise Control Manual.*

The issue of temperature inversions is complex both in determining when they occur and how they influence noise impacts. Therefore the extent of their impact should be managed in the licence using a noise monitoring and complaints based approach. Where complaints are significant the company should be required to develop management strategies.

7. Hours of operation

L7.1 All construction work at the premises must only be conducted between:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 1:00pm Saturday, and;
- at no time on Sunday and/or public holidays.

L7.2 Activities at the premises, other than construction work, may only be carried on between 8:00am to 6:00pm on any day.

L7.3 This condition does not apply to the delivery of material outside the hours of operation permitted by condition L7.1 or L7.2, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification is provided to the EPA and affected residents as soon as possible, or within a reasonable period in the case of emergency.

L8.Potentially offensive odour

L8.1 Activities at the premises must not cause or permit the emission of offensive odour beyond the boundary of the premises.

OPERATING CONDITIONS

O1. Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

b) the processing, handling, movement and storage of materials and substances used to carry out the activity; and

c) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2. Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

(a) must be maintained in a proper and efficient condition; and

(b) must be operated in a proper and efficient manner.

O3. Dust

O3.1 Activities occurring at the premises must be carried out in a manner that will minimise emissions of dust from the premises.

O3.2 Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

O4. Stormwater/sediment control - Construction Phase

O4.1 A Soil and Water Management Plan (SWMP) must be prepared and implemented. The plan must describe the measures that will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities. The SWMP should be prepared in accordance with the requirements for such plans outlined in Managing Urban Stormwater: Soils and Construction (available from the Department of Housing).

O5. Stormwater/sediment control - Operation Phase

O5.1 A Stormwater Management Scheme must be prepared for the development and must be implemented. Implementation of the Scheme must mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities. The Scheme should be consistent with the Stormwater Management Plan for the catchment. Where a

Stormwater Management Plan has not yet been prepared the Scheme should be consistent with the guidance contained in Managing Urban Stormwater: Council Handbook (available from the EPA).

O6. Leachate management

O6.1 Water which contacts waste (other than virgin excavated natural material) must be managed as leachate.

O6.2 Leachate must only be disposed by:

i) disposal at a facility licensed to accept such waste; or

ii) evaporation; or

iii) spray irrigation.

O6.3 Spray irrigation of leachate must only be undertaken:

i) during dry weather;

ii) such that ponding or runoff does not occur; and

iii) on the active cell of the landfill.

O6.4 Spray irrigation must only be undertaken on the active landfill cell if it surrounded by a perimeter bund greater than 300mm in height.

O7.Management of surface waters

O7.1 The perimeter of the area where waste has been landfilled must be contoured to prevent stormwater running on to theses surfaces from all storm event less than or equal to a 1 in 10 year 24 hour duration storm event.

7.2 Surface drainage must be diverted away from any area where waste is being or has been landfilled.

O7.3 The drainage from all areas at the premises which will liberate suspended solids when stormwater runs over these areas must be diverted into sedimentation basins.

O8. Fire risk reduction works

O8.1 The applicant must have in place and implement procedures to minimise the risk of fire at the premises.

O9. Screening of waste

O9.1 The applicant must have in place and implement procedures to identify and prevent the disposal of any waste not permitted by this general terms of approval to be disposed of at the premises.

O10. Waste compaction

O10.1 An average compaction rate of not less than 650 kg per cubic metre must be achieved for all waste disposed of at the premises.

O11. Filling plan

O11.1 The applicant must manage the disposal of waste at the premises in accordance with the progressive filling plan provided in Section 5.8.1 of the EIS.

O12. Completion of landfill cells

O12.1 The applicant must ensure that the landfill cells are capped progressively.

O13. Unauthorised entry

O13.1 The applicant must take all practicable steps to control entry to the premises.

O13.2 The applicant must install and maintain a stockproof perimeter fence around the premises.

O13.3 The applicant must install and maintain lockable security gates at all access and departure locations.

O13.4 The applicant must ensure that all gates are locked whenever the landfill is unattended.

O14. Degradation of local amenity

O14.1 The applicant must have in place and implement a litter management program.

O15. Tracking of mud and waste

O15.1 The applicant must minimise the tracking of waste and mud by vehicles.

O16. Covering of waste

O16.1 Cover material must be virgin excavated natural material.

(a) Daily cover

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.

(b) Intermediate cover

Cover material must be applied to a depth of 30 centimetres over surfaces of the landfilled waste at the premises which are to be exposed for more than 90 days.

(c) Cover material stockpile

At least two weeks cover material must be available at the premises under all weather conditions. This material may be won on site, or alternatively a cover stockpile must be maintained adjacent to the tip face.

O17. Control of pests, vermin and weeds

O17.1 The applicant must control pests, vermin and weeds at the premises.

O18. Fire extinguishment

O18.1 The applicant must extinguish any fires at the premises as soon as possible.

O19. Fire fighting capability

O19.1 The applicant must have in place and implement fire prevention measures at the premises.

O20. Staff training

O20.1 The applicant must ensure that adequately trained staff are available at the premises in order to administer the requirements of this general terms of approval.

O21. Closure plan

O21.1 The last licensee must prepare and submit to the EPA within twelve months of the landfill ceasing to dispose of waste a closure plan in accordance with section 76 of the *Protection of the Environment Operations Act 1997.*

MONITORING AND RECORDING CONDITIONS

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by the EPA's general terms of approval, or a licence under the Protection of the Environment Operations Act 1997, in relation to the development or in order to comply with the load calculation protocol must be recorded and retained as set out in conditions M1.2 and M1.3.

M1.2 All records required to be kept by the general terms of approval must be:

- in a legible form, or in a form that can readily be reduced to a legible form;
- kept for at least 4 years after the monitoring or event to which they relate took place; and
- produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected: the date(s) on which the sample was taken;

- the time(s) at which the sample was collected;
- the point at which the sample was taken; and
- the name of the person who collected the sample.

M2. Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/ discharge point or utilisation area specified below (by a point number), the applicant must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The applicant must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

Leachate – At leachate collection tank(s) (actual location to be finalised)

Pollutant	Units of measure	Frequency	Sampling Method
Total suspended solids	Mg/L	Quarterly	Grab
pH	PH	Quarterly	Grab
Conductivity	µS/cm	Quarterly	Grab
Calcium	Mg/L	Quarterly	Grab
Magnesium	Mg/L	Quarterly	Grab
Potassium	Mg/L	Quarterly	Grab
Sodium	Mg/L	Quarterly	Grab
Iron	Mg/L	Quarterly	Grab
Chloride	Mg/L	Quarterly	Grab
Sulfate	Mg/L	Quarterly	Grab
Alkalinity (as HCO_3^- and CO_3^{2-})	Mg/L	Quarterly	Grab
Total organic carbon	Mg/L	Quarterly	Grab
Nitrogen – ammonia	Mg/L	Quarterly	Grab
Nitrogen – nitrate	Mg/L	Quarterly	Grab
Manganese	Mg/L	Quarterly	Grab
Fluoride	Mg/L	Quarterly	Grab
Total phenolics	Mg/L	Quarterly	Grab

Groundwater - Points identified as PZ01, PZ02S, PZ02D, PZO3 and PZ04 as provided in Figure 4 of the hydrogeological investigation report attached to the EIS.

Pollutant	Units of measure	Frequency	Sampling Method
Total dissolved solids	Mg/L	Quarterly	Groundwater sample - grab
PH		Quarterly	Groundwater sample - probe
Standing water level	m AHD	Quarterly	In situ
Nitrogen – ammonia	Mg/L	Quarterly	Groundwater sample - grab
Calcium	Mg/L	Quarterly	Groundwater sample – grab
Magnesium	Mg/L	Quarterly	Groundwater sample – grab
Potassium	Mg/L	Quarterly	Groundwater sample – grab
Sodium	Mg/L	Quarterly	Groundwater sample – grab
Chloride	Mg/L	Quarterly	Groundwater sample – grab
Sulfate	Mg/L	Quarterly	Groundwater sample – grab

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as HCO_3^- and CO_3^{2-})	Mg/L	Quarterly	Groundwater sample – grab
Total organic carbon	Mg/L	Quarterly	Groundwater sample – grab
Nitrogen – nitrate	Mg/L	Annually	Groundwater sample – grab
Nitrogen – nitrite	Mg/L	Annually	Groundwater sample – grab
Aluminium	Mg/L	Annually	Groundwater sample – grab
Arsenic	Mg/L	Annually	Groundwater sample – grab
Barium	Mg/L	Annually	Groundwater sample – grab
Cadmium	Mg/L	Annually	Groundwater sample – grab
Chromium (total)	Mg/L	Annually	Groundwater sample – grab
Chromium (hexavalent)	Mg/L	Annually	Groundwater sample – grab
Cobalt	Mg/L	Annually	Groundwater sample – grab
Copper	Mg/L	Annually	Groundwater sample – grab
Mercury	Mg/L	Annually	Groundwater sample – grab
Manganese	Mg/L	Annually	Groundwater sample – grab
Lead	Mg/L	Annually	Groundwater sample – grab
Zinc	Mg/L	Annually	Groundwater sample – grab
Fluoride	Mg/L	Annually	Groundwater sample – grab
Benzene	Mg/L	Annually	Groundwater sample – grab
Toluene	Mg/L	Annually	Groundwater sample – grab
Ethylbenzene	Mg/L	Annually	Groundwater sample – grab
Xylene	Mg/L	Annually	Groundwater sample – grab
Total phenolics	Mg/L	Annually	Groundwater sample – grab
Total Petroleum Hydrocarbons	Mg/L	Annually	Groundwater sample – grab
Organochlorine pesticides	Mg/L	Annually	Groundwater sample – grab
Organophosphate pesticides	Mg/L	Annually	Groundwater sample – grab
Polycyclic aromatic hydrocarbons	Mg/L	Annually	Groundwater sample - grab

Surface Water - Point identified as DML Dam as provided in Figure 9.1 of the EIS

Pollutant	Unit of Measure	Frequency	Sampling Method
Level	mAHD	Continuous	Probe
PH	PH	Monthly	Probe
Dissolved oxygen	mg/L	Monthly	Probe
Electrical conductivity	µS/cm	Monthly	Probe
Nitrogen – ammonia	mg/L	Quarterly	Grab
Total organic carbon	mg/L	Quarterly	Grab
Total Dissolved Solids	mg/L	Quarterly	Grab
Total Suspended Solids	mg/L	Quarterly	Grab
Potassium	mg/L	Quarterly	Grab

Dust – Points identified as DG1, DG2, DG3. DG4 and DG5 as provided in the letter to the EPA dated 21 October 2005

Pollutant	Units of measure	Frequency	Sampling Method
Particulates – deposited matter	g/m2/month	Continuous	AM-19

Subsurface methane – locations to be finalised

Pollutant	Units of measure	Frequency	Sampling Method
Methane	% by volume	Quarterly	Special Method 1

For the purposes of the above table, Special Method 1 means methane monitoring in accordance with *AS3580.11.1 – 1993 Methods for Sampling and Analysis of Ambient Air – Determination of Volatile organic Compounds – Methane and Non-methane Volatile Organic Compounds – Direct – Reading Instrument Method.*

Surface methane – locations to be finalised

Pollutant	Units of measure	Frequency	Sampling Method
Methane	% by volume	Quarterly	Special Method 2

For the purposes of the above table, Special Method 2 means methane monitoring performed less than 51mm from the surface of the landfill at a wind speed less than 2.8 m/s, and in accordance with *AS3580.11.1 – 1993 Methods for Sampling and Analysis of Ambient Air – Determination of Volatile organic Compounds – Methane and Non-methane Volatile Organic Compounds – Direct – Reading Instrument Method.*

M3. Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by the EPA's general terms of approval, or a licence under the Protection of the Environment Operations Act 1997, in relation to the development or in order to comply with a relevant local calculation protocol must be done in accordance with the Approved Methods Publication unless another method has been approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

3.2 Monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area required to be conducted by the EPA's general terms of approval, or a licence under the Protection of the Environment Operations Act 1997must be done in accordance with the Approved Methods Publication unless another method has been approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

M4. Recording of pollution complaints

M4.1 The applicant must keep a legible record of all complaints made to the applicant or any employee or agent of the applicant in relation to pollution arising from any activity to which this general terms of approval applies.

M4.2 The record must include details of the following:

(a) the date and time of the complaint;

(b) the method by which the complaint was made;

(c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;

(d) the nature of the complaint;

(e) the action taken by the applicant in relation to the complaint, including any follow-up contact with the complainant; and

(f) if no action was taken by the applicant, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5. Telephone complaints line

M5.1 The applicant must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The applicant must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 This condition does not apply until 3 months after this condition takes effect.

M6. Requirement to monitor volume or mass

M6.1 For each discharge point or utilisation area specified below, the applicant must monitor:

(a) the volume of liquids discharged to water or applied to the area;

(b) the mass of solids applied to the area;

(c) the mass of pollutants emitted to the air,

over the interval, at the frequency and using the method and units of measure, specified below.

Leachate – At leachate collection tank(s) (actual location to be finalised)

Frequency	Units of Measure	Sampling Method
Daily during discharge	kL	Meter or pump capacity multiplied by operation time.

M7. Monitoring remaining landfill capacity

M7.1 The applicant must monitor the remaining disposal capacity (in cubic metres) of the landfill.

REPORTING CONDITIONS

R1. Annual Return documents

What documents must an Annual Return contain?

R1.1 The applicant must complete and supply to the EPA an Annual Return in the approved form comprising:

(a) a Statement of Compliance; and

(b) a Monitoring and Complaints Summary.

A copy of the form in which the Annual Return must be supplied to the EPA accompanies the licence. Before the end of each reporting period, the EPA will provide to the applicant a copy of the form that must be completed and returned to the EPA.

Period covered by Annual Return

R1.2 An Annual Return must be prepared in respect of each reporting, except as provided below

R1.3 Where the licence is transferred from the applicant to a new licensee,

(a) the transferring licensee must prepare an annual return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and

(b) the new licensee must prepare an annual return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where the licence is surrendered by the applicant or revoked by the EPA or Minister, the applicant must prepare an annual return in respect of the period commencing on the first day of the reporting period and ending on

(a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or

(b) in relation to the revocation of the licence – the date from which notice revoking the licence operates.

Deadline for Annual Return

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

Licensee must retain copy of Annual Return

R1.6 The applicant must retain a copy of the annual return supplied to the EPA for a period of at least 4 years after the annual return was due to be supplied to the EPA.

Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

(a) the licence holder; or

(b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a Statement of Compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review this licence.

R2. Notification of environmental harm

Note: The applicant or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act

R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.

R2.2 The applicant must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3. Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

(a) where the licence applies to premises, an event has occurred at the premises; or

(b) where the licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this general terms of approval,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The applicant must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

(a) the cause, time and duration of the event;

(b) the type, volume and concentration of every pollutant discharged as a result of the event;

(c) the name, address and business hours telephone number of employees or agents of the applicant, or a specified class of them, who witnessed the event; and

(d) the name, address and business hours telephone number of every other person (of whom the applicant is aware) who witnessed the event, unless the applicant has been unable to obtain that information after making reasonable effort;

(e) action taken by the applicant in relation to the event, including any follow-up contact with any complainants;

(f) (details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;

(g) (any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the applicant. The applicant must provide such further details to the EPA within the time specified in the request.

R4. Reporting of Fires

R4.1 The applicant must maintain a daily log and record the following data of fires at the site:

(a) Time and date when the fire was deliberately started or reported.

(b) Whether the fire was authorised by the applicant, and, if not, the circumstances which ignited the fire.

(c) The time and date that the fire ceased and whether it burnt out or was extinguished.

(d) The location of fire (eg. clean timber stockpile, putrescible garbage cell, etc).

(e) Prevailing weather conditions.

(f) Observations made in regard to smoke direction and dispersion.

(g) The amount of waste that was combusted by the fire.

(h) Action taken to extinguish the fire.

R4.2 The applicant or its employees or agents must notify the EPA in accordance with conditions R2.1 and R2.2 of all fires at the premises as soon as practical after becoming aware of the incident.

R5. Quarterly reporting

R5.1 The applicant must provide the EPA with information on the quantity of waste received at the facility and the quantity of waste transported from the facility each quarter. The information in respect of a particular quarter is to be provided on the approved Form WISQTR.1 and must be received by the EPA within 60 days of the end of that quarter.

For the purposes of this condition each of the following periods is a quarter:

(Quarter 1) 1 January - 31 March

(Quarter 2) 1 April - 30 June

(Quarter 3) 1 July - 30 September

(Quarter 4) 1 October - 31 December

GENERAL CONDITIONS

G1. Copy of licence kept at the premises

G1.1 A copy of the licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the applicant working at the premises or operating the vehicle or mobile plant.

G2. Signage

G2.1 The location of EPA monitoring and discharge points must be clearly marked by a sign that indicates the point identification number used and located as close as practical to the point.

G3. Contact number of incidents and responsible employees

G3.1 A 24-hour telephone contact line(s) for the purpose of enabling the EPA to directly contact one or more representatives of the applicant who can:

(a) Respond at all times to incidents relating to the premises, and;

(b) Contact the applicant's senior employees or agents authorised at all times to:

(i) Speak on behalf of the applicant, and,

(ii) Provide any information or document required under the licence.

SPECIAL CONDITIONS

E1. Closure of Landfill – Leachate Carrier/Containment System Failure

E1.1 In the event that the contamination of groundwater is identified beyond the boundary of the premises and that this contamination is attributable to activities on the premises, the EPA may, by notice in writing, require the applicant to do one, some or all of the following:

(a) Recover and appropriately treat/dispose of leachate contaminated groundwater through groundwater extraction bores and/or trenches;

(b) Recover and appropriately treat/dispose leachate contaminated groundwater from Cooks Dam (as identified in the EIS), and;

(c) Close the landfill and cap waste filled areas so as to prevent the infiltration of rainwater and minimise leachate generation.

E1.2 If the results of the groundwater monitoring required by condition M2.1 indicate in any of the wells ammonia concentrations greater than 10 mg/L the licensee must contact the EPA within 24 hours and advise it of the results of that monitoring.

POLLUTION STUDIES AND REDUCTION PROGRAMS

U1. Leachate Report

U1.1 The applicant must provide the EPA with a report comparing the actual volumes of leachate generated to the volumes predicted in the Cardno Willing letter of 17 October 2005.

The report must be provided within eighteen months of the commencement of the disposal of waste in the landfill. The report must provide data, based on twelve consecutive months of monitoring, of the actual volumes of leachate generated and disposed of per month for that

twelve month period. The report must also provide monthly rainfall and evaporation data for the same period (obtained from the nearest weather station) and compare the information with the predictions provided in the 17 October 2005 letter. The must, if possible, comment on the adequacy of the leachate management system to manage that leachate generated from the 90th percentile wet year and maintain the required freeboard and head of less than 500mm depth on the basal liner. This comment should be based on a comparison of the actual data versus the predicted figures.

Appendix D

DIRECTOR GENERAL'S REQUIREMENTS

Table D.1 - Director General's Requirements

Issue	Comment	Compliance
Department of Infrastructure, Planning and Natural Resources		
Waste Management	Satisfactorily addressed requirements	✓
Air Quality	Assessment to be carried out in accordance with EPA's "Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW" (2001)	✓
Surface water and Stormwater quality	Satisfactorily addressed requirements. EPA assessed and has issued GTAs	✓
Soil and groundwater issues	Satisfactorily addressed requirements. EPA assessed and has issued GTAs	✓
Traffic and Transport	Satisfactorily addressed requirements. RTA has assessed impact on Castlereagh Highway and has determined satisfactory. Sufficient parking provided on site	✓
Noise and Vibration	Satisfactorily addressed requirements.	✓
Visual Impacts	Satisfactorily addressed requirements	✓
Flora and Fauna	Satisfactorily addressed requirements	✓
Socio-economic impacts	Satisfactorily addressed requirements	✓
Statutory Planning Instruments	Satisfactorily addressed requirements.	✓
Draft Regional Environmental Plan – Sustaining the Catchments	N/A – although SEPP 58 addressed satisfactorily	N/A
Clear statement containing mitigation measures, management and monitoring	Satisfactorily addressed requirements	✓
EIS Guideline: Landfilling	Satisfactorily addressed requirements	✓

Table D.1 - Director General's Requirements

Issue	Comment	Compliance
Consultation	Satisfactorily addressed requirements	✓
EPBC Act 1989	Addressed in EIS and deemed that a referral is not necessary	✓
Summary of EIS	Satisfactorily addressed requirements	✓
Statement of project objectives	Satisfactorily addressed requirements	✓
Analysis of feasible alternatives	Satisfactorily addressed requirements	✓
Analysis of development or activity	Satisfactorily addressed requirements	✓
Compilation of mitigation measures	Satisfactorily addressed requirements	✓
Justification of the development	Satisfactorily addressed requirements	✓
NSW EPA's Requirements		
Demonstrated compliance with benchmark techniques in EPA's Guideline "Solid Waste Landfills" (1996).	EPA has issued GTA's therefore satisfactorily addressed	✓
Impacts of potential acid mine drainage on leachate barriers and landfilling activities	EPA has issued GTA's therefore satisfactorily addressed	✓
Sealing of floors and walls of the emplacement (in context of loss of integrity and increased permeability due to previous mining activities)	EPA has issued GTA's therefore satisfactorily addressed	✓
Noise impacts in relation to EPA guidelines (including traffic movements within the premises)	EPA has issued GTA's therefore satisfactorily addressed.	✓
Management of dust emissions, odour generation and fugitive wastes	EPA has issued GTA's therefore satisfactorily addressed.	✓
Details of recycling to be carried out.	EPA has issued GTA's therefore satisfactorily addressed	✓

Table D.1 - Director General's Requirements

Issue	Comment	Compliance
Control of spontaneous combustion on site	EPA has issued GTA's therefore satisfactorily addressed	✓
Outline of all previous mining activities and demonstrate that the landfill footprint will not be site above any areas which may be subject to subsidence due to underground mining.	Satisfactorily addressed	✓
Intended filling plan for the site, including compaction rates	EPA has issued GTA's therefore satisfactorily addressed	✓
Proposed final landform contours plan	Provided and EPA has issued GTA's therefore satisfactorily addressed	✓
Fire management plan	To be included as part of LEMP, and EPA has issued GTA's therefore satisfactorily addressed	✓
Delineate environmental impacts associated with the operation of the landfill in isolation from general mining impacts of the area.	EPA has issued GTA's therefore satisfactorily addressed	✓
Water impacts of the development	EPA has issued GTA's therefore satisfactorily addressed	✓
Overview of existing groundwater trends and movements	EPA has issued GTA's therefore satisfactorily addressed	✓
Measures to identify waste streams	EPA has issued GTA's therefore satisfactorily addressed	✓
Outline of proposed waste tracking system	EPA has issued GTA's therefore satisfactorily addressed	✓
Source of wastes to be landfilled or recycled	EPA has issued GTA's therefore satisfactorily addressed	✓
Incorporate requirements of SCA	Addressed comments provided through EIS preparation process	✓
Description of recycling strategies and associated facilities and processes.	EPA has issued GTA's therefore satisfactorily addressed	✓