PRELIMINARY ENVIRONMENTAL ASSESSMENT
Part 3A Project Application

PROPOSED ALTERNATIVE WASTE TECHNOLOGY FACILITY AT LUCAS HEIGHTS WASTE AND RECYCLING CENTRE

Prepared by The Planning Group (NSW) Pty Ltd, on behalf of
WSN Environmental Solutions

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EXECUTIVE SUMMARY

WSN Environmental Solutions (WSN) (the proponent) is seeking to have a proposal for the construction and operation of an Alternative Waste Technology (AWT) facility at the Lucas Heights Waste and Recycling Centre (LHWRC), assessed and approved under Part 3A of the *Environmental Planning and Assessment (*EP&A) *Act 1979* .

This proposed development is necessitated by the increasing demand for sustainable waste management and efficient resource recovery services in the Sydney region.

This Preliminary Environmental Assessment (PEA) and subsequent detailed Environmental Assessment (EA) will aim to provide sufficient detail to inform the Department of Planning (DoP), the Department of Environment and Climate Change (DECC) and other relevant authorities and stakeholders in their decision making in regards to the proposed development.

It is proposed the AWT will receive and process up to 100,000 TPA of municipal solid waste (MSW).

The proposed LHWRC AWT facility will utilise the ArrowBio technology similar to that being commissioned at Macarthur Resource Recovery Park (MRRP) in south-west Sydney. The AWT facility will include a co-generation function converting biogas to electricity; and ancillary support structures e.g. access roads, car and truck parking areas and signage.

The project will have a capital value of approximately $60 million and will generate 30-50 construction jobs over a 16-18 month period and 40 (full-time equivalent) operational positions.

The proposed ArrowBio system is a mechanical biological treatment (MBT) process. The ArrowBio technology has been developed to maximise resource recovery within the waste stream. The process allows for the sorting and separation of various materials to allow for their re-use. It also produces biogas (suitable for renewable energy production and nutrient rich sludge) that can potentially be used for agricultural applications.

This technology has the following key features:

- Captures 100% of biogas produced;
- Maximises reduction in greenhouse gases;
- Achieves up to 70% landfill diversion rate;
- Produces renewable electricity;
- Recovers a high proportion of recyclable material;
- Reduces risks associated with poor quality compost production; and
- Has a comparatively small environmental and physical footprint.

It is proposed that the proposed AWT facility will operate 24 hours a day, seven days a week.

The majority of the ArrowBio putrescible waste processing system is water-based and waste remains predominantly in a submerged state, significantly reducing malodorous emissions. Further to this, an appropriate odour control system will be installed to mitigate any remnant odour. Odour and air quality modelling will be conducted as part of the EA Process.

The site provides excellent road access to service the catchments of the western, inner-western and southern sections of the Sydney Metropolitan Region. Detailed traffic modelling studies of all major intersections will be conducted to ascertain any likely traffic impacts and suggest mitigation measures.

Further environmental issues that have been identified and will be addressed as part of the EA (in accordance with Part 3A of the EP&A Act) including:

- Noise;
- Flora & Fauna;
- Waste Management;
- Heritage; and
- Visual Impact.

WSN will prepare a statement of commitments to describe how these issues will be managed through the design, construction and operation of the LHWRC AWT facility.

It is not anticipated that the proposed development will cause any significant environmental impacts.

1. INTRODUCTION

1.1 PURPOSE OF THIS APPLICATION

The proponent seeks ***"project approval"*** under Part 3A of the *EP&A Act 1979,* for the LHWRC AWT facility. This Preliminary Environmental Assessment (PEA) has been prepared to assist in facilitating this process.

This PEA has been prepared for the following purposes:

- To describe the site and existing operations, outline the proposed project and provide a preliminary environmental assessment;
- To assist the Clause 6 request to the Minister to declare the proposal to be a project to which Part 3A of the *EP&A Act 1979* applies, as outlined in Clause 6 of the State Environmental Planning Policy (Major Projects) 2005; and
- To request the Director General's Environmental Assessment Requirements (DGRs) for a Project Application for the proposed AWT facility under Section 75 of the *EP&A Act*.

1.2 THE SITE

1.2.1 Local and Regional Context

LHWRC is located within the Sutherland Shire Local Government Area (LGA), which is in the southern region of the Sydney Metropolitan Region (see **Figure 1.1**). The LHWRC extends over an area of 204.85 ha.

The site of the proposed AWT facility is located in the south-eastern corner of the LHWRC, with access to the site off New Illawarra Road to Little Forest Road (see **Figure 1.2**). LHWRC is in a location that has access to several major roads, including New Illawarra Road, Heathcote Road and the M5 further to the north. Vicinity to these roads affords the facility efficient access to the majority of the Sydney Metropolitan Region.

The site is surrounded by the following land uses:

- The former Lucas Heights WRC (LH 1), which has ceased operation and is currently being converted into a regional sporting facility - incorporating an 18-hole golf course, netball courts, hocky fields and an athletics stadium.
- Rehabilitated and operational areas of the current LHWRC (including an area where the Sutherland Shire Police Citizens Youth Club (SSPCYC) mini-bike track will be relocated);
- Power Plant (operated by Energy Developments Limited) (EDL);
- The Australian Nuclear Science and Technology Organisation (ANSTO) Technology Park - which incorporates Australia's only nuclear reactor;

- Holsworthy Military Reserve;
- Lucas Heights Conservation Area (LHCA); and
- Residential development (approximately 2 km to the southeast at North Engadine and 2.6 km to the east at Barden Ridge) (see **Figure 1.3**).

Figure 1.1: Regional Context

Figure 1.2: Local Context

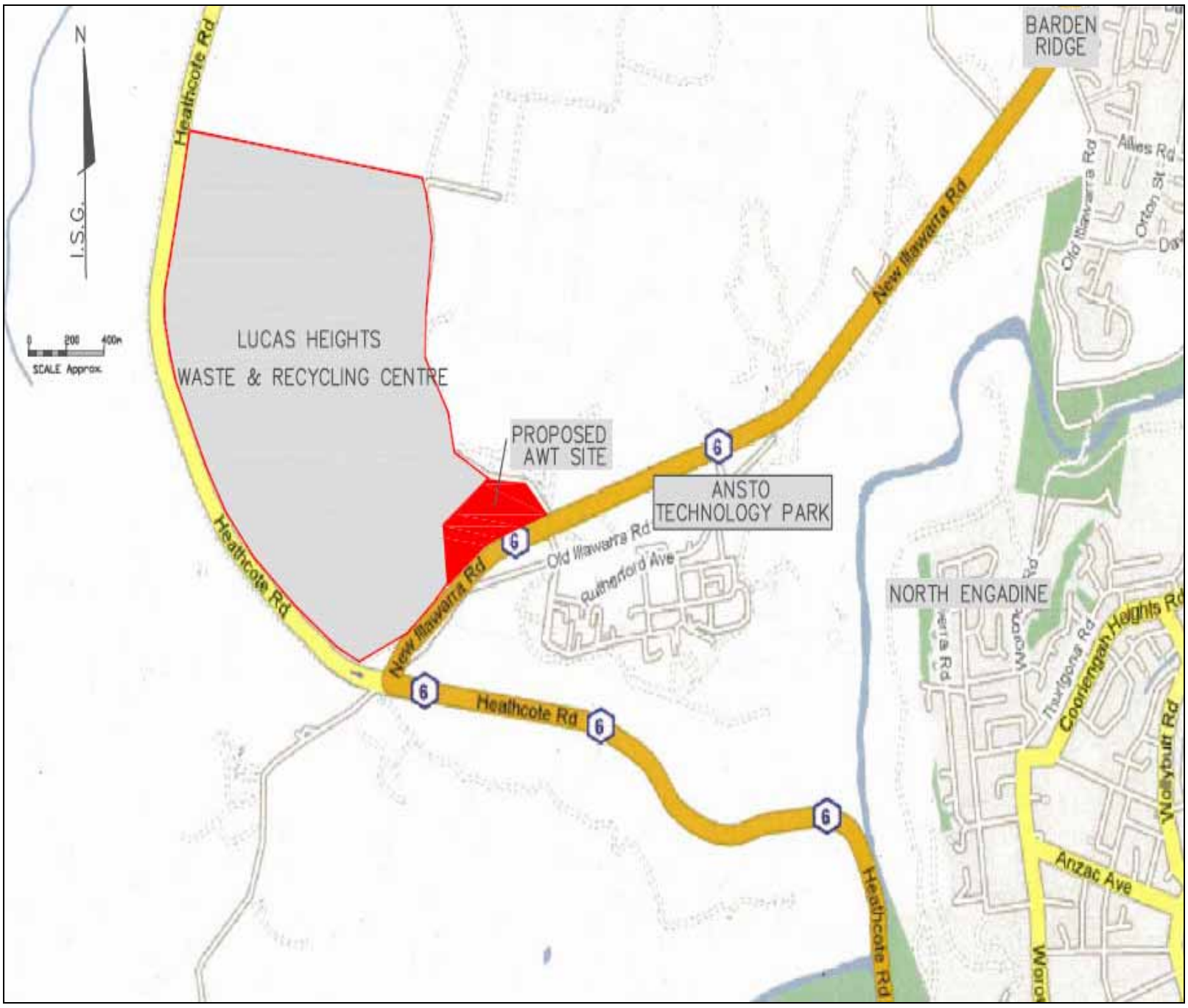


Figure 1.3: Surrounding Land Uses

1.2.2 Site Description

The proposed AWT site is to the north of, and adjoining New Illawarra Road, and to the west of, and adjoining Little Forest Road. The site has access to Little Forest Road, which connects with New Illawarra Road at the southeastern corner of the LHWRC (see **Section 1.4**). This site has an area of 11 ha and is currently occupied by the facilities of the SSPCYC. These facilities include mini-motorcycle training and BMX bicycling track.

The site consists of two allotments known as:

- Lot 111 of DP 1050235, and
- Lot 1 of DP 233333.

Both of these lots front onto the New Illawarra Road. The land is owned by ANSTO and leased to WSN. The proposed AWT site is within the area previously identified in the 1999 LHWRC Master Plan as an area for *"Recycling Resource Recovery".* Within the Master Plan the SSPCYC was to be relocated to the west of the Recycling Resource Recovery area.

The proposed AWT site is on land that is zoned Special Uses – Waste Recycling (Zone 12 – Special Uses) within the *Sutherland Local Environmental Plan 2006 (LEP 2006)*.

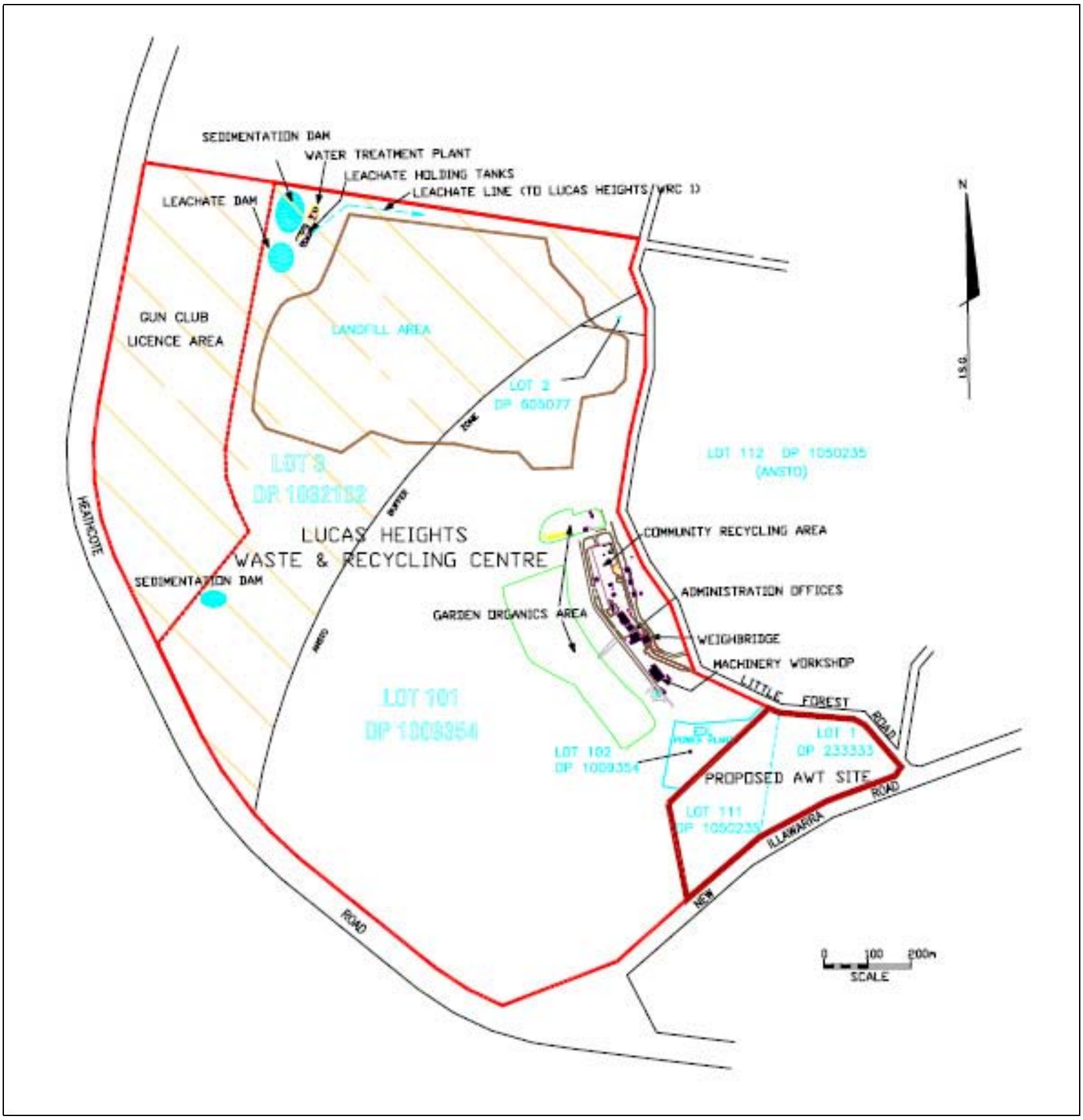
1.3 CURRENT OPERATIONS

1.3.1 Lucas Heights Waste and Recycling Centre (LHWRC)

LHWRC contains an operating landfill bounded by Heathcote Road to the west and southwest, New Illawarra Road to the southeast, Little Forest Road to the east, and the LHCA to the north.

The 204.85ha LHWRC site is in two ownerships, with 89.35ha owned by WSN and 115.50ha owned by ANSTO. The LHWRC is managed by WSN through their contracting partner Cleary Bros (Bombo) Pty Ltd. The LHWRC operates under DECC Licence 5065 (see **Appendix A**); the Garden Organics Area operates under DECC Licence 12520; and the EDL Power Plant operates under DECC Licence 6345 A large portion of the site falls within the ANSTO 1.6km radius Exclusion Zone (see **Figures 1.4**) that provides a safety buffer for ANSTO activities.

Figure 1.4: Existing Operations



The LHWRC facilities that are currently operating include the:

- Landfill (approved to receive 575,000 TPA mixed waste);
- Community Recycling Area;
- Garden Organics Area (approved to process 55,000 TPA);
- Biogas Power Plant (operated by EDL);
- Several ancillary buildings and structures (e.g. weighbridge, machinery workshop, administration offices, stormwater and leachate dams);

- Leachate Treatment Plant (located at LH 1); and
- 50ha of rehabilitated landfill.

Sutherland Shire Council (SSC) originally approved the LHWRC in 1985 and granted planning consent in 1996 to upgrade the WRC entrance. From 1999, all key development was determined by the Department of Planning (DoP). The DoP subsequently granted modifications in 2001 and 2005 – with revisions to the composition and sourcing of waste (see **Appendix B**).

1.3.2 1999 PLANNING CONSENTS

On 12 November 1999 the Minister for Planning granted development consent (DA No 11-01-99 CONSENT REF R97/00029), which included the following key elements;

- The expansion of LHWRC capacity by 8.225 million tonnes and extension of the landfill life to 2024 with a limit of 575,000 TPA (mixed waste - Class 1 and 2), to be landfilled and 55,000 TPA to be recycled/ recovered or composted;
- The development of composting and recycling facilities including a Green Waste Processing and Composting Facility (GWPCF) and a Biowaste Facility (to process food wastes);
- The staged provision of a rehabilitated landform and the progressive development of a local and regional multi-purpose sporting and recreational complex at LH 1 and the establishment of low intensity recreational uses at LHWRC, and
- The rehabilitation of 123.5 ha of bushland (known as the LHCA) to the immediate north of the LHWRC – to be transferred to NSW National Parks and Wildlife Service (NPWS).

The landfill, GWPCF (Garden Organics Facility), large areas of landfill rehabilitation and recreational developments progressed in accord with these consents. The LHCA was subsequently rehabilitated and ownership was transferred to SSC in 2002.

The Biowaste Facility did not proceed and it is now proposed to locate the AWT within this area previously designated as “Recycling Resource Recovery” and nominated for the Biowaste Facility (see **Figure 1.5**).

The relocation of the SSPCYC facilities (to the adjoining rehabilitated LHWRC area) will be completed by early 2009.

Figure 1.5: Approved LHWRC Masterplan

Source: Figure 3 1999 EIS, prepared for Waste Service NSW & SCC by NECS.

2. THE PROPOSED DEVELOPMENT

2.1 INTRODUCTION

WSN seeks approval for the construction and operation of an AWT facility at LHWRC that will have the capacity to treat up to 100,000 TPA of municipal solid waste (MSW). Approval is also sought for related ancillary activities including road works, weighbridge, car and truck parking and signage.

The proposed AWT facility will occupy approximately 12,300 m^2 in the southeast corner of the 204.85 ha LHWRC, adjacent to the existing EDL Power Plant. The proposed location of the AWT facility is relatively isolated in the southeastern corner of the LHWRC and thus construction works will not greatly impact the operation of the existing LHWRC facilities. Therefore these facilities will all remain operational during AWT construction.

2.2 PROPOSED LHWRC OPERATIONS

On completion of the above works, the LHWRC will include the following:

- An AWT facility;
- Operational landfill;
- Garden Organics Area;
- Community Recycling Area;
- Biogas Power Plant (operated by EDL);
- Several ancillary buildings and structures (e.g. weighbridge, machinery workshop, administration offices, car and truck parking areas, stormwater and leachate dams); and
- Rehabilitated landfill areas.

2.3 LUCAS HEIGHTS AWT

The proposed AWT facility will utilise ArrowBio technology, which is similar to the Ecolibrium Mixed Waste Facility, constructed at MRRP in southwest Sydney (see **Figures 2.3** & **2.4**).

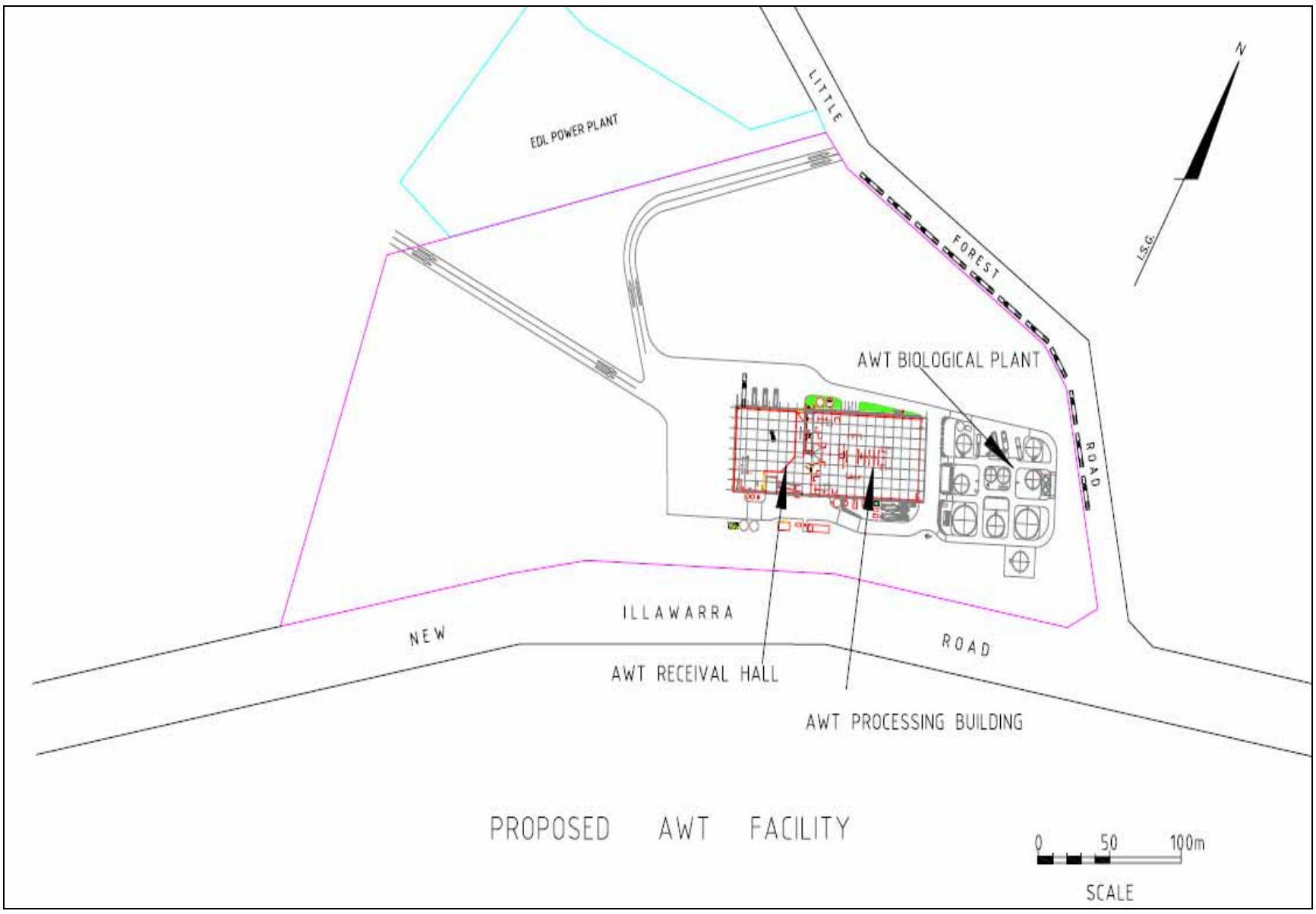
The AWT will use proven material separation technologies and anaerobic digestion to recover recyclable materials from the municipal waste stream diverting up to 70% of waste material from landfill. The operation of the facility will also produce biogas suitable for electricity generation.

The AWT facility at Lucas Heights will comprise the following operations:

- Receival Hall;
- Processing Building;
- Biological Plant;
- Energy Generation Plant;
- Staff facilities;
- Parking area; and
- Internal road network.

Figure 2.1, below shows the proposed layout of the facility on the subject site, while **Figure 2.2** shows a rendered drawing of the facility.

Figure 2.1: Proposed AWT Facility Layout



It is proposed that the AWT will receive and process up to 100,000 TPA of MSW. The proposed development does not seek to increase the currently approved 575,000 TPA of mixed waste being landfilled at the LHWRC. The residue from the proposed AWT facility will constitute a proportion of the approved 575,000 TPA landfilled.

It is proposed that the AWT facility will operate 24 hours a day, seven days a week.

Figure 2.2: Artistic Architectural View of LHWRC AWT Facility

Figure 2.3: Ecolibrium Mixed Waste (AWT) Facility at MRRP under construction

Figure 2.4: Ecolibrium Mixed Waste Facility viewed from the west

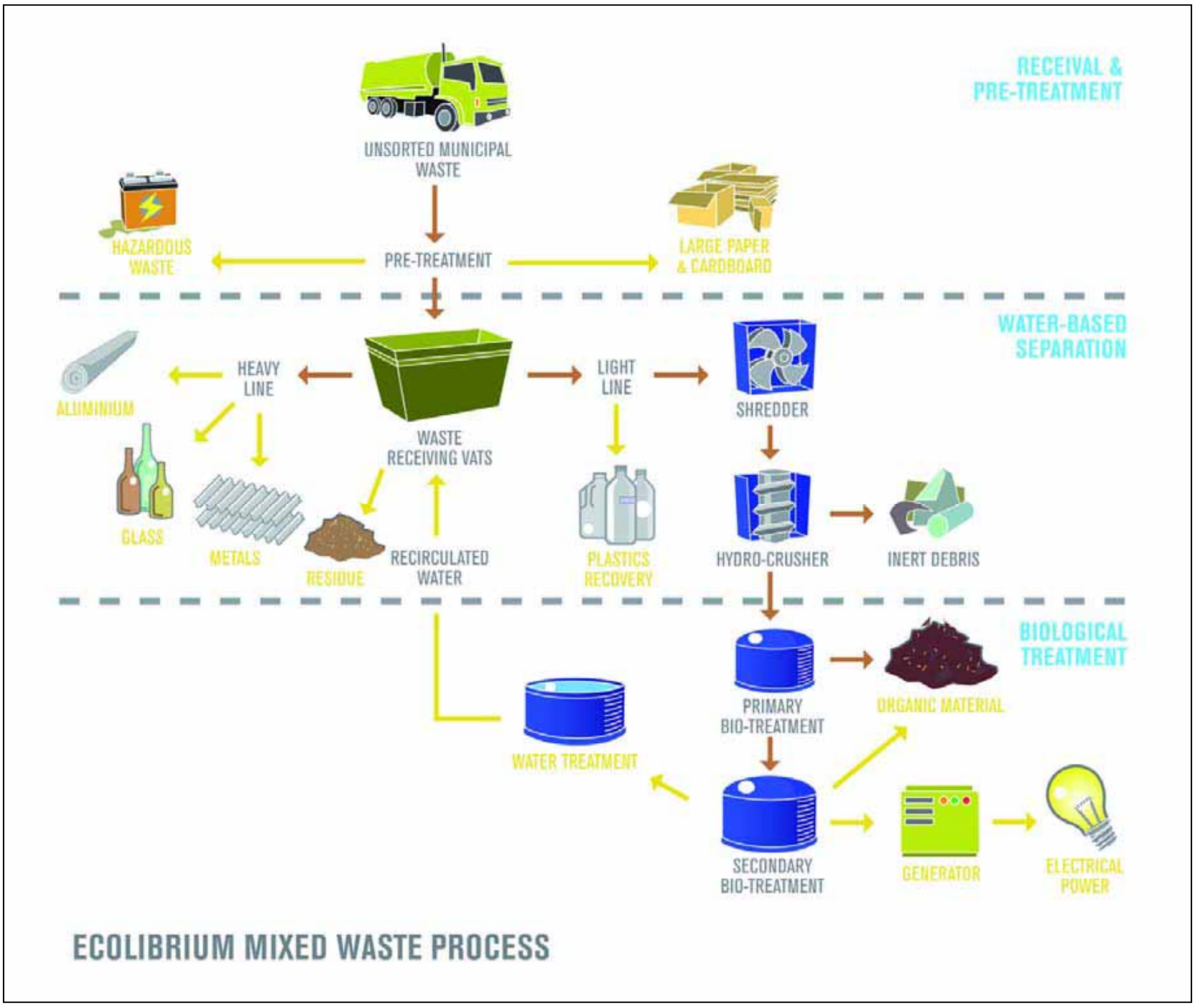
2.4 ARROWBIO TECHNOLOGY - OVERVIEW

The proposed AWT facility will utilise the hydro-biological processing of the ArrowBio system. This technology represents a unique method to process MSW that would normally be sent to landfill. The processing of the waste is done through biological treatment, the product of which is biogas (to be used for electricity generation), and nutrient rich sludge, which could potentially be used commercially for agricultural purposes (subject to DECC approval). Additionally, the process potentially creates excess water that may be re-used on or off site.

Currently, there is only one ArrowBio plant in operation in the world in Tel Aviv, Israel. Similar facilities are in the process of being commissioned at WSN's MRRP (southwest Sydney), and are planned in Falkirk (Scotland), and Mexico. The effectiveness of the technology in producing biogas primarily depends on the organic content of the putrescible municipal waste stream being treated.

The ArrowBio process is based upon liquid waste treatment technology. By dissolving the food organic fraction and breaking down paper-based wastes to create a liquid with high organic content, anaerobic digestion processes similar to those used in many sewage and wastewater treatment plants can be employed to produce biogas. The overall conceptual process is detailed below in **Figure 2.5**.

Figure 2.5: Conceptual Outline of the ArrowBio Process



The AWT facility will comprise three integrated processing units, utilising a combination of advanced Materials Recovery Facility (MRF) technologies and innovative biological processing techniques to maximise resource recovery.

Receival Hall

The AWT Receival Hall will utilise a best practice odour control technology. MSW will be delivered by truck. Large inorganic / non-recyclable items (e.g. concrete and furniture and hazardous items) will be removed by a small excavator fitted with a grab – for disposal to landfill.

Processing Building

The balance of materials are sorted in the AWT Processing Building via a trommel into larger and smaller fractions. Large fractions (e.g. cardboard and car batteries) are removed by hand sorting and transferred to alternative facilities for recycling. The remaining fractions then pass into an aqueous solution (**Figure 2.6**). From this point forward the waste is submerged in large water vats, minimising odour emissions.

Figure 2.6: Hydro-Mechanical Sorting Systems in the Tel Aviv AWT

Once submerged, the shredded material separates out by the processes of buoyancy based on density. Inorganic materials will either generally rise to the surface (*e.g.* plastics), or fall to the bottom (*e.g.* metals/ glass fines). These materials are then extracted and transported to alternative facilities for further recycling, or sold to the market.

This first processing stage ends with passing the suspension through eddy current and magnetic separators to further extract any aluminium or ferrous particles from the solution. This solution, consisting primarily of organic material, is hydro-crushed and the resulting liquid pumped into fermentation tanks for acidogenic digestion (**Figure 2.7**) and then methanogenic digestion.

Biological Plant

Once the solution is pumped to the first part of the biological plant (acidogenic digestion in four tanks), naturally occurring micro-organisms start the fermentation process and transform the complex organic material into simpler compounds such as organic and fatty acids. This acidogenic fermentation process is an uninterrupted process, and the organic acid solution is transferred continuously to the two methanogenic fermentation processing tanks.

Figure 2.7: AWT Bioreactors Controlling Fermentation

In the methanogenic fermentation process, a different type of microorganism processes the organic material producing both a biogas (approximately 70% methane and 30% carbon dioxide) and sediment (the final product; nutrient rich sludge). The passive anaerobic fermentation, gas capture and flare unit systems will operate 24 hours per day. The process is designed to account for cases of system failure, ensuring that odour and noise levels will not exceed approved levels.

2.4.1 Water and Energy By-Products

The anaerobic fermentation process produces three valuable resources. The chief by-product of anaerobic fermentation is gas (predominantly methane). The biogas is collected in the upper part of the Methanogenic Reactor and can be transferred out of the system directly to two energy-generating units (*e.g.* electrical generators - **Figure 2.8**).

Alternatively, it can be stored for later usage as fuel in biogas vehicles. Energy produced through a generator could be used to power the site and/or sold to the State Grid. It would be expected that the AWT site would produce approximately 2MW of energy per year.

Digested biomass from the Methanogenic Reactor will be dewatered, and be used (as in Israel) as organic soil amendment product, subject to approval by the regulatory authority.

Figure 2.8: AWT Gas Engines – Tel Aviv, Israel

Due to the nature of putrescible waste (which contains water) and the fermentation process, the system produces excess water. This water produced is recirculated within the process, however a certain proportion of the water must be continually removed. This is treated in a series of tanks and released to the sewer system or tankered off-site for treatment.

2.4.2 Overall AWT Outcomes

It is anticipated that the proposed Lucas Heights AWT facility would divert approximately 70% of waste away from landfill, through best-practice recovery of recyclables and bioorganic treatment. This would prevent about 70,000 TPA of waste (resources) being sent to landfill. This has significant environmental benefits including conservation of scarce landfill capacity. The facility will also avoid climate changing greenhouse gas (GHG) impacts through total capture of biogas for renewable energy generation.

3. JUSTIFICATION

3.1 AWT DEMAND

WSN is proposing to construct and operate an AWT facility at LHWRC to meet the increasing demand by local government and business sectors for sustainable waste management and resource recovery throughout the Sydney Metropolitan Region.

The AWT facility aligns with the philosophy of viewing waste as a resource – and recovering resources in their highest net resource value state. The recovery of resources in this manner creates value from the waste stream.

WSN is committed to the principles of waste avoidance and resource recovery. The proposed LHWRC AWT facility will deliver outcomes consistent with state strategies for sustainable waste management. The operation of the facility will exceed the 66% municipal waste diversion from landfill target set by the ***Waste Avoidance and Resource Recovery Strategy 2006***.

3.2 THE BENEFITS OF ARROWBIO TECHNOLOGY

The ArrowBio technology has been proven to be comparatively efficient in regards to resource use, resource recovery, waste reduction, landfill reduction, and environmental impacts, when compared to other emergent waste technologies (NYCDS, 2004). The technology generates a relatively small environmental footprint in comparison with other processing techniques.

The range of benefits the AWT project is anticipated to provide includes:

- Maximum recovery of the major elements of the waste stream, thereby maximising energy and resource recovery;
- Significant reduction in Greenhouse Gas (GHG) emissions through:
  - The capture of 100% of Biogas, produced through the organic component of the waste stream;
  - Recovering (for recycling) homogenous streams of plastic, metal and glass; and
  - Avoiding emissions from material, which would otherwise have been placed in a landfill.
- Generation of Renewable Energy;
- Reduction in disposal to landfill of potential resources - the AWT facility will divert up to 70%;
- Potential production of marketable compost from AWT sludge;

- Containment of odour, noise and dust impacts by the contained nature of the technology, minimising impacts on surrounding businesses; and

- The proposed facility will provide benefits to the Sutherland region by the development of a new industry and employment opportunities

3.3 DO NOTHING OPTION

If the proposed AWT facility did not proceed at LHWRC, an opportunity to implement state government sustainable waste management strategies would be lost and a range of sustainable outcomes including best practice resource and energy recovery, 100% GHG capture and efficient renewable energy generation would not occur. The 100,000 TPA of MSW to be processed at the LHWRC facility would continue to be landfilled with significant negative GHG and other environmental impacts.

4. COMMUNITY AND STAKEHOLDER CONSULTATION

4.1 COMUNITY CONSULTATION GROUP

WSN has an established network of Community Advisory Committees (CAC's). The LHWRC CAC will be consulted in relation to this proposal. This CAC includes members of the public, community groups and representatives and officers of SSC. Feedback from the CAC will be considered and information on the ongoing process will be provided to them during the EA.

4.2 ANSTO

ANSTO are the owners of the site and they have been consulted in relation to the project and have indicated preliminary support for the proposal. WSN will continue to consult with ANSTO throughout the EA process.

5. ENVIRONMENTAL PLANNING INSTRUMENTS AND CONTROLS

5.1 COMMONWEALTH LEGISLATION

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* contains an assessment and approvals system for, among other things, actions that will have or are likely to have a significant impact on matters of national environmental significance (NES). According to the *EPBC Act 1999*, there are seven matters of national significance, which must be considered. The proposal's compliance with the *EPBC Act* will be considered in detail in the EA.

5.2 NSW STATE LEGISLATION

5.2.1 EP&A Act 1979

The proposed development falls under the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Part 3A applies to development that is declared by the Minister to be a 'major project" (refer to **Section 5.2.3** below).

5.2.2 Protection of the Environment Operations Act 1997

The *POEO Act* aims to minimise pollution, reduce waste and more effectively monitor pollution (including noise, odour and dust) generating industries. As a scheduled development under Schedule 1 of the *POEO Act*, the proposal will need to be licensed by the DECC.

5.2.3 SEPP (Major Projects) 2005

The proposed AWT facility will have the capacity to handle 100K TPA of MSW, and a capital investment value of more than $50 million. Under Clause 27(3) of Schedule 1 of the SEPP (Major Projects) 2005, the proposed development is to be considered as a major project and subject to the provisions of Part 3A of the EP&A Act.

Additionally, as the proposed AWT facility will produce biogas to be converted to electricity at a capital cost in excess of $30 million the project is also to be considered a major project under Clause 24 (a) of Schedule 1 of SEPP (Major Projects) 2005.

As the proposed AWT facility falls within Schedule 1 and in accordance with Clause 6 of SEPP (Major Projects) 2005 - Part 3A of the EP&A Act may apply.

5.2.4 Other SEPPs

Other SEPPs considered for their relevance to the proposal in the preparation of the EA include the following:

- SEPP 33 – Potentially Hazardous or Offensive Development.

- SEPP 55 – Remediation of Land – The area of the proposed AWT site has no history of being used for landfilling and land contamination was not discovered during the preparation of the Environmental Impact Statement supporting the 1999 DA and Consents.

- SEPP (Infrastructure) 2007 – provided specific provisions for infrastructure including waste or resource management facilities.

5.2.5 Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment

The site has been identified as being within the *Greater Metropolitan Plan No 2 - Georges River Catchment Area*. The proposed AWT facility will not have an adverse effect on the aims and objectives of this plan.

The AWT facility is essentially a closed process with no direct discharge of process water to the environment. Water used as part of the process will be treated to a certain level and then discharged into the local sewer system or tankered off-site. The option of using treated process water for on or off-site uses will be investigated.

5.2.6 Sutherland LEP 2006

The location of the proposed site falls within Zone 12 Special Uses. The proposal is consistent with the relevant objectives of the zone in providing a service to meet the needs of the community. Waste Recycling and management centres are permissible with consent in the special use zone.

5.2.7 Other

Sutherland Development Control Plan 2006

The Sutherland DCP will also be considered as part of the EA where relevant to the proposal.

ANSTO

There is no specific legislation in relation to development near the ANSTO Facility, however, ANSTO have an ‘exclusion zone’, of which the subject site is within. WSN is in consultation with ANSTO in relation to the proposed AWT facility.

6. ENVIRONMENTAL IMPACT ASSESSMENT

This section includes an overview, which considers the main environmental impacts that would be assessed in relation to the proposal. The potential impacts of the LHWRC AWT facility will be fully detailed in various expert reports within the EA and in accordance with the Director General's Requirements (DGRs).

6.1 AIR QUALITY, DUST, ODOUR AND ACOUSTICS

Holmes Air Sciences will assess potential air quality, dust and odour impacts, and Heggies Pty Ltd will assess noise impacts. The impacts will be considered in relation to the construction and operational phases as well as the proximity to residential areas such as North Engadine and Barden Ridge to the site.

It is not expected that the operation of the AWT will create any significant air quality impacts, as the Receival Hall will have a best practice odour control system.

6.1.1 Dust

During the construction stage of the proposed facility, dust emissions in the vicinity of the AWT site may increase. A number of control measures will be implemented which will assist in greatly reducing dust impacts. In addition - all construction site access roads will be sealed.

During operation the water-based nature of the ArrowBio technology minimises operational dust impacts to the environment and indoor air quality.

6.1.2 Odour

The ArrowBio process is a low odour technology, largely due to the waste being immersed in water soon after entering the plant. Exhaust air from the Receival Hall and the Processing Building will be treated with an appropriate odour control technology.

6.2 TRAFFIC

This site is accessed via New Illawarra Road (No. 6 Metroroad) or Heathcote Road (highway). These roads are major routes towards Hurstville, Sydney and Bankstown to the north and Wollongong to the south.

The AWT facility will increase traffic in the local area due to import and export of materials to the site. The likely impacts of the increased traffic movements will be detailed in a Traffic Assessment Report.

6.3 WATER

During construction of the AWT facility an appropriate sediment and erosion control plan will be implemented.

It is unlikely that the AWT will have any impact upon groundwater as the operations will take place within hardstand-enclosed areas and the majority of the site (*e.g.* roads, car and truck parking areas) will be impervious. There will be no direct discharge of process water into the environment.

AWT process water could potentially be treated at the LHWRC leachate treatment plant (LTP), then discharged to sewer, or tankered off-site for treatment. Another option, which will be investigated, is to treat the water for further use on or off-site. Potential impacts on ground water will be assessed in a specialist report within the EA, but since the plant itself is located on concrete slabs or within buildings, the impacts of its operation on groundwater are not expected to be significant.

Rainwater will be harvested from the roofs of buildings and used for non-potable staff amenities and for fire fighting and plant wash down purposes.

6.4 NOISE

The ArrowBio technology is a comparatively quiet technology and it is expected that the proposed AWT will comply with the relevant regulations at the nearest residential areas and ANSTO Technology Park. Noise impacts in relation to the existing EDL Power Plant will also be part of the background noise assessment.

Within the EA Heggies Pty Ltd will assess the potential for construction and operational noise impacts, including traffic noise, in relation to the closest residences and ANSTO Technology Park.

6.5 FLORA AND FAUNA

The vegetation of the AWT site has been extensively degraded through two decades of use as a motorised minibike club. The proposal will result in some additional clearing of vegetation; however, a significant area of regenerated and landscaped bushland (acting as a visual buffer along New Illawarra Road) will be reserved. The potential visual impacts of the development will thus be reduced. A landscaping plan will be prepared as part of the EA – ensuring that overall landscaping is increased in appropriate areas using appropriate indigenous species to the area/region.

6.6 VISUAL IMPACT

An assessment of the proposed development will be undertaken, however, it is not likely that the potential impact would be significant on vistas within the visual catchment. The buffer zone along the boundary of the WRC will effectively screen the facility from passing traffic on New Illawarra Road. Additional landscaping proposed for the landscaping plan will also assist in ameliorating any potential visual impacts from the proposal.

6.7 HAZARDS

Bushfire

The site is partially located in the Bushfire Prone Land. Some areas on the site are identified in the Bush Fire Prone Land Map (produced by Sutherland Shire Council) and are categorised in the following Bush Fire Prone Land Categories:

- Vegetation Category 1; and
- Vegetation Buffer – 100-30m.

A Bushfire Assessment will therefore be prepared as part of the EA to assess the proposal with the principles of Planning for Bushfire Protection.

Gas

The processes undertaken on the site produce gas, which is then collected on site and used for electricity generation. An emergency plan will be developed, in compliance with relevant regulations, to ensure safe facility operations.

Flooding

There is no indication that flooding is an issue on site. The site is not located on the Flood Risk Management Maps on Sutherland Shire Council's website.

6.8 SOCIAL AND ECONOMIC

The proposed AWT facility will employ approximately 40 full-time staff during its operational phase. Employment for 30-50 people will also be generated during the construction phase - lasting from 16 to 18 months. The project will have a capital value of $60 million. The Sutherland region will gain a major sustainable industry with important flow-on economic and social benefits.

6.9 WASTE MINIMISATION AND DEMAND ON RESOURCES

The proposed AWT facility is self-sufficient in water and energy requirements. The Arrow Bio technology is also relatively energy efficient compared to other waste technologies.

The plant's high resource recovery rates ensure the conservation of valuable landfill space within the Metropolitan Sydney Region. Landfill space can then be used for more non-recyclable / non-recoverable wastes in the future, instead of being consumed by putrescibles wastes and potentially recyclable materials, as it is currently.

6.10 GREENHOUSE GAS

The proposed ArrowBio technology will result in the 100% capture of GHG emissions from the organic content of the waste stream, which would otherwise contribute significant levels of the (GHG gases) methane and carbon dioxide to the environment. The proposal

will process putrescible wastes to generate approximately 2 MW of renewable energy on the site, a high proportion of which can be exported to the grid.

6.11 CUMULATIVE EFFECTS

The proposed development aims to result in positive cumulative impacts in terms of air and water quality, noise, and traffic and be consistent with the aims of the ***NSW Waste Avoidance and Resource Recovery Strategy 2006.***

6.12 ECOLOGICAL SUSTAINABLE DEVELOPMENT

Ecologically Sustainable Development

The guiding principles of Ecologically Sustainable Development (ESD) include:

- The precautionary principle;
- Inter-generational equity;
- Conservation of biological diversity; and
- The principle of improved valuation, pricing and incentive mechanisms.

The proposal:

- Will not pose a threat of serious irreversible environmental damage;
- Facilitates inter-generational equity as it achieves best practice resource recovery and reduces waste related GHG and climate change impacts and treats waste within the region it was created - Sydney Metropolitan Region;
- Improves local employment potential and contributes to economic growth in the Sutherland region;
- Diverts significant quantities of waste from landfilling.

6.13 ENVIRONMENTAL MANAGEMENT

WSN will include Environmental Commitments in the EA documentation. An outline of the proposed Construction and Operational Environmental Management Plans (EMPs), which will be used to manage, monitor and mitigate environmental impacts from the proposal, will also be provided.

7. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

A Preliminary Risk Assessment (PRA) was conducted for the site and the operation of the AWT Facility. The assessment is based on the location of the site in context to surrounding uses and information known about the ArrowBio process.

The risk assessment was based on an index formed from the perceived likelihood of an occurrence, and the subsequent consequence of that occurrence. Both likelihood and consequence were measured on a scale of 1 – 5 (improbable/insignificant – frequent/catastrophic). These figures where then added together to calculate the inherent risk of the proposed development. In some instances, the proposed developed or an outcome of the process may be considered a benefit (B) and as a result are indicated with a 'B'. Table 5.1 details the risk definitions that have been established for the likelihood and consequence of specific parts of the development.

Table 7.1: Environmental Risk Definitions

Likelihood (L)		
1	**Improbable**	Event may occur but only under exceptional circumstances.
2	**Remote**	Event could occur at some time.
3	**Occasional**	Event should occur at some time.
4	**Probable**	Event will probably occur in most circumstances.
5	**Frequent**	Event expected to occur in most circumstances.
Consequence (C)		
1	**Insignificant**	No detectable effect on or off site.
2	**Minor**	Detectable effects with minimal impact on site.
3	**Moderate**	Effects on and off site requiring attention.
4	**Major**	Sizable effects warranting immediate attention.
5	**Catastrophic**	Sizable effects with a large impact warranting immediate attention.
Risk Level (R) (L+C)		
2-4	Low	
5	Moderate	
6+	High (Key issues)	
B	Benefits resulting from the proposed modifications are identified with a "B" and will be addressed further.	

The results of the risk assessment are shown in Appendix C. The majority of risks identified are seen to be of a Low or Moderate nature. There are no 'High' risks that have been associated with the proposed development and its subsequent operation.

The potential risk of odour impacts resulting from a putrescible waste processing facility in close proximity to residential areas was not seen to be a High risk. This is largely due to several factors, including:

- The submergence of all waste under water, almost immediately after truck delivery, greatly limits the potential for odour emissions.
- The enclosed AWT facility will utilise appropriate best practice odour control technology.
- An odour complaints register will be maintained.
- The closest resident is approximately 2km from the subject site.

The site is located in a largely vegetated area – characterised by areas of national park. Although the use is somewhat industrial, the vegetation bounding the site will be sufficient to screen any risk of visual amenity. In terms of traffic, it is considered that the local road network is well equipped to handle an increase in vehicle movements. It is not expected that the AWT facility will significantly impact traffic levels. However, should congestion increase, scheduling of waste vehicle delivery may be used to minimize the risk of congestion.

Conducting waste processing in an enclosed building and in a submerged state will reduce the risk of litter. Similarly, the advanced technology utilised in the ArrowBio process results in a Low risk in regards to energy usage and greenhouse gas emissions.

8. CONCLUSION

With appropriate management and environmental mitigation measures integrated into the design, the proposal is considered unlikely to have any significant environmental impacts. Detailed studies including air quality, noise, flora and fauna, heritage and traffic will be commissioned as part of the EA to confirm this.

The AWT facilities level of environmental impact will be minimal primarily due to:

- the nature and design of the ArrowBio technology; and
- the existing degraded nature of the site.

The proposed AWT will provide significant environmental and economic benefits at local and regional level. It will meet an increasing demand for sustainable regional waste services and resource recovery facilities - reduce the volume of waste sent to landfill and produce renewable electricity and potentially re-usable water. The social benefit will include the provision of employment options during both construction and operation.

The construction phase of the project is likely to produce impacts typically associated with construction works. Implementation of an adequate environmental management plan will minimise such impacts, as evidenced from the work currently being carried out at the Ecolibrium Mixed Waste Facility at MRRP in Camden LGA.

It is considered that the proposed development conforms with all legislative requirements of both State and Council authorities.

APPENDIX A
DECC LICENCE

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 5065

Department of **Environment & Climate Change** NSW

Licence Details	
Number:	5065
Anniversary Date:	21-August
Review Due Date:	22-Jun-2010

Licensee
WASTE RECYCLING AND PROCESSING CORPORATION
PO BOX 3250
RHODES NSW 2138

Licence Type
Premises

Premises
LUCAS HEIGHTS WASTE & RECYCLING CENTRE
NEW ILLAWARRA ROAD
LUCAS HEIGHTS NSW 2234

Scheduled Activity
Waste Activities
Waste disposal (application to land)

Fee Based Activity	**Scale**
Solid Waste Landfilling (79)	> 100000 - T
Waste disposal (application to land)	0 - All
Waste Storage, Transfer, Separating or Processing (84)	0 - All
Hazardous, Industrial or Group A Waste Generation or Storage (73)	0 - 10 T

Region
Waste Operations
59-61 Goulburn Street
SYDNEY NSW 2000
Phone: 02 9995 5000
Fax: 02 9995 5999
PO Box A290 SYDNEY SOUTH
NSW 1232

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 5065

Department of **Environment & Climate Change** NSW

Environment Protection Licence

Department of **Environment & Climate Change** NSW

Licence - 5065

Environment Protection Licence

Licence - 5065

Department of Environment & Climate Change NSW

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

Environment Protection Licence

Licence - 5065

The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

WASTE RECYCLING AND PROCESSING CORPORATION
PO BOX 3250
RHODES NSW 2138

subject to the conditions which follow.

1 Administrative conditions

A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-

based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity
Waste Activities
Waste disposal (application to land)

Fee Based Activity	**Scale**
Solid Waste Landfilling (79)	> 100000 - T
Waste disposal (application to land)	0 - All
Waste Storage, Transfer, Separating or Processing (84)	0 - All
Hazardous, Industrial or Group A Waste Generation or Storage (73)	0 - 10 T

A1.3 Not applicable.

Environment Protection Licence

Department of **Environment & Climate Change** NSW

A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
LUCAS HEIGHTS WASTE & RECYCLING CENTRE
NEW ILLAWARRA ROAD
LUCAS HEIGHTS
NSW
2234
LOT 1 DP233333; LOT 2 DP605077; LOT 111 DP1050235; LOT 3 DP1032102; LOT 101 DP1009354 (EXCEPT FOR PART LOT 101 DP1009354 LABELLED AS "GREEN WASTE PROCESSING AREA" ON MAP TITLED "PLAN OF SUBDIVISION OF LOT10 IN DP837126 FOR LEASE PURPOSES BEING PART LOT 1 IN DP804455" DATED 21 DECEMBER 1999 AND MAP TITLED "PLAN SHOWING POSITION OF GREEN WASTE PROCESSING AREA WITHIN LOT 101 IN D.P.1009354 AT LUCAS HEIGHTS NO.2" DATED 28 JULY 2006).

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Crushing, Grinding or Separating Works
Waste Activities
Waste Facilities - temporary storage of pollution incident waste
Waste Facilities - used tyre processing or disposal

Waste Facilities - waste storage, transfer separating or processing

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
(a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
(b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to air and water and applications to land

P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Environment Protection Licence

Department of **Environment & Climate Change** NSW

Licence - 5065

Water and land

EPA identification no.	Type of monitoring point	Type of discharge point	Description of location
1	Discharge to waters Overflow quality monitoring - MC1	Discharge to waters Overflow quality monitoring - MC1	Discharge Point at Mill Creek labelled as "1" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312001E 6231750N.
3	Leachate quality monitoring - LD001		Surface Water Monitoring Point from Leachate Dam (LD001) labelled as "3" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 311987E 6231582N.
4	Groundwater quality monitoring - MB008		Groundwater Monitoring Point from MB008 labelled as "4" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312877E 6230142N.
7	Groundwater quality monitoring - MB032		Groundwater Monitoring Point from MB032 labelled as "7" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312013E 6231780N.
8	Groundwater quality monitoring - MB034		Groundwater Monitoring Point from MB034 labelled as "8" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312015E 6231775N.

Environment Protection Licence

Licence - 5065

EPA identification no.	Type of monitoring point	Type of discharge point	Description of location
16	Groundwater quality monitoring - MB305		Groundwater Monitoring Point from MB305 labelled as "16" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 311860E 6231217N.
17	Groundwater quality monitoring - MB306		Groundwater Monitoring Point from MB306 labelled as "17" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 311858E 6231220N.
18	Groundwater quality monitoring - MB033		Groundwater Monitoring Point from MB033 labelled as "18" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312011E 6231775N.
19	Groundwater quality monitoring - MB035		Groundwater Monitoring Point from MB035 labelled as "19" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312006E 6231771N.
20	Pumped Discharge from Sediment Dam 5 - DS002	Pumped Discharge from Sediment Dam 5 - DS002	Discharge Point from Sediment Dam 5 labelled as "20" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312031E 6231701N.

Environment Protection Licence

EPA identification no.	Type of monitoring point	Type of discharge point	Description of location
21	Pumped Discharge from Stormwater Treatment Plant - DS001	Pumped Discharge from Stormwater Treatment Plant - DS001	Discharge Point from stormwater treatment plant adjacent to Sediment Dam 5 labelled as "21" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312039E 6231730N.
22	Overflow from Sediment Dam 5 - OF001	Overflow from Sediment Dam 5 - OF001	Monitoring Point from Overflow of Sediment Dam (SD005) labelled as "22" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312031E 6231701N.
23	Sediment Dam 5 - SD005		Surface Water Monitoring Point from Sediment Dam (SD005) labelled as "23" on map titled "Lucas Heights Waste & Recycling Centre - Licence Monitoring Points" (Plan R46-310) prepared by WSN Environmental Solutions. 312000E 6231662N.

3 Limit conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Load limits

L2.1 Not applicable.

L2.2 Not applicable.

L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

Water and Land

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile Concentration Limit
Conductivity	microsiemens per centimetre				1500
pH	pH				5.5-8.5
Phenol	milligrams per litre				0.32
Nitrogen (ammonia)	milligrams per litre				2.5
Dissolved Oxygen	milligrams per litre				6
TSS	milligrams per litre				50

POINTS 20,21,22

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile Concentration Limit
TSS	milligrams per litre				50
Nitrogen (ammonia)	milligrams per litre				2.5

L3.4 The licensee is taken not to have breached the licence total suspended solids concentration limits for Point 1 and Point 22 if:

(a) the overflow is caused by a rainfall event; and
(b) the licensee has taken all practical measures to avoid or minimise water pollution.

L4 Volume and mass limits

L4.1 Not applicable.

L5 Waste

L5.1 The licensee 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 the licence.

L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L5.3 The licensee must ensure that only the following types of waste are disposed of at the premises; except as expressly permitted by the licence.

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: If the licence permits the disposal of asbestos waste, the licensee must comply with Clause 29 of the Protection of the Environment Operations (Waste) Regulation 1996.

L5.4 Pollution incident waste

L5.4.1 The licensee is permitted to receive pollution incident waste for temporary storage only, provided that:

(a) within 24 hours, the licensee notifies the EPA of the type, amount and source of the pollution incident waste received; and

(b) the licensee notifies the EPA when and where the incident waste is to be removed to for treatment, processing or disposal.

For the purposes of this condition pollution incident waste means waste that:

(c) requires temporary storage only; and
(d) is generated from a spill or other pollution incident;

Tyres

L5.5 The licensee must not dispose of any tyre at the premises unless:

(a) the tyre has a diameter of 1.2 metres or more; and/or
(b) the tyre has been shredded or had its walls removed; and/or
(c) the tyre was delivered to the premises as part of a domestic load.

For the purposes of this condition:

(a) tyres are taken to be shredded only if the tyres are in pieces measuring no more than 250mm in any direction; and
(b) domestic load means a load containing no more than 5 tyres having a diameter of less than 1.2 metres.

L5.6 Tyres stockpiled on the premises must:
(a) not exceed fifty (50) tonnes of tyres at any one time; and
(b) be located in a clearly defined area away from the tipping face; and
(c) be managed to control vermin; and
(d) be managed to prevent any tyres from catching fire.

L5.7 Transfer station

L5.7.1 The licensee must ensure that only the following hazardous, industrial, Group A and Group B wastes are received and/or stored at the transfer station:
(a) asbestos (N220);
(b) waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish (F100);
(c) basic solutions or bases in solid form (C100);
(d) lead acid batteries (D220);
(e) waste oil/water, hydrocarbons/water mixtures or emulsions (J120);
(f) waste pharmaceuticals, drugs and medicines (R120); and
(g) beverage related waste.

For the purposes of this condition:

Waste received at the transfer station must only be domestic quantities.

L6 Noise Limits

L7 Potentially offensive odour

L7.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed

at minimising odour.

4 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:
(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O1.2 There must be no incineration or burning of any waste at the premises.

O1.3 The licensee must take all practicable steps to control entry to the premises.

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 Control

O3.1 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.2 Waste recycling

O3.2.1 The licensee must ensure that recycling facilities as much as practicable are provided for the following materials:

(a) Glass – clear, brown and green;
(b) Paper and cardboard;
(c) Batteries;
(d) Sump engine oil;
(e) Aluminium and steel cans; and
(f) Reusable timber, firewood and green waste.

O3.2.2 Recycling facilities at the premises must be clearly marked and be available for access by the public.

O4 Covering of waste

O4.1 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.

O5 Management of surface waters

O5.1 Surface waters must be diverted away from any area where waste is being or has been landfilled.

O6 Disposal of Immobilised waste

O6.1 The licensee must cover the immobilised waste on the day of receival.

O6.2 The licensee must not dispose of immobilised waste which has disposal restrictions requiring that they may only be disposed of at solid waste landfills or industrial waste landfills, which have currently operating leachate management systems and which are licensed to receive that particular class of waste and that have licence conditions to receive waste subject to immobilisation approvals with this type of disposal restriction, other than in cells 2 and/or 3 in stage 5.

O7 Uncovering of landfilled waste

O7.1 The licensee must not carry out any activity that exposes previously landfilled waste at the premises, except as expressly permitted by a condition of this licence.

O7.2 The licensee must carry out works in accordance with the document titled Odour Management Plan for Landfill Gas Extraction Systems provided with the letter received from Waste Service NSW dated 28 June 2002.

O8 Landfill Leachate

O8.1 Landfill leachate must not be irrigated except as expressly permitted by a condition of this licence.

O8.2 The licensee must not inject leachate back into the landfilled waste.

O8.3 Leachate must be disposed of to sewer or removed by tanker to a premises which may lawfully receive the leachate for treatment.

O9 Household chemical collection program

O9.1 Chemicals which have been collected in conjunction with a "Household Chemical Collection Program" must be stored in a secure and bunded location within the premises pending lawful off site disposal or recycling of these chemicals.

O10 Closure Plan

O10.1 The licensee must prepare and submit to the EPA within twelve months prior to the last load of waste being landfilled, a closure plan in accordance with section 76 of the Protection of the Environment Operations Act 1997.

O11 Preventing fires

O11.1 All operations and activities occurring at the premises must be carried out in a manner that will prevent and minimise the risk of fire at the premises.

O12 Management of collected groundwater

O12.1 The licensee must manage any groundwater extracted from groundwater depressurisation works in the same manner as leachate.

O13 Landfill gas oxidation

O13.1 Except in emergency conditions or short periods of shutdowns the licensee must ensure that landfill gas generated by the disposal of waste and collected at the premises is treated by oxidation to carbon dioxide.

5 Monitoring and recording conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
(a) in a legible form, or in a form that can readily be reduced to a legible form;
(b) kept for at least 4 years after the monitoring or event to which they relate took place; and
(c) 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 for the

purposes of this licence:
(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) 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 licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

Environment Protection Licence

Department of **Environment & Climate Change** NSW

Licence - 5065

Water and Land

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Special Frequency 1	Probe
Dissolved Oxygen	milligrams per litre	Special Frequency 1	Grab sample
Nitrogen (ammonia)	milligrams per litre	Special Frequency 1	Grab sample
Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample
Turbidity	nephelometric turbidity units	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample

POINT 3

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Yearly	Grab sample
Aluminium	milligrams per litre	Yearly	Grab sample
Arsenic	milligrams per litre	Yearly	Grab sample
Barium	milligrams per litre	Yearly	Grab sample
Benzene	milligrams per litre	Yearly	Grab sample
Benzo(a)pyrene	milligrams per litre	Quarterly	Grab sample
Cadmium	milligrams per litre	Yearly	Grab sample
Calcium	milligrams per litre	Yearly	Grab sample
Chloride	milligrams per litre	Yearly	Grab sample
Chromium (hexavalent)	milligrams per litre	Yearly	Grab sample
Chromium (total)	milligrams per litre	Yearly	Grab sample
Cobalt	milligrams per litre	Yearly	Grab sample
Conductivity	microsiemens per centimetre	Quarterly	Probe
Copper	milligrams per litre	Yearly	Grab sample
Ethyl benzene	milligrams per litre	Yearly	Grab sample
Fluoride	milligrams per litre	Yearly	Grab sample
Lead	milligrams per litre	Yearly	Grab sample
Magnesium	milligrams per litre	Yearly	Grab sample
Manganese	milligrams per litre	Yearly	Grab sample
Mercury	milligrams per litre	Yearly	Grab sample
Nitrate	milligrams per litre	Yearly	Grab sample
Nitrite	milligrams per litre	Yearly	Grab sample

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Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (ammonia)	milligrams per litre	Yearly	Grab sample
Organochlorine pesticides	milligrams per litre	Yearly	Grab sample
Organophosphate pesticides	milligrams per litre	Yearly	Grab sample
Phosphorus	milligrams per litre	Yearly	Grab sample
Polycyclic aromatic hydrocarbons	milligrams per litre	Quarterly	Grab sample
Potassium	milligrams per litre	Yearly	Grab sample
Sodium	milligrams per litre	Yearly	Grab sample
Sulfate	milligrams per litre	Yearly	Grab sample
Toluene	milligrams per litre	Yearly	Grab sample
Total Phenolics	milligrams per litre	Yearly	Grab sample
Total dissolved solids	milligrams per litre	Yearly	Grab sample
Total organic carbon	milligrams per litre	Yearly	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Quarterly	Grab sample
Total suspended solids	milligrams per litre	Yearly	Grab sample
Xylene	milligrams per litre	Yearly	Grab sample
Zinc	milligrams per litre	Yearly	Grab sample
pH	pH	Yearly	Probe

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POINTS 4,7,8,16,17,18,19

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Quarterly	Grab sample
Aluminium	milligrams per litre	Yearly	Grab sample
Arsenic	milligrams per litre	Yearly	Grab sample
Barium	milligrams per litre	Yearly	Grab sample
Benzene	milligrams per litre	Yearly	Grab sample
Benzo(a)pyrene	milligrams per litre	Quarterly	Grab sample
Cadmium	milligrams per litre	Yearly	Grab sample
Calcium	milligrams per litre	Quarterly	Grab sample
Chloride	milligrams per litre	Quarterly	Grab sample
Chromium (hexavalent)	milligrams per litre	Yearly	Grab sample
Chromium (total)	milligrams per litre	Yearly	Grab sample
Cobalt	milligrams per litre	Yearly	Grab sample
Copper	milligrams per litre	Yearly	Grab sample
Ethyl benzene	milligrams per litre	Yearly	Grab sample
Fluoride	milligrams per litre	Yearly	Grab sample
Lead	milligrams per litre	Yearly	Grab sample
Magnesium	milligrams per litre	Quarterly	Grab sample
Manganese	milligrams per litre	Yearly	Grab sample
Mercury	milligrams per litre	Yearly	Grab sample
Nickel	milligrams per litre	Yearly	Grab sample
Nitrate	milligrams per litre	Yearly	Grab sample
Nitrite	milligrams per litre	Yearly	Grab sample
Nitrogen (ammonia)	milligrams per litre	Quarterly	Grab sample
Organochlorine pesticides	milligrams per litre	Yearly	Grab sample
Organophosphate pesticides	milligrams per litre	Yearly	Grab sample
PCBs	milligrams per litre	Yearly	Grab sample
Polycyclic aromatic hydrocarbons	milligrams per litre	Quarterly	Grab sample
Potassium	milligrams per litre	Quarterly	Grab sample
Selenium	milligrams per litre	Yearly	Grab sample
Sodium	milligrams per litre	Quarterly	Grab sample
Standing Water Level	metres	Quarterly	In situ
Sulfate	milligrams per litre	Quarterly	Grab sample
Tetrachloroethene (tetrachloroethylene)	milligrams per litre	Yearly	Grab sample

Pollutant	Units of measure	Frequency	Sampling Method
Toluene	milligrams per litre	Yearly	Grab sample
Total Phenolics	milligrams per litre	Yearly	Grab sample
Total dissolved solids	milligrams per litre	Quarterly	Grab sample
Total organic carbon	milligrams per litre	Quarterly	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Quarterly	Grab sample
Trichloroethylene	milligrams per litre	Yearly	Grab sample
Xylene	milligrams per litre	Yearly	Grab sample
Zinc	milligrams per litre	Yearly	Grab sample
pH	pH	Quarterly	Probe

POINTS 20,21

Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (ammonia)	milligrams per litre	Special Frequency 2	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 2	Grab sample

POINT 22

Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (ammonia)	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

POINT 23

Pollutant	Units of measure	Frequency	Sampling Method
Nitrogen (ammonia)	milligrams per litre	Quarterly	Grab sample
Total suspended solids	milligrams per litre	Quarterly	Grab sample

For the purposes of the table(s) above:

a. Special Frequency 1 means, if discharges occur, the collection of samples within 24 hours of discharge; and
b. Special Frequency 2 means, the collection of samples at minimal weekly intervals during discharge.

M3 Testing methods - concentration limits

M3.1 Not applicable.

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of

a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence 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 licensee in relation to the complaint, including any follow-up contact with the complainant; and
(f) if no action was taken by the licensee, 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 licensee 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 licensee 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 Conditions M5.1 and M5.2 do not apply until 3 months after:
(a) the date of the issue of this licence or
(b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M6 Requirement to monitor volume or mass

M6.1 Not applicable.

M7 Requirement to monitor meteorological parameters

M7.1 The licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The applicant must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Parameter	Units of measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1 hour	AM-4
Wind speed @ 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4
Wind direction @ 10 metres	^{0}	Continuous	15 minute	AM-2 & AM-4
Temperature	^{0}C	Continuous	15 minute	AM-4
Sigma theta @ 10 metres	^{0}	Continuous	15 minute	AM-2 & AM-4
Solar radiation	W/m2	Continuous	15 minute	AM-4
Additional requirements - Siting - Measurement				 AM-1 & AM-4 AM-2 & AM-4

M8 Requirement to record leachate discharge events

M8.1 The licensee must record the date, duration and volume of any leachate discharge to surface water.

M9 Requirement to record fires

M9.1 The licensee must record the following data in relation to fires occurring at the premises:

(a) time and date when the fire started;
(b) whether the fire was authorised by the licensee, and, if not, the circumstances which ignited the fire;
(c) the time and date that the fire burnt out or was extinguished;
(d) the location of fire (e.g. clean timber stockpile, putrescible garbage cell, etc);
(e) prevailing weather conditions at the time of the fire;
(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;
(i) action taken to prevent a reoccurrence.

M10 Requirement to monitor landfill gas

M10.1 The licensee must undertake quarterly surface landfill gas monitoring in accordance with the document titled “Landfill Surface Gas Monitoring Programme, Lucas Heights Waste and Recycling Centre” prepared by WSN Environmental Solutions and dated February 2006.

If the results of the monitoring indicate the presence of methane in excess of 500 ppm on the surface of the capped areas, the licensee must:

i. notify the EPA within 24 hours; and
ii. submit to the EPA a proposed program to control these emissions.

The above quarterly surface landfill gas monitoring must be submitted to the EPA annually, accompanying the Annual Return.

M10.2 The licensee must undertake quarterly landfill gas accumulation monitoring in accordance with the document titled "Proposed Landfill Subsurface Jas and Accumulation Monitoring Program, Lucas Heights Waste and Recycling Centre" prepared by WSN Environmental Solutions and dated March 2006.

If the results of the monitoring indicate the presence of methane in excess of 1.25 % (v/v), the licensee must:

iii. notify the EPA within 24 hours; and
iv. submit to the EPA a proposed program to control these emissions.

The above quarterly landfill gas accumulation monitoring must be submitted to the EPA annually, accompanying the Annual Return.

6 Reporting conditions

R1 Annual return documents

What documents must an Annual Return contain?

R1.1 The licensee 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 this licence. Before the end of each reporting period, the EPA will provide to the licensee 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 period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee 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 this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee 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').

Notification where actual load can not be calculated

R1.6 Not applicable.

Licensee must retain copy of Annual Return

R1.7 The licensee 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

R1.8 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.

R1.9 A person who has been given written approval to certify a certificate 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 of this licence.

R2 Notification of environmental harm

Note: The licensee 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 licensee 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 this licence applies to premises, an event has occurred at the premises; or
(b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
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 licensee 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 licensee, or a specified class of them, who witnessed the event;
(d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
(e) action taken by the licensee 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; and
(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 licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Notification of fires

R4.1 The licensee must notify the details of the occurrence of all fires on the premises to the EPA in accordance with conditions R2.1 and R2.2 as soon as practical after becoming aware of the fire.

R5 Notification of groundwater contamination by leachate and proposed remediation action

R5.1 In the event that monitoring detects ammonia in groundwater at a concentration above 1 mg/L in any of the points 4, 7, 8, 16, 17, 18 and 19 the licensee must send written notification to the Manager Sydney Waste within 14 days of the monitoring results becoming available.

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General conditions

G1 Copy of licence kept at the premises

G1.1 A copy of this 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 licensee working at the premises.

Pollution studies and reduction programs

U1 Trial Irrigation of Greenwaste Dam Water on Rehabilitation Areas

U1.1 The licensee may conduct a trial irrigation of the greenwaste dam water on the rehabilitated areas of the premises in accordance with:

i. specifications outlined in WSN Environmental Solutions letter dated 26 November 2007 (EPA Reference DOC07/49050); and
ii. Additional specifications:
    a. Construction of 3 temporary collection ponds (Runoff Quality Monitoring Ponds) immediately downgradient of each irrigation area of size at least 1 cubic metre;
    b. Conduct weekly water quality monitoring of each temporary collection pond including for temperature, pH, dissolved oxygen, turbidity, electrical conductivity, redox, biological oxygen demand, total, suspended solids, ammonia and total organic carbon;
    c. Cease irrigation with greenwaste dam water should:
        i. Ammonia within the greenwaste dam water or the Runoff Quality Monitoring Ponds exceed 1mg/L; or
        ii. Total organic carbon within the Runoff Quality Monitoring Ponds exceed 10mg/L.

The licensee must be conducted from 1 July 2008 to 30 April 2009.

U1.2 The licensee must submit a report to the EPA within one month of the end of the trial period. The report must:

i. Include monthly water quality reports from Mill Pond (SD1) and Sediment Dam 5 (SD5); and
ii. detail all odour incidents and/or reports of odour and detail the licencee's response to those incidents and reports.

Note: The EPA reserves the right to suspend the trial should odour incidents occur as result of this trial.

U2 Landfill gas monitoring

U2.1 The licensee must install the subsurface gas monitoring devices proposed in the document titled "Proposed Landfill Subsurface Gas and Accumulation Monitoring Program, Lucas Heights Waste and Recycling Centre" prepared by WSN Environmental Solutions and dated March 2006.

Due Date = 30 April 2008

U2.2 The licensee must, within 3 months of construction, submit a report detailing the installation of the Subsurface Gas Monitoring devices. The report must:

i. include the construction details of the installed devices, including the depth of devices and geology encountered during the installation;
ii. the reduced levels of devices in AHD; and
iii. a plan at a suitable scale depicting the devices location.

U3 Design and construction of Stage 5 (Cell 2 and Cell 3)

U3.1 Groundwater Depressurisation

U3.1.1 The licensee must install a ground water depressurisation system in Stage 5 - Cells 2 and 3 in accordance with Chapter 3 and Drawings 21-14779-C007 and 21-14779-C008 of the document titled "WSN Environmental Solutions - Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction", prepared by GHD and dated May 2006 (Report ID: 21/14779/119859)

U3.2 Compacted Clay Liner

U3.2.1 The licensee must install a compacted clay liner system in Stage 5, Cells 2 and 3 in accordance with Chapter 4 and Drawings 21-14779-C002, 21-14779-C005, 21-14779-C005 and 21-14779-C005 of the document titled "WSN Environmental Solutions - Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction", prepared by GHD and dated May 2006 (Report ID: 21/14779/119859).

U3.2.2 The licensee must implement relevant testing regimes and procedures detailed in Chapters 2 and 3 of the document titled "WSN Environmental Solutions - Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction Quality Assurance Program", prepared by GHD and dated May 2006 (Report ID: 21/14779/119862).

U3.2.3 The licensee must undertake density testing of the compacted clay liner in accordance with:

i) AS1289.5.7 at a frequency of one test every 500m2 to 800 m2 for each and every layer of the liner; or

ii) an alternative frequency method and approved in writing by the EPA.

U3.2.4 The licensee must undertake permeability testing of the upper layer of the compacted clay liner in accordance with:

i. AS1289.6.7.3 at a frequency of one test every 1000 m^2; or
ii. an alternative frequency method and approved in writing by the EPA.

U3.3 Leachate Management System

U3.3.1 The licensee must install a leachate management system in Stage 5 - Cells 2 and 3 in accordance with Chapter 5 and Drawings 21 14779-C004, 21-14779-C005, 21-14779-C006 and 21-14779-C007 of the document titled "WSN Environmental Solutions - Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction", prepared by GHD and dated May 2006 (Report ID: 21/14779/119859).

U3.3.2 The licensee must implement relevant testing regimes and procedures detailed in Chapter 3 of the document titled "WSN Environmental Solutions, Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction Quality Assurance Program", prepared by GHD and dated May 2006 (Report ID: 21/14779/119862).

U3.4 Construction Quality Assurance Report – Stage 5 (Cell 2)

The licensee must, submit a Construction Quality Assurance report. The report must:

i. constructed drawings prepared from field surveys of the installed depressurisation system, compacted clay liner and leachate management systems in Stage 5 - Cell 2;
ii. results of the implementation of the relevant testing regimes and procedures;
iii. comment as to whether the respective systems were installed in accordance with their respective specifications.

Note 1: Following assessment of the Construction Quality Assurance report, the EPA proposes to attach conditions to the licence to require the licensee to maintain:

a. the leachate head in the Stage 5 - Cell 2 collection sump less than or equal 1.1 metres above the basal liner at any point until the completion of the first waste lift in stage 5-2, and less than or equal to 0.3 metres above the basal liner at any point thereafter; and
b. a freeboard of 223 mm for the leachate dam as depicted in Attachment 4 to appendix 2 of WSN Environmental Solutions letter of 27 February 2006.

Note 2: The requirement to maintain the leachate head in the stage 5 - Cell 2 collection sump is consistent with specification outlined within the document titled "WSN Environmental Solution – Report for Lucas Heights WRC, Stage 5 – Cells 2 & 3 Construction", prepared by GHD and dated May 2006 (Report ID: 21/14779/119859).

U3.5 Commencement of landfilling operations

Waste must not be landfilled in Cell 5 (Stage 2 and 3) at the premises until the EPA has provided written advice permitting the disposal of waste within it.

U4 Leachate level in Stage 5 (Cell 1) Risers

U4.1 The licensee must provide a report to the EPA which detail measures to conduct quarterly monitoring of the leachate level in the immediate risers in Stage 5 (Cell1). The report must a timeframe for commencement of monitoring in the immediate risers in Stage 5 (Cell1).

Note: Should the monitoring indicate that the leachate level within the risers is at a depth greater than 300 mm above the base of the risers the licensee must implement measures to lower the leachate level below 300 mm.

Due Date= 1 August 2008

U5 Surface water monitoring

U5.1 The licensee must implement a 12 month surface water monitoring program proposed in the report titled “Surface Water Monitoring Program, Lucas Heights Waste and Recycling Centre – Proposal” prepared by WSN Environmental Solutions and dated March 2006.

Note 1: Wet weather monitoring must be undertaken as soon as practicable after a rainfall event exceeding 10 mm in the preceding 24 hours.

Note 2: The surface water monitoring program must be conducted in accordance with the quality assurance and quality control procedures proposed in the report titled “Surface Water Monitoring Program, Lucas Heights Waste and Recycling Centre – Proposal” prepared by WSN Environmental Solutions and dated March 2006.

Due Date = 1 March 2009

U5.2 The licensee must, at the completion of the surface water monitoring program, submit a report on the results. The report must:

i. A statistical analysis of the data:
ii. graphical presentation of data to illustrate changes in analytes over time;
iii. geographical presentation of data to illustrate differences between analytes between locations; and
iv. comparison against leachate and groundwater characteristics.

Due Date= 1 June 2009

U6 Install additional groundwater monitoring bores

U6.1 The licensee must install groundwater monitoring bores proposed in Appendix 4 of WSN Environmental Solutions letter dated 27 February 2006.

Due Date= 30 April 2008

U6.2 The licensee must, within 2 months of installation, submit a report prepared by a suitably qualified person confirming that:

i. construction of the groundwater monitoring bores has been completed; and
ii. confirming the location and construction details for each bore.

Note 1: Following installation of additional groundwater monitoring bores, the EPA will attach monitoring requirements as part of the groundwater monitoring program for the premises.

U7 Investigation Program to lower Ammonia concentrations in stormwater

U7.1 The licensee, must complete an investigation program to determine the source of Ammonia in stormwater discharge from the premises, and prepare and submit a proposed program to the EPA to lower the Ammonia concentrations below 0.91 mg/L.

Due Date: 1 June 2009

Note: The results from the PRP regarding Surface Water Monitoring must be taken into account in addressing this requirement.

Special conditions

E1.1 Not applicable.

Dictionary

General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*

	Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
industrial waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
inert waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances

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Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
reprocessing of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
treatment of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste code	Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B.
waste type	Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste

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Department of **Environment & Climate Change** NSW

Mr John Sparkes

Environment Protection Authority

(By Delegation)

Date of this edition - 14-May-2008

End Notes

1	Licence varied by notice 1011080, issued on 10-Apr-2002, which came into effect on 05-May-2002.
2	Licence varied by notice 1018739, issued on 04-Jul-2002, which came into effect on 04-Jul-2002.
3	Licence varied by notice 1019721, issued on 30-Aug-2002, which came into effect on 30-Aug-2002.
4	Licence fee period changed by notice 1026075 on 25-Mar-2003.
5	Licence varied by notice 1034582, issued on 17-Jun-2004, which came into effect on 25-Jun-2004.
6	Licence varied by notice 1041728, issued on 22-Oct-2004, which came into effect on 25-Oct-2004.
7	Licence varied by notice 1044509, issued on 15-Feb-2005, which came into effect on 16-Feb-2005.
8	Licence varied by notice 1044945, issued on 22-Mar-2005, which came into effect on 22-Mar-2005.
9	Licence varied by notice 1045900, issued on 22-Jun-2005, which came into effect on 17-Jul-2005.
10	Licence varied by notice 1056254, issued on 02-Mar-2006, which came into effect on 18-Mar-2006.
11	Licence varied by notice 1063380, issued on 17-Aug-2006, which came into effect on 17-Aug-2006.
12	Licence varied by notice 1073111, issued on 13-Feb-2008, which came into effect on 13-Feb-2008.
13	Licence varied by notice 1084039, issued on 26-Mar-2008, which came into effect on 26-Mar-2008.
14	Licence varied by notice 1084652, issued on 22-Apr-2008, which came into effect on 22-Apr-2008.
15	Licence varied by Change to schedule 1, issued on 14-May-2008, which came into effect on 14-May-2008.

Section 55 Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 5065

Department of **Environment & Climate Change** NSW

APPENDIX B
LHWRC Planning Consents

SUTHERLAND SHIRE COUNCIL

Administration Centre,
SUTHERLAND, 2232.
Telephone : 5214011

Notice of APPROVAL to Development under Provisions of Sec. 92 of Environmental Planning and Assessment Act, 1979.

The Director,
Metropolitan Waste Disposal Authority,
P.O. Box 699,
CHATSWOOD. N.S.W. 2067

Consent No. 5482/85
Date : 6th June, 1985
File : G.1/16
B.A. No. :
Authority :

Under the above provisions, the Council of the Shire of Sutherland hereby APPROVES your application

For proposed continued operation of the Lucas Heights Regional Landfill Depot
Proposed Stage II
(BOX situated at Mill Creek Valley.

Subject to the following conditions : N I L

Which are imposed :

(a) To ensure compliance with the requirements of Council and Statutory Authorities.

(b) To avoid the creation of a traffic hazard.

(c) To ensure no injury is caused to the amenity of the area.

(d) In the public interest.

This decision has been made by the Council as the authority responsible in respect of development within a zone under planning instrument

Section 97 (1) of Environmental Planning and Assessment Act provides a right of appeal against this decision. THE CONSENT DOES NOT RELIEVE THE APPLICANT OF THE OBLIGATION TO OBTAIN BUILDING APPROVAL as provided by Sections 311 and 312 and Ordinance 70 under the local Government Act BEFORE ANY WORK IS COMMENCED.

J.W.RAYNER
XXXXXXXX
Shire Clerk

Applicant | File | Register | S.B.S. | V.G.

SUTHERLAND SHIRE COUNCIL
ADMINISTRATION CENTRE,
ETON STREET,
SUTHERLAND 2232
PHONE: 710 0333

CONSENT TO OPERATE FROM : 02 April 1996
CONSENT TO LAPSE ON : 02 April 2001 (kh)
FILE NO. : G1/16
AUTHORITY : Senior Planner (West)
AUTH. DATE : 28 December 1995

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979
DEVELOPMENT CONSENT

NOTICE OF DETERMINATION OF
Development Application # 951337

LAND
DESCRIPTION:

L1 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)
L2 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)
L3 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)
L4 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)
L5 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)
L6 DP233333 at NEW ILLAWARRA ROAD LUCAS HEIGHTS (Registered)

APPLICANT : WASTE SERVICE NSW
PO BOX 699
CHATSWOOD NSW 2067

The Council of the Shire of Sutherland, pursuant to Section 92 of the Environmental Planning and Assessment Act, 1979, hereby notifies hat the abovementioned Development Application for development described as:

UPGRADE OF ENTRANCE TO REGIONAL
WASTE DEPOT

has been determined by granting of consent subject to the conditions specified in this notice.

The conditions of this consent which have been imposed to reduce or eliminate any detrimental effects which the proposed development might have on the environment including the amenity of the area are described on the following pages.

SUTHERLAND SHIRE COUNCIL
ADMINISTRATION CENTRE,
ETON STREET,
SUTHERLAND 2232
PHONE: 710 0333

****** CONDITIONS ******

1. The development must be implemented substantially in accordance with the details set out on the plan/drawings R46-172 & R46-173 and on the application form and on any supporting information received with the application except as amended by the conditions specified hereunder. (D0002)

2. Prior to commencement of any site works, all trees to be retained must be enclosed with protective fencing to prevent them being damaged during the construction period. (D0101)

3. All approved landscaping must be implemented and maintained at all times to the satisfaction of Council. (D0104)

4. A plan and specification of the proposed landscaping and bushland regeneration, prepared by a suitably qualified landscape consultant, must be submitted for Council's approval with the Building Application Plans. The details to be submitted are to include the location of any required on site drainage detention area and associated drainage lines, the position in which each shrub and tree is proposed to be planted, identification of each plant by a reference number referring to a legend on the plan specifying in tabulated form the botanical name, common name, expected height and (if a flowering species), colour.(D0103)

5. Erosion control measures which shall be undertaken maintained during the course of construction to prevent sediment discharge from the site, in accordance with Council's standards and specifications, along with measures to be undertaken to stabilise all disturbed areas by revegetation at the completion of construction. (D999)

6. The pavement design is to be based on anticipated wheel loading information to be submitted to and approved by Council for the future life of the tip but is to be not less than 5 x 10 ESA. (D999)

7. Works within each of the road reserves are to be constructed in accordance with Council's currently adopted specification and as detailed on the approved engineering drawings and are to include earth works, road pavement, kerb and gutter, shoulder construction, footpath and verge construction and drainage works including table drains. (D999)

8. Traffic management is to be in accordance with AS1742 and AS1743 and also generally with RTA Form 1002. (D999)

SUTHERLAND SHIRE COUNCIL
ADMINISTRATION CENTRE,
ETON STREET,
SUTHERLAND 2232
PHONE: 710 0333

9. A detailed construction program for the works is to be submitted to Council with the engineering plans and is to include:

   (a) Construction sequence/traffic management.

   (b) Equipment to be used.

   (c) Stockpile sites.

   (d) The proposed method to prevent the tracking of material from the site onto road surfaces.

   (e) Erosion control methods. (D999)

10. The constructed road pavement is to extend to the kerb return ends of the access road to Council's night soil depot. (D999)

11. The whole of the existing New Illawarra Road pavement linemarking for the full extent of the deceleration lanes, east and west, are to be refurbished. (D999)

12. The intersection design is to be in accordance with appropriate Australian Standards and RTA design guidelines, including site distance requirements for a 17m articulated vehicle. (D999)

13. All road pavement linemarking is to be in accordance with AS1742.2 and/ or RTA guidelines appropriate to the intersection requirements. (D999)

14. The Works-as-Executed drawings are to be submitted to the Council prior to the final inspection.

    The certificates stamped on the Works-as-Executed drawings are to be signed by the Registered Surveyor and Supervising Engineer.

    The Works-as-Executed drawings shall contain all relevant information as specified by the document attached titled "Requirements Following Completion of Roadworks/Development Works - Works-as-Executed Plans." (D0532)

15. The applicant shall nominate to Council a suitably qualified and experienced Supervising Engineer for all civil and drainage works. The Supervising Engineer must be available during normal working hours for the duration of the project. It is the responsibility of the Supervising Engineer to supervise all works during the course of construction. (D0626)

16. The applicant shall submit full details of 3.0m high walls and signage. (D999)

SUTHERLAND SHIRE COUNCIL
ADMINISTRATION CENTRE,
ETON STREET,
SUTHERLAND 2232
PHONE: 710 0333

**** END OF CONDITIONS ****

SUTHERLAND SHIRE COUNCIL
ADMINISTRATION CENTRE,
ETON STREET,
SUTHERLAND 2232
PHONE: 521 0333

NOTES

1. This Notice of Consent is issued by the Council as the Authority responsible in respect of development under the provisions of the Sutherland Local Environmental Plan.

2. A Tree Preservation Order has been proclaimed in the Sutherland Shire. A person who contravenes or causes or permits a tree preservation order to be contravened is guilty of an offence. Trees, the subject of this Order, other than those which have become dangerous shall not be cut down, topped, lopped, injured, or wilfully destroyed except with the consent of the Council. However, unless specified otherwise in this consent, those trees designated to be removed on the approved plans under this consent may be so removed.

3. S.97 of the Environmental Planning and Assesment Act confers on an appplicant who is dissatisfied with the determination of a consent authority a right of appeal to the Land and Environment Court exercisable within 12 months from the date of a Notice of Determination of Development Application.

4. This consent does not relieve the applicant of the obligation to obtain Building Approval where necessary as provided by S.68 and S.75 of the Local Government Act, 1993, as amended, and the Building Code of Australia, prior to the commencement of any work. Excavation and filling of the site, and demolition of existing building(s) must not be undertaken without prior written approval of the Council.

for J W Rayner
General Manager
Date 2/4/96

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

DETERMINATION OF DEVELOPMENT APPLICATION UNDER SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

I, the Minister for Urban Affairs and Planning, under Section 80 of the "Environmental Planning and Assessment Act, 1979" ("the Act") determine the development application ("the application") referred to in Schedule 1 by granting consent to the application subject to the conditions set out in Schedule 2.

The reason for the imposition of conditions generally is to minimise any adverse effects from the development, consistent with the objectives of the Act. These conditions are set out in detail in Schedule 2.

Andrew Refshauge MP
Deputy Premier
Minister for Urban Affairs and Planning
Minister for Aboriginal Affairs
Minister for Housing

Sydney, 12 NOV 1999 File No. R97/00029

SCHEDULE 1

Application made by:	Waste Recycling and Processing Service of NSW and Sutherland Shire Council ("the Applicants"). Note that the term "the Applicants" is used generically in this instrument of consent. The roles and responsibilities of the Waste Recycling and Processing Service of NSW and Sutherland Shire Council shall be in accordance with the terms of the deed of agreement addressed in Condition 10 of this consent.
To:	The Minister for Urban Affairs and Planning ("the Minister").
In respect of:	Lots 10 and 11 DP 818819, PO (PO 85/81 Metrop) Crown Land, Portion 126, Lot 24 DP 874608, Lot 2 DP 605077, Lot 1 DP 804455, Lot 10 DP 837126, Lot 102 DP

unregistered, and Lot 101 DP unregistered, New Illawarra Road and Heathcote Road, Sutherland Shire.

For the following:

The expansion of the capacity of the Lucas Heights Waste Management Centre and the progressive redevelopment of the site for recreational purposes;
The development of composting and recycling facilities including a Green Waste Processing and Composting Facility (GWPCF) and a biowaste facility at the Lucas Heights Waste Management Centre;
The diversion of dry waste and clean fill from the Lucas Heights Waste Management Centre to the area known as Lucas Heights 1 and the progressive development of a local and regional multi-purpose sporting and recreational complex at the site;
The establishment of an area known as the Lucas Heights Conservation Area to the immediate north of the Lucas Heights Waste Management Centre.
("the development").

Development Application:

DA No. 11-01-99 lodged with the Department of Urban Affairs and Planning on 18 January 1999, accompanied by the Environmental Impact Statement prepared by National Environmental Consulting Services dated January 1999, and Amended DA lodged with the Department of Urban Affairs and Planning on 28 April 1999.

BCA Classification:

Lucas Heights 1
Weighbridge – Class 10b
Sports Club:
Main lounge, dining room, gaming room - Class 9b
Function areas – Class 9b
Pro-shop – Class 6
Amenities buildings:
Kiosks - Class 6
Change rooms & toilets – Class 10a
Maintenance building – Class 10a
Shade structures – Class 10a
Golf course players' pavilion – Class 10a
Fences, retaining walls – Class 10b
Picnic area structures (tables, seating, shelters etc) – Class 10a
Car parking areas – Class 7
Lucas Heights Waste Management Centre
Weighbridge – Class 10b
Biowaste Facility:
Administration offices – Class 5
Warehouse, laboratory and maintenance building – Class 8

Anaerobic Digestion Plant – Class 10a
Waste water treatment structures – 10a
Post-treatment, product storage and bagging plant – Class 8
Composting Hall – Class 8
Recycling sheds – Class 8
Lucas Heights Conservation Area
Fences – Class 10b

Determination:

1) To ascertain the date upon which the consent becomes effective, refer to section 83 of the Act.
2) To ascertain the date upon which the consent is liable to lapse, refer to section 95 of the Act.
3) Section 97 of the Act confers on an applicant who is dissatisfied with the determination of a consent authority a right of appeal to the Land and Environment Court exercisable within 12 months after receipt of notice.

SCHEDULE 2

Conditions of Development Consent

Abbreviations and Interpretation

Approval from EPA	means approved in writing by the EPA or as specified as a condition of a licence
BCA	Building Code of Australia
CELC	Community Environment Liaison Committee
Council	Sutherland Shire Council
DA	development application
DLWC	Department of Land and Water Conservation
DLWC GTA	DLWC General Term of Approval
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979, as amended
EPA	Environment Protection Authority
EPA GTA	EPA General Term of Approval
EPA Licence	means a licence under the Protection of the Environment Operations Act 1997
Leachate	means any liquid released by, or water that has percolated through waste, and that contains dissolved and/or suspended liquids and/or solids and/or gases and includes old fill leachate and new fill infiltrate
LH1	Lucas Heights 1
LH1LC	Lucas Heights 1 Liaison Committee
LH1SC	Lucas Heights 1 Steering Committee
LHCA	Lucas Heights Conservation Area
LHEMTG	Lucas Heights Environmental Management Technical Group
LHWMC	Lucas Heights Waste Management Centre
New fill infiltrate	means any liquid that has come into contact with the waste that will be placed over the top of stages 2 and 5 at the LH1 site
NPWS	National Parks and Wildlife Service
Old fill leachate	means any liquid that has come into contact with the waste that was disposed of at the LH1 site prior to the commencement of this consent
PCA	Principal Certifying Authority
RTA	Roads and Traffic Authority
Subject Land	the land to which the DA and this consent applies
The Applicants	Waste Recycling and Processing Service of NSW and Sutherland Shire Council
The Department	Department of Urban Affairs and Planning
The Director-General	Director-General of the Department of Urban Affairs and Planning

VENM	Virgin Excavated Natural Material, as defined in the Protection of the Environment Operations Act 1997

INTEGRATED DEVELOPMENT

Integrated development is development (not being complying development) that, in order for it to be carried out, requires development consent and one or more of the approvals set out in the EP&A Act. The subject proposal is integrated development, as it requires development consent and the approval of the Environment Protection Authority (EPA) under the Protection of the Environment Operations Act 1997, a permit from the Department of Land and Water Conservation (DLWC) under Part 3A of the Rivers and Foreshores Improvement Act 1948, a licence from DLWC under Part 2 of the Water Act 1912 and a licence from DLWC under Part 5 of the Water Act 1912. The general terms of approval of both the EPA and DWLC therefore form part of this consent.

GENERAL

Adherence to Terms of DA and EIS

1. Development shall be carried out in accordance with:

   (a) DA No. 11-01-99;
   (b) the EIS prepared by National Environmental Consulting Services dated December1998; and
   (c) Amended DA and accompanying Assessment Report prepared by National Environmental Consulting Services dated 27 April 1999

   except as modified by the following conditions.

   In the event of an inconsistency between this consent and DA No. 11-01-99 (and accompanying EIS), this consent shall prevail.

Staged Development

2. In accordance with section 80(4) of the EP&A Act, this consent does not apply to new vehicle access points to the LHWMC site from New Illawarra Road ("South Entrance") and Heathcote Road ("West Entrance"). In accordance with section 80(5) of the EP&A Act, the South Entrance and West Entrance require a further development consent.

Compliance with Requirements of the Director-General and Prescribed Conditions

3. The Applicants shall comply with all reasonable requirements of the Director-General in respect of the implementation of any measures arising from reports submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.

4. The Applicants shall comply with all relevant conditions prescribed in Part 7 of the Environmental Planning and Assessment Regulation 1994, as required by Section 80A (11) of the Act.

Obligation to Prevent and Minimise Harm to the Environment

5. All practicable measures shall be taken to prevent and minimise harm to the environment as a result of the construction, operation, post closure and, where relevant, the decommissioning of the development. *(EPA GTA)*

Structural Adequacy

6. Detailed plans and specifications relating to the design and construction of all structural elements associated with the proposed development are to be submitted to the Principal Certifying Authority (PCA) prior to the commencement of construction works. Such plans and specifications shall be accompanied by certification provided by a practicing professional structural engineer or an accredited certifier certifying the structural adequacy of the proposed building design and compliance with the Building Code of Australia (BCA).

Verification of Construction

7. Upon completion of building works and prior to the issue of an occupation certificate/s, a certificate/s prepared by a suitably qualified person or a compliance certificate/s issued by an accredited certifier, is to be submitted to the PCA certifying that the following building components, where relevant, have been completed in accordance with approved plans and specifications:

(a) footings;
(b) concrete structures, including ground floor and any subsequent floors, and retaining walls and columns;
(c) framing and roof structure;
(d) fire protection coverings to building elements required to comply with the BCA; and
(e) mechanical ventilation.

The certificate/s shall demonstrate at what stage of construction inspections were undertaken.

Year 2000 Conformity

8. One month prior to the commencement of operation of any automated system, including embedded systems, used for operation, pollution control, monitoring and safety (including fire safety), the Applicants shall provide the Director-General with a report confirming that the system has been tested in accordance with the most recent edition of BSI/DISC PD2000-1 to confirm continuous time and date functionality of that system.

Commencement of operation shall not take place until the Director-General's receipt of that report.

Dispute Resolution

9. In the event that the Applicants, Council, a government authority other than the Department or the PCA cannot agree on the specification or requirements applicable under this consent, the matter shall be referred by either party to the Director-General or, if not resolved, to the Minister, whose determination of the disagreement shall be final and binding on the parties.

Deed of Agreement

10. The Applicants shall enter into a deed of agreement in relation to:
    (a) their respective responsibilities for different areas of the subject land; and
    (b) responsibilities and arrangements between them for implementing and complying with the conditions of this consent.

ENVIRONMENTAL MANAGEMENT

Environmental Services

11. The Applicants shall employ or contract suitably qualified environmental services throughout the duration of landfilling/construction activities at LH1, landfilling activities at LHWMC, and rehabilitation activities at the LHCA. The Applicants shall nominate an Environmental Management Representative/s (EMR) as the principal person/s responsible for overseeing environmental management of the project and supervision of environmental services. The EMR appointment shall be subject to the satisfaction of the Director-General. The EMR/s shall have the authority to stop work if an adverse impact on the environment has occurred or is likely to occur.

    The EMR/s shall:

    (a) be responsible for the preparation or certification of all environmental management plans and procedures;
    (b) be responsible for considering and advising on matters specified in the conditions of this consent and compliance with such matters;
    (c) oversee the receipt and response to complaints about the environmental performance of the project;
    (d) facilitate an induction and training program for all persons involved with construction, landfilling and rehabilitation activities at all sites; and
    (e) be present on-site during any critical construction or operational activities as defined in the relevant Environmental Management Plan (EMP).

Committees

12. Prior to the commencement of landfilling/construction activities at LH1, or at such other time as agreed to between the Applicants and the Director-General, the Applicants shall establish the Lucas Heights 1 Steering Committee (LH1SC) and

Lucas Heights 1 Liaison Committee (LH1LC) in accordance with Section 5.9 of the EIS.

13. Prior to the commencement landfilling/construction activities at LH1, landfilling activities at LHWMC, and rehabilitation activities at the LHCA, the Applicants shall establish the Lucas Heights Environmental Management Technical Group (LHEMTG) in accordance with the principles of Section 5.9 of the EIS.

(Note: the EPA's role will be advisory only).

14. A Community Environment Liaison Committee (CELC) shall be established for LH1 and LHWMC, comprising representatives of the community, ANSTO (for LHWMC only) and the Applicants. The CELC shall meet on a quarterly basis. The purpose of the meetings will be to discuss matters of concern associated with the environmental impact of the development and to promote mutually satisfactory solutions. *(EPA GTA)*

(Note: the requirements of this condition may be fulfilled by the existing Community Monitoring Committee).

Environmental Management Plans

15. Within 3 (three) months of the date of this consent, or within such period as otherwise agreed to by the Director-General, the Applicants shall amend the draft EMPs for the LH1, LHWMC and LHCA sites such that the EMPs reflect and comply with the conditions of this consent, except as provided by Condition 17.

The amended EMPs shall be prepared to the satisfaction of the Director-General in consultation with the EPA, DLWC, LH1SC and LHEMTG.

Furthermore, the Applicants shall, in consultation with the Director-General, the EPA, DLWC, LH1SC and LHEMTG update the amended EMPs from time to time in order to ensure continuing compliance with the conditions of this consent and all relevant approvals and licenses.

16. The amended EMPs for LH1 and LHWMC shall be submitted to the EPA when relevant licence applications are made. *(EPA GTA)*

17. Within 12 (twelve) months of the date of this consent, or within such period as otherwise agreed to by the Director-General, the Applicants shall prepare an EMP for the operation of the sporting and recreation facilities at LH1 that reflects and complies with the conditions of this consent.

(Note: for the purposes of this condition, the Applicants may update section 7 of the draft LH1 EMP.)

ENVIRONMENTAL MONITORING

18. The Applicants shall undertake monitoring of surface water, leachate, landfill gas, groundwater, dust, noise and any other environmental performance indicators in accordance with the amended EMPs and the requirements of the relevant EPA licences. *(EPA GTA)*

19. The LHCA and LHWMC amended EMPs shall provide a program to identify the source and extent of contamination detected in the bores that are located near to the Sydney International Clay Target Area, former night soil areas, Harrington's Quarry, Industrial Waste Centre, and Little Forest Burial Ground sites. *(EPA GTA)*

20. The results of any monitoring required at the LH1 site and LHWMC shall be recorded and retained as set out in the EPA licences. *(EPA GTA)*

21. Water quality monitoring results shall be forwarded to DLWC within one month of sample collection. In addition, an annual interpretation and report on groundwater monitoring in the bore and any associated bores, shall be prepared by an independent/consultant and forwarded to DLWC. *(DLWC GTA)*

CONDITIONS COMPLIANCE REPORTS

LH1

22. The Applicants shall submit to the Director-General Conditions Compliance Reports as follows:

(a) At least one month prior to the commencement of construction works for the purposes of landfilling, or within such period as otherwise agreed to by the Director-General;

(b) At least one month prior to the commencement of each stage of works as indicated in Section 5.2 of the EIS, or within such period as otherwise agreed to by the Director-General.

LHWMC

23. The Applicants shall submit to the Director-General and Council Conditions Compliance Reports as follows:

(a) In the case of the expansion of landfill operations and site rehabilitation works, at least one month prior to the commencement of each stage of works as indicated in Section 6.2 of the EIS, or within such period as otherwise agreed to by the Director-General;

(b) In the case of the biowaste facility and GWPCF, at least one month prior to the commencement of construction works and at least one month prior to the commencement of operation of either facility, or within such periods as otherwise agreed to by the Director-General.

INDEPENDENT ENVIRONMENTAL AUDITS

24. Every 3 (three) years following the date of this consent, or at periods otherwise agreed to by the Director-General, and until such time as agreed to by the Director-General, the Applicants shall arrange for an independent audit of the environmental performance of the development at the LH1, LHWMC and LHCA. The audits shall:

(a) be conducted pursuant to ISO 14010 – Guidelines and General Principles for Environmental Auditing, ISO 14011 – Procedures for Environmental Monitoring and any specifications of the Director-General;
(b) be conducted by a suitably qualified independent person approved by the Director-General;
(c) assess compliance with the requirements of this consent;
(d) assess the implementation of the EMPs and review the effectiveness of the environmental management of the proposal; and
(e) be carried out at the Applicants' expense.

The audits shall be submitted to the Director-General, DLWC, EPA, Council, the LHEMTG, and the LH1, LHCA and LHWMC CELC.

The Applicants shall comply with all reasonable requirements of the Director-General in respect of any measures arising from or recommended by the audits and within such time as agreed to be the Director-General.

HOURS OF CONSTRUCTION AND LANDFILL OPERATION

LH1

25. All construction and landfilling operations at LH1 shall be restricted to between the hours of 6:00 am to 4:00 pm Monday to Friday and 8:00 am to 5:00 pm Saturdays and Sundays. Heavy earthmoving and landfilling equipment shall only operate between 7:00 am and 4:00 pm Monday to Friday and 8:00 am and 5:00 pm Saturdays and Sundays, except in emergency situations.

LHWMC

26. All construction and landfilling operations at LHWMC shall be restricted to between the hours of 6.00am to 4.00pm Monday to Friday and 8.00 am to 5.00 pm Saturday and Sunday. Heavy earthmoving and landfilling equipment shall only operate between 7:00 am and 4:00 pm Monday to Friday and 8:00 am and 5:00 pm Saturdays and Sundays, except in emergency situations.

WASTE VOLUMES AND TYPES

LH1

27. No more than 1.3 million tonnes of waste as described in Section 5.3.2 of the EIS shall be landfilled at LH1.

No waste shall be delivered to or landfilled at the site after 31 December 2009.

28. A weighbridge shall be used in accordance with Clause 25 of the Protection of the Environment Operations (Waste) Regulation 1996. *(EPA GTA)*

29. Only the waste types identified in Section 5.3.2 of the EIS and VENM and which is diverted from the LHWMC and Waste Service NSW transfer stations shall be disposed of at LH1. Hazardous waste or industrial waste shall not be disposed of the site. *(EPA GTA)*

30. Except as expressly permitted in the EPA license, waste shall not be:

(a) received at the site for storage, treatment, processing or reprocessing; or
(b) disposed of at the site. *(EPA GTA)*

31. A record shall be maintained of all events involving the removal of any waste that was brought to the site and which is not permitted to be disposed of at the site. *(EPA GTA)*

32. Any hazardous waste or industrial waste generated on or received at the site shall be stored and disposed of in a manner to minimise its impact on the environment including appropriate segregation for storage and separate disposal by a waste transporter licensed by the EPA. *(EPA GTA)*

33. Material accepted as VENM shall be certified as such by the Applicants. Such certification shall be provided to Council prior to its placement at the LH1 site.

34. The Applicants shall provide the LHEMTG and CELC with quarterly reports outlining fill volumes to date and an assessment of the compliance of works with the staging plan outlined in Section 5.2 of the EIS.

LHWMC

35. (a) No more than 630,000 tonnes of waste per annum shall be delivered to the LHWMC after 31 December 2000. This includes waste that is recovered for use as on-site construction materials.

(b) Of the maximum 630,000 tonnes of waste per annum delivered to the LHWMC after 31 December 2000:

- no more than 575,000 tonnes per annum shall be landfilled at the LHWMC; and
- subject to Conditions 37 and 38, no more than 55,000 tonnes per annum shall be treated at the recycling and resource recovery facilities at the LHWMC site.

36. Waste delivered to the LHWMC shall comprise waste generally in accordance with Table 6.2 of the EIS. After 31 December 2000, a minimum of 80% of Municipal waste received at the site shall be sourced from the Southern Sydney Waste Planning and Management Board's region.

37. If the GWPCF does not proceed, the biowaste facility can be expanded to receive up to 55,000 tonnes of waste but only if the Applicants obtain EPA approval which demonstrates that the environmental impacts of the expanded biowaste facility are not greater than those avoided by the GWPCF not proceeding. *(EPA GTA)*

38. If the biowaste facility does not proceed, the GWPCF can be expanded to receive up to 55,000 tonnes of waste but only if the Applicants obtain EPA approval which demonstrates that the environmental impacts of the expanded GWPCF are not greater than those avoided by the biowaste facility not proceeding. *(EPA GTA)*

39. The expansion of landfill capacity at the LHWMC shall not exceed 8.225 million tonnes beyond the remaining capacity of 8 million tonnes under the existing consent calculated as at 1 July 1997. No landfilling shall occur at the LHWMC after 31 December 2024.

40. Excavation and filling in Stage 5 shall be in accordance with Section 6.4.3 of the EIS. Prior to the excavation of Phases 2 and 3 of Stage 5, the Applicants shall undertake a review of fill volumes, compaction rates and remaining capacity in order to ensure that the Stage 5 excavation area does not exceed the remaining waste capacity at then current compaction rates. This review shall be submitted to the Director-General, EPA, and the LHEMTG.

41. A weighbridge shall be used in accordance with Clause 25 of the Protection of the Environment Operations (Waste) Regulation 1996. *(EPA GTA)*

42. The Applicants shall provide evidence at the time of seeking to amend the EPA licence (No. 4910) that sufficient cover material is available for covering waste for all stages of the landfill. *(EPA GTA)*

43. The capping of the waste at the site shall meet relevant environmental goals identified in Benchmark Technique no. 28 in the EPAs Environmental Guidelines: Solid Waste Landfills. *(EPA GTA)*

44. Except as expressly permitted in the EPA licence, waste shall not be:

(a) received at the site for storage, treatment, processing or reprocessing; or
(b) disposed of at the site. *(EPA GTA)*

45. Only the following types of waste as defined by the Protection of the Environment Operations Act 1997 and the Waste Guidelines may be disposed of at the premises:

- Inert Waste; and
- Solid Waste.

Waste Guidelines means the EPA's *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (or as amended). *(EPA GTA)*

46. No types of waste other than those permitted by the EPA licence may be disposed of at the site, unless approved of by the EPA. *(EPA GTA)*

47. Hazardous waste or industrial waste shall not be disposed of at the site. *(EPA GTA)*

48. Any hazardous waste or industrial waste generated on or received at the site shall be stored and disposed of in a manner to minimise its impact on the environment including appropriate segregation for storage and separate disposal by a waste transporter licensed by the EPA. *(EPA GTA)*

49. Tyres shall not be disposed of at the landfill unless:

(a) the tyre has a diameter of 1.2 metres or more; or
(b) the tyre has been shredded into pieces which measure no more than 250mm in any direction or had its walls removed; or
(c) the tyre was delivered to the facility as part of load containing no more than 5 tyres having a diameter less than 1.2 metres; or
(d) as otherwise approved by the EPA. *(EPA GTA)*

50. A record shall be maintained of all events involving the removal of any waste that was brought to the site and which is not permitted to be disposed of at the site. *(EPA GTA)*

51. The Applicants shall submit a report to and obtain approval from the EPA prior to the disposal of waste into stage 5. The report must address the following matters:

- the proposed locations and purpose of the new bores which are under consideration and the rationale for the selection of their locations;
- the leachate collection system will need to be designed to cater for the increased volumes of leachate that would require removal to ensure minimal head of leachate on the liner, if there is a possibility that leachate could flow from the previously filled stages into stage 5;
- details of the rate of intrusion and quality of groundwater (if any) into stage 5 once fully excavated;
- information to demonstrate that upheaval has stabilised, prior to the construction of the liner;
- details quality assurance system to be employed for the installation of the liner and the initial layers of waste to ensure that the liner achieves its design performance as nominated in the EIS; and
- details of the method of sealing the monitoring bores which exist in stage 5. *(EPA GTA)*

Biowaste Facility

52. The biowaste facility shall only reprocess the following wastes:

- non-quarantine food wastes
- paper waste

- vegetation wastes
- untreated wood wastes
- manures

unless otherwise approved by the EPA. *(EPA GTA)*

53. The products produced from the biowaste facility shall comply with the Australian Standard AS 4454 - Composts, Soil Conditioners and Mulches or an alternative standard agreed to by the EPA or be disposed of as waste. *(EPA GTA)*

54. Waste processing at the site shall be undertaken within the enclosed parts of the biowaste facility that have all odour and leachate collection and treatment systems operating unless it meets a protocol developed by the Applicants and approved by the EPA as being suitable for external curing. *(EPA GTA)*

55. The environmental controls at the biowaste facility (including odour and leachate collection and treatment) shall be operational at all times the biowaste facility is processing waste. These controls shall include backup supplies of essential services and continuous monitoring of the operation. *(EPA GTA)*

GWPCF

56. The GWPCF shall only receive those wastes nominated in the EIS unless otherwise approved by the EPA. *(EPA GTA)*

57. The products produced from the GWPCF shall comply with the Australian Standard AS 4454 - Composts, Soil Conditioners and Mulches or an alternative standard agreed to by the EPA or be disposed of as waste. *(EPA GTA)*

WATER

Pollution of Water

58. Except as may be expressly provided in the EPA licence, the Applicants shall comply with section 120 of the Protection of the Environment Operations Act 1997 prohibiting the pollution of waters at LH1 and LHWMC. *(EPA GTA)*

(Notes:

The EPA may require energy dissipation to be provided for the surface water that is to be redirected around the LHWMC site.

The EPA may require separate storage capacity to be provided for surface water that is to be re-used on the site.)

Operation

59. In order to avoid tracking of materials on roads, a wheel washer to remove materials from wheels and underneath the bodies of vehicles, shall be designed and installed to the approval of the EPA. All vehicles leaving the LH1 and LHWMC sites likely to track materials on roads shall pass through the wheel washer. *(EPA GTA)*

60. Washing and servicing of equipment shall be conducted in a washbay/workbay which is bunded to exclude rainwater. All waste from washdown/service area shall be discharged to sewer under a Trade Waste Agreement with Sydney Water or treated for disposal or reuse.

Groundwater and Leachate Management

61. Accumulated sludge and sediment formed during leachate storage or treatment at LH1 and LHWMC shall be disposed of to a special waste area at LHWMC.

(Note: a "special waste area" is an area separate from the active tipping face of the landfill).

LH1

62. Groundwater, new fill infiltrate and old fill leachate shall be managed at the LH1 site in accordance with the amended EMP and the requirements of the EPA licence. *(EPA GTA)*

63. The leachate management system at the LH1 site shall be designed and operated to prevent leachate from polluting groundwater, unless otherwise permitted by the EPA licence.

The monitoring program for groundwater quality in the amended EMP shall additionally address the following:

- the provision and installation of additional groundwater bores to monitor and intercept any leachate released from stages 2 and 5;
- the depth at which groundwater will be able to flow into the monitoring bores;
- provision of a scale diagram identifying the boreholes, including the perimeter dimensions of stages 2 and 5; and
- provision of the methodology on how the monitoring results will be interpreted by the applicants in order to assess the performance of the LH1 site in relation to the above specified environmental outcome.

A groundwater contamination remediation action plan shall be prepared and incorporated into the amended EMP for the LH1 site. *(EPA GTA)*

64. Water drawn from the monitoring bores shall be tested prior to discharge. Discharge to the irrigation system will only be allowed if it can be demonstrated that irrigation water will still comply with adopted guidelines on raw water in the EIS.

Where levels of contaminants are unacceptable, water shall be discharged to the sewer or leachate system.

65. The Applicants shall undertake Leachate Irrigation Trials to determine if old fill leachate can be used for irrigation. To avoid potential impacts on high value playing surfaces, the trials shall take place only on areas where finished playing surfaces have not been completed.

66. A minimum cover thickness of 600mm shall separate putrescible waste from overtopping waste at LH1.

LHWMC

67. Leachate shall not pollute groundwater at the LHWMC, unless otherwise permitted by the EPA licence.

A groundwater contamination remediation action plan shall be prepared and incorporated into the amended EMP for the LHWMC site.

Leachate and groundwater at the LHWMC shall be managed in accordance with the amended EMP and the requirements of the EPA licence. *(EPA GTA)*

68. Leachate shall not be reinjected into the waste at LHWMC in a manner that exceeds the capacity of the leachate management system. *(EPA GTA)*

69. The volume of leachate that is be generated at LHWMC and the volume of leachate collected shall be modelled. The modelling methodology and the results shall be provided to the EPA within 1 (one) year of commencement of this consent. *(EPA GTA)*

70. Once the excavation in any phase of Stage 5 is complete, the excavation shall be left for a minimum of 3 months prior to commencement of placement of the base liner to allow for stress relief of the underlying strata.

71. The base liner installed in Stage 5 shall extend across the entire base of the excavation. Where significant lateral groundwater flows are encountered, the base liner shall be extended up the walls of the excavation in order to intercept such flows, unless otherwise approved by the EPA.

Surface Water Management

LH1

72. Any liquid emitted from LH1 shall not result in receiving water exceeding criteria specified in the *"Australian Water Quality Guidelines for Fresh and Marine Waters"* ANZECC 1992, unless otherwise permitted by the EPA licence.

Emissions to surface waters shall not compromise the ANZECC water quality objectives for the receiving water. Where receiving waters do not meet the desired

water quality objectives, the emissions must not cause any further degradation. Stormwater overflows may occur where it can be demonstrated that baseline ambient (low) objectives will not be compromised in the long term and these emissions comply with the conditions of the EPA licence.

The monitoring program for surface water quality in the amended EMP shall additionally address the following:

- monitoring of the quantity of surface water discharged from the premises;
- monitoring of the quantity of rainfall on a daily basis;
- monitoring the quality of surface water at the commencement of any discharge and during any discharge from the premises;
- monitoring the quantity of surface water flowing onto the LH1 site from all sources including from the drain under New Illawarra Road;
- monitoring for the list of chemical/physical parameters listed in Table 2.1 of the ANZECC guideline;
- provision of a scale diagram that identifies the discharge points from LH1 into Lucas Heights 1 Creek and the monitoring locations; and
- provision of the methodology on how the monitoring results will be interpreted by the applicants in order to assess the performance of the LH1 site in relation to the above specified environmental outcome. *(EPA GTA)*

73. The location and design of the water supply storages on LH1 Creek shall be in accordance with details provided in the EIS.

74. Any vegetation or other material removed from the area of operations shall be disposed of to an appropriate site where the debris cannot be swept back into LH1 Creek during a flood.

75. Three sets of detailed plans and drawings including long sections and cross sections of the water supply storages on LH1 Creek and any related works shall be provided to and approved by DLWC prior to the commencement of any works that are subject to this condition.

76. A leachate irrigation trial shall be undertaken at the LH1 site and its results applied to the management of irrigation liquids, surface water, new fill infiltrate and old fill leachate to ensure that the requirements of the amended EMP are achieved and the EPA licence is complied with.

77. Surface water at the LH1 site shall be managed in accordance with the amended EMP and the requirements of the EPA licence. *(EPA GTA)*

LHWMC

78. The design, construction, operation, monitoring and rehabilitation of surface water control works at the LHWMC shall be in accordance with the amended EMP and the requirements of the EPA licence. *(EPA GTA)*

(Note: The EPA may require energy dissipation to be provided for the surface water that is to be redirected around the site).

79. The "Surface Water Management Plan" for the GWPCF shall be submitted to and approved by the EPA before construction of GWPCF. *(EPA GTA)*

80. The biowaste facility shall operate as far as practicable on a total water reuse strategy as outlined in the EIS. If water is to be discharged from the facility it shall be only within the site in accordance with the EPA licence or to sewer in accordance with the dischage limit to sewer. *(EPA GTA)*

81. In addition to annual de-silting of sediment ponds as outlined in the EIS, de-silting shall be carried out when 30% of the sediment basin capacity has been filled with silt.

82. Scour protection, lining or vegetating of drains and waterways shall be undertaken when flow velocities exceed 0.5 m/s.

Water Act 1912 - Part 5 License for the Construction of Groundwater Bores (DLWC GTAs)

General

83. In accordance with relevant occupational health and safety requirements, the Applicants shall allow an authorised DLWC officer or any person authorised by DLWC, full and free access to the development works, either during or after construction, for the purpose of carrying out inspection or tests of the works and its fittings. The Applicants shall carry out any work or alterations deemed necessary by DLWC for the protection and proper maintenance of the works, or the control of the water extracted to prevent wastage and for the protection of the quality and prevention from pollution or contamination of sub-surface water.

84. If a bore works and associated works is abandoned at any time the Applicants shall notify DLWC that the work has been abandoned and seal off the aquifer by:

- Backfilling the work to ground level with clay or cement after withdrawing the casing (lining); or
- Such methods as agreed to or directed by DLWC.

85. If the bore authorised by the Water Act - Part 5 license is lined with steel or plastic casing the inside diameter of that casing shall not exceed 220 mm.

86. Water shall not be pumped from the bore authorised by this license for any purpose other than expressly provided under a relevant licence under the Protection of the Environment Operations Act 1997.

Conditions Specific to the DA

87. If during the construction of the work, saline or polluted water is encountered above the producing aquifer, such water shall be sealed off by:

- Inserting the appropriate length(s) of casing to a depth sufficient to exclude the saline or polluted water from the work; and
- Cementing between the casing(s) and the walls of the bore hole from the bottom of the casing to ground level.

Any departure from these procedures shall be approved by DLWC before undertaking the work.

88. The Applicants shall notify DLWC if a flowing supply of water is obtained. The bore shall then be lined with casing and cemented and a suitable closing gear shall be attached to the borehead as specified by DLWC.

89. The Applicants shall within two months of the date of completion of the bore authorised by the License:

- Backfill it with clay or cement to ground level, after withdrawing any casing (lining), or
- Render it ineffective by any other means acceptable to DLWC.

Formal Application Issues

90. Upon formal Part 5 License application, the Applicants shall within two months of completion or after the issue of the license if the work is existing, furnish to DLWC:

- Details of the bore and associated works set out on the appropriate form.
- A plan showing accurately the location of the bore and associated works, in relation to portion and property boundaries.
- Details of any water analysis and/or pumping tests.
- Other relevant information required by DLWC.

Water Act 1912 - Part 2 License (Surface Water) (DLWC GTAs)

(Note: A license under Part 2 of the Water Act (1912) is required to construct the three proposed dams and diversion works (pumps) on LH1 Creek for irrigation and recreation purposes and Sedimentation Dam 5 on Mill Creek).

General

91. In accordance with relevant occupational health and safety requirements, the Applicants shall allow DLWC, or any person authorised by it, full and free access to the works, either during or after construction, for the purpose of carrying out inspection or test of the works and its fittings and shall carry out any work or alterations deemed necessary by DLWC for the protection or proper maintenance of the works, or the control of the water extracted and for the protection of the quality and the prevention from pollution or contamination of sub-surface water.

92. The Applicants shall notify DLWC if a work is abandoned at any time.

93. Works authorised by this license shall not be used for any other purpose or any other location other than that specified by the license.

Conditions Specific to the DA

94. The holder of the license shall, within three months of being called upon by DLWC to do so, install to the satisfaction of DLWC in respect of location, form, type and construction, an appliance or appliances or such other class of meter, or means as may be approved by DLWC, for the measurement of the quantity of water diverted or taken by means of the licensed work. The holder of the licence shall continuously maintain such appliance or appliances in good working order and condition, and shall, after the installation of such appliance or appliances, record the measurements of all water diverted or taken by means of the licensed work and supply particulars of such measurement to DLWC at such intervals as shall be directed by DLWC. Whenever called upon to do so a test certificate furnished either by the manufacturer concerned or by some person or authority duly qualified shall be supplied by the holder of the license as to the accuracy of the appliance or appliances installed.

95. The Applicants shall not allow any tailwater drainage to discharge into or onto:

- any adjoining public or crown road;
- any other persons' land;
- any adjoining Crown land;
- any river, creek or watercourse;
- any groundwater aquifer;
- any native vegetation as described under the Native Vegetation Conservation Act 1997; or
- any wetlands of environmental significance.

96. Where practicable, a vegetated buffer zone of not less than 20 metres shall be maintained between the irrigated area and the high bank of the watercourse located within the water source.

97. Where any internal combustion powered work is used for the purpose of diverting water authorised under this license, the power unit and any associated fuel storage shall be located outside any watercourse or drainage depression and a bunding wall of hay bales or other approved material shall be installed around the pumping plant to avoid contamination of any river or lake through spills or leaks of oils, fuels or greases.

98. The pumping and ancillary equipment and pump sites shall be, at all times, properly secured and/or sealed so as to prevent any leakage of petroleum based products and/or noxious material from entering any river or lake.

99. The existing profile of the channel and bank of any watercourse or drainage depression shall not be disturbed any more than is necessary in order to site and maintain the authorised diversion work. Any area that is disturbed when carrying out such work shall be stabilised and maintained by grass cover, stone pitching or any other approved material as directed and to DLWC's satisfaction so as to prevent the occurrence of erosion.

100. Any drainage channels or cross banks associated with the authorised diversion works or access roads, to or from that work, shall have installed and maintained a bunding wall of hay bales, or other relevant silt trapping, to prevent siltation due to the authorised diversion work or access roads from reaching any river or lake.

101. The natural riverbank or artificial levee shall be altered as little as practicable. The delivery pipe shall, if practicable, be laid over the top of the bank. If it is necessary to lay the pipe in a trench, the length of pipe through the bank or levee shall be left in position and the trench back-filled with well compacted soil.

102. When the use of a pipe through the bank is to be discontinued, the pipe shall be removed or filled with concrete. If the pipe is temporarily out of use, it shall be plugged off at the ends.

103. The Applicants shall construct through the dam a pipe of appropriate diameter, as described in the EIS, fitted with a stop valve or other control device to the satisfaction of DLWC. The level of the invert of the said pipe shall be fixed and approved by DLWC or, alternatively, the Applicants shall provide a suitable pipe syphon or other approved device for passing flows through the storage of the dam.

104. Subject to Condition 103, when a flow is entering the storage of a dam the said pipe shall be so operated as to maintain a base flow in the watercourse downstream of the said dam equivalent to the flow entering the storage of the dam for the time being or the capacity of the said pipe, whichever is the lesser. This pipe will be for the purpose of maintaining baseflows.

105. The location and level of the crest of the bywash of the dam shall be fixed and approved by DLWC.

(Note: Conditions 103, 104, 105 apply to each individual dam).

106. The work shall be constructed and maintained in a safe and proper manner that will minimise the possibility of damage being occasioned by it, or resulting from it to any public or private interest.

Notes to Conditions 91 to 106:

DLWC may revoke, suspend or modify a license on being satisfied that:

(a) the Applicants have conserved, diverted, taken or used any quantity of water in excess of that authorised by the license or has irrigated an area in excess of that which he/she is entitled by the license to irrigate, or
(b) the Applicants had failed to observe and perform any limitation or condition of the license, or
(c) the water taken or diverted by the Applicants is not being beneficially used, or is being wasted, or
(d) beneficial use is not being made of the licensed work.

In the event of an actual or threatened shortage of water, or if there are any circumstances which, in its opinion, render it necessary or expedient to do so, DLWC may suspend or modify a license or reduce the quantity of water authorised to be taken under the license.

DLWC may suspend a license on being satisfied that the Applicants have failed to comply with the terms of any notice given by DLWC modifying the license or reducing the quantity of water authorised to be taken by the license.

Works are audited from time to time and license conditions reviewed on renewal. Surface water licenses are renewable every five years.

Rivers And Foreshores Improvement Act 1948 - Part 3a Permit (DLWC GTAs)

(Note: A permit issued under Part 3A of the Rivers and Foreshores Improvement Act 1948 (R&FI Act) is required to carry out excavations, construction of a sediment basin, stream re-alignment, stream diversion and riparian zone restoration in and within 40 metres of the top of the bank of Mill Creek at Lucas Heights, being works associated with the Lucas Heights Waste Management facility. A part 3A Permit is not required for works at the LH1 site).

<u>General</u>

107. The work to which these general terms of approval apply is not to commence until such time as a formal permit under Part 3A of the Rivers and Foreshores Improvement Act 1948 has been issued by DLWC.

108. If, in the opinion of an authorised DLWC officer, any work is being carried out in such a manner that it may damage or detrimentally affect the stream, or damage or interfere in any way with any work, the operation on that section of the stream shall cease immediately upon oral or written direction of such officer.

109. Survey plans showing works as executed shall be forwarded to DLWC upon request.

110. If the permit conditions have been breached, the permit holder shall restore the site to the satisfaction of DLWC. If the necessary works are not completed then the permit holder shall pay a fee prescribed by DLWC for the initial breach inspection and all subsequent breach inspections.

111. Operations shall be conducted in such a manner as not to cause damage or increase the erosion of adjacent stream banks. The permit holder shall carry out any instructions given by DLWC with a view to preventing damage to the banks.

112. Any vegetation or other material removed from the area of operations shall be disposed of to an appropriate site where the debris cannot be swept back into the river during a flood.

113. When the works are to cease, DLWC is to be notified 1 month in advance of the cessation of the operation.

<u>Conditions Specific to LHWMC site</u>

114. Work is to be carried out in accordance with drawings and any "plans" required by these conditions, and approved by DLWC and which will accompany the Part 3A Permit.

115. A "Mill Creek Stream Rehabilitation and Stabilisation and Vegetation Management Plan" for the length of the creek on the site shall be prepared by a suitably qualified person. The Plan shall be prepared to the satisfaction of DLWC and is to be completed within three months of the issue date of the 3A permit. The Plan is to describe in detail the proposed rehabilitation and stabilisation of the stream, staging of works, methods to stabilise the bed and banks of the stream, vegetation to be retained, the establishment of riparian zones using local native vegetation, vegetation maintenance, monitoring and performance criteria. The restoration of the stream channel is to adopt an environmentally sympathetic engineering approach.

116. Any proposed stream diversion works around Sediment Basin No 5 may be addressed by the preparation of a special section of the "Mill Creek Stream Rehabilitation and Stabilisation and Vegetation Management Plan", and approved by DLWC, prior to completion of the final plan. No stream diversion works are to be commenced until DLWC approval has been obtained.

117. A Soil and Water Management Plan for the works is to be prepared by a suitably qualified person, to the satisfaction of the Director-General, Sutherland Shire

Council and DLWC, and approved by DLWC, prior to the issue of the Part 3A Permit. The Plan is to cover all works in and near the stream, staging and maintenance requirements. The Plan is to meet the requirements outlined in the NSW Department of Housing's publication *Managing Urban Stormwater: Soils and Construction (1998)*. The Plan is also to meet EPA licence requirements.

118. Within three months of the issue date of the 3A permit, a bank guarantee from any bank licensed pursuant to the Banking Act 1959 (Cth) is to be provided in favour of DLWC, for an amount equal to the cost of restoring Mill Creek and its environs in accordance with the "Mill Creek Stream Restoration and Vegetation Management Plan", and subject to the approval of DLWC. The moneys will be held until such time as the restoration works and any specified maintenance period are complete. The sum held may be reduced on application to DLWC, subject to the satisfactory completion of stages of restoration. DLWC may at any time, and more than once and without notice to the Permit holder, demand all or part of the moneys available under the bank guarantee, if in its opinion, the Permit holder has failed at any time to meet the performance criteria set out in the Plan.

119. The precise location of Sediment Basin No 5 shall be in accordance with the DA and as agreed to by DLWC.

120. The design of any stream crossings is to be sensitive to the corridor functions (now and in the future) of Mill Creek, and bridges with piered approaches or structures with equivalent corridor functions are to form the basis for any crossing design.

121. Surface drainage outlets to Mill Creek are to be in accordance with the requirements of DLWC and designs are to be approved by DLWC prior to their construction.

Notes to Conditions 107 to 121:

DLWC advises that a Part 3A Permit, subject to conditions, will be issued for the proposed works upon application, and upon payment of the appropriate fee.

Permits are generally granted for a period of 12 months from the date of formal approval and renewable on an annual basis. Any application for renewal shall be lodged three months prior to the expiry date.

Three sets of drawings, consisting of plans, long sections, cross sections and detail drawings of all engineering works associated with Mill Creek, to the satisfaction of DLWC, and all "Plans" referred to in the General Terms of Approval, are to be provided to DLWC to allow Part 3A Permit preparation.

The rehabilitation of the area to the satisfaction of DLWC is the responsibility of the permit holder and the owner or occupier of the land.

The permit holder and the owner or occupier of the land are responsible for any excavation or soil removal undertaken by any other person or company at this site.

Any Part 3A permit granted is not transferable to any other person or company and does not allow operations at any other site.

Any Part 3A permit granted does not give the holder the right to occupy any land without the consent of the owner(s), nor does it relieve the permit holder of any obligation which may exist to also obtain permission from local government and other authorities who may have some form of control over the site of the work and/or the activities you propose to undertake.

To issue a Part 3A Permit, DLWC will require full details on land ownership of all areas affected by the proposed works, and authorisation for the works by relevant land owners.

Should any of the above conditions not be complied with, DLWC may issue a Stop Order on 3A permit related operations at the site until the condition(s) has(have) been complied with.

AIR QUALITY

122. The LH1 and LHWMC sites shall not emit offensive odour, in accordance with the provisions of the Protection of the Environment Operations Act 1997 (EPA GTA).

123. The applicants shall take all practical steps to manage the LH1 and LHWMC operations so that there are no extra exceedences of the ambient air quality goals, specifically for total suspended particulates (TSP) of 90 micrograms per cubic metre (annual average) and the dust deposition goal of 4 gram per square metre per month (annual average). These goals apply when measured at any monitoring location specified in the Air Quality Management Plans.

The applicants shall prepare Air Quality Management Plans that contain strategies to manage the LH1 and LHWMC contributions to TSP and dust deposition. The air quality management plans shall contain, but not be limited to the following:

- Identification of all potential sources of dust deposition and TSP and detailed description of the remedial action to be taken or management systems to be employed to minimise emissions of these pollutants from all sources within the premise;
- The facility's ambient air quality management plan for dust deposition, TSP and meteorological data identifying the following:
- Description of monitoring methodologies and standards that will be adhered to;
- Identification of the locations where monitoring will be carried out; and
- Detailed description of the monitoring cycle and the duration of each monitoring cycle.

The Air Quality Management Plans shall be prepared and incorporated into the amended EMPs for the LH1 and LHWMC sites, or at another time agreed to by the Director-General.

The applicants shall implement the Air Quality Management Plans in accordance with the EPA licence. *(EPA GTA)*

124. Landfill gas from LH1 and LHWMC sites shall be managed in accordance with the amended EMPs and the requirements of the EPA licences. *(EPA GTA)*

NOISE

LH1 & LHWMC

125. Noise emissions from the operation of the plant or processes at the sites, when measured or computed at any point within one metre of any affected residential or other noise sensitive premises, shall not exceed an LA10,T sound pressure level of 50dB (A). LA10,T is to be measured for any time period between ten and fifteen minutes. *(EPA GTA)*

126. Noise from the licenced premises (sports club) at LH1 shall comply with the following requirements:

(a) The L_{A10} noise level emitted from the premises shall not exceed the background (L_{A90}) noise level in any Octave Band Frequency (31.5Hz to 8KHz inclusive) between the hours of 7:00 am to 12:00 am when assessed at the boundary of the nearest affected residence;
(b) The L_{A10} noise level emitted from the premises shall not exceed the background (L_{A90}) noise level in any Octave Band Frequency (31.5Hz to 8KHz inclusive) between the hours of 12:00 am to 7:00 am when assessed at the boundary of the nearest affected residence;
(c) Without limiting the generality of (b) above, noise emitted from the licenced premises shall not be audible within any habitable room in any residential premises between the hours of 12:00 am to 7:00 am.

127. Noise Monitoring shall be in accordance with the EPA licences. The parameters to be monitored and the frequency of monitoring will be established in the licence.

FLORA AND FAUNA

LH1

128. Within three months of the date of this consent, a LH1 Creek Vegetation Management Plan shall be prepared by a suitably qualified person, for the length of the creek on the LH1 site, to the satisfaction of DLWC. The plan shall describe the proposed staging of works affecting LH1 Creek, methods to stabilise the beds and banks of the stream, vegetation to be retained, the establishment of riparian zones using local native vegetation, vegetation maintenance, monitoring and performance criteria, and identification of implementation responsibilities.

(Note: Nothing in this condition precludes the above plan being prepared in conjunction with or as part of the finalised Landfill EMP required by Condition 16 of this consent).

129. A riparian zone, consisting of local native plant species (trees, shrubs and groundcover species), is to be established along both sides of LH1 Creek for the length of the disturbed area, and is to be addressed in the LH1 Creek Vegetation Management Plan. The riparian zone width is to extend to the top of the western embankment, between LH1 Creek and the proposed golf course, and at all other locations along LH1 Creek the riparian zone width is to be a minimum 20 metres (from the top of the bank) on both sides of the creek. Nothing in this condition precludes the retention of the vehicle existing access road.

130. No exotic plant species, other than sterile cover crops, are to be planted in or within 40 metres from the top of the bank of LH1 Creek.

LHWMC

131. The area of conservation value of the Shale/Sandstone Transition Forest shall include the full extent of the community and a 10 metre buffer adjacent to landfilling activity. The area of conservation value, including the 10 metre buffer, shall be fenced for the duration of the operation of the LHWMC.

132. A conservation plan for the Shale/Sandstone Transition Forest, as identified by the above survey, shall be prepared by a qualified bush regenerator/botanist. The objective of the plan shall be to ensure that the conservation values of the community are not adversely affected by development activity. Management issues to be addressed include control of any run-off or leachate discharge to the area, weed control, access control, fire management and regeneration of the buffer area. The Conservation Plan shall be prepared in accordance with the NPWS 's General Guidelines for Environmental Management Plans.

The Conservation Plan shall form part of the finalised LHCA EMP prepared in accordance with Condition 16 of this consent.

VISUAL IMPACTS

LH1

133. All outdoor lighting shall be designed in order to minimise impacts on the amenity of any nearby residence through illumination or light spillage. All outdoor lighting shall comply with Australian Standard AS4282: 1997 *Control of the Obtrusive Effects of Outdoor Lighting.*

134. In order to minimise disturbance to nearby residential areas, the Applicants shall implement an appropriate night time curfew/s on floodlighting of sporting fields and recreational facilities. The curfew/s shall be addressed in the LH1 Plan of Management prepared under Part 5 of the Crown Lands Act 1989.

135. Landscaping shall be undertaken in accordance with Section 3.1 and Appendix B of Volume 1 of the DA Report and all relevant drawings in Volume 2 of the DA Report. In addition to those species listed in Appendix B of Volume 1 of the DA Report, landscaping shall incorporate planting of *Acacia rubida, Darwinia dimunuta, and Grevillea diffusa,* as appropriate.

LHWMC

136. Landscaping shall be undertaken in accordance with Section 6.2 of Volume 1 and Appendix F of the DA Report and all relevant drawings in Volume 2 of the DA Report. In addition to those species listed in Appendix F of Volume 1 of the DA Report, landscaping shall incorporate planting of *Darwinia diminuta,* as appropriate.

137. A detailed landscape plan shall be submitted to the satisfaction of Sutherland Shire Council prior to commencement of construction of the GWPCF. The Plan shall be generally in accordance with the approved Master Plan.

Built structures – LH1, LHWMC and LHCA

138. The Applicants shall ensure that the external colour and texture of all structures shall, where practical, blend into the natural surroundings of the locality.

HERITAGE AND ARCHEOLOGY

Aboriginal Heritage

139. Management strategies shall be prepared by a suitably qualified archaeologist in consultation with the Gandangara Local Aboriginal Land Council (GLALC) for Aboriginal sites that are located within or are less than 100 m of the subject land. The draft EMPs for LH1, LHWMC and LHCA shall be amended to incorporate these measures.

140. In the event that any Aboriginal artefacts are identified on the subject land during the carrying out of works, the Applicants shall cease work immediately in the vicinity of the artefact and contact the NPWS and the GLALC to arrange for the protection of the artefacts.

Non-Aboriginal Heritage

141. In the event that any items potentially of non-Aboriginal heritage significance are identified on the subject land during the carrying out of works, the Applicants shall arrange for a suitably qualified archaeologist to inspect the item/s, determine the level of significance of the item/s and advise on appropriate management measures.

TRAFFIC AND TRANSPORT

142. The existing vehicle access point to the Jenko Pony Club from New Illawarra Road shall be closed to general traffic by means of a gate or other appropriate measures and shall be retained for use in emergency situations only.

143. The Applicants shall fund and undertake to the satisfaction of the RTA upgrading of the intersection of Recreation Drive and New Illawarra Road in order to ensure adequate intersection performance and safety. Upgrading works shall include the provision of traffic signals, a single right turn lane for south-bound traffic on New Illawarra Road, a left turn deceleration lane for north-bound traffic on New Illawarra Road and any other appropriate measures agreed to by both the RTA and the Applicants. These works shall be undertaken:

- 3 years after the date of this consent, or
- when peak vehicle generation from the site reaches 600 vehicles per hour, or
- if a significant accident problem, as identified by the Roads and Traffic Authority (RTA), arises at the intersection,

whichever occurs first.

HAZARDS AND SAFETY

LH1

Pre-construction

144. At least one month prior to the commencement of construction (except for construction of preliminary works that are outside the scope of the hazard studies) of the proposed development at LH1, or within such further period as the Director-General or her nominee may agree, the Applicants shall prepare and submit for the approval of the Director-General a Fire Safety Study for the proposed Gas Management System. This study shall cover all aspects detailed in the Department's Hazardous Industry Planning Advisory Paper No. 2, *Fire Safety Study Guidelines*. The study shall also be submitted for the approval of the New South Wales Fire Brigades. The study shall take into account the New South Wales Government *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*.

Pre-operation

145. At least two months prior to the commencement of operation of the proposed development at LH1, or within such further period as the Director-General may agree, the Applicants shall prepare and submit for the approval of the Director-General a comprehensive Emergency Plan and detailed emergency procedures for the proposed Gas Management System. The plan should include detailed procedures for the safety of people in areas outside the development. The plan should be in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 1, Industry Emergency Planning Guidelines.

LHWMC

Pre-construction

146. At least one month prior to the commencement of construction (except for construction of preliminary works that are outside the scope of the hazard studies) of the proposed development at LHWMC, or within such further period as the Director-General or her nominee may agree, the Applicants shall prepare and submit for the approval of the Director-General the following studies:

(a) A Fire Safety Study for the proposed biowaste facility, Stormwater Pre-treatment Plant and Gas Management System at LHWMC. This study shall cover all aspects detailed in the Department's Hazardous Industry Planning Advisory Paper No. 2, *Fire Safety Study Guidelines*. The study shall also be submitted for the approval of the New South Wales Fire Brigades. The study shall take into account the New South Wales Government *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*.

(b) A Hazard and Operability Study (HAZOP) for the proposed biowaste facility and Stormwater Pre-treatment Plant at LHWMC, chaired by an independent qualified person approved by the Director-General. The study should be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 8, *HAZOP Guidelines*.

Pre-operation

147. At least two months prior to the commencement of operation of the proposed development at LHWMC, or within such further period as the Director-General may agree, the Applicants shall prepare and submit for the approval of the Director-General a comprehensive Emergency Plan and detailed emergency procedures for the proposed biowaste facility, Stormwater Pre-Treatment Plant And Gas Management System. The plan should include detailed procedures for the safety of people in areas outside the development. The plan should be in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 1, Industry Emergency Planning Guidelines.

Incident Reporting

148. Within 24 hours of any incident or near incident with actual or potential significant off-site impacts on people or the biophysical environment, a report shall be supplied to the Department outlining the basic facts. A further detailed report shall be prepared and submitted following investigations of the causes, and identification of necessary additional preventative measures.

General

149. All chemicals shall be stored in accordance with the Australian Standard AS 1940-1993 The Storage and Handling of Flammable and Combustable Liquids and the

EPA's Environment Protection Manual for Authorised Officers: Technical Section (Bunding and Spill Management).

150. Sufficient supplies of appropriate absorbent materials shall be kept on site to recover any liquid spillage. Liquid spills shall be cleaned up using dry methods. Adsorbent materials used to clean up shall be disposed of to an appropriately licensed facility.

TRANSGRID EASEMENT

151. Prior to the commencement of landfilling activity at LH1, the Applicants shall consult with TransGrid in relation to:

- Vehicular access;
- Excavation or alteration of ground levels;
- Location and height of above-ground structures;
- Location and height of vegetation;
- Utility services installation, whether above or below ground,

within the TransGrid easement, and shall comply with all relevant TransGrid requirements.

FINANCIAL ASSURANCE

152. The EPA may require a financial assurance in accordance with division 5 of *the Waste Minimisation and Management Act 1995* or after 1 July 1999 in accordance with Part 9.4 of the *Protection of the Environment Operations Act 1997*.

COMPLAINTS PROCEDURES

153. Prior to the commencement of construction, the Applicants shall establish a freecall telephone line that operates 24 hours per day 7 days per week on which complaints about the subject development can be registered. The Applicants shall record details of all complaints received and actions taken in response to complaints in an up-to-date log book. The Applicants shall ensure that an initial response to complainants is provided within 24 hours and a detailed response within 10 days of the complaint being lodged.

The complaints register shall be available for inspection upon request by the Director-General, EPA, DLWC, the LH1LC, and the LHEMTG.

NOTICE OF AMENDMENT OF A DEVELOPMENT CONSENT GRANTED UNDER SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 PURSUANT TO SECTION 96(2) OF THE ACT.

I, the Minister for Urban Affairs and Planning, pursuant to Section 96(2) of the Environmental Planning and Assessment Act 1979, modify the development consent referred to in Schedule 1 in the manner set out in Schedule 2

Andrew Refshauge MP
Deputy Premier
Minister for Urban Affairs and Planning
Minister for Aboriginal Affairs
Minister for Housing

Sydney, 5 June 2001

ABBREVIATIONS AND INTERPRETATION

The Director-General	Director-General of the Department of Urban Affairs and Planning
The Applicant	Waste Recycling and Processing Service of NSW (Waste Service NSW)
EPA	New South Wales Environment Protection Authority
LHWMC	Lucas Heights Waste Management Centre

SCHEDULE 1

Development consent granted by the Minister for Planning and Environment on 12 November 1999, in respect of a development application made by the Applicant, Waste Recycling and Processing Service of NSW (Waste Service NSW) for landfilling, rehabilitation, recycling and associated activities at Lucas Heights Waste Management Centre.

SCHEDULE 2

That the existing conditions 35, 36 and 122 be removed and replaced with

Condition 35 (a)

On and from 30 June 2002, no more than 630,000 tonnes of waste per annum shall be delivered to the Lucas Heights Waste Management Centre (LHWMC). This includes waste that is recovered for use as on-site construction material. Prior to 30 June 2002, no more than 1.2 million tonnes of waste per annum shall be delivered to the LHWMC. This also includes waste that is recovered for use as on-site construction material.

Condition 35 (b)

Of the maximum 630,000 tonnes of waste per annum delivered to the LHWMC after 30 June 2002:

(i) No more than 575,000 tonnes per annum shall be landfilled at the LHWMC; and

(ii) Subject to conditions 37 and 38, no more than 55,000 tonnes per annum shall be treated at the recycling and resource recovery facilities at the LHWMC site.

Condition 36 (a)

Waste delivered to the LHWMC will generally comprise waste in accordance with Table 6.2 of the EIS.

Condition 36 (b)

Prior to 30 June 2002, municipal waste may be received at the site from existing sources. On and from 30 June 2002, a minimum of 80% municipal waste received at the site shall be sourced from the Southern Sydney Waste Planning & Management Board's region

Condition 122 (a)

The LH1 and LHWMC sites shall not emit offensive odour, in accordance with the provisions of the Protection of the Environment Operations Act 1997 (EPA GTA).

Condition 122 (b)

In addition to the provision of a clean fill capping to cover the waste landfill material on a daily basis, interim capping operations during the day will be undertaken on a needs basis, to ensure odour performance meets the NSW EPA Draft Odour Policy - *Assessment and Management of Odour from Stationary Sources in NSW* (2001).

That one additional condition be applied:

Condition 154

Primary access to the LHWMC shall be via Alfords Point Road or Heathcote Road. Heavy vehicles transporting waste shall not use the Woronora Bridge and Menai Road.

NOTICE OF AMENDMENT OF A DEVELOPMENT CONSENT GRANTED UNDER SECTION 80 PURSUANT TO SECTION 96(1A) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

I, Sam Haddad, Deputy Director-General, Office of Sustainable Development Assessments and Approvals, as delegate of the Minister for Planning, pursuant to section 96(1A) of the *Environmental Planning and Assessment Act 1979*, modify the development consent referred to in Schedule 1 in the manner set out in Schedule 2.

S Haddad

Sam Haddad
Deputy Director-General

Sydney, 22 September 2005

File No. R97/00029
MOD-123-8-2005-i

SCHEDULE 1

Development consent: granted by the Minister for Urban Affairs and Planning on 12 November 1999.

In respect of: development application 11-01-99 made by the Waste Recycling and Processing Service of NSW and Sutherland Shire Council ("the Applicants" – note that the term "the Applicants" is used generically in this instrument. The roles and responsibilities of the Waste Recycling and Processing Service of NSW and Sutherland Shire Council shall be in accordance with the terms of the deed of agreement addressed in Condition 10 of the consent), in relation to land described as Lots 10 and 11 DP 818819, PO (PO 85/81 Metrop) Crown Land, Portion 126, Lot 24 DP 874608, Lot 2 DP 605077, Lot 1 DP 804455, Lot 10 DP 837126, Lot 102 DP unregistered, and Lot 101 DP unregistered, New Illawarra Road and Heathcote Road, Sutherland Shire.

For the following: The expansion of the capacity of the Lucas Heights Waste Management Centre and the progressive redevelopment of the site for recreational purposes;
The development of composting and recycling facilities including a Green Waste Processing and Composting Facility (GWPCF) and a biowaste facility at the Lucas Heights Waste Management Centre;
The diversion of dry waste and clean fill from the Lucas Heights Waste Management Centre to the area known as Lucas Heights 1 and the progressive development of a local and regional multi-purpose sporting and recreational complex at the site;
The establishment of an area known as the Lucas Heights Conservation Area to the immediate north of the Lucas Heights Waste Management Centre.

Modification Application: Removal of restriction to source 80% of waste from the Southern Sydney Waste Planning and Management Board region.

SCHEDULE 2

The development consent is modified by:

1) deleting existing condition 36.

APPENDIX C
Preliminary Environmental Risk Analysis

Table C1: Preliminary Environmental Risk Analysis

Environmental Issue	Environmental Impact	L (1-5)	C (1-5)	R (L+H)	Comment
Air Quality	Generation of dust during process	2	2	4	The recieval hall is under negative pressure and the processing of waste is conducted using hydro-biological techniques, minimising dust generation. An assessment of dust impacts will be prepared as part of the EA. This is considered a **low** environmental issue.
	Emission of Odour as a result of facility operation	2	2	4	The recieval hall is under negative pressure and the processing of waste is conducted using hydro-biological techniques, minimising odour generation. An appropriate odour control system will be used to further reduce any odour the process may generate. An assessment of odour impacts will be prepared as part of the EA. This is considered a **low** environmental issue.
Greenhouse Gas Emissions	Production of (bio-gas during biological digestion of waste			B	The ArrowBio Technology will result in a 100% capture of green house gas (GHG) emissions. The AWT will also produce approximately 2MW of renewable energy on the site. This will be used to power the plant with excess energy pumped back into the electricity grid. This is considered a **beneficial** environmental issue.
Noise	Noise generation during construction	2	2	4	Some noise will occur during the construction phase of the development. However, considering the distance of the site to the nearest resident is approximately 2km and the timing of construction between normal working day hours, noise impacts will be negligible. This is considered a **low** environmental issue.
	Noise generated during the operation of the new AWT Facility	3	2	5	The enclosed nature of the AWT Facility will minimise the generation of operational noise. Further noise mitigation measures will be explored and implemented to further minimise any impact. A noise assessment will be prepared as part of the EA. This is considered a **moderate** environmental issue.
	24hr operation	3	2	5	The 24hr operation is not considered to impact on surrounding residents as the closest dwelling is located approximately 2km away. As mentioned above, further mitigation measures will be explored in the noise assessment that will be prepared as part of the EA. This is considered a **moderate** environmental issue.

Water Quality	Quality of water used as part of the AWT process	1	2	3	The proposed AWT Facility will have little, if any impact on ground water quality. All water used on site will be over hardstand areas and will be collected and recycled. There is an option to treat excess used water at the LHWRC Leachate Treatment Plant (LTP) and then discharge to the sewer. A water quality report will be prepared as part of the EA. This is considered a **low** environmental issue.
Water Resource	Need for water for the processing and sorting of waste	1	2	3	Although a considerable amount of facility start-up water is required for commissioning, there is potential to filter and recycle process water. Rainwater will also be harvested and if required used in the process. This negates the need for further water externally from the site and is considered a positive environmental impact. This is considered a **low** environmental issue.
Human Health	Production of bio-gas as a result of the biological process	1	1	2	The bio-gas produced will be harvested on site and used for electricity generation. Considering the facilities proximity to the ANSTO facility, an emergency procedures plan will be prepared in accordance with relevant policies and guidelines to ensure minimal impact. This is considered a **low** environmental issue.
Flora and Fauna	FLORA – Potential removal of vegetation	3	1	4	The site of the proposed facility is currently used by the SSPCYC and has been extensively cleared. Further removal of vegetation may be necessary. A flora assessment will be prepared as part of the EA. This is considered a **low** environmental issue.
	FAUNA – loss of habitat as a result of potential removal of vegetation.	3	1	4	As mentioned above, the subject site is currently heavily cleared. Further clearing will be minimal and is considered to have a negligible impact on current fauna species. A fauna assessment will be prepared as part of the EA. This is considered a **low** environmental issue.
Hazard and Risk Assessment (Land Use Safety)	BUSHFIRE – site has been identified as bushfire prone	3	3	6	The site is within bushfire prone land is approximately 200m from the ANSTO facility. A bushfire assessment will be prepared as part of the EA. This is considered a **key** environmental issue.
	Transformer explosion.	1	3	4	An emergency procedures plan will be prepared in accordance with relevant policies and guidelines to ensure minimal impact. This is considered a **low** environmental issue.

Indigenous and Non-Indigenous Heritage	The site may contain items of non-indigenous heritage.	1	2	3	The NSW Heritage Register, National Parks and Wildlife Services Aboriginal Sites Register, Illawarra REP and Wollongong LEP do not record any items of heritage significance within LHWRC. This is considered a **low** environmental issue.
Visual Amenity	The scale and location of the proposed facility may impact on the visual amenity of passers-by.	4	3	7	The site is located on New Illawarra Road, which forms its southern boundary. Existing vegetation currently screens the existing activity, however the size of the proposed facility will impact slightly on visual amenity. A visual assessment will be prepared as part of the EA. This is considered to be a **key** environmental issue.
Socio-Economic Impacts	Construction and operation phase of this project will require an additional temporary and permanent workforce as outlined in the PEA.			B	This is a beneficial socioeconomic impact.
Traffic	Construction traffic will be redirected to the new gas holder location	3	2	5	It is proposed that the facility will receive and process 100,000 TPA of MSW. This in addition to the tonnages of MSW and recycled materials currently approved. This will increase the amount of heavy vehicle movements into the site. A traffic assessment will be prepared as part of the EA. This is considered a **moderate** environmental issue.
Soil/Land Contamination	Possible disturbance of contaminated soil during the construction phase	1	1	2	According to information provided by WSN, the subject site is virgin of any fill or waste activity. Mitigation measures will be used to ensure that run off from the surrounding WRC does not contaminate the site. Contamination of the site from the actual ArrowBio process will also be minimal as the majority of the site will be hardstand and all run-of will be captured on site. This is considered a **low** environmental issue.