

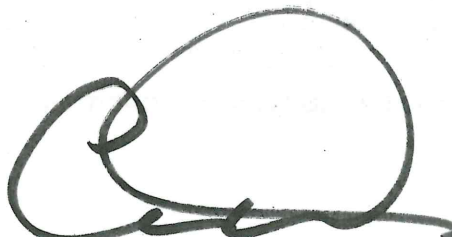
Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

Under the Minister for Planning and Infrastructure's delegation dated 27 February 2013, I approve the application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.



Chris Wilson
Executive Director
Development Assessment Systems & Approvals

Sydney

3 APRIL

2013

SCHEDULE 1

Application No:

11_0094

Proponent:

Wollongong City Council

Approval Authority:

Minister for Planning and Infrastructure

Land:

Reddall's Road: Part Lot 501 DP 1079122;
Lot 502 DP 1079122;
Lot 2 DP 240557;
Lot 51 DP 1022266;
Lot 52 DP 1022266; and
Lot 53 DP 1022266.

Project:

Whytes Gully Landfill Extension Project

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SCHEDULE 2 DEFINITIONS

BCA	Building Code of Australia
Construction	The demolition of buildings or works, carrying out of works, including bulk earthworks and erection of buildings and other infrastructure covered by this approval
Council	Wollongong City Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DCP	Development Control Plan
DA	Development Application
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department (or his nominee)
EA	Environmental Assessment titled ' <i>Whytes Gully New Landfill Cell</i> ', dated June 2012 and prepared by Golder Associates Pty Ltd
ENM	Excavated Natural Material
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning & Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning & Assessment Regulation 2000</i>
EPL	Environment Protection Licence
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
GDEs	Groundwater dependent ecosystems
General Solid Waste (Putrescible)	As defined in the <i>Waste Classification Guidelines</i> (DECCW)
General Solid Waste (Non-Putrescible)	As defined in the <i>Waste Classification Guidelines</i> (DECCW)
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this approval
Land	In general, the definition of land is consistent with the definition in the EP&A Act.
Landfill	Whytes Gully Landfill
LEMP	Landfill Environmental Management Plan
LGA	Local government area
M	Metres
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning and Infrastructure
Mitigation	Activities associated with reducing the impacts of the Project
MRF	Whytes Gully Materials Recycling Facility
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	Department of Primary Industries – NSW Office of Water
OEH	Office of Environment and Heritage
Operation/s	Operation/s are triggered by the receipt of waste at the new landfill cells covered by this approval
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Preferred Project Report	Preferred Project Report prepared titled ' <i>Whytes Gully New Landfill Cell Response to Submissions/Preferred Project Report</i> ', dated 20 December 2012 and prepared by Golder Associates Pty Ltd
Privately-owned land	Land not owned by the Proponent or where a private agreement does not exist between the Proponent and the land owner
Project	The development described in the EA
Proponent	Wollongong City Council, or its successor
Reasonable	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Rehabilitation	The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment
RMS	Roads and Maritime Services
Site	The Whytes Gully RRP as described in the EA
Special Waste	As defined in the EPA's <i>Waste Classification Guidelines</i>
Statement of Commitments	The Proponent's Statement of Commitments in Appendix 1
SWERF	Solid Waste to Energy Recycling Facility
Tpa	Tonnes per annum
UV	Ultraviolet
VENM	Virgin Excavated Natural Material
WCC	Wollongong City Council
Whytes Gully RRP	Whytes Gully Resource Recovery Park

SCHEDULE 3 ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Project.

TERMS OF APPROVAL

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) PPR;
 - (c) Statement of Commitments (see Appendix 1);
 - (d) site layout plans and drawings in the EA (see Appendix 2); and
 - (e) conditions of this approval.
3. If there is any inconsistency between the above, the conditions of this approval shall prevail to the extent of any inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

LIMITS OF APPROVAL

5. The Proponent shall ensure that no more than 180,000 tpa of waste is accepted at the landfill in any calendar year.
6. This approval does not authorise any landfilling activities or new landfill cell to be constructed or operated within the area marked Stage 4-2B in the PPR and shown in the staging plan in Appendix 3 of this approval.

SURRENDER OF EXISTING DEVELOPMENT CONSENTS

7. Within 12 months from the date of this approval, or as otherwise agreed by the Director-General, the Proponent shall surrender the development consents identified in Table 1 in accordance with Sections 75YA and 104A of the EP&A Act.

Table 1: Existing development consents to be surrendered

DA No.	Site Description	DA Description
DA-1982/459	Western Gully (Landfill)	Waste disposal site
DA-1984/228	Western Gully (Landfill)	Construction and operation of a waste disposal depot
DA-1992/662	Eastern Gully (Landfill)	Upgrade of existing Western Gully Landfill and extension into the adjacent Eastern Gully
DA-1996/8256 DA-1996/6256	SWERF	Construction and operation of a SWERF
DA-1996/256	Landfill Gas and infrastructure	Landfill gas infrastructure
DA-1999/533	Site access and road realignment	Deviation of Reddalls Road, Kembla Grange
DA-2002/2240	Leachate and surface water ponds	Construction of new leachate and stormwater treatment ponds
DA-2003/532	Leachate treatment plant (LTP)	Construction and operation of a LTP
DA-2006/463	Weighbridge and new site entrance	Weighbridge and new site entrance
DA-2010/1088	Small vehicle transfer station	Small vehicle waste transfer station

Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent or approval should not be understood as implying that works legally constructed under a valid consent or approval can no longer be legally maintained or used.

8. To the extent of any inconsistency between the consents identified in Table 1 and this approval, this approval shall prevail.

TRANSITIONAL ARRANGEMENTS

9. All existing environmental management plans that apply to the site under those DAs listed in Table 1 of this Schedule shall continue to be fully applied until replaced under this approval.

STRUCTURAL ADEQUACY

10. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project.*

Retaining Walls

11. The Proponent shall ensure that:
 - (a) all retaining walls are designed by a suitably qualified civil or structural engineer and are detailed on engineering plans which meet the requirements of WCC; and
 - (b) following the completion of construction of any retaining wall, a certificate from a suitably qualified civil or structural engineer is obtained to verify the structural adequacy of the retaining wall.

DEMOLITION

12. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.

OPERATION OF PLANT AND EQUIPMENT

13. The Proponent shall ensure that all plant and equipment used for the project is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

PROTECTION OF PUBLIC INFRASTRUCTURE

14. The Proponent shall:
 - (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and
 - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.

STAGED SUBMISSION OF PLANS OR PROGRAMS

15. With the approval of the Director-General, the Proponent may submit any plan or program required by this approval on a progressive basis.
-

SCHEDULE 4 SPECIFIC ENVIRONMENTAL CONDITIONS

WASTE

Restrictions on Receipt, Classification and Disposal

1. The Proponent shall only receive waste on site that is authorised for receipt by an EPL.
2. The Proponent shall ensure that any waste generated on the site during construction is classified in accordance with the EPA's *Waste Classification Guidelines* and disposed of to a facility that may lawfully accept the waste.

Resource Recovery

3. The Proponent shall implement all reasonable and feasible measures to recover resources from the waste stream to the satisfaction of the Director-General.

Screening and Acceptance

4. The Proponent must:
 - (a) implement auditable procedures to:
 - ensure that the site does not accept wastes that are prohibited; and
 - screen incoming waste loads; and
 - (b) ensure that:
 - all waste that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and
 - staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste.

Monitoring

5. The Proponent shall prepare and implement a Waste and Resource Recovery Monitoring Program for the site to the satisfaction of the Director-General. This program must:
 - (a) be prepared in consultation with the EPA;
 - (b) be approved by the Director-General prior to the commencement of operation;
 - (c) detail the screening and acceptance procedures required by Condition 4 above;
 - (d) monitor:
 - the quantity, type and source of waste received on site; and
 - the effectiveness of the resource recovery measures (see Condition 3 above).

This program must be documented in the Landfill EMP (see Condition 3 in Schedule 5).

Trade Waste Agreement

6. From the date of this approval, the Proponent shall ensure that a Trade Waste Agreement is in place with Sydney Water for as long as leachate is discharged to sewer.

Landfill Operations

7. Unless the Director-General agrees otherwise, the Proponent shall:
 - (a) minimise the exposed or cleared areas at the landfill;
 - (b) progressively revegetate all completed areas of the landfill and stabilise any exposed areas with intermediate cover of at least 0.3 m that are not required for operational purposes for a period greater than 90 days;
 - (c) ensure intermediate cover areas are revegetated with grasses;
 - (d) limit the size of the active tipping face area, waste relocation area, daily cover and 90 day cover areas to minimise dust and odour (see Table 5 of this approval);
 - (e) minimise the tracking of mud and waste from the site on public roads;
 - (f) fill the landfill cells in a systematic manner;
 - (g) maximise landfill compaction rates;
 - (h) cover the active landfill area with at least 0.15 m of soil (or a suitable alternative material) at the end of daily waste disposal and compaction activities;
 - (i) progressively cap the landfill cells with the approved capping layer, which shall comprise the following (from top to bottom), or an EPA approved alternative:
 - 0.5 m to 1 m revegetation layer;
 - geocomposite drainage system with geotextile covers to prevent clogging of the system from sediment migration;
 - linear Low Density Polyethylene (LLDPE) geomembrane liner to prevent infiltration of water into the landfilled waste;

- 0.2 m clay rich bearing layer to form a low permeability and smooth base for geomembrane liner placement;
 - 0.3 m intermediate cover remaining from the landfill operation;
 - landfill gas collection trenches underneath the cap, consisting of gravel aggregate and perforated collection pipes connected to an active landfill gas collection system; and
- (j) revegetate the covered landfill cells following the capping of each cell and once they reach their final design height.

Cover Material

8. The Proponent shall ensure that all daily waste cover material used on site is ENM, VENM and/or alternative daily cover, as approved in writing by the EPA.

Litter Control

9. The Proponent shall:
- (a) implement suitable measures to prevent the unnecessary proliferation of litter both on and off-site, including the installation and maintenance of a mesh fence of not less than 1.8 metres high around the site; and
 - (b) inspect daily and clear the site (and if necessary, surrounding area) of litter on at least a weekly basis.

Lining System

10. Prior to the commencement of any landfilling over existing landfilled waste, the Proponent must construct a Piggyback Liner System over these surfaces to the satisfaction of the EPA. The Liner System shall include the following (from bottom to top), or an EPA approved alternative:
- (a) pipework and gravel trenching to collect and vent landfill gas from the underlying waste to minimise the risk of uncontrolled lateral migration of gas and uplift pressure on the liner;
 - (b) a foundation or bridging layer at least 500mm thick comprised of clean, well-graded, coarse engineered fill, with geogrid reinforcement at mid-layer, to protect the liner from deformations due to settlement of the underlying waste;
 - (c) a bearing layer at least 200mm thick comprised of compacted clay to provide a smooth surface for installation of the geosynthetic liner materials;
 - (d) a composite liner comprised of a reinforced geosynthetic clay liner (GCL) with hydraulic conductivity less than 5×10^{-11} m/s under a 1.5mm thick textured linear low density polyethylene (LLDPE) geomembrane liner;
 - (e) a geocomposite leachate collection layer, incorporating a tri-planar geonet drainage core between two protection geotextiles, linked to a pipe network graded at a minimum of 2% to convey collected leachate to a sump at the low point in each cell. The geonet must have equivalent hydraulic transmissivity to a gravel collection layer with a saturated hydraulic conductivity of 1×10^{-3} m/s², taking into account field conditions likely to impair the geonet's ability to convey flow; and
 - (f) a protection layer comprised of at least 300mm of sand or similar material to protect the geonet and liner from damage (physical and UV).
11. The detailed design of the Piggyback Liner System referred to in Condition 10 of this Schedule (above) must include a settlement analysis addressing predicted settlement and lateral deformations of the underlying waste, and demonstrating, to the satisfaction of the EPA, that:
- (a) the stresses and strains induced in the geosynthetic liner materials by the predicted settlements will be lower than allowable values, as expressed in contemporary best practice guidelines for design with these types of materials;
 - (b) there will be no grade reversal of drainage elements which could interfere with collection and conveyance of leachate; and
 - (c) where these performance requirements cannot be met when modelling the liner system configuration specified in Condition 10 of this Schedule, that augmentations to the thickness and strength of the liner elements in Condition 10 can be made to provide for long term liner integrity under the predicted maximum settlements.
12. Prior to the commencement of any landfilling over natural surfaces, the Proponent must construct a Conventional Liner System over the base of the cell to the satisfaction of the EPA. The Liner System shall include the following (from bottom to top), or an EPA approved alternative:
- (a) a bearing layer at least 200mm thick of compacted clay to provide a smooth surface for installation of the geosynthetic liner materials;
 - (b) a composite liner comprised of a reinforced geosynthetic clay liner (GCL) with hydraulic conductivity less than 5×10^{-11} m/s under a 2mm textured high density polyethylene (HDPE) geomembrane liner. A cushion geotextile must be installed above the geomembrane to protect it from construction and waste-related load damage, including excessive strains introduced by indentation from the overlying gravel drainage aggregate;
 - (c) for leachate collection in areas other than over natural ridge areas, a gravel leachate collection layer at least 300mm thick containing a pipe network graded at a minimum of 2% to convey collected leachate to a sump at the low point in each cell. The gravel must be 20mm nominal size gravel with a

- saturated hydraulic conductivity of greater than $1 \times 10^{-3} \text{ m/s}^2$. The particle size distribution must be uniform, with maximum particle size 26.5mm, not more than 20% passing the 19mm standard sieve aperture, not more than 10% passing the 13.2mm standard sieve aperture, and not more than 3% smaller than 0.075mm. A filter protection geotextile must be placed above the gravel; and
- (d) for leachate collection over natural ridge areas, a geocomposite leachate collection layer and a protection layer, as per the requirements for these elements specified for the Piggyback Liner System in Condition 10 of this Schedule.

13. The Proponent shall prepare and implement a Construction Quality Assurance Plan for the project. The plan must:
- (a) be prepared in consultation with EPA by a suitably qualified and experienced expert whose appointment has been endorsed by the Director-General;
 - (b) be approved by the Director-General prior the commencement of construction, or at a time otherwise approved by the Director-General;
 - (c) outline the construction activities and staging;
 - (d) outline the measures taken (e.g. by independent testing, certification, monitoring and inspection) to ensure that the construction and installation of the final leachate-barrier management and collection system would be successful and quality assured;
 - (e) specify the final leachate-barrier material selection and construction techniques;
 - (f) specify/validate of the final thickness and permeability of leachate barrier/s; and
 - (g) include an environmental-awareness site-induction program for construction personnel.

This plan must be documented in the CEMP (see Condition 2 in Schedule 5).

SOIL & WATER

Surface Water Discharge Limits

14. The Proponent shall ensure that all licensed surface water discharges from the site comply with the discharge limits (volume and quality) set for the project in any EPL or relevant provisions of the POEO Act.

Stormwater Management

15. The Proponent shall:
- (a) design and install the stormwater management and collection system (including new stormwater pond and drainage) generally in accordance Chapter E14 of the *Wollongong DCP 2009*;
 - (b) ensure that the system capacity has been designed in accordance with the Blue Book Volumes 1 and 2B and Chapter E14 of *Wollongong DCP 2009*;
 - (c) ensure peak stormwater discharge rates from the site at each stage of the project do not exceed pre-development values;
 - (d) divert existing clean surface water around operational areas of the site;
 - (e) direct all sediment laden water in overland flow away from the leachate management system; and
 - (f) prevent cross-contamination of clean and sediment or leachate laden water,

to the satisfaction of the Director-General.

Flooding Management

16. The Proponent must prepare and implement a Flood Emergency and Evacuation Plan to the satisfaction of the Director-General. The Plan must:
- (a) be prepared by a suitably qualified and experienced expert in consultation with Council;
 - (b) be approved by the Director-General prior to the commencement of construction;
 - (c) ensure the project is designed in accordance with Chapter E13 of *Wollongong DCP 2009*, Council's *Mullet and Brooks Creeks Floodplain Risk Management Study and Plan* and the *NSW Floodplain Development Manual*, taking into account Council's conduit blockage criteria;
 - (d) identify contingency actions to be implemented in the event that the site is inundated during a major flood event to protect:
 - the integrity of stormwater/leachate ponds and prevent release of stormwater/leachate into the local environment including water quality control measures; and
 - human safety.
 - (e) identify emergency evacuation routes, flood warning alarms, and evacuation procedures.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 5).

Leachate Management

17. The Proponent shall:
- (a) design and install the leachate management and collection system (including new leachate pond) generally in accordance with the conceptual design in the EA/PPR, applicable Australian Standards and industry standard best practice guidelines, or otherwise approved by the EPA;

- (b) ensure that leachate generated by the project is minimised and appropriately contained, collected and disposed of;
- (c) collect and store all leachate generated by the project until it is transferred for treatment/processing;
- (d) install a leachate barrier to be used for the direct impoundment of leachate (see Conditions 10 to 13 of this Schedule);
- (e) design and operate the leachate management system to prevent leachate from escaping to surface water, groundwater or the surrounding subsoils;
- (f) ensure that the leachate management and collection system does not include leachate discharge or disposal by way of leachate re-injection into any active or capped landfill cell, unless otherwise approved by the EPA;
- (g) direct all surface water from areas not subject to waste disposal or leachate disposal away from the leachate management system; and
- (h) treat all water that has entered areas filled with waste, or been contaminated by leachate, as leachate,

to the satisfaction of the Director-General.

Soil, Water and Leachate Management Plan

18. The Proponent shall prepare and implement a Soil, Water and Leachate Management Plan for the project in consultation with Council, NOW and the EPA and to the satisfaction of the Director-General. This plan must be prepared and implemented by a suitably qualified and experienced person and be approved by the Director-General prior to the commencement of operation. The plan must include:
- (a) a site water balance that:
 - identifies the source of all water collected or stored on site, including rainfall, stormwater and groundwater;
 - includes details of all water use on site and any discharges; and
 - describes the measures that will be implemented to minimise water use on site.
 - (b) an erosion and sediment control plan that:
 - is consistent with the requirements in the latest version of the Blue Book Volume 1 and Volume 2B;
 - identifies the activities on site that could cause soil erosion and generate sediment; and
 - describes the measures that will be implemented to:
 - minimise soil erosion and the transport of sediment to downstream waters, including the location, function and capacity of any erosion and sediment control structures and maintain these structures over time;
 - ensure that any topsoil stockpiles on site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site.
 - (c) a leachate management plan that:
 - includes final detailed design specifications of the leachate management and collection system on site;
 - demonstrates how the requirements of Condition 17 of this Schedule have been addressed; and
 - includes a remedial action plan should leachate escape the leachate containment system.
 - (d) a stormwater management plan that:
 - is consistent with the guidance in the latest version of the Blue Book Volume 1 and Volume 2B and Chapter E14 of *Wollongong DCP 2009*;
 - includes final detailed design specifications for the stormwater management and collection system; and
 - demonstrates how the requirements of Condition 15 of this Schedule has been addressed;
 - (e) an on-going surface water, groundwater and leachate monitoring program that includes (but is not limited to):
 - baseline data;
 - a combined surface and groundwater monitoring program to gain an understanding of surface and groundwater interaction and the potential for any impacts of the project on the downstream environment including GDEs and Dapto Creek;
 - surface and groundwater impact assessment criteria including trigger levels for investigating adverse impacts;
 - a Mitigation Plan detailing the remedial actions to be implemented address potential impacts on the downstream environment from surface or groundwater contamination associated with the project and/or in the event of exceedances of the surface and/or groundwater impact assessment criteria; and
 - a commitment to provide the results of monitoring to NOW and other relevant government agencies every 12 months.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 5).

Contamination Management Plan

19. The Proponent shall prepare and implement a Contamination Management Plan for the project to the satisfaction of the Director-General. This Plan must:
- (a) be prepared by a suitably qualified and experienced expert;
 - (b) be submitted to the Director-General prior to the commencement of construction;
 - (c) detail the protocols to be put in place and followed in the event that contaminated soil (including Acid Sulfate Soils) or water is encountered during construction;
 - (d) be prepared in accordance with the relevant best practice industry guidelines such as the *NSW State Government's Acid Sulfate Soils Manual* (ASSMAC 1998);
 - (e) detail how excavated soil will be tested, handled and stockpiled;
 - (f) detail the measures that will be employed to prevent erosion and sedimentation of contaminated soil; and
 - (g) outline how contaminated soil and water will be disposed of off-site (e.g. at a licensed facility).

This plan must be documented in the CEMP (see Condition 2 in Schedule 5).

Bunding

20. The Proponent shall store all chemicals, fuels and oils used on-site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participants Handbook*.

Erosion and Sediment Control

21. During the construction of the project, the Proponent shall implement suitable erosion and sediment control measures on site, in accordance with the relevant requirements in the latest version of the *Managing Urban Stormwater: Soils and Construction* guideline.

Soil

22. The Proponent shall:
- (a) minimise any soil loss through erosion on site;
 - (b) set aside any topsoil won on site for the proposed revegetation and rehabilitation of the site; and
 - (c) ensure that any topsoil stockpiles on site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site.

AIR QUALITY

Odour

23. The Proponent shall ensure the project does not cause or permit the emission of any offensive odour (as defined by the POEO Act).

Dust Criteria

24. The Proponent shall ensure that dust generated by the project does not exceed the criteria listed in Tables 2 to 4 at any private residential receiver, or on more than 25 percent of any privately owned land surrounding the site.

Table 2: Long term criteria for particulate matter

Pollutant	Averaging period	^d Criterion
Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³

Table 3: Short term criterion for particulate matter

Pollutant	Averaging period	^d Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³

Table 4: Long term criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total ¹ deposited dust level
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^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month
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Notes for Tables 2 -4:

- ^aTotal impact (i.e. incremental increase in concentrations due to the Development plus background concentrations due to other sources);
- ^b Incremental impact (i.e. incremental increase in concentrations due to the Development on its own);
- ^c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and
- ^d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agree to by the Director-General in consultation with the EPA.

Dust Minimisation

25. During construction, the Proponent shall ensure that:
- all vehicles on site do not exceed a speed limit of 25 kilometres per hour;
 - all loaded vehicles entering or leaving the site have their loads covered; and
 - all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.

Operating Conditions

26. The Proponent shall:
- implement best management practice, including all reasonable and feasible dust and odour mitigation measures to prevent and minimise dust and odour emissions from operation;
 - prevent and minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events;
 - regularly assess air quality monitoring data and relocate, modify, and/or stop operation to ensure compliance with the relevant conditions of this consent; and
 - minimise surface disturbance of the site, other than as permitted under this consent.

Project Areas

27. For each stage of the project identified in Table 5 (below), the Proponent shall comply with the maximum area specified for active tipping face, waste relocation, daily cover and 90 day cover in the corresponding row and columns (from left to right), unless otherwise approved by the Director-General in consultation with the EPA.

Table 5: Active tipping face area, waste relocation area, daily cover and 90 day cover

Stage	Active tipping face Area (m ²)	Waste relocation Area (m ²)	Daily Cover Area (m ²)	90 Day Cover Area (m ²)
Stage 1	1,100	1,800	19,800	14,000
Stage 2	1,000	0	1,300	7,500
Stage 3	1,000	0	1,300	7,500
Stage 4	1,000	0	1,300	7,500

Note: This condition has been included in the approval to help control/minimise odour and dust emissions.

Monitoring

28. The Proponent shall install and operate a meteorological weather monitoring station on the site for the life of the project that complies with the requirements in the latest version of the EPA's *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline. The meteorological station must be maintained so as to be capable of continuously monitoring the following parameters: air temperature, wind direction, wind speed, rainfall and relative humidity.

Air Quality Management Plan

29. The Proponent shall prepare and implement an Air Quality Management Plan for landfilling operations in consultation with the EPA. The plan must:
- be prepared and implemented by a suitably qualified and experienced expert;
 - be approved by the Director-General prior to the commencement of operation;
 - describe the measures that will be implemented to ensure:
 - best management practice is employed;
 - the air quality impacts (including odour) from landfilling are minimised during adverse meteorological conditions and extraordinary events; and
 - compliance with the relevant conditions of this approval.

- (d) describes the air quality management system; and
- (e) includes an air quality monitoring program that:
 - is capable of evaluating the performance of the landfill;
 - includes a protocol for determining any exceedances of the relevant conditions of approval and responding to complaints;
 - adequately supports the air quality management system; and
 - evaluates and reports on the effectiveness of the air quality management system.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 5).

Greenhouse Gas Management Plan

30. The Proponent must develop and implement a Greenhouse Gas Management Plan prior to the commencement of operation of the new landfill cells. This plan must include, as a minimum:
- (a) final details of the landfill gas management system including flaring and/or combustion to reduce potential greenhouse gas emissions from the landfill;
 - (b) energy saving measures to be implemented; and
 - (c) include a program to monitor the effectiveness of these measures, and a protocol to periodically review the plan.

This plan must be documented in the Landfill EMP (see Condition 3 in Schedule 5).

NOISE

Noise Limits

31. The Proponent shall ensure that the noise generated by the operations on site does not exceed the criteria in Table 6 at any private residential receiver.

Table 6: Noise impact assessment criteria dB(A)

Residential Receiver Location	Day
	L _{Aeq} (day)
N1	47
N2	45
N3	38
N4	35
N5	35

- To identify a residential receiver location, refer to Appendix 6 of this approval and Appendix D of the EA.
- Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

Operating Conditions

32. The Proponent shall:
- (a) implement best management practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the project;
 - (b) minimise the noise impacts of the project during adverse meteorological conditions when noise criteria do not apply;
 - (c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and
 - (d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this approval.

Operating Hours

33. The Proponent shall comply with the construction and operating hours detailed in Table 7 for the site, unless otherwise agreed in writing by the Director-General.

Table 7: Construction and Operating Hours

Activity	Day	Time
Construction	Monday - Friday	7.30am – 4.30pm
	Saturday	8.00am – 4.00pm
	Sunday and Public Holidays	Nil
Operation	Monday to Friday	7.30am – 4.30pm
	Saturdays, Sundays and Public Holidays	8.00am – 4.00pm

Noise Management Plan

34. The Proponent shall prepare and implement a Noise Management Plan for the project in consultation with the EPA and to the satisfaction of the Director-General. The plan must:
- be prepared and implemented by a suitably qualified and experienced person whose appointment has been approved by the Director-General;
 - be approved by the Director-General prior to the commencement of construction;
 - describe the measures that will be implemented to minimise noise from the construction and operation of the project and ensure:
 - best management practice is employed on site;
 - implementation of traffic noise management measures;
 - the noise impacts of the project are minimised during adverse meteorological conditions; and
 - compliance with the relevant conditions (including noise limits) of this approval.
 - describe the noise management system;
 - includes a noise monitoring program that:
 - is capable of evaluating the performance of the project;
 - includes a protocol for determining exceedances of the noise limits in this approval and responding to complaints;
 - adequately supports the noise management system; and
 - evaluates and reports on the effectiveness of the noise management system.
 - include a description of the remedial actions that may be implemented in the event of a non-compliance with the noise limits in this approval.

This plan must be documented in the CEMP and Landfill EMP (see Conditions 2 and 3 in Schedule 5).

TRANSPORT

Traffic Monitoring

35. The Proponent shall:
- keep accurate records of the volume of waste transported to the site;
 - nominate a haulage route to be used by heavy vehicles accessing the landfill consistent with the traffic assessment in the EA; and
 - make these records available in its Annual Report.

Operating Conditions

36. The Proponent shall ensure that:
- internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the project are constructed and maintained in accordance with the latest versions of AS 2890.1 and AS 2890.2;
 - the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with AUSTROADS;
 - the project does not result in any vehicles queuing on the public road network;
 - heavy vehicles and bins associated with the project do not park or stand on local roads or footpaths in the vicinity of the site;
 - all vehicles are wholly contained on site before being required to stop;
 - all loading and unloading of materials is carried out on site; and
 - the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Intersection Upgrade

37. Prior to the receipt of more than 180,000 tpa of waste at the Whytes Gully RRP in any calendar year, or as otherwise directed by RMS, the Proponent must upgrade the intersection of West Dapto Road and the Princes Highway to traffic signals in accordance with WCC's Works Authorisation Deed with RMS, to the satisfaction of RMS.

Construction Traffic Management

38. The Proponent shall prepare and implement a Construction Traffic Management Plan for the project, to the satisfaction of the Director-General. The Plan shall:
- (a) be prepared in consultation with Council and RMS by a suitably qualified and experienced expert;
 - (b) be approved by the Director-General prior to the commencement of construction;
 - (c) include a detailed analysis of the impact of the project on the road network during construction;
 - (d) detail the measures that would be implemented to manage internal and external road safety and network efficiency including measures to control traffic movements during construction;
 - (e) detail the access and parking arrangements for the site during construction;
 - (f) detail the measures to ensure that the local road network is not utilised by vehicles associated with the project during construction; and
 - (g) if necessary, detail procedures for notifying residents of any potential disruptions to routes and access.

This plan must be documented in the CEMP (see Condition 2 in Schedule 5).

VISUAL AMENITY

Lighting

39. The Proponent shall ensure that the lighting associated with the project:
- (a) complies with the latest version of *AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting*; and
 - (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Landscaping

40. The Proponent shall progressively implement the Landscape Plan (Appendix 7) following the completion of ground disturbing works across the site, to the satisfaction of the Director-General.

Signage

41. The Proponent shall not install any advertising signs on site without the written approval of the Director-General.

HAZARDS

Pre-construction

42. The Proponent shall prepare the studies set out under subsections 42(a) to 42(b) (the pre-construction studies). Construction, other than of preliminary works that are outside the scope of the hazard studies, shall not commence until study recommendations have been considered and, where appropriate, acted upon.
- (a) Bushfire Risk Management Strategy
A Fire Management Strategy for the Project. This strategy shall cover all proposed recommendations and safeguards set out in the Bushfire Report at Appendix M of the EA.
 - (b) Hazard and Operability Study
A Hazard and Operability Study (or equivalent) for the proposed landfill gas handling equipment, chaired by an independent qualified person. The study shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'*.

Pre-commissioning

Safety Management System

43. Prior to commissioning, the Proponent shall develop and implement a comprehensive Safety Management System (SMS), covering all on-site operations. The Safety Management System shall be consistent with the Department of Planning's *Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'*. The SMS shall include procedures for ensuring the ongoing implementation and integrity of the safeguards identified in the Preliminary Hazard Analysis (PHA) at Appendix L of the EA and in the Bushfire Risk Management Strategy at Appendix M of the EA.

Pre-startup

Pre-startup Compliance Report

44. The Proponent shall submit to the Department a report detailing compliance with Conditions 42 and 43 one month prior to the commencement of operation.

Pest, Vermin & Noxious Weed Management

45. The Proponent shall:
- (a) implement suitable measures to manage pests, vermin and declared noxious weeds on site; and
 - (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.

Fire Management

46. The Proponent shall:
- (a) implement suitable measures to minimise the risk of fire on site, including in the landfill area;
 - (b) extinguish any fires on site promptly; and
 - (c) maintain adequate fire-fighting capacity on site.

CONSERVATION

Heritage

47. During the life of the Project, the Proponent shall protect the identified heritage and archaeological sites outside of the Project footprint, in consultation with the Local Aboriginal Land Council, and to the satisfaction of the Director-General.

Note: The location of heritage and archaeological sites on the site are illustrated in Appendix 8 of this approval.

Heritage Management

48. The Proponent must prepare:
- (a) heritage training and induction processes for construction personnel (including procedures for keeping records of inductions) including site identification, protection and conservation of Aboriginal and historic heritage; and
 - (b) procedures for dealing with heritage items including human remains, including cessation of works in the vicinity and notification of the Department, NSW Police Force (in the case of human remains), OEH and registered Aboriginal stakeholders and not recommencing any works in the area unless authorised by the NSW Police Force and/ or the Department.

These procedures must be documented in the CEMP (see Condition 2 in Schedule 5).

Vegetation and Biodiversity Management

49. The Proponent shall prepare and implement a Vegetation Management Plan for the project to the satisfaction of the Director-General. This plan must:
- (a) be prepared by a suitably qualified and experienced expert;
 - (b) be approved by the Director-General prior to the commencement of construction;
 - (c) include a vegetation clearing protocol (see Condition 50 of this Schedule);
 - (d) must specifically include a Biodiversity Offset Strategy that:
 - is assessed against the OEH's '*Principles for the Use of Biodiversity Offsets in NSW*' and the '*Interim Policy on Assessing and Offsetting Biodiversity Impacts of Part 3A, SSD and SSI Projects*';
 - details the proposed offset measures to be implemented and secured for removing 0.49 hectares of native vegetation (including 0.01 hectares of Illawarra Subtropical Rainforest);
 - identify conservation mechanisms to be used to ensure the long term protection and management of the offset sites;
 - references best practice management guidelines for restoring and managing the vegetation communities proposed for protection;
 - details how the proposed offset measures will be protected, managed, funded and monitored over the life of the project;
 - (e) ensure the project maintains suitable buffer distances to nearby waterways in accordance with *Wollongong DCP 2009* to protect riparian land; and
 - (f) details the site-wide ecological management and monitoring program/s to be implemented for the life of the project.

This plan must be documented in the Landfill EMP and CEMP (see Conditions 2 and 3 in Schedule 5).

50. The Vegetation Clearing Protocol must:
- (a) clearly identify the location and type of vegetation to be retained and to be removed from the site;

- (b) detail measures that would be implemented for vegetation clearing;
- (c) ensure vegetation, including trees would not be pushed or felled into any retained bushland areas during the vegetation removal process;
- (d) detail procedures to manage impacts on fauna including translocation of fauna by a suitably qualified ecologist/wildlife rescuer (if appropriate); and
- (e) detail the staging of construction to avoid breeding times for key species on site.

LANDFILL CLOSURE AND REHABILITATION

51. The Proponent shall prepare and implement a Rehabilitation Management Plan for the landfill to the satisfaction of the Director-General. This plan must:
- (a) be prepared in consultation with the OEH by a suitably qualified and experienced expert;
 - (b) be submitted to the Director-General for approval within six (6) months of the date of this approval;
 - (c) be undertaken in a manner which is complementary with the rehabilitation is consistent with the proposed final landform depicted in the figures in Appendices 4 and 7;
 - (d) specify a time period for the rehabilitation to works to commence and be finalised following cessation of landfill activities; and
 - (e) be documented in the Landfill EMP (see Condition 3 in Schedule 5).
-

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING

COMMUNITY EDUCATION PROGRAM

1. The Proponent shall prepare and implement a Community Education Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General for approval prior to the commencement of operation, and shall at a minimum focus on promoting resource recovery activities provided at the site.

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

2. The Proponent shall prepare and implement a Construction Environmental Management Plan for the project to the satisfaction of the Director-General. The Plan must:
 - (a) be approved by the Director-General prior to the commencement of construction;
 - (b) identify the statutory consents and approvals that apply to the project;
 - (c) include a copy of all relevant management plans and monitoring programs required under this approval;
 - (d) outline all environmental management practices and procedures to be followed during construction and demolition works associated with the project;
 - (e) describe all activities to be undertaken on the site during construction of the project, including a clear indication of construction stages;
 - (f) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - (g) describe of the roles and responsibilities for all relevant employees involved in construction and demolition works associated with the project;
 - (h) include arrangements for community consultation and complaints handling procedures during construction and demolition; and
 - (i) be placed on Council's website within 2 weeks of its approval.

Note: Construction of the project shall not commence until written approval of this plan has been received from the Director-General.

Landfill Environmental Management Plan

3. Prior to the commencement of operation, the Proponent shall update the draft Landfill Environmental Management Plan in the EA for the site to the satisfaction of the Director-General. This plan must:
 - (a) be prepared by suitably qualified and experienced experts whose appointment has been endorsed by the Director-General;
 - (b) be prepared in consultation with the EPA and other relevant government agencies;
 - (c) be approved by the Director-General prior to the commencement of operation;
 - (d) describe in detail the management measures that would be implemented to address:
 - the relevant matters referred to in the *Environmental Guidelines for Solid Waste Landfills*;
 - the conditions of this approval; and
 - requirements of the EPL;
 - (e) include a copy of:
 - the relevant plans and programs required under this approval;
 - a quality assurance plan for the design and installation of the leachate management system and any capping of the landfill cells that covers the relevant issues outlined in sections 1 – 2 of Appendix A of the *Environmental Guidelines for Solid Waste Landfills*;
 - (f) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the Project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the Project; and
 - respond to emergencies;
 - (g) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project; and
 - (h) be placed on Council's website within 2 weeks of its approval.

Management Plan Requirements

4. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);

- any relevant limits or performance measures/criteria; and
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
- (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
- (d) a program to monitor and report on the:
- (e) impacts and environmental performance of the Project;
- (f) effectiveness of any management measures (see c above);
- (g) a contingency plan to manage any unpredicted impacts and their consequences;
- (h) a program to investigate and implement ways to improve the environmental performance of the project over time;
- (i) a protocol for managing and reporting any:
- (j) incidents;
- complaints;
 - non-compliances with statutory requirements; and
 - exceedances of the relevant limits and/or performance measures / criteria; and
- (k) a protocol for periodic review of the plan.

Annual Review

5. One year after the commencement of operation, and annually thereafter, the Proponent shall review the environmental performance of the Project to the satisfaction of the Director-General. This review must:
- (a) describe the operations that were carried out in the past calendar year;
- (b) analyse the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the
- relevant statutory requirements, limits or performance measures/criteria;
 - monitoring results of previous years; and
 - relevant predictions in the EA;
- (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- (d) identify any trends in the monitoring data over the life of the Project;
- (e) describe what actions will be implemented over the next year to improve the environmental performance of the project (including a timeline for the completion of each action); and
- (f) be placed on Council's website within 2 weeks of its completion.

Revision of Plans & Programs

6. Within 3 months of the submission of an:
- (a) audit under Condition 9 of Schedule 5;
- (b) incident report under Condition 7 of Schedule 5; and
- (c) annual review under Condition 5 of Schedule 5,
- the Proponent shall review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Director-General.

Note: This is to ensure the plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Project.

REPORTING

Incident

7. The Proponent shall notify the Director-General and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of this incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

Regular

8. The Proponent shall provide regular reporting on the environmental performance of the Project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.

INDEPENDENT ENVIRONMENTAL AUDIT

9. Within a year of the commencement of operation of the project, and every 5 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:
- (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
- (b) include consultation with the relevant agencies;

- (c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any relevant EPL (including any plan or program required under these approvals);
- (d) review the adequacy of any plans or programs required under these approvals; and, if appropriate; a
- (e) recommend measures or actions to improve the environmental performance of the Project, and/or any plan or program required under these approvals; and
- (f) be placed on Council's website within 2 weeks of its completion.

Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.

10. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

11. From the commencement of construction of the project, the Proponent shall make the following information publicly available on its (Council's) website as it is progressively required by the approval:
 - (a) a copy of all current statutory approvals;
 - (b) a copy of the current plans and programs required under this approval;
 - (c) a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
 - (d) a complaints register, which is to be updated on a monthly basis;
 - (e) a copy of the Annual Reviews (over the last 5 years);
 - (f) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and
 - (g) any other matter required by the Director-General.
-

APPENDIX 1 PROPONENT'S STATEMENT OF COMMITMENTS

Issue	Commitments
General	<ul style="list-style-type: none"> Wollongong City Council would implement the Project in accordance with the EA and conditions of approval as provided by the determining authority. Wollongong City Council commit to considering the Concept Site Masterplan for future planning of resource recovery activities on the Whytes Gully RRP site. This includes consideration of an appropriate footprint for future resource recovery activities and access requirements. By 2014 Wollongong City Council's Waste Strategy commits Wollongong City Council to reviewing available alternative waste technologies as identified in Wollongong City Council's Waste Strategy. If the Project is approved, it is proposed that Wollongong City Council would surrender existing development consents of relevance to the Project site. This does not include the existing development consent for the MRF, which is not affected by the Project.
Waste Management Strategy	<ul style="list-style-type: none"> Wollongong City Council would implement the Project in accordance with the "Wollongong City Council Waste and Resource Recovery Strategy 2012 to 2022" as provided in Appendix B and future updates of this document as relevant to the Project. Detailed design of the Project would consider and address constraints and opportunities identified within the EA.
Environmental Management Plans	<ul style="list-style-type: none"> A Construction Environmental Management Plan would be prepared and implemented to guide environmental management and monitoring activities during construction. The CEMP would include specific environmental issue sub-plans to reduce potential impacts and in accordance with relevant commitments identified within the EA and within this table. A monitoring program shall be conducted throughout the construction period to monitor compliance with the CEMP. The Landfill Environmental Management Plan (LEMP) would be implemented to be consistent with the draft LEMP provided in Appendix P. This includes implementation measures to guide environmental management and monitoring activities during operation as identified within the EA in addition to further specific issues identified within this Table.
Noise	<p>Wollongong City Council commit to the following with regard to noise:</p> <ul style="list-style-type: none"> All mobile equipment would be selected to minimise noise emissions. Equipment would be fitted with silencers and be in good working order. Broadband reversing alarms would be used for all site equipment. Construction activities would be limited to the recommended construction hours where feasible and reasonable. Consultation with residents who are identified as potentially affected by cumulative and operational noise exceedances and communication of details of the construction and operational program on a regular basis. In accordance with Chapter 8 of the EPA "NSW Industrial Noise Policy" (2000), negotiated agreements would be commenced prior to construction of the appropriate stage of the Project with the affected community (i.e. Receiver N1 – Stage 3, Receiver N2 – Stage 2). Provide a community liaison phone number and permanent site contact so that noise complaints would be received and addressed in a timely manner. Submission of a noise impact assessment and associated mitigation measures for Stage 4-2b for approval prior to commencement of construction of Stage 4-2b.
Greenhouse Gas	<p>Wollongong City Council commit to the following:</p>

Issue	Commitments
Erosion and Sediment Control	<ul style="list-style-type: none"> • An active landfill gas management system would be installed including flaring and/or combustion to reduce potential greenhouse gas emissions from the landfill. • Potential energy efficiency measures would be considered in the detailed design phase of the Project and be implemented and monitored through an Energy Savings Action Plan in accordance with the "Guidelines for Energy Savings Action Plans (DEUS 2005). <hr/> <ul style="list-style-type: none"> • An Erosion and Sedimentation Control Plan would be developed as part of the CEMP in general accordance with the following erosion and sedimentation control principles including: <ul style="list-style-type: none"> ○ Construction of earth bunds and diversion drains upslope and around the perimeter of construction areas where surface disturbance occurs, to prevent clean surface water entering these areas. ○ Erection of silt fences or straw bales at strategic locations (i.e. around stockpiles) to manage the migration of fines. ○ Construction of temporary sediment retention ponds. ○ Dust suppression as needed. ○ Reducing the surface area disturbed by construction activities at any one time. ○ Regular inspection and maintenance of sediment and erosion control structures. ○ Protecting and retaining vegetation and surface cover where possible. ○ Placement of an erosion protection barrier (e.g. grassing) at the completion of works. ○ Using designated access roads and paths where possible. ○ Removing soil adhering to the wheels and undercarriage of trucks (e.g. by wheel wash) prior to departure from the Project site. ○ Limit both the size of any stockpile footprints and the time between excavation and removal off-site of materials. ○ Do not place stockpiles within 30 m of any watercourse. ○ Stabilise all disturbed areas as soon as practicable. Temporary vegetative destabilisation techniques must be applied to any disturbed soil to prevent areas remaining bare for more than 28 days. ○ Stabilise all temporary and permanent drainage immediately. ○ Maintain all sediments and erosion control measures in effective condition until the works are completed and the site is stabilised. ○ Release "Dirty" Stormwater, captured and stored by sediment and erosion control measures or site works, after treatment and testing to confirm compliance with relevant criteria. ○ A monitoring program shall be conducted by throughout the construction period to monitor compliance with the CEMP. • Proposed erosion and sediment control measures that would be applied during operation of the Project are outlined in the draft LEMP (Appendix P).
Acid Sulfate Soils	In the event of discovery of Acid Sulfate Soils, procedures would be implemented/adopted to mitigate potential impacts on the environment in accordance with appropriate guidance and legislation and as identified in Chapter 12 of the EA.
Contamination	In the event of discovery of previously unidentified area(s) of potentially contaminated material, procedures would be implemented/adopted to mitigate potential impacts on the environment, employees and the public in accordance with appropriate guidance and legislation and as identified in Chapter 12 of the EA.
Surface Water	<ul style="list-style-type: none"> • A Surface Water Management Plan would be developed as part of the CEMP in general accordance with the following control principles: <ul style="list-style-type: none"> ○ Bund fuels, oils, paints, and other chemicals onsite to comply with the requirements of relevant legislation. ○ Bunds must be fitted with an impervious floor and must not be fitted with a drain valve. ○ Remove accidental spills of soil or other materials.

Issue	Commitments
Groundwater	<ul style="list-style-type: none"> • Wollongong City Council would commit to the following key principles in developing the surface water management controls for operation of the Project. <ul style="list-style-type: none"> ○ Diversion of clean drainage directly into Dapto Creek. Runoff from areas that are unaffected by the development would be allowed to discharge directly from the site to Dapto Creek. ○ Runoff from areas that are likely to generate sediment such as the new cell construction areas and stockpile areas would be directed into the Surface Water Ponds. ○ Reduce the volume of runoff to Surface Water Ponds by reducing the contributing catchment area at any particular time. ○ Keep sources of different water quality types separate from each other. ○ Construction of a perimeter bund around the entire active landfill area to prevent surface water from entering the landfill area. ○ Construction of a diversion drain around the entire landfill area to collect all runoff from disturbed areas (but outside exposed/uncapped active waste cell area(s)) which would drain to the sedimentation basin ○ The existing surface water ponds would be used for Stage 1 to 3 of the development. ○ The Surface Water ponds would be downsized for Stage 4 onwards, as Stage 1 to 3 would be rehabilitated and runoff would be directed offsite to Dapto Creek. ○ Re-use 'dirty' water for dust suppression. • A Construction Quality Assurance (CQA) system would be implemented for cell construction. Detailed CQA requirements are embedded in the Technical Specification of the Design Report (Appendix 0). • During the operational phase of the Project a number of engineering measures and management strategies would be used to mitigate impacts to groundwater. Further documented within the EA these include: <ul style="list-style-type: none"> ○ Leachate Barrier System and Leachate Collection System ○ Leachate Pond ○ Leachate Treatment Plant ○ Groundwater separation ○ Monitoring <ul style="list-style-type: none"> - A network of groundwater bores would be used to monitoring groundwater quality and trends at the Project Site. This would include a regular programme of groundwater sampling and assessment as detailed in the LEMP. - The leachate management system would be monitored in accordance with measures described in the LEMP including direct monitoring for the purposes of system integrity, leachate quantity and quality. - Groundwater Assessment Program to monitor background concentrations. If a significant change in concentration for any of the indicator parameters is detected over two consecutive monitoring periods, then the affected groundwater monitoring bores would be resampled and assessed and OEH notified (if required). Following this a groundwater remediation plan may be developed in accordance with the LEMP. - Combined surface water and groundwater monitoring program to gain an understanding of surface water and groundwater interaction and to assess potential impacts on the downstream environment including Dapto Creek and GDEs
Leachate Management	<p>Wollongong City Council commit to the following with respect to leachate management:</p> <ul style="list-style-type: none"> • Segregation of leachate from surface water and groundwater; • Maintain pond levels with adequate freeboard to minimise the potential for

Issue	Commitments
	<p>overflow;</p> <ul style="list-style-type: none"> Continue to monitor leachate discharge to sewer in accordance with Trade Waste Agreement.
Flora and Fauna	<p>Wollongong City Council commit to the following to ensure the Project maintains or improves the biodiversity values of the region.</p> <ul style="list-style-type: none"> Clearing for the purposes of bushfire protection would be restricted to non-native vegetation communities (Acacia Scrub/Exotic, Closed Exotic Grassland, Planted). In accordance with the Bushfire Assessment, clearing or trimming of the Illawarra Subtropical Rainforest on the site is proposed to be avoided. Removal of native vegetation communities and fauna habitats during construction and operation of the Project be avoided and minimised where possible. Undertaking two additional targeted surveys for the Green and Golden Bell Frog in the peak breeding season to confirm results of targeted surveys undertaken in November/December 2011 and early January 2012. Waterbody removal and associated vegetation removal being undertaken over the spring or summer months when fauna species are most active. Undertaking protection of all retained trees. Tree protection measures such as temporary fencing will be implemented for any trees potentially indirectly impacted by the Project. Installation of protective fencing around all retained native vegetation. This is particularly important for areas of ISTR EEC where there is a risk of indirect impact. Installation of sediment and erosion controls as required including for potential indirect impacts to the ISTR EEC. Ensure machinery parking, equipment or materials storage compounds, temporary stockpiling of excavated material and work areas are outside sensitive natural features including retained native vegetation, wetlands and drainage lines. Logs removed with any vegetation removal would be relocated into areas of retained vegetation, for the purpose of providing fauna habitat. A weed control program would be undertaken in accordance with the LEMP. Undertake revegetation of cleared and disturbed areas using a range of native species of local provenance for the purpose of managing weeds, controlling soil erosion, and maintaining fauna habitat in accordance with the Landscape Strategy (Appendix N). Maintain suitable buffer distances from nearby waterways. These buffer distances are recommended based on the stream orders of waterways and the subsequent categories identified within the "Wollongong City Council Development Control Plan 2009". Following the disturbance of existing surface water ponds, landscaping would be undertaken to enhance existing riparian zone vegetation associated at the ponds to be in accordance with appropriate riparian buffer widths. The vegetation buffer is proposed to be constructed to an average width of 5 metres where possible to improve the existing aquatic habitats. Extend the current water quality monitoring program to include one monitoring location on Dapto Creek, upstream of the discharge point and two locations downstream. Biodiversity and habitat values would be maintained and increased where possible by planting a range of indigenous species. Offsetting measures, and measures to monitor the success of these offsets, would be outlined in a Vegetation Management Plan.

Issue	Commitments
Air Quality	<p data-bbox="483 199 1278 224">Wollongong City Council commits to the following with regard to air quality:</p> <ul data-bbox="496 253 1407 1081" style="list-style-type: none"> <li data-bbox="496 253 1407 309">• Watering of unsealed haul roads and disturbed surfaces (including construction areas). <li data-bbox="496 331 1206 356">• Restricting the size of disturbed areas as much as practicable. <li data-bbox="496 383 1407 439">• Disturbed areas would be rehabilitation progressively in accordance with the Landscape Strategy. <li data-bbox="496 465 1166 490">• Prevention of truck over-loading and covering dusty loads. <li data-bbox="496 517 1054 542">• Washing down trucks before they leave the site. <li data-bbox="496 568 1350 593">• Maintaining equipment and plant appropriately to ensure efficient operation. <li data-bbox="496 620 1407 707">• The active landfill area would be covered following the completion of waste placement at the end of each day with landfill lids or approximately 150 mm of daily cover material or other cover system. <li data-bbox="496 734 1187 759">• Adhering to appropriate hours of construction and operation. <li data-bbox="496 786 1334 810">• Temporarily suspending operations under extreme wind speed conditions. <li data-bbox="496 837 1407 947">• Giving consideration to reducing the footprint of the active cell area and daily cover and increasing the thickness of daily cover to control odour as required, particularly during the operation of Stage 1 during waste relocation works and Stage 4. <li data-bbox="496 974 1407 1030">• An air quality (including dust and odour) management strategy would be incorporated into the CEMP. <li data-bbox="496 1057 1238 1081">• Monitoring in accordance with the EPL and ongoing assessment.
Traffic and Transport	<p data-bbox="483 1108 863 1133">Wollongong City Council commit to:</p> <ul data-bbox="496 1160 1407 1485" style="list-style-type: none"> <li data-bbox="496 1160 1407 1216">• Appropriate management and maintenance of road pavement of Reddalls Road intersection to Whytes Gully RRP and site access. <li data-bbox="496 1243 1407 1406">• The CEMP for the Project would include a traffic management plan identifying truck movements to and from the site, internal access, interactions with general public, parking and access requirements for construction personnel and safety signage and training of personnel in traffic management in accordance with relevant requirements and guidelines of the RTA in terms of road safety and network efficiency. <li data-bbox="496 1433 1407 1485">• Where possible, trucks to the site would be scheduled to avoid peak hour and within standard hours of operation, except in emergencies.
Heritage	<p data-bbox="483 1512 1378 1565">Wollongong City Council commit to the following with regard to heritage (indigenous and non-indigenous):</p> <ul data-bbox="496 1592 1407 2103" style="list-style-type: none"> <li data-bbox="496 1592 1407 1675">• Registered Aboriginal parties identified within the EA would be informed about the management of Aboriginal cultural heritage sites within Whytes Gully RRP where they may be impacted upon by the Project. <li data-bbox="496 1702 1407 1839">• Identified potential archaeological deposits within the Whytes Gully RRP site would be left in their identified location and not salvaged unless the Project cannot avoid impacting upon these sites. If salvage is required Wollongong City Council would consult with the relevant statutory bodies and provide an opportunity for collection of the cultural material from the site. <li data-bbox="496 1865 1407 1944">• Monitoring of construction would be completed for the Project where in proximity to listed heritage items (i.e. Glengarry Cottage) to ensure there is no disturbance to heritage significance. <li data-bbox="496 1971 1407 2049">• A heritage induction including indigenous and non-indigenous heritage is proposed to be incorporated within the general induction during construction of the Project. <li data-bbox="496 2076 1407 2103">• Should indigenous or non-indigenous cultural material be identified during any

Issue	Commitments
Visual	<p data-bbox="544 181 1404 237">works, construction and/or operation will cease in the vicinity of the find and the appropriate representative at OEH will be contacted.</p> <p data-bbox="483 264 863 286">Wollongong City Council commit to:</p> <ul data-bbox="496 315 1404 1070" style="list-style-type: none"> <li data-bbox="496 315 1404 371">• Staging and planning of landfill activities to reduce the extent to which they would be visible during the construction and operation of the Project. <li data-bbox="496 394 1404 450">• Implementation of the Landscape Strategy (Appendix N of the EA) to reduce and manage potential long term visual impacts. <li data-bbox="496 472 1404 555">• Reducing the area of un-vegetated landfill slope, both permanent and temporary, by staging the operations and progressively establishing a vegetation cover on each section of slope as they are completed. <li data-bbox="496 577 1404 633">• Revegetating the proposed landfill slopes with mix of shrubs and small trees and grass to create a landscape character similar to adjoining rural areas. <li data-bbox="496 656 1404 739">• Adopting design options (when suitable) to be in keeping with the surroundings of the site including native grasses and dark toned colours for existing and proposed structures to reduce their visual contrast with their landscape setting. <li data-bbox="496 761 1404 844">• Consulting with residents (as identified within the relevant chapter of the EA) to discuss the potential for planting to be carried out close to their houses to screen views of the landfill operations. <li data-bbox="496 866 1404 981">• Subject to bushfire protection requirements (such as trimming of mature trees), existing native vegetation would be retained where possible to provide visual screening and contribute to the landscape character of Whytes Gully RRP. <li data-bbox="496 1003 1404 1059">• Screen planting with dense tall tree planting on natural ground would be used to block views to the site, particularly from adjoining residences.
Socio-economic	<p data-bbox="483 1099 963 1122">Wollongong City Council commit to ensuring:</p> <ul data-bbox="496 1151 1404 1473" style="list-style-type: none"> <li data-bbox="496 1151 1404 1368">• A Stakeholder Strategy would be implemented throughout the delivery of the Project. Provided within environmental management documentation (LEMP) the Stakeholder Strategy would provide procedures for communication with stakeholders, procedures for the dissemination of information to the community, identification of the communication channels available for the community and stakeholders to provide feedback on the Project, a protocol for the Project to respond to any enquires or feedback and for managing site visits and property inspections. <li data-bbox="496 1391 1404 1473">• Implementation of measures to reduce the potential for construction and operation impacts upon amenity as identified within the relevant chapters of the EA and the draft Statement of Commitments.
Hazards and Risks	<p data-bbox="483 1503 963 1525">Wollongong City Council commit to ensuring:</p> <ul data-bbox="496 1547 1404 2067" style="list-style-type: none"> <li data-bbox="496 1547 1404 1570">• No smoking around plant equipment and within designated areas only. <li data-bbox="496 1592 1404 1648">• Any dangerous goods would be stored in accordance with normal dangerous goods storage procedures. <li data-bbox="496 1671 1404 1727">• Spill containment to be managed in accordance with relevant Australian Standards. <li data-bbox="496 1749 1404 1805">• Safety hazards would be managed through occupational health and safety procedures. <li data-bbox="496 1827 1404 1850">• Environmental hazards would be managed through the CEMP and LEMP. <li data-bbox="496 1872 1404 1955">• Fire protection (including fire extinguishers, separation distances) would be provided in accordance with relevant Australian Standards and as identified within the EA. <li data-bbox="496 1977 1404 2011">• Fire suppression and protection systems serviced and inspected periodically. <li data-bbox="496 2033 1404 2067">• Water carts would continue to be made available at the site.

Issue	Commitments
	<ul style="list-style-type: none"> • Site emergency response plan including emergency contact numbers provided within management system for the site. • The site landscaping would not exceed a fuel load of 2 t/ha. • Planted trees that are retained on the site would have the lower branches trimmed (cut off) to a height of 2 m above the ground. The tree trimming works may be staged with priority given to the protection of assets and fuel load reduction adjacent to roads. • An asset protection zone (APZ) of 10 m would be maintained around existing site buildings. • A perimeter firebreak of 5 metres be established around the entire Whytes Gully RRP site and around buildings (roads and access tracks including offsite roads and tracks, may be utilised to form the fire break). • Wind-blown litter would be managed as outlined in the LEMP. • Coordination of vegetation planting and removal with bushfire management requirements that include access tracks and fuel management zones. • Flammable materials would be removed from site fencing as outlined in the LEMP. • The LEMP would be implemented to ensure reduction of hazards and risk associated with delivery and/or processing of waste. • A Vegetation Management Strategy (including Weed management) would be developed within the LEMP to ensure that vegetation is managed to not exceed recommended fuel loads in relevant guidelines. • The general public would not be allowed direct access to the landfill. • Security of the site would be maintained during construction and operation including security fencing, which is locked after hours of operation. • Waste entry and flows would be monitored and controlled in accordance with the LEMP.
Rehabilitation and Final landform	<p>Wollongong City Council commit to:</p> <ul style="list-style-type: none"> • Development of a final landform that integrates with the surrounding landscape and environment. • Implementing of the Design Report to ensure that appropriate capping of the landfill is completed progressively throughout the Project. • Implementing the LEMP to ensure appropriate post closure monitoring and maintenance. This includes contingency and remediation measures should environmental monitoring indicate that the closed landfill is impacting upon air, surface water, groundwater or amenity of nearby receptors. This also includes procedures for maintaining the landfill surface post closure and repairing damage to the capping system.
Stakeholder Engagement	<p>Wollongong City Council commit to ongoing regular consultation with the community on the Project through:</p> <ul style="list-style-type: none"> • Community Consultative Committee for the Whytes Gully RRP. • Phone line to communicate issues to Whytes Gully RRP management. • Complaints management process (as provided in the draft LEMP). • Clear signage at construction sites during construction. • Stakeholder satisfaction surveys and feedback forms (as part of wider Wollongong City Council activity). • Ongoing use of interactive web-based activities including updates of the Project website.

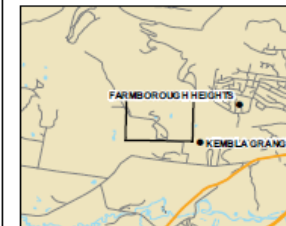
APPENDIX 2 GENERAL LAYOUT OF THE PROJECT SITE



WHYTES GULLY NEW LANDFILL CELL ENVIRONMENTAL ASSESSMENT

WOLLONGONG CITY COUNCIL

PROJECT FOOTPRINT



LEGEND

- Contours of Final Landform (5 m interval)
- Site Boundary
- Approximate Extent of Waste
- Extent of Landfill Works
- Indicative New Leachate Pond Footprint
New Leachate Pond to be established prior to commencement of Stage 4 construction
- Indicative New Surface Water Pond Footprint
Surface Water Pond to be reduced in size prior to commencement of Stage 4 construction
- Indicative LTP infrastructure
will be assessed at the end of 2014.
- Existing Leachate Treatment Plant (LTP) Footprint

NOTES

Extent of waste based on site observations and information provided by Council.

Aerial Ortho-Photograph provided by AAM Pty. Ltd. taken on 16 May 2011, Reference 18783A. Image Geo referenced.

Extent of landfill works as per Golder Design Report.

0 25 50 100 150 metres

SCALE (at A3) 1:3,800

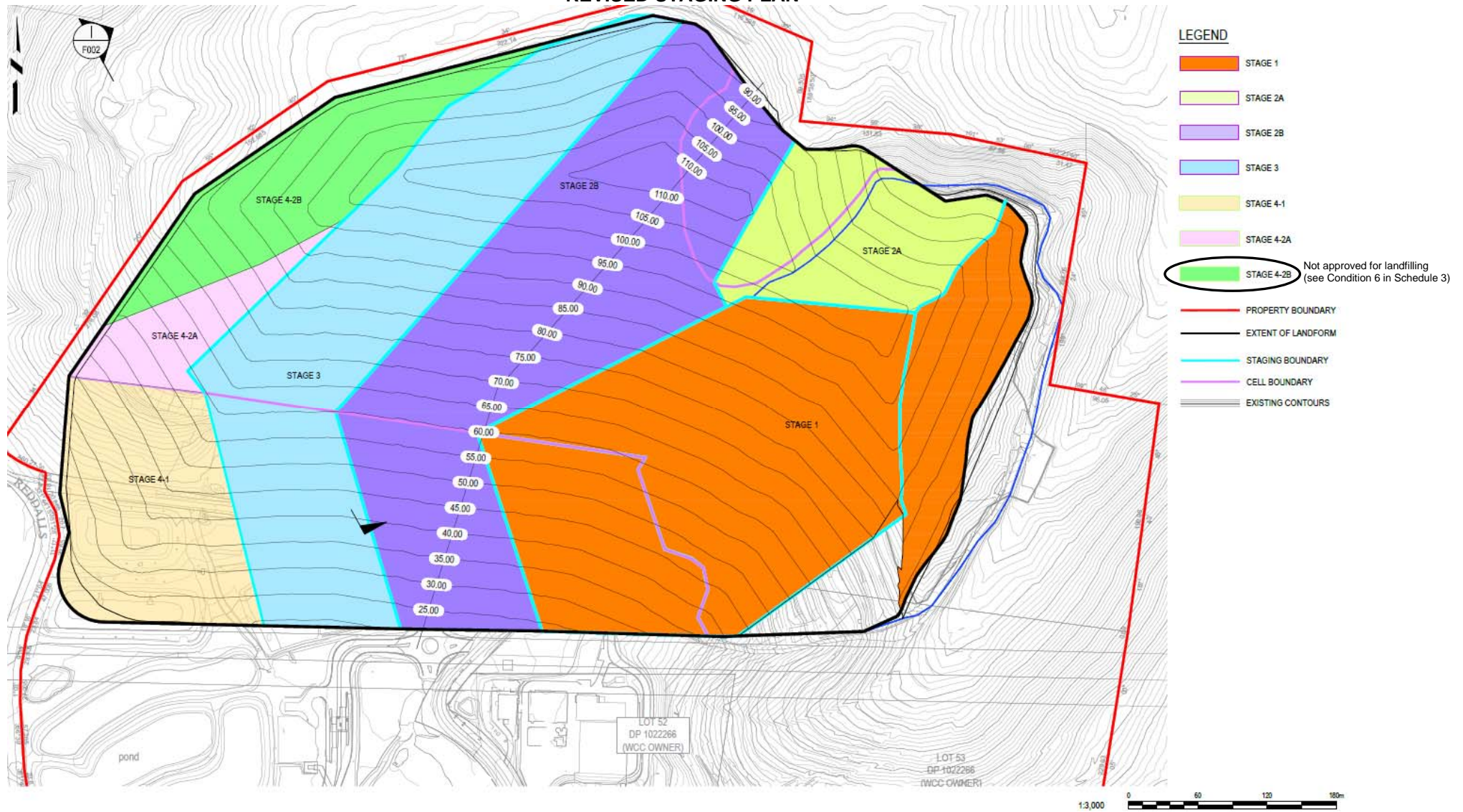
Coordinate System: GDA 1984 MGA Zone 56

PROJECT: 117625003
DATE: 22/02/2012
DRAWN: FA
CHECKED: JMc

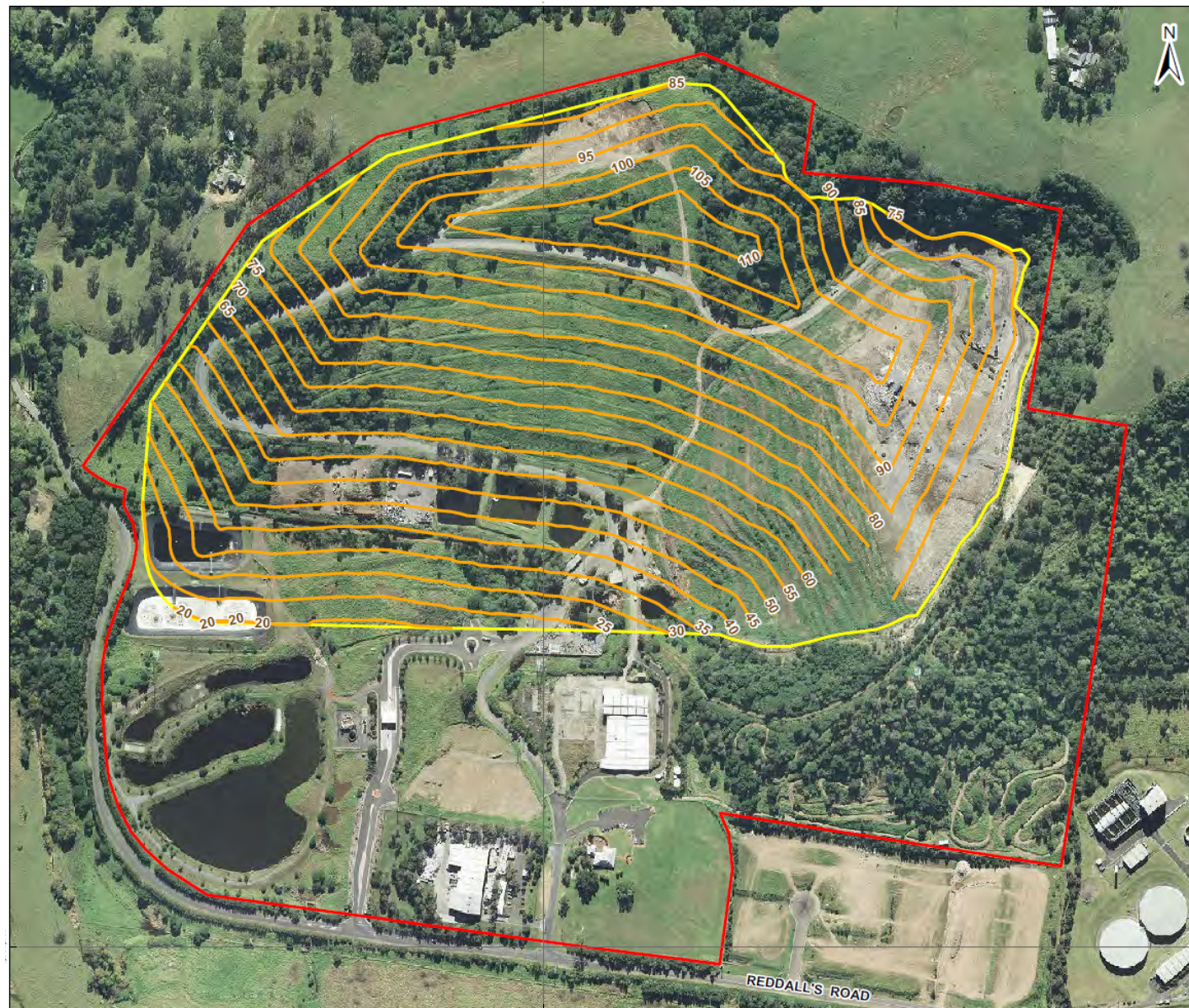
FIGURE 5.1



APPENDIX 3 REVISED STAGING PLAN

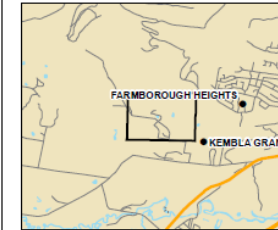


APPENDIX 4 INDICATIVE FINAL LANDFORM



WHYTES GULLY NEW LANDFILL CI
LANDFILL MASTER PLAN
WOLLONGONG CITY COUNCIL

FINAL LANDFORM



LEGEND

- Contours of Final Landform (5 m interval)
- Site Boundary
- Extent of Landfill Works

NOTES

Aerial Ortho-Photograph provided by AAM Pty. Ltd. taken on 16 May 2011, Reference 15763A. Image Georeferenced.

Extent of landfill works and final contours as per Golder Design Report.

0 25 50 100 150 Metres

SCALE (at A3) 1:3,800

Coordinate System: GDA 1994 MGA Zone 56

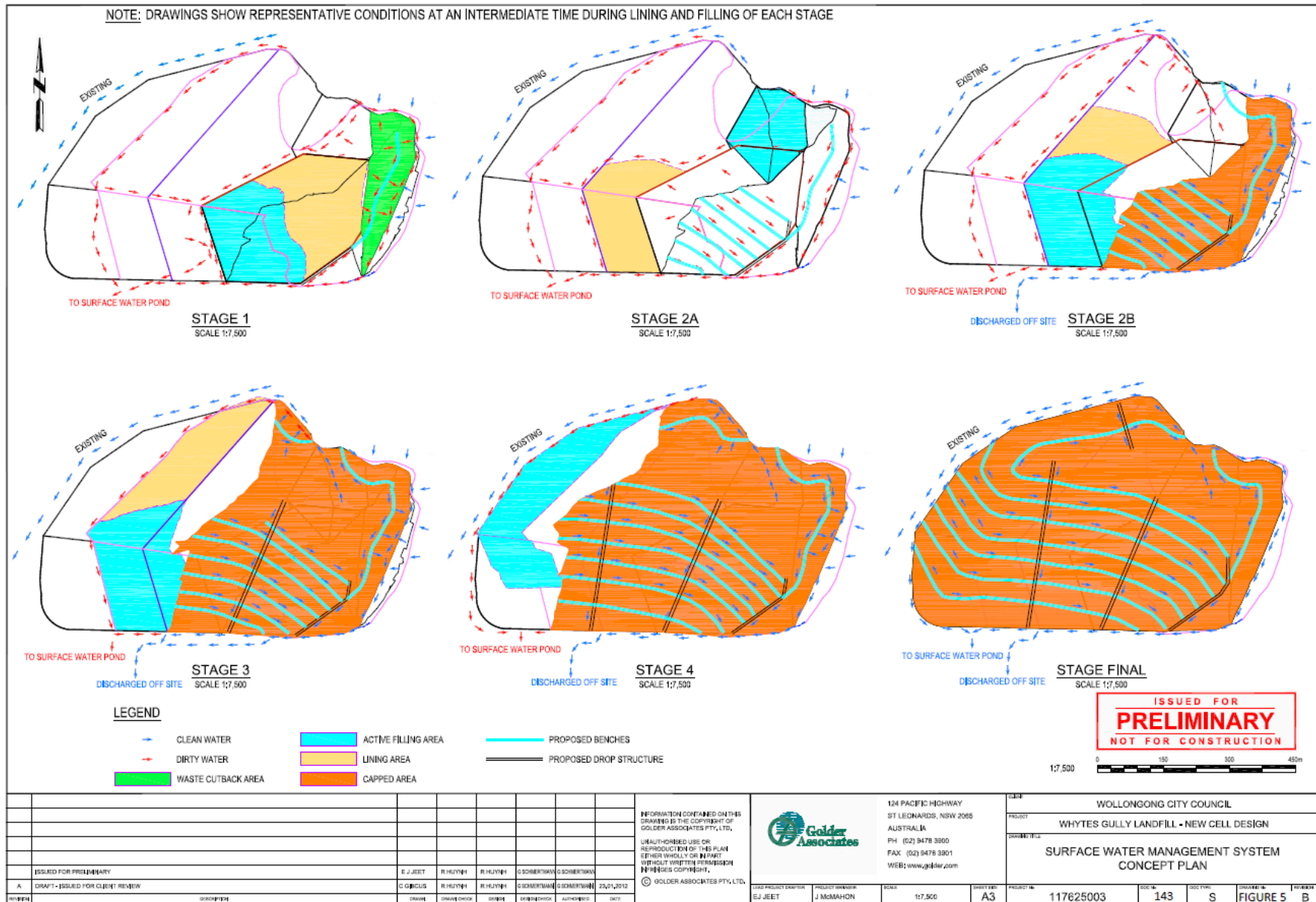
PROJECT: 117625003
DATE: 5/03/2012
DRAWN: FA
CHECKED: JMc

FIGURE 2

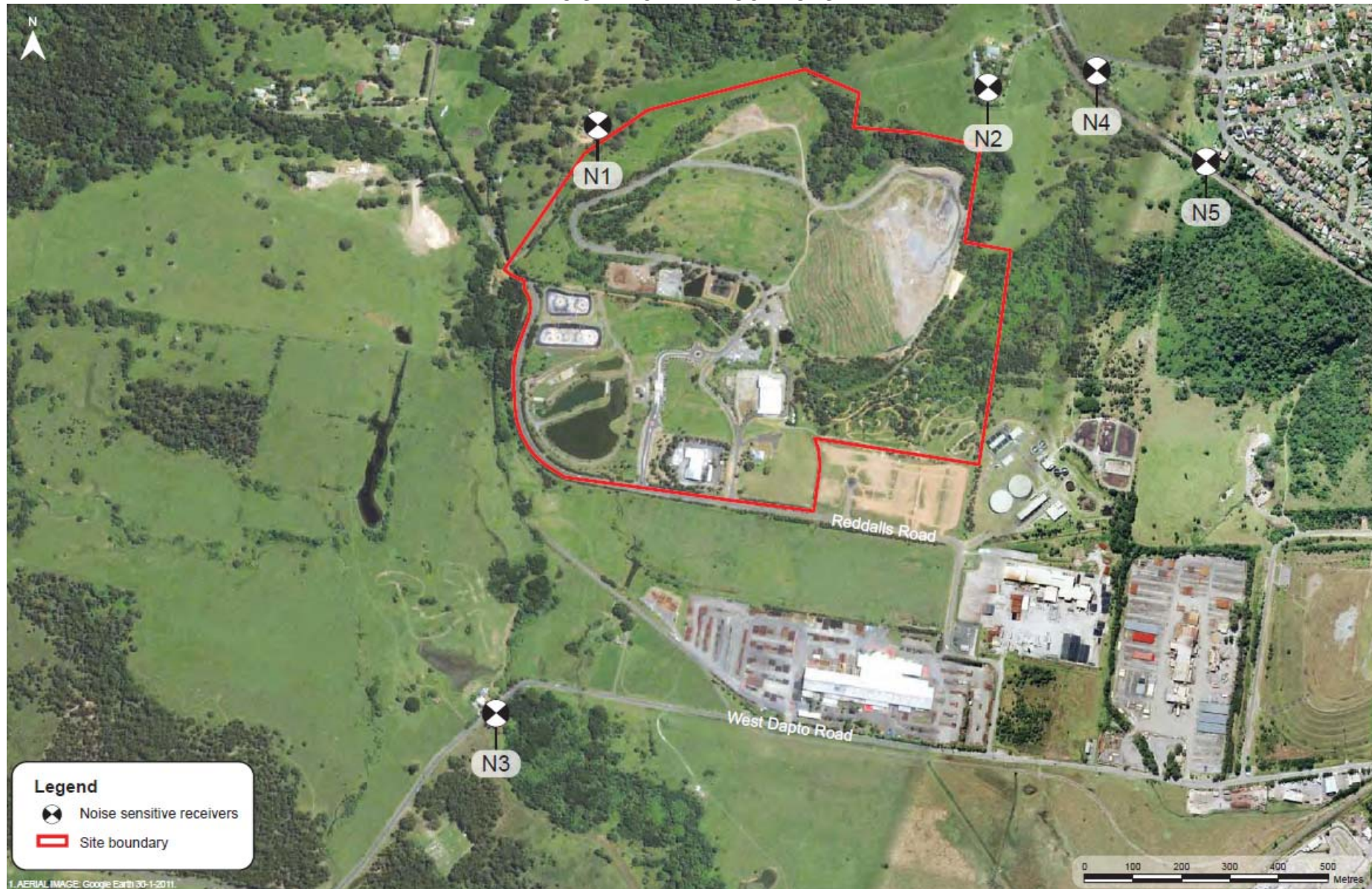


APPENDIX 5 INDICATIVE SURFACE WATER MANAGEMENT SYSTEM CONCEPT PLAN

NOTE: DRAWINGS SHOW REPRESENTATIVE CONDITIONS AT AN INTERMEDIATE TIME DURING LINING AND FILLING OF EACH STAGE



APPENDIX 6
NOISE RECEIVER LOCATIONS



APPENDIX 7 INDICATIVE LANDSCAPING PLAN



WHYTES GULLY NEW LANDFILL CELL
ENVIRONMENTAL ASSESSMENT
WOLLONGONG CITY COUNCIL

LANDSCAPING PLAN

LEGEND

- Site boundary
- New landfill boundary
- Proposed contours (5m intervals)
- Existing trees to be retained
- Proposed screen planting along boundary
- Proposed small tree & shrub planting on landfill
- Proposed tree planting on natural ground
- Proposed grass on landfill slopes
- Existing ponds retained
- Potential lookout area
- Potential passive open space recreation area
- Existing industrial buildings on site
- Existing residential buildings adjoining site



FIGURE 20.3

Figure provided by

Landscape Architect



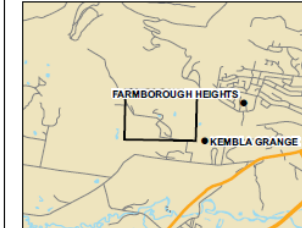
Landscape Architecture
Urban Design

APPENDIX 8 DEVELOPMENT CONSTRAINTS



WHYTES GULLY NEW LANDFILL CELL
ENVIRONMENTAL ASSESSMENT
WOLLONGONG CITY COUNCIL

DEVELOPMENT CONSTRAINTS



LEGEND

- Site Boundary
- Cadastre
- Easement
- Flood Planning Area (West Dapto LEP)
- Interpreted Flood Planning Area (50 cm Freeboard)
- Heritage
- Aboriginal Archaeological Sites (12/01/2012)
- AHIMS Results in Study Area (12/01/2012)
- Extent of Landfill Works

NOTES

Historic locations digitised by Golder from reports supplied by Wollongong City Council

Aerial Ortho-Photograph provided by AAM Pty Ltd, taken on 16 May 2011, Reference: 18763A, Image Georeferenced.

Site contours based on survey by KFW Williams, dated 20/07/2011

0 125 25 50 75 100 125 150 metres

SCALE (at A3) 1:4,000

Coordinate System: GDA 1994 MGA Zone 56

PROJECT: 117625003
DATE: 26/03/2012
DRAWN: FA
CHECKED: JMc

FIGURE 7.2

