APPENDIX E - Revised Statement of Commitments

1 STATEMENT OF COMMITMENTS

The Statement of Commitments contained in Section 9 of the EA has been updated and amended to reflect the revised project description and to take into account the submissions received during exhibition of the EA. This Appendix SUPERCEDES AND REPLACES it.

The following Statement of Commitments has been prepared in accordance with the Director General's Requirements and Part 3A of the *EP&A Act* 1979. These commitments outline the mitigation, management and monitoring measures to be implemented by Council throughout the construction and operation of the proposed extension to the Tharbogang Quarry and Landfill to manage potential environmental impacts arising from the proposal.

1.1 Environmental Management

Thus far, the following design and operational plans have been developed:

- Coffey Mining (2008) Staged Operational and Development Plan for Tharbogang Quarry and Landfill
- Alf Griggs and Associates (2008) Tharbogang Quarry and Waste Management Centre, Site Operations Plan
- Balance Consulting (2007) Tharbogang Quarry and Landfill Expansion Offset Strategy

These documents will provide the framework on which to build two all encompassing site specific plans for the construction, operation and closure of the quarry and the landfill:

- Tharbogang Waste Management and Disposal Centre: Operational and Environmental Management Plan
- Tharbogang Quarry: Operational and Environmental Management Plan

Environmental management objectives and commitments, as outlined in this report, and the requirements outlined in the DG's Requirements, relevant SEPPs and relevant National and State Government technical and policy guidelines, will be embedded into the body of the two site specific plans.

Council will ensure that the successful tender for the construction of the WTS prepares a Construction Environmental Management Plan prior to the commencement of works, detailing:

- Project details and construction methodologies
- Site management and environmental management measures and procedures
- Responsibility and authority of organisations involved in the construction of the WTS

Council will develop the Griffith Biodiversity Management Strategy to provide strategic direction to land planning in the shire and the provision of offsets for the proposed development.

Tharbogang Waste Management and Disposal Centre: Operational and Environmental Management Plan

Council will develop and implement the operational and environmental management plan prior to the commencement of works to meet the operational requirements of the facility and environmental objectives and commitments, including the environmental goals listed in *Environmental Guidelines: Solid Waste Landfills* (EPA, 1996).

The Plan will be divided into the following chapters and sections:

- Site overview
- Environmental objectives
- Cell construction, including:
    - Cell design
    - Batter stabilisation
    - Leachate drainage and storage
    - Bund construction
    - Landfill base layers and HDPE membrane
    - Commissioning sequence for landfill cells
    - Transition between cells
- Waste transfer station procedures
    - Accepted wastes
    - Waste reception procedures
    - Waste storage procedures
    - Prohibited waste management and protocols
    - Hazardous waste management and protocols
    - Routine operational and monitoring procedures
    - Removal of recyclables
    - Traffic management
    - Scavenger rights and responsibilities
    - Complaints procedures
    - Incident reporting management system
- Landfill operation procedures, including:
    - Transition procedures from the existing landfill to the proposed landfill
    - Maintenance of active tip face
    - Cover requirements
    - Flaring of gas emissions
    - Leachate collection system
        - Maintenance
        - Response procedures high level alarm
        - Discharging leachate
    - Traffic management
    - Pest and weed control
    - Cell rehabilitation
    - Ongoing monitoring requirements

- Landfill closure and rehabilitation plan, including:
    - Final landform and use
    - Final landfill contouring
    - Detailed site investigation procedures to determine the extent and degree of contamination from landfill
    - Maintenance and monitoring of leachate collection, gas collection and stormwater controls
    - Revegetation procedures
    - Revegetation maintenance and monitoring procedures
- Quality assurance and quality control, including:
    - Requirements for DECC reporting
    - Procedures for collecting waste stream data
    - Requirements for auditing waste transfer station and landfill facility procedures
    - Requirements for auditing environmental performance

Council will ensure that all site personnel, management and contractors are familiar with the above document, in particular the environmental objectives, and management and monitoring requirements. This document is to be the primary reference for all landfill activities and used for site inductions.

Tharbogang Quarry: Operational and Environmental Plan

Council will develop and implement the operational and environmental management plan for the quarry prior to the commencement of works, outlining the operational procedures and environmental management measures to be adhered to by the successful quarry contractor and Council. The plan will cover the following:

- Site overview
- Environmental objectives
- Pit construction and operation
    - Pit design
    - Commissioning sequence
    - Operating schedule
    - Flora and fauna exclusion zones
    - Onsite flora and fauna measures to be undertaken by the Contractor
    - Hazard controls and personnel safety
    - Stormwater management controls and storage
    - Stripping of overburden and stockpiling procedures
    - Drilling, blasting and crushing procedures
    - Noise and vibration controls to be employed during the blasting and operation of mobile quarry equipment
    - Stockpiling of resource

    - Traffic management
    - Dust suppression measures
    - Ongoing monitoring requirements
    - Transition procedures between quarry pits
    - Public complaint procedures
    - Incident reporting management system
- Quarry rehabilitation plan, including:
    - Final landform and use
    - Quarry wall contouring
    - Revegetation procedures
    - Maintenance and monitoring procedures
- Quality Assurance and Quality Control, including:
    - Requirements for DECC reporting
    - Requirements for auditing quarry facility and operations
    - Requirements for auditing environmental performance

Council will ensure that the contractor and management are familiar with this document, in particular the environmental objectives, and management and monitoring requirements. This document is to be the primary reference for all quarry activities and used for site inductions.

1.2 Mitigation Measures

Table E1 outlines the mitigation and management measures Council has committed to in order to manage potential environmental impacts and issues arising from the proposal. Key responsibilities and a schedule have been identified to ensure effective implementation of commitments at the appropriate project stage. Council is ultimately responsible for ensuring contractual agreements with contractors address agreed environmental commitments and that these commitments are implemented.

Table E1: Mitigation and management commitments

MITIGATION AND MANAGEMENT MEASURE	RESPONSIBILITY	IMPLEMENTATION SCHEDULE	PERFORMANCE INDICATOR, STANDARD OR GUIDELINE	DOCUMENT REFERENCE
FLORA AND FAUNA				
▪ Develop and implement Griffith Biodiversity Management Strategy	Council	Project commencement	Strategy review of biodiversity outcomes	EA Section 7.2.2 'Onsite measures'
▪ All retained areas of native vegetation on Lot 201 and Lot 202 (that is areas not subject to the proposed and envisaged future clearing for quarrying operations) will be protected in perpetuity as part of the offset package and rezoned to Environmental Conservation or Environmental Management ▪ Revegetate and enhance (where possible) to create a contiguous corridor with Lot 201 on the western boundary ▪ Maintain and enhance a 40m riparian zone on either side of the ephemeral drainage line	Contractors	Prior to commencement of each quarry pit	Species survival counts Structural and floristic diversity Buffer dimensions	EA Section 7.2.2 'Onsite measures'
▪ Collect, store and/or propagate seeds for rehabilitation purposes (to be stipulated in the detailed rehabilitation plan)	Council	Prior to commencement of each quarry pit	Species diversity in seed collection	EA Sections 6.3.6 and 6.4.4 'Rehabilitation and final landform'
▪ Relocate hollow trees and woody debris to corridors and areas not designated for clearing	Council	Prior to commencement of each quarry pit		EA Section 7.2.2 'Onsite Measures'
▪ Clearing of hollow-bearing trees will be undertaken outside of the main bird breeding periods and trees will be inspected for resident fauna by a suitably qualified ecologist. Appropriate action will be taken prior to removal should the presence of native fauna be confirmed	Qualified NSW Parks Officer or equivalent	Prior to commencement of each quarry pit	Property Vegetation Plan (*Native Vegetation Act 2003*)	EA Section 7.2.2 'Onsite measures'
▪ Undertake detailed flora and fauna assessments of proposed offsets	Council	Prior to the commencement of each quarry pit	*Consultant Brief 2007* 'Objectives and Assessment Tasks', and in consultation with DECC	EA Section 10.2
▪ Refine the offset package described in **Appendix C** to the satisfaction of the Department of Planning and implement it prior to the commencement of the new quarrying activities in order to compensate	Council	Prior to the commencement of each quarry pit	Approval from the Department of Planning and verified number of hectares protected and reported as offsets	EA Section 7.2.2 'Offsets' EA Section 10.4

for the native vegetation to be cleared				
▪ Enhance onsite vegetation in areas not designated for clearing through direct seeding, thinning, grazing exclusion, weed and fire management ▪ Develop and implement a weed and pest management strategy for the control and eradication of weed species and incorporate into the rehabilitation plan, and QOEMP and LOEMP ▪ Monitor success of revegetation and enhancement works onsite and in offset areas	Council	Ongoing		EA Section 7.2.2 EA Section 10.5
▪ Prepare a detailed rehabilitation plan for the quarry and landfill components to achieve the rehabilitation outcomes identified in the EA. The rehabilitation plan will describe short, medium and long-term measures what will be implemented to rehabilitate the site, manage the remnant vegetation and habitat on the site and landscaping of the site to mitigate any visual impacts of the project. ▪ Performance monitoring and completion criteria will be designed to demonstrate that the rehabilitation outcomes identified in the EA and rehabilitation plan are met.	Council	Project commencement and ongoing	DECCW approval	EA Section 6.3.6 and 6.4.4
▪ Progressively clear vegetation for each quarry pit ▪ Progressively rehabilitate each quarry pit	Council/Contractors	Ongoing	Number of hectares successfully rehabilitated Species survival counts	EA Section 6.3.6
▪ Cap and rehabilitate the landfill on completion	Council/Contractors	Landfill closure	Species survival counts	EA Section 6.4.4

GROUNDWATER

▪ Install 2 new licensed groundwater monitoring bores west of the site	Landfill Operations Manager	Project commencement	*Minimum Construction Requirements for Water Bores in Australia 2003*	EA Section 7.3.2 & figure 7.3
▪ Licence new groundwater monitoring bores	Landfill Operations Manager	Prior to installation of new bores	*Water Act 1912 (NSW)*	EA Section 7.3.2
▪ Establish and implement groundwater monitoring program in accordance with DECCW requirements	Quarry and Landfill Operations Managers	Project commencement	*EPA Environmental Guidelines: Solid Waste Landfill1996* *Guidelines for Water Quality Monitoring and Reporting ANZECC 2000* *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW 2004*	EA Section 7.3.2
▪ Construct appropriately engineered landfill cells lined with an impermeable liner (i.e. with a permeability less than $10^{-9}ms^{-1}$) and a	Council, project designers and	Construction	*EPA Guidelines for Aqueous Liquid Treatment Ponds*	EA Section 6.4.3 'Monitoring and

drainage layer ▪ Construct a leachate collection system with appropriate holding pond and/or tanks to divert leachate back to landfill ▪ Construct surface water diversions around landfill ▪ Install high level alarm to the leachate pond interlocked with the drainage system to prevent overfilling ▪ Install monitoring and alarm system to detect possible failures in the leachate collection system and liner	contractor		*EPA Leachate Barrier System Guidelines* *EPA Leachate Collection System Guidelines* *EPA Environmental Guidelines: Solid Waste Landfills 1996*	maintenance' & Section 7.3.2
▪ Establish assessment procedures to determine extent of leachate system failure ▪ Establish and maintain a landfill incident response register and assessment of potential risks	Landfill Operations Manager	Ongoing		EA Section 7.3.2
▪ Visual inspections of engineering works on a daily basis	Site Manager	Ongoing		EA Section 9.5
▪ Install operational backflow device on potable water supply pipeline ▪ Identify, map and colour code all pipelines on site	Landfill Operations Management	Project Commencement	*National and State plumbing regulations*	EA Section 6.5
▪ Contour, cap and revegetate to top profile of the landfill form to maximum 5% gradient	Landfill Operations Manager	Closure	*EPA Environmental Guidelines: Solid Waste Landfills 1996*	EA Section 6.4.4
▪ Conduct ongoing groundwater monitoring post closure and action non-compliances	Council	Closure	*EPA Environmental Guidelines: Solid Waste Landfills 1996*	EA Section 7.3.2
GROUNDWATER DEPENDANT ECOSYSTEMS				
▪ Progressively rehabilitate quarry voids to limit area of disturbance potential for loss / gain of water accession to groundwater	Quarry contractor	Completion of extraction in each pit		EA Section 6.3.6
▪ Install leachate collection system for landfill cells.	Council, project designers and contractor	Construction		EA Section 7.3.2
▪ Construct / install stormwater and sedimentation controls	Council, project designers and contractor	Construction		EA Sections 7.5.2
▪ Assess the significance of the various ephemeral swamps and water bodies as part of the Griffith Biodiversity Strategy	Council	Ongoing		EA Section 5.11
SURFACE WATER				

▪ Council will prepare a surface water management plan to the satisfaction of the NSW Office of Water. This should include measures to ensure that contaminated runoff will not leave the site.	Council	Prior to project commencement	*Approval of plan by NSW Office of Water*	EA Sections 7.4.2 and 7.5.2
▪ Construct diversion drains and bunds around permitter of quarry pits ▪ Install pumps to divert surface water to settlement and stormwater detention ponds ▪ Install sediment trap at discharge point ▪ Incorporate energy dissipation and erosion protection measures in surface water diversions	Council, project designers and contractor	Construction	*Managing Urban Stormwater: Soils and Construction (Landcom, 2004)*	EA Section 7.5.2
▪ Install table drains, culvert pipes and silt traps on all access new roads, i.e. to pit 101 ▪ Undertake all engineering works to minimise erosion and soil contamination	Council, project designers and contractor	Construction	*RTA Roadside Handbook - environmental guidelines for road construction and maintenance workers 1995* *RTA Road Design Guidelines (draft Chapter 7 – drainage)*	EA Section 6.2.2
▪ Ensure all water storages are engineered for peak weather events (1 in 100 year 72 hour rainfall event) ▪ The stormwater detention pond will be lined with a flexible membrane and the water quality monitored on a quarterly basis	Council, project designers and contractor	Construction and ongoing	*ANCOLD Guidelines on Design Floods for Dams 1994* *ANCOLD Guidelines Environmental Management for Dams 2001*	EA Section 6.5 Appendix J, Section 7.2
▪ Install bunding and spill kits in the vicinity of any chemicals or fuels stored or used onsite	Quarry and Landfill Operations Managers	Ongoing	*AS 1940 The storage and handling of flammable and combustible liquids 2004* *Dangerous Goods Regulations 2005*	EA Section 6.3.4
▪ Install operational backflow device on potable water supply pipeline ▪ Identify, map and colour code all pipelines on site	Landfill Operations Manager	Project Commencement	*National and State plumbing regulations*	EA Section 6.5
▪ Visual inspection of engineering works	Site Manager	Ongoing		EA Section 9.5

SOILS

▪ Containment spill kit will be kept on site at all times ▪ Contaminated soils will be removed and placed in the active putrescible landfill cell ▪ Soils testing will be conducted down gradient of the landfill, leachate colletion system, leachate pond, quarry pits and settlement pond to ensure soil quality remains intact	Site Manager	Commencement of works and ongoing	Number of spills and remediation action	EA Sections 6.3.4 and 7.6.2
▪ Construct cut-off drains and diversions with erosion control measures	Council, project designers and	Construction	*Managing Urban Stormwater: Soils and*	EA Section 7.6.2

	contractor		*Construction (Landcom, 2004)*	
▪ Periodically check and empty sediment trap at settlement dam	Contractor	Ongoing		EA Section 7.6.2
▪ Wet down stockpiles as per the Dust Management Plan	Contractor	Ongoing		EA Section 7.6.2
▪ Enhance vegetation in edge areas (landfill, roads, quarry edges etc) ▪ Cover edges with mulch as a temporary measure	Council	Ongoing	Species survival counts Evidence of erosion	EA Section 7.2.2 'Onsite measures'
▪ Progressively revegetate quarry stages	Contractor	On completion of each quarry stage	Number of hectares successfully rehabilitated Species survival counts	EA Section 6.3.6
SALINITY				
▪ Install closed leachate collection system and surface water controls around landfill ▪ Install sedimentation dam and drainage channels to direct water from quarries	Council, project designers and contractor	Construction	*Managing Urban Stormwater: Soils and Construction (Landcom, 2004)*	EA Section 7.7.2
AIR QUALITY				
▪ Implement procedures for investigating complaints	Council	Ongoing	Number of complaints registered and finalised	EA Section 7.17
▪ Water cart for dust suppression on unsealed roads ▪ Water down uncovered stockpiles	Contractor	Ongoing	Compliance with Dust Management Plan	EA Section 7.8.2
▪ Conduct odour modelling in the event of a complaint / incident	Council	Ongoing	*Approved Methods for the Sampling and analysis of Air Pollutants NSW 2007*	EA Section 7.8.2
▪ Water sprayers will be used on the crusher whenever it is operating	Council	Ongoing	Compliance with Dust Management Plan	
▪ When the 10 minute average wind speed measured at the quarry exceeds 30km/hr from the north-east quadrant (between 0 degrees and 90 degrees) operation of the quarry will cease or as specified in Dust Management Plan	Council	Ongoing	Compliance with Dust Management Plan	
▪ When the average wind speed measured at the quarry in any direction exceeds 35km/hr (10 minute average), then all construction and operation of the quarry will cease or as specified in Dust Management Plan.	Council	Ongoing	Compliance with Dust Management Plan	
▪ A Dust Management Plan incorporating dust monitoring to be developed and submitted to DECCW.	Council	Prior to Project Commencement	Approval from DECCW	
GREENHOUSE GAS EMISSIONS				

▪ Capture and flare landfill gases and monitor emissions ▪ Once data is available, a greenhouse gas target will be set and incorporated into the landfill operational environmental management plan	Landfill Operations Manager	Ongoing	*POEO (Clean Air) Regulations 2002 - schedule 2* *EPA Environmental Guidelines: Solid Waste Landfills 1996*	EA Section 7.9.2
▪ Construct and operate waste transfer station to reduce waste to landfill	Council	Within 2 years of project commencement	*Handbook for the Design and Operation of Rural and Regional Transfer Stations 2006*	EA Figure 6.11
▪ Cover active tip face daily with green waste to improve bioreaction process	Council	Ongoing	*Environmental Guidelines: Solid Waste Landfills*	EA Section 7.9.2

NOISE AND VIBRATION

▪ Implement procedures for investigating complaints	Council	Ongoing	Number of complaints registered and finalised	EA Section 7.17
▪ Where quarry plant noise is found to exceed the intrusive goal of 35dB ($L_{Aeq, 15\ mins}$) at affected residences, the plant will be moved or modified to ensure the noise impact from plant is below 35dB ($L_{Aeq, 15\ mins}$).	Contractor	Ongoing	Number of exceedences	EA Section 7.7.2
▪ Blasting airblast overpressure (in dB Linear Peak) and ground vibration peak particle velocity (in millimetres per second) will be measured for the first three blasts at the nearest affected residence. If these are well within the limits and there are no complaints, then monitoring will be undertaken once a year. The results will be reported to DECCW. ▪ Blasting will only occur between 9.00am -3pm, Monday to Friday excluding public holidays.	Contractor	Ongoing	Number of exceedences	
▪ Restrict operating hours of the quarry to 8.30am - 5pm	Contractor	Ongoing		EA Section 6.4.3
▪ Notify residents within 2,000m of intention to blast at least 7 days in advance	Council / Contractor	Ongoing		EA Section 7.8.2

HAZARDS

▪ Erect fencing above quarry walls	Contractor	Prior to commencement of quarry works	*DPI Safety Bulletin: working near quarry benches 2008*	EA Section 7.10.2
▪ Implement procedures for refusing prohibited wastes ▪ Construct defined asbestos disposal zone	Landfill Operational Manager	Construction	*Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes 2004*	EA Table 7.13
▪ Construct bunded area for diesel containers	Quarry Operational	Construction	*AS 1940 The storage and handling of*	EA Section 6.3.4

	Manager		*flammable and combustible liquids 2004* *Dangerous Goods Regulations 2005*	
▪ Develop and implement fire management procedures in consultation with the Griffith Fire Control Centre, and submit to emergency services ▪ Develop emergency response and contingency procedures as part of the operational plans	Landfill Operational Manager	Construction		EA Table 7.13
▪ Store chemicals and explosives offsite	Landfill Operational Manager	Ongoing	*Explosives Act 2003 and Regulations 2005*	EA Table 7.13
▪ Public education and additional inspection for prohibited wastes and burning materials	Landfill Operational Manager		*Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes 2004*	EA Table 7.13
▪ Reduce tip face and cover daily to reduce risk of ignition from lightening strikes ▪ Spread green waste in thin layers to minimise risk of self-combustion ▪ Street sweeper waste to be stockpiled with green waste ▪ Manage and monitor waste prior to disposal in the landfill cell and implement other measures outlined in Table 7.13 of the EA ▪ Create vertical and horizontal layers in inert cell with clay to isolate volume of waste prone to a fire event	Landfill operational manager	Ongoing		EA Table 7.13
▪ Limit access to quarry face and exposed edges ▪ Conduct safe work methods statements for potentially hazardous tasks ▪ Ensure appropriate supervision for personnel for all tasks ▪ Conduct site inductions and periodic refresher training for all employees , contractors and transport contractors	All personnel	Ongoing	*DPI Safety Bulletin: working near quarry benches 2008*	EA Section 7.10.2 & Table 7.13

WASTE MINIMISATION

▪ Construct waste transfer station	Project design and contractor	Construction	*Handbook for the Design and Operation of Rural and Regional Transfer Stations 2006*	EA Figure 6.4.3 'Infrastructure and equipment'
▪ Re-direct recyclables for processing	Landfill Operations Manager	Within 2 years of project commencement	*NSW Waste avoidance and Resource Recovery Strategy 2007*	EA Section 8.3
▪ Record the waste stream and amount received, recovered and recycled, and disposed of in landfill	Landfill Operations Manager	Ongoing	*NSW Waste avoidance and Resource Recovery Strategy 2007*	EA Section 8.3

			DECC Online Tracking Service Pack *DECC Online Waste Reporting Service Pack and User Guide*	

TRAFFIC

▪ Implement procedures for investigating complaints	Council	Prior to commencement of works	Number of complaints registered and finalised	EA Section 7.17
▪ Undertake regular traffic and road inspections and any works required will be undertaken in accordance with road and rail design standard applicable at the time	Council	Every 5 years	In consultation with RTA and the rail authorities, and standards current to the time	EA Section 7.11.2
▪ Compile Transport Management Plan	Council	Prior to commencement of works	Approval of plan by RTA.	
▪ Upgrade auxiliary right turn treatment at the intersection with Kidman Way and ensure that there is no cost to the RTS associated with the development	Council	In accordance with the RTA approved Transport Management Plan	Approval of plan by RTA.	
▪ The operator to maintain a log book of extraction quantities, waste deliveries and traffic movements.	Council	Ongoing		

HERITAGE

▪ Implement procedures to investigate and protect culturally significant material if discovered during construction and operation	Site Manager	Prior to commencement of works	*Guidelines for Aboriginal Heritage Impact Assessment in the Exploration & Mining Industries*	EA Section 7.12.2 and **Appendix D** of this Response to Submissions
▪ The two surveyor scarred trees will be preserved and protected and and a 20 m radius development exclusion zone will be maintained around each tree	Council	Prior to commencement of works		**Appendix D** of this Response to Submissions
▪ The two Bluedot Speedway signs will be carefully removed and handed over to the car racing club for safe-keeping, reuse or displayed at Griffith Pioneer Park Museum.	Council	Prior to commencement of works		**Appendix D** of this Response to Submissions

VISUAL AMENITY

▪ Erect 2.5m perimeter fence to prevent windblown rubbish leaving the site ▪ Ensure rubbish pickup along the fence line and more generally is undertaken regularly	Site Manager	Prior to commencement of works and ongoing	Number of complaints regarding rubbish	EA Section 7.13.2
▪ The landfill will be rehabilitated and revegetated to replicate areas of open grassy woodland.	Council	Ongoing		EA Section 6.4.4
▪ Construct batters with fissures (offset at each bench) and benches to minimise extend of the cut face. These will mimic the natural scarps and reduce the formation of unnatural straight lines. ▪ The benches and floor of the quarries will be revegetated with suitable native species	Quarry Operations Manager and Contractor	Ongoing	*NSW Minerals Council Rehabilitation by Design Practice Notes* *DITR Mine Rehabilitation* *Landform Design for Rehabilitation 1998*	EA Sections 6.3.4 and 7.13.2
▪ Ensure strategic landscaping is incorporated into new residential developments within line of sight and in close proximity to the development	Planning division Council	Ongoing	*Griffith Land and Environment Plan*	EA Section 7.13.2
SOCIOECONOMIC				
▪ Maintain ongoing and inclusive consultation with nearby landholders ▪ Respond to all community concerns and the complaints register	Council	All project stages	Number of complaints registered and finalised	EA Sections 7.14 and 7.17

1.3 Rehabilitation and Closure Plans

Council will prepare a detailed rehabilitation plan for both the quarry and landfill components within 12 months of commencement of extraction and landfilling activities in accordance with Environmental Guidelines: Soil Waste Landfills and with reference to the following landform design and rehabilitation and plantings guides:

- Mine Rehabilitation (Department of Industry, Tourism and Resources)
- Landform Design for Rehabilitation (Environmental Australia, 1998)
- NSW Minerals Council Rehabilitation by Design Practice Notes
- New South Wales Vegetation Classification and Assessment, Part 1 and Part 2 (Benson *et al*, 2006; Benson 2008)

The rehabilitation plan will be prepared in consultation with DECC, and the relevant sections incorporated into the QOEMP and LOEMP once approved.

The quarry rehabilitation plan will include the following as a minimum:

- Detailed flora and fauna assessment of each offset area
- Aims and objectives of the rehabilitation plan including goals, landmarks and monitoring parameters
- Timeframes for rehabilitation program components
- Species list for each offset area / community, and for each progressive rehabilitation area
- Procedures for the collection, storage and propagation of seeds
- Procedures for planting, including seed application, fertilisation and watering regimes
- A fire control plan
- Feral animal control plan
- Weed control plan
- Details of ongoing maintenance and monitoring the success of revegetation
- Breakdown of costs to carryout rehabilitation and funding arrangements

The landfill rehabilitation plan will be developed in parallel with the quarry rehabilitation plan and include the following as a minimum:

- Aims and objectives of the rehabilitation plan including goals, landmarks and monitoring parameters
- Timeframes for rehabilitation program components
- Procedures for the detailed contaminated site assessment that comply with SEPP 55 Guidelines
- Details of the final landform contour, capping and monitoring infrastructure
- Species list for the landfill rehabilitation area
- Procedures for the collection, storage and propagation of seeds
- Procedures for planting, including seed application, fertilisation and watering regimes
- A fire control plan
- Feral animal control plan
- Weed control plan
- Details of ongoing maintenance and monitoring
- Breakdown of costs to carryout rehabilitation and funding arrangements

Council will also prepare and submit to DECC a Landfill Closure Plan within three months of landfill completion. The plan will:

- Specify the steps taken or to be taken in closing and stabilising the facility, including timeframes

- Ensure all leachate collection, gas collection and stormwater sediment controls, monitoring and reporting practices are maintained to a standard equivalent of that employed during the facility's operational life
- Provide contact details to neighbouring residents to discuss any problems. Records of complaints are to be kept in the same manner as approved during the operation
- Ensure that waste materials are not received for disposal at the facility after operations have ceased

1.4 Griffith Biodiversity Management Strategy

Council will implement the Griffith Biodiversity Management Strategy to improve strategic management of remnant vegetation in the LGA. The strategy will:

- Identify and classify remnant vegetation in the Griffith LGA, and assess the significance of these areas with consideration of wildlife requirements, acceptable paths for movement between remnant areas and other factors governing the viability of native flora and fauna within the local government area
- Develop a comprehensive environmental revegetation and enhancement plan detailing the implementation of biodiversity objectives and sources of funding
- Provide strategic direction for the acquisition and maintenance of offsets
- Assess the significance of the various ephemeral swamps and water bodies in the Griffith region

1.5 Offset Strategy

An Offset Strategy has been prepared in relation to the proposed development and outlines key measures to be implemented by Council in order to offset the loss of 12.2 ha of Bimble Box-Pine and 3.0 ha of Dywer's Red Gum-Currawang vegetation communities. The selection of offsets will be undertaken in accordance with the key principles outlined in the offset strategy and given due consideration to the broader commitments detailed in the Griffith Biodiversity Management Strategy. Consequently, the provision of offsets will be in keeping with the overall biodiversity objectives of the Local Government Area and therefore benefit the community.

Council will implement an Offset Strategy as detailed in Appendix L of the EA as amened by **Appendix C** of this response to submissions. The key measures are outlined below:

- Council will rezone the portions of Lot 202 and Lot 201 not required for the proposed (i.e. pit 103 and 101) and possible future quarry (i.e. pit 205 and 303) operations as Environmental Conservation or Environmental Management. This amounts to some 222.8 ha of Bimble Box Pine and 29.5 ha Dwyers Red Gum - Currawong. This will ensure enduring protection of these areas in perpetuity.

- These areas will be subject to a detailed site evaluation conducted by a flora and fauna specialist and will include:
    - Vegetation condition assessment
    - An inventory of habitat resources and species recorded during the site evaluation
    - Vegetation mapping
    - Habitat complexity assessment, including relevant components of the PVP Developer
-

- Determine and apply a royalty on gravel removed from the quarry site and waste delivered to the Landfill site. Such royalty will be calculated to cover the estimated costs of this Offset Strategy and the site rehabilitation plan and may include grants, loans or assistance from other sources.
- Progressive implementation of the offset strategy utilising royalties from the quarry and landfill operation to fund the management of offset areas.
- Active management of offset areas including weed management, grazing management, fire management, enhancement measures, vermin control, managing salinity and recreational use, and preparation of an overarching management plan for the offset sites will be implemented
- Revegetation of areas to act as corridors between offset sites that are isolated patches of vegetation
- Monitoring the following indicators for offset areas and revegetation areas:
    - Threatened species populations
    - Revegetated areas for signs of distress
    - Grazing
    - Weed infestations and spread
    - Vermin and native browser (if applicable)
    - Fuel loads
    - Human activities and impacts

1.6 Environmental Monitoring

Monitoring of environmental parameters will be undertaken in accordance with the requirements and specified timeframes of DECCW in the licensing permit. A detailed site environmental monitoring plan will be developed to ensure monitoring is conducted and reported to authorities in compliance with permit conditions. The plan will outline methodologies and techniques, materials and construction, procedures and security, in relation to the following:

- Detection of groundwater pollution from leachate
- Detection of surface water pollution from leachate, hydrocarbons and sedimentation
- Assessment of leachate characterisation and potential for cumulative contamination within and between cells
- Detection of sub-soil pollution from leachate
- Detection of surface gas emissions
- Detection of subsurface gas emissions
- Assessment of landfill gas emissions (methane and non-methane organic compounds) post flare
- Detection of vibration peak particle velocity above 5.0mm/s and overpressure above 120dB at the closest residence
- Detection of odours exceeding 6ou at nearby residences
- Detection of dust exceeding 4g/m^2/month

Periodic inspections of the site, facility and infrastructure will be undertaken to ensure environmental controls are operational. Periodic inspection requirements will report on the integrity of:

- Leachate collection system, storage dam and holding tank
- Stormwater management system, settlement dam, bunds and diversions, and discharge outlet and sediment trap

- Landfill gas extraction and flare system
- Landfill compaction
- Fuel storage and bunding
- Machinery and equipment

As part of ongoing landfill and quarry operations, the following parameters will be recorded and reported on:

- Acceptance of unauthorised waste streams
- Waste to landfill
- Landfill compaction rate
- Illegal dumping
- Resource recovery and recycling (type and weight of wastes recovered)
- Resource extraction rate
- Annual tonnage of gravel for private sale and Council use
- Public complaints and response procedures
- Safety and hazard incidences and response procedures

Monitoring of flora and fauna values will be undertaken for rehabilitated areas onsite and in offsets to determine the success of revegetation and habitat enhancement measures. This will involve:

- Periodic inspections by a suitably qualified person to determine vegetation health and identify areas requiring management and enhancement
- Establishing monitoring plots annually for a period of five years after the commencement of enhancement measures
- Establishing monitoring plots every three months for the first year and annually thereafter, after the commencement of revegetation measures
- Undertaking an avifauna survey onsite every five years for the life of the project, commencing with the Avifauna survey completed by Webster (2007)

The findings from the periodic inspections, monitoring plots and avifauna surveys will be collated and managed by Council's Environmental Planning Division and will provide the basis of biodiversity conservation action plans.

1.7 Environmental Reporting

To ensure that relevant authorities are informed on the environmental performance of the proposed development, it is recommended that Council prepares and delivers an environmental review on an annual basis. This review should report on:

- Annual extraction of gravel material, landfill disposal and resource recovery
- All rehabilitation and land clearance including the method and measures undertaken to minimise habitat disturbance
- Establishment and management of vegetation offsets including the status of land acquisition and lease agreements, revegetation and enhancement measures, and monitoring.
- Ongoing monitoring results with a discussion of exceedences and historical trends (over three years)
- Community complaints registered and managed

- Any environmentally related incidences reported onsite and corrective actions implemented

Monitoring environmental parameters will continue post closure. A landfill closure plan will be developed and submitted for approval prior to the closure of the facility. The plan will incorporate post closure monitoring and maintenance to ensure the longevity and integrity of the landfill. Specifically the plan will ensure all leachate collection, gas collection and flaring, stormwater, sediment controls, and monitoring and reporting practices continue to the equivalent standard employed during the operational period of the facility.

APPENDIX F - Revised noise study