



S75W Modification 4

Hours of Operation

October 2013

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Statement of Validity

Section 75W Report:

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Land Details: Genesis Waste Management Facility (former Pioneer Quarry site, Eastern Creek)

Lot & DP: Lots 1 and 4 in DP 1145808

Applicant Details: ThaQuarry Pty Ltd and ACN 114 842 452 Pty Ltd

Applicant Address: 32 Burrows Road, Alexandria, NSW 2015

Project Summary: Modified Project Approval No. 06_0139 MOD 4
- Modification of hours of operation to the Materials Processing Centre

Declaration

We certify that the contents of the Section 75W report to the best of our knowledge, has been prepared as follows:

- In accordance with the requirements of the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulations 2000; and
- The information contained in this report is true in all material particulars and is not misleading.



Matthew O'Donnell (31 October 2013)

Executive Summary

This report has been prepared to support a Section 75W application to modify Project Approval (06_0139) for a project at the Genesis Waste Management Facility (former Pioneer Quarry site, Eastern Creek), which was granted on 22 November 2009 pursuant to Section 75J of the Environmental Planning and Assessment Act, 1979 (the Act).

The current use and operation of the site as a waste facility provides for:

- a waste recovery facility including a Materials Processing Centre (MPC) and greenwaste area. rehabilitation of the quarry void via a Class 2 (non-putrescible) landfill;
- a total throughput of up to 2 million tonnes of materials at the site per calendar year;
- landfilling of up to 700,000 tonnes of non-putrescible waste (including asbestos);
- stockpiling of up to 50 tonnes of tyres on site at any one time; and
- stockpiling of up to 20,000 tonnes of greenwaste on site at any one time.

The recycling / waste transfer facility opened 8 June 2012 and operates pursuant to EPL 20121. Mixed or comingled building and demolition waste is transported by truck to the facility where it is unloaded within the MPC. In accordance with approved environmental management strategies for the facility, preliminary sorting of materials for processing takes place within the MPC.

The Proponent currently operates the Materials Processing Centre (MPC) from 7:00am to 6:00pm (Monday to Friday) and 8:00am to 4:00pm (Saturday, Sunday and Public Holidays).

As the MPC operates throughout the working day inevitably there are breakdowns and periods in which routine maintenance is required. Whilst sections of the Plant are isolated from operation for safety purposes during routine maintenance, the times taken for this have a consequential effect on the overall productivity of the Plant.

Subsequently this Section 75W Modification proposes to extend the existing hours of operation of the MPC only. The extension of hours is principally sought to accommodate the maintenance, repair and cleaning schedules which are necessary to ensure that the Plant operates to maximum capacity and in an environment conducive to workplace safety. The Proponent seeks to extend these approved hours by the following:

- one extra hour each morning (to commence at 6:00am) and four extra hours in the evening (to continue to 10:00pm); and
- for Saturday, Sunday and Public Holiday hours, an extra two hours in the morning before 8:00am is sought.

The extended operating hours would be limited to the processing activities being carried out inside the MPC. Extended hours do not extend to the running of the chute from the MPC to the landfill.

Under this proposed modification, there will be no additional tonnage of processing materials over and above the current Project Approval (as modified) limits. Moreover, there will be no additional impact from the proposed extension of MPC operating hours as the facility will generally maintain its current operational and management procedures. There are no proposed changes to the operating hours of the adjoining landfill or other outdoor activities such as crushing grinding or separating works.

Except for the electric conveyors operating on the site the proposed extension of operating hours for the plant within the MPC does **NOT** include:

- any land-filling activities;
- the use of any heavy plant or equipment externally; and
- crushing, grinding or separating works.

The Proponent has identified and examined the following potential environmental impacts of this modification which it is seeking. These include, in order of potential adverse impacts:

- noise;
- traffic;
- air quality; and
- odour.

An assessment of the potential impacts has confirmed the following:

- the proposed operating hours for the operation of the MPC Plant will not be audible at the nearest residential receiver (exceeding the noise limit of 36 dBA) and the extended operating hours within the MPC will therefore not result in unacceptable impacts on the nearby suburban residential area or result in any public community interest impacts;
- two separate series of attended Monitoring was carried out by Pacific Environment Limited for the purposes of this modification. The first concluded based upon that Data that MPC Plant operations were inaudible at the nearest potentially affected receivers over and above ambient noise levels;
- the subsequent assessment used Noise data taken at varying distance intervals from the exterior of the MPC Building while the Plant was in operation and using approved modelling methods determined the sound power of the MPC using site based (attended) noise measurements. The determined sound power level was then used to predict the noise level at the nearby sensitive receivers due to the operation of the MPC. The predicted noise levels are significantly lower than the Licence noise limits and as a result there are no noise (off-site) impacts being generated by the MPC operations;
- the environmental assessment and 'Material Processing Centre Noise Assessment' prepared by Pacific Environment Limited (**Appendix A**) concludes that the predicted noise levels as generated from the MPC operations will be significantly lower than the noise limits imposed by both the Project Approval and the Environment Protection Licenses and as such the proposed modifications sought by the Proponent should be made;
- traffic impacts will remain as per the current traffic patterns at the Facility;
- repairs and maintenance activities carried on within the building during the extended operating hours generate no dust either within or outside the building; and
- there will be no odour impacts resulting from this proposed modification Putrescible material is neither authorised nor accepted at the facility. No composting of garden waste is being carried out. Odour is never an issue observed during MPC operations.

Background

1.1 OVERVIEW

The Project includes the operation of a Resource Recovery facility (RRF) and a general solid waste (non-putrescible) landfill. The RRF includes a Materials Processing Centre (MPC) and a Waste Transfer Station. The Project is commonly known and referred to as the 'Genesis Xero Waste Facility' or 'Genesis'.

In summary, the following activities have been approved under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act):

- capacity to receive up to two million tonnes of waste per annum, including inert and solid wastes from construction and demolition (C&D), commercial and industrial (C&I) waste streams complying with acceptable waste for general solid waste (non-putrescible) facilities and green waste clean ups;
- on-site waste processing including sorting, screening, sieving, crushing, grinding, shredding and/or chipping, and composting of green waste;
- recycling of an estimated 65-80% of incoming waste (1.3 to 1.6 million tonnes per annum (mtpa), based on maximum capacity intake) e.g. to produce road base, aggregate, landscaping soil, bedding sand, mulch, wood chip, green waste compost and asphalt derived products for land application;
- testing and on-site storage/stockpiling of finished products prior to resale from stockpiles, predominantly to the building, construction and landscaping sectors and potentially the domestic market;
- transport of an estimated 20-35% of incoming waste (0.4 to 0.7 mtpa, based on a maximum capacity intake) to the landfill proposed within the quarry void, comprising incoming materials which are unsuitable or uneconomical for recovery and recycling (for example contaminated soils, asbestos waste and loads that cannot physically be sorted);
- quarantine and transfer of unacceptable wastes to an appropriate off-site facility for disposal;
- construction and operation of associated infrastructure, plant and equipment, including upgrade of the internal road network and reshaping of earthen amenity berms;
- use of the existing site access (via Old Wallgrove Road) [now replaced by public road Honeycomb Drive]; and
- retention and conservation of a significant area in the north-west corner of the site, incorporating a remnant endangered ecological community (EEC) of Cumberland Plain Woodland (CPW).

1.2 THE SITE

The operational components of the site are largely restricted to the quarry void itself (for landfilling) and the area immediately to the west of the void (materials processing centre and associated infrastructure), which now totals 61.32ha (following the boundary adjustment in previous modifications).

The site is surrounded by land owned by , Australand, [North East] Hanson[East], , the Department of Planning and Infrastructure and Sargents,[West] all of which is earmarked under the Western Sydney Employment Area State Environmental Planning Policy (WSEA SEPP) to be redeveloped for higher end industrial and employment uses over the next decade. The closest residential areas are located approximately 400 metres from the northern boundary of the site at Minchinbury, and 800 metres to the west of the site at Erskine Park.

1.3 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) supports an application for modification submitted to the NSW Department of Planning and Infrastructure (DoPI), under section 75W of the EP&A Act to permit MPC operation hours to be extended:

- one hour in the morning (on a weekday) and four hours from 6:00pm (on a weekday); and
- two hours in the morning before 8:00am (Saturday, Sunday and Public Holiday) and closing time to remain the same.

A specialist study prepared by Pacific Environment Pty Ltd was commissioned to assess whether there would be any noise impacts on the residential receivers and whether the operation of the MPC (during proposed extended operating hours) would exceed the prescribed noise limits in the Project Approval (06_0139).

1.4 THE PROPONENT

The landowner, ThaQuarry Pty Ltd and ACN 114 843 453 Pty Ltd own Lots 4 and 1 in DP 1145808 (Eastern Creek in the Blacktown local government area) being the subject land of the project.

Dial A Dump (EC) Pty Ltd, the license holder of EPL 20121 and 13426, operates a major recycling facility and general solid waste (non-putrescible) landfill facility known as the 'Genesis Recycling and Landfill Facility' at Honeycomb Drive, Eastern Creek. EPL 20121 specifically regulates the MPC operations and related materials.

The site includes the surface area of the quarry is 52.4Ha and comprises of two land parcels, identified as Lots 1 and 4 in Deposited Plan 1145808.

1.5 THE ORIGINAL PROJECT APPROVAL

The current Project Approval (06_0139) provides for:

- a waste recovery facility including a MPC and greenwaste area (rehabilitation of the quarry void via a Class 2 (non-putrescible) landfill;
- a total throughput of up to 2 million tonnes of materials at the site per calendar year;
- landfilling of up to 700,000 tonnes of non-putrescible waste (including asbestos);
- stockpiling of up to 50 tonnes of tyres on site at any one time; and
- stockpiling of up to 20,000 tonnes of greenwaste on site at any one time.

1.6 CONSENT HISTORY

The following consent and modifications are of relevance to this application:

- Original Project Approval – Minister's Approval (06_0139) for construction and operation of a resource recovery and non-putrescible landfill facility;
- Modification (Mod 1 granted by the Minister on 30 September 2010) for the following components:
 - electrically powered conveyor and chute;
 - postponed commencement of construction;
 - two way traffic on Fourth Avenue;

- concrete bay walls within the greenwaste processing area; and
- relocation of the wheelwash
- Modification (Mod 2 granted by the Minister on 9 November 2010) for correction to the land description details of the project Approval. The corrected reference to the land being Lots 1, 2, 3 and 4 in DP 1145808; and
- Modification (Mod 3 granted by the Minister on 5 December 2011) for the following components:
 - revised final landform level of the fill pad at Area D;
 - operational landform levels and site stormwater design;
 - internal office and external amenities to the Weighbridge;
 - new amenities building;
 - new amenities building associated with the spotter stations;
 - new administrative/office building;
 - new amenities at the tarp stand area;
 - approval for the use and relocation of the vehicle turning bay which works have already been carried out; and
 - voluntary planning agreement.

1.7 BACKGROUND TO CURRENT OPERATIONS

The recycling / waste transfer facility opened 8 June 2012 and operates pursuant to EPL 20121. Mixed or comingled building and demolition waste is transported by truck to the facility where it is unloaded within the MPC. The MPC is a large building of cast concrete slab, steel and colour-bond construction typical of the surrounding industrial buildings within the Precinct.



FIGURE 1 – FRONT OF MPC BUILDING, FRONT MAIN DOORS VISIBLE

In accordance with approved environmental management strategies for the facility, preliminary sorting of materials for processing takes place within the MPC.

The facility operates to strict waste classification management standards including the screening loads by weighbridge camera and then spotters at various positions throughout the facility. This will not change under this proposal.

1.8 SITE PARTICULARS

The Genesis facility has an ability to accept up to two million tonnes of waste per annum.

Waste loads received at the facility are classified into the following categories:

CATEGORIES	
Segregated hard-fill materials	<ul style="list-style-type: none"> This is material capable of being recovered or recycled by a series of processes. Carried on externally to the MPC. After reprocessing and/or recovery, recycled hard-fill materials [brick concrete, sand soil stone bitumen] are stored on-site within the segregated material stockpile area SMA until sold. No change to current operating hours is proposed for any of this activity.
Co-mingled construction and demolition waste and commercial and industrial waste	<ul style="list-style-type: none"> Consisting of metals, brick, concrete, plasterboard, soil, aggregates, plastics and a range of building and demolition wastes. These materials are delivered to the Materials Processing Centre [MPC] for classification and processing.

CATEGORIES	
Land-filling	<ul style="list-style-type: none"> The remainder of incoming waste materials is directed straight to landfill for disposal. This is due to its chemical composition and waste classification which requires that it be disposed of by landfilling.

1.9 THE MPC PLANT

Waste which is received within the MPC is subject to processing by the Fixed Plant contained inside the MPC.

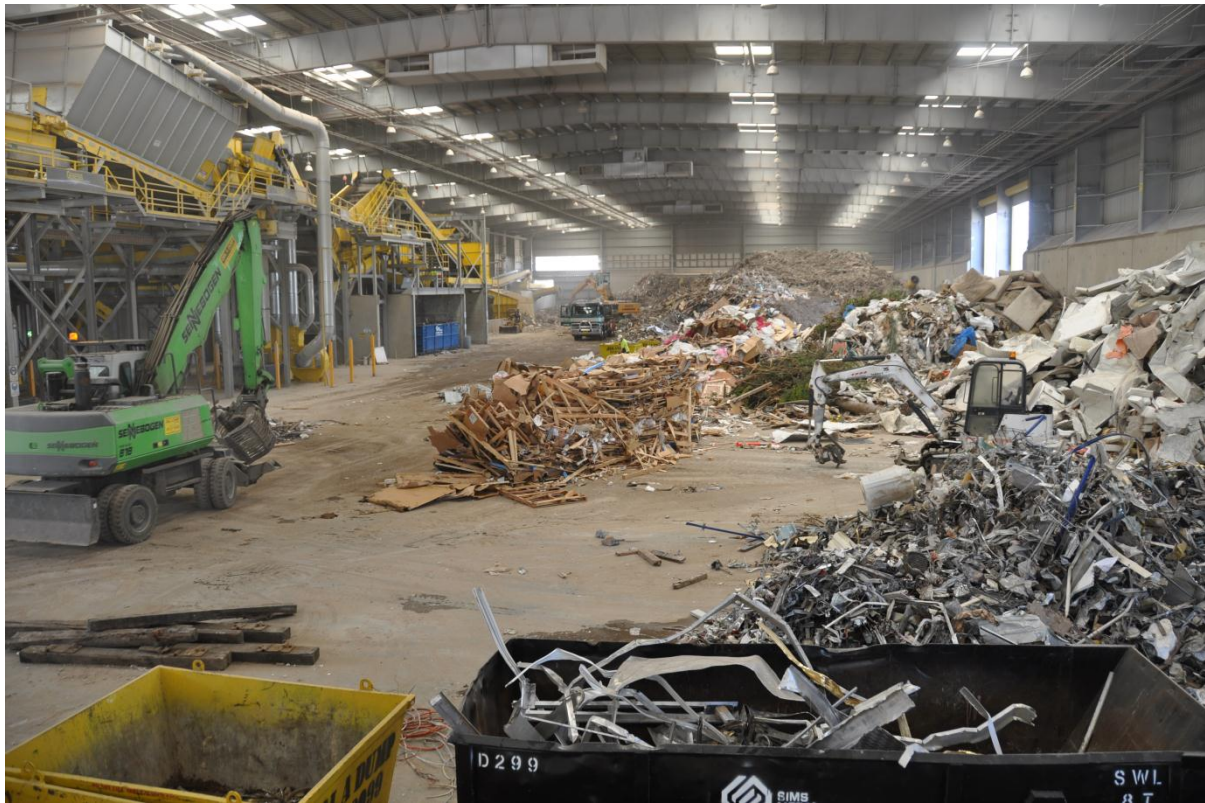


FIGURE 2 – PHOTO OF INSIDE THE MPC FROM THE SOUTHERN END

The Plant (as shown in the photos) is a large and complex piece of fixed machinery involving up to 52 interconnected electrically driven conveyors and a range of magnets, graders, screens sieves and hand sorting stations.

The Plant operates throughout the working day and inevitably there are breakdowns and periods in which routine maintenance is required. Whilst sections of the Plant are isolated from operation for safety purposes during routine maintenance, the times taken for this have a consequential effect on the overall productivity of the Plant.

The extension of hours is principally sought to accommodate the maintenance, repair and cleaning schedules which are necessary to ensure that the Plant operates to maximum capacity and in an environment conducive to workplace safety.

1.10 MATERIALS RECEIVABLE

Waste materials are currently delivered to the Genesis site by a combination of light, medium and heavy vehicles, with loads typically varying from approximately one to 40 tonnes (t) in weight.

Preliminary classification of waste is based on advice from the carrier, inspection of the carrier's documentation prepared in accordance with the EPA (2008) Waste Classification Guidelines and verification of this information by visual inspection using the weighbridge camera ('Check Point 1').

Mixed loads are directed to tip at the MPC work floor.

1.11 SORTING

Where practicable mixed loads delivered to the MPC/WTS are first segregated by material type and where appropriate are placed in designated bays and bins for transport to appropriate areas for recycling, or to landfill or off-site (as required). These co-mingled loads tipped at the work floor are first mechanically and hand sorted by working from the northern to the southern end of the Building.

Extending the full length of the MPC is a separation and recycling Plant which carries out a range of functions. Following the preliminary sorting and extraction of specific items or materials the residue co-mingled wastes are first loaded into a primary shredder which reduces the mean size of the waste to be separated. Waste is then transported through the Plant by a series of electrically driven conveyors where separation and sorting of various types take place automatically.

Ferrous and non-ferrous metals recovered through the sorting process (generally by use of a magnet and eddy current separators) as well as plastics and paper/ cardboard are sorted, placed into bays and bins and stored until sold or transported from site for recycling by others.

Timber waste wood waste is recovered from the mixed materials during the separation sorting process and currently that material is chipped for blending and/ or testing and resale as woodchip or for use as fuel by others.

Small aggregates and gravel sorted by the same processes is deposited outside of the western wall of the MPC.



FIGURE 3 – VIEW OF PLANT INSIDE THE MPC (FROM THE NORTHERN END)



FIGURE 4 – VIEW OF PLANT INSIDE THE MPC (FROM THE SOUTHERN END) SHOWING THE CONVEYORS WHICH ARE ELECTRIC-DRIVEN

Following the pre-screening process the mixed waste is then loaded by machine into the primary crusher and the Plant begins its progressive sorting and screening process.



FIGURE 5 – PHOTO OF TYPICAL LOADING MACHINERY INSIDE THE MPC

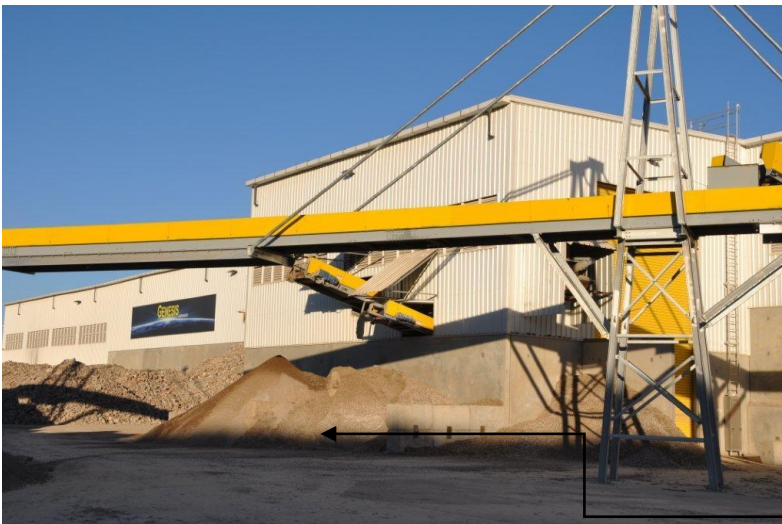
Long Objects (usually timber) are removed at an early stage and are deposited in a bay within the building as are ferrous metals.



FIGURE 6 – PHOTO SHOWING RESIDUE WASTE BEING RE-CIRCULATED AND THEN DEPOSITED INSIDE THE MPC BUILDING



FIGURE 7 – PHOTO SHOWING THE CONVEYOR FROM THE WESTERN SIDE OF THE MPC BUILDING DESIGNED TO CARRY SMALL TIMBER PIECES TO THE WOOD WASTE STORAGE AREA, WHERE IT IS DEPOSITED INTO A STOCKPILE AND SUBJECTED TO FURTHER SORTING



stockpile

FIGURE 8 – PHOTO SHOWING THE CONVEYOR, AS DESCRIBED ABOVE

Screening actions of the Plant within the MPC separate lighter materials from heavier materials and the heavier being aggregates of various sizes which are then deposited through openings in the western wall of the MPC onto the concrete hardstand and against the building wall. These materials are then consolidated with stockpiles of the same product located in the SMA.

Management procedures for waste to be processed through the MPC (and landfill facility) including the classification, unloading, sorting, processing, storage and disposal of waste loads have been extensively detailed in the initial environmental assessment for the project (prepared by ERM dated December 2008; reference 0088621).

The environmental management procedures have been developed in accordance with best practice to maximise resource recovery and minimise biodegradable material from being land-filled in accordance with relevant legislative requirements.

The MPC site also benefits from the construction of impervious barriers at various positions around the facility being a requirement under the Project Approval.

The processed materials (from the MPC plant) leaving the conveyor at the rear of the MPC facility are dry materials with no odour. "Green" or garden waste is not processed by the Plant or conveyed to the chutes at the rear of the MPC.

Under this proposed modification, there will be no additional tonnage of processing materials over and above the current Project Approval (as modified) limits. Moreover, there will be no additional impact from the proposed extension of MPC operating hours as the facility will generally maintain its current operational and management procedures.

Except for the conveyors shown in the photograph (Figures 7 & 8) the proposed extension of operating hours for the plant within the MPC does **NOT** include:

- any land-filling activities;
- the use of any heavy plant or equipment externally;
- crushing, grinding or separating works; and
- There are no proposed changes to the operating hours of the adjoining landfill or any outdoor activities such as crushing, grinding or separating works.

2 Statutory Framework

2.1 PART 3A TRANSITIONAL PROJECTS

The Project was declared a Major Project to which (the former) Part 3A of the EP&A Act applies and for which approval of the Minister for Planning was required. Ministerial Project Approval (06_0139) was granted on 22 November 2009.

Following the repeal of Part 3A of the Act on 1 October 2011, the project continues to be subject to Part 3A of the Act pursuant to the transitional provisions provided in Schedule 6A of the Act as follows:

Transitional arrangements—repeal of Part 3A

- 1) *The following are, subject to this Schedule, transitional Part 3A projects:*
 - (a) *an approved project (whether approved before or after the repeal of Part 3A),*
 - (b) *a project that is the subject of an approved concept plan (whether approved before or after the repeal of Part 3A),*
 - (c) *a project for which environmental assessment requirements for approval to carry out the project, or for approval of a concept plan for the project, were last notified or adopted within 2 years before the relevant Part 3A repeal date (unless the environmental assessment is not duly submitted on or before 30 November 2012 or on or before such later day as the Director-General may allow by notice in writing to the proponent),*
 - (d) *a project for which an environmental assessment (whether for approval to carry out the project or for approval of a concept plan for the project) was duly submitted before the relevant Part 3A repeal date.*

As the project is the subject of an approved project, Part 3A of the Act continues to apply.

2.2 SECTION 75W OF THE ACT

Pursuant to Part 3A of the Act (as in force prior to its repeal), Section 75W provides that the proponent may request the Minister to modify the Minister's approval for a project (including an approved project). Such modifications may include:

- (a) *revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
- (b) *changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*

Section 75W does not limit the circumstances in which the Minister may modify a determination made under Division 3 in connection with the approval.

The requirements of s75W of the Environmental Planning & Assessment Act 1979 (EP&A Act) have been considered by the Courts on several occasions. The Land and Environment Court has observed that the language of s75W is not constrained by the qualification (contained in s96 of the EP&A Act) that the development as modified be "*substantially the same*" as the development already approved (*Williams v Minister for Planning* (2009) 164 LGERA 204). In other words, the power under s75W to modify is broader than the test under s96. Biscoe J expressed the test another way, by stating that s75W does not contemplate a "*radical transformation*" of the terms of an existing approval (*Williams v Minister*).

The Court of Appeal subsequently cautioned against seeking to use any descriptive phrase to substitute for or explain the statutory language in s75W. That Court has noted that “*the fact that there are no express standards to be applied in considering whether a particular request falls within the terms of the section itself gives rise to an inference that no essential precondition to the consideration of a request was intended*” (*Barrick Australia Ltd v Williams* (2009) 74 NSWLR 733 at 401).

We submit that the modifications proposed by this application do not constitute a ‘radical transformation’ to the Project Approval because:

- the proposed use is the same as that approved under the Project Approval;
- there are no variations proposed to the operations on the site, with the exception of hours of operation; and
- there will be no increase in the approved amount of waste that is treated at the site.

This report:

- demonstrates that the proposed modifications comply with the relevant environmental planning instruments and policies;
- addresses environmental impacts that may occur as a result of the proposed modification; and
- justifies how the proposed modification is consistent with the provisions of s75W of the Act.

3 The Proposed Modifications

3.1 PROJECT MODIFICATION OVERVIEW

The Proponent currently operates the Materials Processing Centre (MPC) from 7:00am to 6:00pm (Monday to Friday) and 8:00am to 4:00pm (Saturday, Sunday and Public Holidays).

The Proponent seeks to extend these approved hours by one extra hour each morning (to commence at 6:00am) and four extra hours in the evening (to continue to 10:00pm).

For Saturday, Sunday and Public Holiday hours, an extra two hours in the morning before 8:00am is sought.

The extended operating hours would be limited to the activities being carried out inside the MPC, and does not extend to the running of the chute from the MPC to the landfill.

The MPC is a purpose built structure housing the Plant for production. The MPC during regular operating hours (7:00am to 6:00pm weekdays and 8:00am to 4:00pm weekends and public holidays) accepts trucks which tip comingled and recyclable building and demolition waste onto the working floor. From this point it is segregated for further sorting and processing.

The MPC operations, when running, would consist only of the following elements:

- the running of the fixed plant located wholly inside the MPC (being a series of 52 interconnected electric conveyors); and
- running of the rear MPC external conveyors which take timber pieces from the MPC to the external bays in the rear stockpile yard where they are deposited into stockpiles.

No other external fixtures, machinery or equipment outside the MPC will be in operation.



FIGURE 9 – AERIAL PHOTO OF MATERIALS PROCESSING CENTRE

3.2 MODIFICATIONS TO THE PROJECT

The Proponent seeks a variation of Project Approval (06_0139) together with such conditions as may be relevant or necessary to give effect to them.

The Proponent proposes the following condition 39 of Schedule 3 of the Project Approval to be varied. Text proposed to be deleted is indicated by 'strike through' text and text proposed to be added is indicated by bold text.

Hours of Operation

39. *The Proponent shall comply with the restrictions in Table 5.*

Table 5: Construction and Operation Hours for the Project

ACTIVITY	DAY	TIME
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 4:00pm
	Sunday and Public Holidays	Nil
Operation	Monday – Friday	7:00am to 6:00pm
	Saturday, Sunday and Public Holidays	8:00am to 4:00pm
MPC	Monday – Friday	6:00am to 10:00pm
	Saturday, Sunday and Public Holidays	6:00am to 4:00pm

Note

39a Operating hours of the conveyor and chute system are to be restricted to the facility's operational hours (and not times governing the Operation of the MPC as above) and as defined in condition 39 of Schedule 3.

4 Reasons for the Proposed Modification

Since commencing MPC operations on 8 June 2013, the Proponent has received approximately 500,000 tonnes of material being predominantly building and construction materials.

The Project need and justification for proposed extended operating hours is as follows:

- to accommodate loss in production time arising from the operator's commitment to ensuring a safe and efficient workplace environment;
- the Plant is complex and it is necessary to ensure that all components are at all time working harmoniously in order to ensure an effective production result;
- waste is not homogeneous. Depending upon the general composition of the waste which is to be processed an assessment may be made that it is desirable to place the Plant on a slower production cycle to ensure that quality product is produced and best practice waste minimization / recycling goals are met in respect of that particular type of waste; and
- as waste is delivered to the MPC, trucks are disgorging their contents and waste classifications are taking place. It is at this time that preliminary sorting of the waste also occurs.

In order to maximize the efficiency and effectiveness of this process a slightly slower rate overall would be beneficial in order to be able to extract unsuitable materials or items likely to cause damage to the plant before the waste is loaded in to the shredder.

4.1 LOST PRODUCTIVITY

It is within this context that the need for extended operating hours for MPC operations arises.

The Plant is a piece of highly systemized and specialized equipment which requires specialized maintenance and sensitive to mechanical failures, whereby belts break and blockages (from received waste materials) stops the shredders and conveyors from optimal operations. The MPC Plant is a fully automated operation and operates by a turn-key meaning that once the operation key is on, the entire plant runs. Sections of the plant cannot be isolated for separate operations.

To minimize and prevent build-up of fine dust throughout the MPC and on the Plant, regularly stoppages are also required to cease production and clean down the conveyors in accordance with safe work environment practice under Work, Health and Safety legislation.

On average, the MPC plant is out of production (due to blockages or breaks with conveyor belts) 2 hours out of the production day (approximately 20%). Production day is defined as per the 7:00am to 6:00pm (Monday to Friday) and 8:00am to 4:00pm (Saturday, Sunday or Public Holiday) as stipulated in the Project Approval.

The most common reasons for ceasing MPC production include bearing failures on the motors, electrical faults and belt tears. Out of these, belt tears are common. The operating belts of the MPC come in varying sizes and are supplied by external manufacturers depending upon the type of belt.

On average when a belt tears (commonly due to steel piercing the belt) a complete replacement must be carried out. When this occurs it will take approximately 14 hours to replace a belt due to the retrieval / replacement and curing of the belt (being the gluing process) of affixing the replacement belt. During the curing process, the belt must not be touched for approximately 4-5 hours. On average, the Proponent replaces a belt once a month. This signifies lost time and lost productivity of MPC operations.



FIGURE 10 – PHOTO OF THE PLANT SHOWING A BELT CONVEYOR

Additionally, routinely when there is a blockage or need to repair or replace a part of the MPC Plant, often the entire Plant must be locked out. This is to ensure that the Proponent complies with health and safety requirements and prevent injury or death.

Specialist technicians and mechanics (externally contracted) are called in for repairs. The Facility's Engineer and Senior Maintenance Manager oversees all repairs / maintenance activities for the MPC.

The need for the Project approval modification derives principally from inherent environmental, social and economic benefits it will be able to be realized, including:

- ability for optimize available production MPC operating hours;
- provision of further employment, with an extra 10 people for MPC processing operations and indirect employment generated via support services such as maintenance and short-term / long-term contractors to the site; and
- maximizing sorting opportunities and achieving waste resource recovery goals and guidelines.

4.2 SLOWER OPERATION CYCLE

To meet demand and output objectives (local commercial demand for product) there are quality assurance checks which the Proponent carries out of processed materials from the MPC Plant.

With operational experience of 12 months (running the Plant), the Proponent has noted that improved quality recycled materials of certain types can be produced on a slower processing cycle than through a speed / fast cycle.

The Proponent seeks to run the Plant on the slower cycle, to ensure that materials are fully recycled (resulting in a quality recycled product for the market-place) and consequently seeks extended production times (as sought in this modification) to meet this demand.

This would be consistent with the adoption of best practice recyclable processing and the *Waste Avoidance and Resource Recovery Act 2001*.

4.3 SLOWER CLASSIFICATION AND PRE-SORTING PROCESS.

Waste is delivered to and deposited within the MPC in accordance with the customers' time schedules.

Normally customers require the fastest turnaround time achievable. Whilst the MPC building has the size capacity to receive all of the waste delivered to it within the current working hours the proposed extension of working hours would allow more time to be taken in its classification and pre-sorting thereby largely avoiding unsuitable materials being loaded into the plant which may cause damage.

5 Environmental Assessment

5.1 CONSISTENCY WITH CURRENT APPROVALS

The modification proposed within this application does not constitute a '*radical transformation*' to the original Concept Plan Approval because:

- the proposed use is the same as that approved under the Project Approval;
- there are no variations proposed to the operations on the site, with the exception of hours of operation; and
- there will be no increase in the approved amount of waste that is treated at the site.

The proposed modification is consistent with the provisions of S75W as outlined in Section 2.2 of this report.

5.2 ENVIRONMENTAL PLANNING INSTRUMENTS

There are no specific Environmental Planning Instruments specific to hours of operation.

5.3 POTENTIAL IMPACTS

The Proponent has identified and examined the following potential environmental impacts of this modification which it is seeking.

These include, in order of potential adverse impacts:

- noise;
- traffic;
- air quality; and
- odour.

TABLE 1 – PROPONENT'S ENVIRONMENTAL RISK ASSESSMENT

ENVIRONMENTAL RISK ASSESSMENT	
Noise	<p>There are minimal noise impacts that will result in the extension of hours of operation. Further technical assessment has been provided by Pacific Environment in the Noise Report dated 2 September 2013 at Appendix A.</p> <p>The noise results from Pacific Environment confirm that the as proposed operating hours for the operation of the MPC Plant will not be audible at the nearest residential receiver (exceeding the noise limit of 36 dBA) and the extended operating hours within the MPC will therefore not result in unacceptable impacts on the nearby suburban residential area or result in any public community interest impacts.</p>
Traffic	<p>Traffic impacts will remain as per the current traffic patterns at the Facility. With the exception of some extra staff vehicles (parked in the staff car park next to the administration office building), estimated at 10 vehicles. There will be no increased traffic impacts. And traffic flow from staff will shift in times to reflect the proposed operating hours. To enter the site staff must drive</p>

ENVIRONMENTAL RISK ASSESSMENT

	<p>through the wider industrial estate, and not through any residential areas.</p> <p>The extension of the operating hours will not result in any additional traffic movements, as the MPC will only operate the existing plant/equipment to process the existing materials contained within the MPC building.</p> <p>The Proponent does not propose any intensification or change of the present permissible activities at the MPC facility.</p>
– Air Quality	<p>The activity is carried out within the MPC building being an enclosed purpose built structure. Repairs and Maintenance activities carried on within the building during the extended operating hours generate no dust either within or outside the building.</p> <p>Presorting of waste materials carried on within the building during the extended operating hours generate no dust either within or outside the building.</p> <p>In full operation negligible particulate emissions leave the facility. A network of sprinklers surrounds the MPC to wet down sealed roads and to ensure that any gravel deposited against the western wall of the building remains wet.</p> <p>Two rear chutes protrude from the western wall of the MPC the conveyor from one of which transports processed timber directly from the MPC plant to the stockpile yard.</p> <p>The following materials are discharged from the chutes (during current operating hours); note that no greenwaste or putrescible wastes are permitted:</p> <ul style="list-style-type: none"> ▪ timber; ▪ aggregate; and ▪ sand/soil (of less than 4mm in size). <p>Air Quality Assessment and Compliance testing previously undertaken by Pacific Environmental Limited and reported to the NSW Department of Planning and Infrastructure (attached is a copy of this report at Appendix B) indicates that the Facility when operating at full capacity, [indoor and outdoor activities] including crushing screening grinding and land-filling meets all environmental goals and standards for the Facility.</p> <p>The present modification only seeks to enable the operation of an indoor Plant for extended hours to accommodate downtime due to repairs cleaning and maintenance [which otherwise takes place throughout the day] and to facilitate enhanced quality control procedures concerning the finished products.</p>

ENVIRONMENTAL RISK ASSESSMENT	
	<p>When the Plant within the MPC is operating the three rear (west) facing MPC conveyors are also running. The heights for material leaving the MPC by these routes and accumulating against the western wall of the MPC is never permitted to reach the height of the conveyor exit point because to allow this to occur would interfere with the proper and efficient operation of the Plant.</p> <p>Normal practice is that each day when truck movements are authorised by the Project Approval a truck or loader removes this material to relevant Stockpiles within the SMA for further processing or for sale as part of a larger load.</p>
– Odour	<p>There will be no odour impacts resulting from this proposed modification, no putrescible material is authorised and no composting of garden waste is being carried out. Odour is never an issue observed during MPC operations.</p> <p>The modification does not involve the processing composting storing managing or otherwise dealing with greenwaste or biodegradable materials liable to generate odour.</p> <p>Small dry (less than 300mm length) timber pieces recovered from co-mingled demolition wastes are recovered and stored in the bundled stockpile area to the west of the MPC.</p>

The Proponent has assessed the key potential environmental impacts above and formed the view that there are no adverse environmental impacts resulting from the proposed modification.

5.4 POTENTIAL CONSEQUENTIAL CHANGES

The Proponent has assessed that a number of consequential changes will be required resulting from this proposed modification application for extended MPC operating hours, including but not limited to:

- stockpile management;
- increase in staff;
- improved visibility around the MPC;
- changes in shifts;
- night maintenance / cleaning;
- increased need for security;
- updating all emergency site procedures / action plans; and
- amendment to EPL 20121 to vary the MPC operating times.

Each of the above items and the potential consequential impacts are discussed below:

TABLE 2 – PROPONENT'S ASSESSMENT OF CONSEQUENTIAL

CONSEQUENTIAL CHANGES	
Stockpile management	<p>Stockpiles where aggregates and or timber are deposited will not be managed or moved during evening operations (6:00pm to 10:00pm) nor in the early morning (6:00am to 7:00am). Any movement of these stockpiles as shown in Figure 8 will be done from 7:00am within the permitted hours of operation.</p>
Increased staff	<p>The Proponent will employ an evening MPC manager, assistant manager and up to 8 operators, cleaners, and maintenance staff to carry out MPC operations.</p> <p>No impacts from increased staff are envisaged.</p>
MPC visibility and extra lighting	<p>Extra lighting will be installed around the MPC and between the administration building and adjoining car park.</p> <p>In addition to this, lighting will be installed along DADI Drive from the front entrance to provide clear visibility along the driveway. Extra lighting to show the front signage display at the entrance to DADI Drive is also proposed to provide a clear entry point to the facility in the event of an emergency response between 6:00pm to 10:00pm.</p> <p>No lighting is proposed inside the landfill quarry as it will not be open.</p> <p>The distance of the site to the residential dwellings north of the site, the presence of the ten metre high berms separating the facility from its surrounds and the six lane M4 Motorway combine to be sufficient to avoid any increased levels of light pollution.</p>
Changes to shifts	<p>The designation of the 'afternoon/evening' shift will be adjusted to be from 2:00pm to 10:00pm. The 'morning' shift will be from 6:00am to 2:00pm. There is currently only one designated shift running from 7:00am to 6:00pm as per Project Approval requirements.</p>

CONSEQUENTIAL CHANGES

Night maintenance and cleaning	Any evening maintenance as part of routine MPC operations will take place between the proposed extended hours of 6:00pm to 10:00pm each evening. In addition to this cleaning crew will be allocated a time during this period to carry out required cleaning of the MPC working floor.
Security patrols	<p>The Proponent currently uses external security contractors who patrol the facility every night. In addition to this, security cameras are located throughout the facility, both inside and outside the MPC.</p> <p>The Proponent proposes employing, in addition to the current Genesis Facility security patrol, an extra patrol (to start at the same hours as sought in the modification) especially for the MPC. This MPC patrol would carry out physical checks and surveillance externally (around the perimeter of the MPC and inside the MPC).</p>
Updating of site procedures and emergency procedures	<p>All site procedures for MPC operations lock out procedures, emergency excavation plans and all fire exits and extinguishers inside the MPC will have adequate lighting to ensure that they are highly visible in an emergency.</p> <p>The following approved environmental management plans will be reviewed and where relevant updated:</p> <ul style="list-style-type: none"> ▪ Emergency and Fire Response Plan; ▪ Noise Monitoring Program; ▪ Fencing and Security Management Plan; and ▪ Environmental Waste Management Plan.
Amendment to EPL 20121 to vary the MPC operating times	A variation application to EPL 20121 will be lodged with the EPA seeking the modification to operating hours as sought in this EA.

5.5 COMPLAINTS PROCEDURES

The Proponent has established a detailed complaints procedure for taking public complaints via the published details on the website.

The Proponent also retains an on-line 'Genesis Facility Complaints Register' on the website which is updated monthly: <http://www.dadi.com.au/landfills-and-recycling-centres.html>

Since MPC operations commenced on 8 June 2013 no complaints have been received from the community.

5.6 NOISE ASSESSMENTS PRIOR TO 2013

The current operations at the MPC will not materially be changed by the modification proposed in this application.

The noise assessment carried out by ERM (Environmental Assessment for Major Project Application (06_0139) dated 4 December 2008), detailed a noise impact assessment being carried out in accordance with the DECC (2000) Industrial Noise Policy (INP), DECC (1994) Environmental Noise Control Manual (ENCM) and DECC (1999) Environmental Criteria for Road Traffic Noise (ECRTN). The assessment included:

"Noise levels for all stages of the Project operations are predicted to meet the relevant Project specific noise criteria at assessed sensitive receivers (nearby residences) under all metrological conditions during the evening, night-time and morning shoulder period. Although site operations will not occur during the nite time, approximately once per week waste may be received at the site after 10pm from time to time. The modelling results indicate that maximum noise emissions during night time operations under the INP weather conditions are predicted to remain below the sleep disturbance noise criteria at all assessment locations.

The Noise Assessment recommended that the following noise mitigation measures be included in a Noise Management Plan prepared for the site:

- ***restriction of normal hours of operation between 6am and 10pm, with landfilling operations further restricted to the hours between 6am and 6pm (receivable of material would only occur after 10pm on occasion); and***
- *construction of impervious barriers at various positions around the facility, including 10 m high barriers to the north, north-west, west and south of the main area of operations and retention of the existing earth mound to the north-east of the quarry pit.*

These recommendations have been incorporated into the Project design or as part of the operational procedures". [added emphasis]

[extract from page iv of the above referenced report]

It was clearly contemplated at the time of preparing the 2008 environmental assessment by ERM that the Proponent's desire, in principle, was for extended operating hours from 6am and 10pm.

The Proponent currently operates in compliance with the approved Environmental Management Strategy (EMS) (November 2011).

The EMS (comprising also of a noise monitoring program implemented by the Proponent) was submitted to and approved by the NSW Department of Planning and the EPA. The EMS established the protocol which would be followed for all subsequent routine monitoring of the site during both the construction and

the Operational Phase. On 20 September 2012, a Compliance Noise Monitoring report was provided by PAE Holmes and submitted to the NSW Department of Planning and to the EPA. This report observed:

Schedule L3.2 provides the following qualifications for the noise limits:

- "Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the LAeq (15 minute) noise limits."

Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.

The noise emission limits identified apply under meteorological conditions of:

- wind speed up to 3m/s at 10 metres above ground level; or
- temperature inversion conditions of up to 3°C/100m and wind speed up to 2m/s at 10 metres above the ground.

Schedule L4 of the Licence stipulates the operating hours of the premises as follows:

- Monday-Friday 7.00am to 6.00pm.
- Saturday, Sunday and Public Holidays 8.00am to 4.00pm.

Monitoring locations are shown on the following aerial photograph at the Figure11 below:

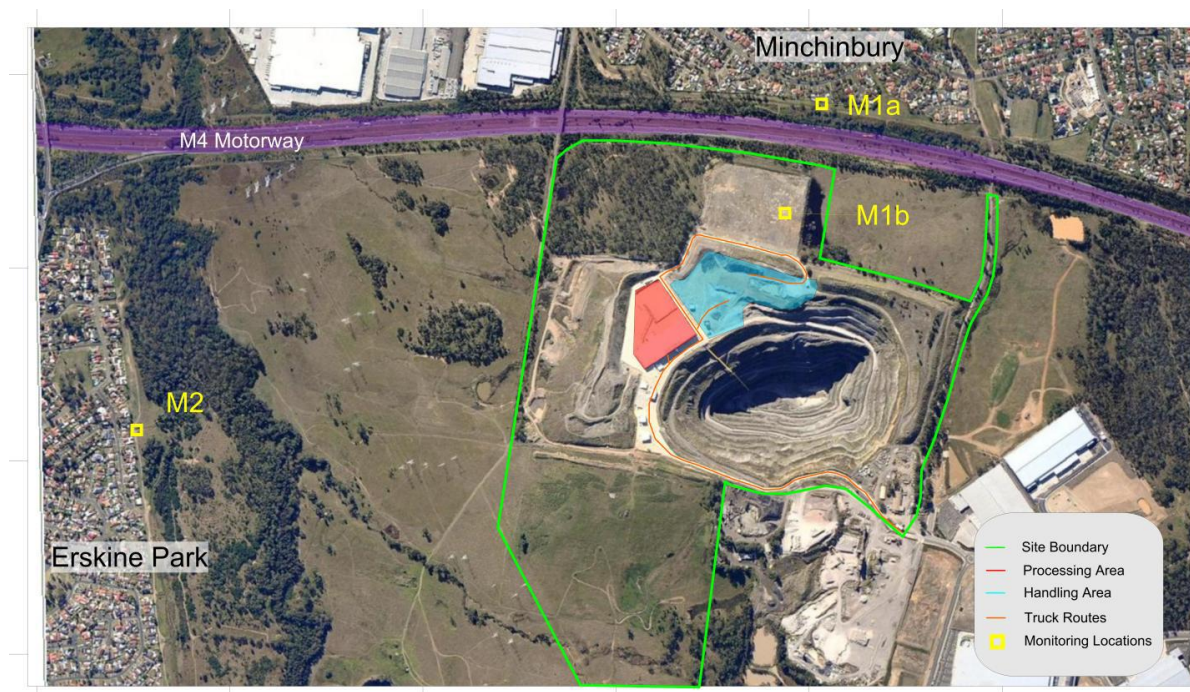


FIGURE 11 – NOISE MONITORING LOCATIONS

It was determined during the measurements that the site was both inaudible and un-measurable at location M1a due to high background noise levels caused by the M4 motorway. Therefore, it was not possible to measure the facility's contribution to the noise environment at this location. In order to attempt to establish the facility's level of noise emission, an additional measurement location, M1b, was used.

Meteorological data was obtained from the nearest Bureau of Meteorology monitoring station at Horsley Park, approximately 6km to the south east of the facility. The weather conditions were suitable for noise monitoring as there was calm to light wind conditions and no rain was recorded during the day.

The level at the receivers in Minchinbury was calculated using the measurements at location M1b and corrections were made to account for distance attenuation, ground and air absorption and shielding effects.

The following assumptions were made based on observations and GPS positioning data recorded on site:

- distance correction:
 - distance from closest source to measurement location: 149m
 - distance from source to receiver: 440m
 - distance correction: -4.7 dB
- ground Absorption estimated to be -2 dB due to presence of majority of soft ground between source and receiver. The M4 motorway represents hard ground, the remaining ground is grass land or similar;
- air absorption estimated to be -1 dB;
- based on ISO9613 atmospheric absorption coefficient for frequencies 63-500 Hz, taken to be the significant frequency bands for the Facility's noise emission and typical of mobile plant;
- shielding effects estimated to be -5 dB. This is based on the minimum shielding effect of a barrier where there is no line of sight;
- the total correction applied to the estimated Facility's noise emission is the arithmetic sum of all the corrections, being -12.7 dB; and
- based on the measurements performed and observations made on site, the facility complied with the noise limits as set out in the facility's EPL 20121.

It is important to note that the times at which the monitoring was undertaken were during the normal weekday working hours and included all activities on site including operation of all plant equipment within the MPC Building, all external conveyors, truck and other vehicle movements and crushing screening and rock breaking activities.

5.7 NOISE ASSESSMENT RESULTS PRELIMINARY FINDINGS

Pacific Environment Limited undertook a series of noise measurements and provided a report for this Modification Application (attached as **Appendix A**).

Attended noise monitoring was carried out to investigate noise levels of the MPC at the Genesis waste processing facility in Eastern Creek at the nearest residential receivers in Minchinbury.

The objective of the measurements was to perform noise measurements at the nearest residential receivers located in Minchinbury to determine if the operation of Plant within the MPC was audible at the receivers during the period 6.00pm-10.00pm.

The measurement period was split into two sessions, 6.00pm to 8.00pm and 8.00pm to 10.00pm. During each of the sessions, the Plant within the MPC was operated for one 15 minute period.

“Blind” assessments were carried out in order to enable the measurement operator to objectively assess the impact of any of the MPC Plant operation. In order to conduct this test the measurement operator was not aware of the time the MPC Plant was operating at the specific time of the measurements.

Attended measurements were carried out at the nearest residential receivers in Minchinbury as is indicated in the Approved Noise Monitoring Plan on three separate occasions as follows:

- Measurement 1 - Wednesday 6 February, 2013 6.00pm to 10.00pm
- Measurement 2 - Friday 8 February, 2013 6.00pm to 10.00pm
- Measurement 3 – Wednesday 20 February, 2013 6.00pm to 10.00pm

Noise measurements were carried out using an ARL Ngarā Environmental Noise Logger and a Rion NL-31 Sound Level Meter. Both items’ calibration was checked before and after measurements and no significant drift was noted. During the measurements, the weather conditions were observed at the measurement location and during Measurement 1 and Measurement 2, conditions were observed to be suitable for noise monitoring (no rain and calm wind conditions). During Measurements 3, conditions were deemed suitable after some very light rainfall for approximately 13 minutes during the measurements. It was considered that the observed rainfall did not adversely affect the measurements.

At short intervals undisclosed to the measurement operator at the time during each of the monitoring periods the MPC plant including the external conveyors was fully operational in all of its activities within the building and the external outputs (with the main entry doors also closed). Under proposed evening operations, the large front MPC doors would be closed.

A review of the measurements indicates that at the measurement locations, road traffic noise from the M4 is the most dominant source.

Generally road traffic noise was observed to be between LAeq 55 and 59 dB(A). Peaks in road traffic noise were observed from heavy vehicles passing, accelerating and engine braking, generally contributing to the LA10 and LA1 descriptors.

Other peaks in the noise environment were generally controlled by the presence of community noise sources such as plane or helicopter flyovers and the use of lawnmowers or whipper snippers. It was also observed that as the overall noise levels decreased across the measurement periods (6.00pm to 10.00pm), the road traffic noise from the M4 also decreased and a noticeable increase in breaks in traffic were observed.

In addition non-anthropogenic sources also contributed to the noise environment and this includes crickets, insects and cicadas as well as birds and intermittent dogs barking from the community. Cricket noise was observed to be generally constant throughout the measurements; road traffic noise from the M4 was still the dominant noise source. Cicadas were observed to be intermittent and generally decreased from approximately 8.00pm onwards.

At no point during the measurements was the MPC plant operation observed to be audible amongst the prevailing ambient or background noise environment. A review of the noise measurements did not indicate any discernible change which could be attributed to the MPC operating.

Pacific Environment Limited conducted noise measurements to determine the audibility of the MPC operating on three separate occasions between 6.00pm and 10.00pm. The measurements determined that the MPC were not audible or discernible within the prevailing ambient and background noise environment.

MPC Noise Testing by Pacific Environment

Further noise measurements of the MPC noise levels were conducted on 18 June 2013 under normal MPC operating conditions. The assessment involved measuring the 1/3 octave band equivalent sound pressure level, (L_{eq}) at distinct points around the exterior perimeter of the MPC Building.

A total of 29 measurements were made in total. The noise generated from the site was noted to be of steady character with no distinct tonal characteristics.

Measurements were made with a RION NA-28 Type 1 sound level meter (serial no. 960042). A calibration check was conducted before and after the assessment and no significant drift was noted. Weather was observed as generally overcast with little or no wind. Whilst rain was observed on the day of measurement, no measurements were carried out during periods of rain.

Using the data and with regard to the procedures outlined in ISO 3744 the total sound power of the MPC was determined. Table 3 below summarises the MPC Sound power level determined.

TABLE 3 – MPC SOUND POWER LEVEL

DESCRIPTI ON	OCTAVE BAND CENTRE FREQUENCY [HZ]								TOTAL SOUND POWER LEVEL			
	SOUND POWER LEVELS (DB)											
	31.5	63	125	250	500	1000	2000	4000	8000	dB (Lin)	dB(A)	dB(C)
MPC	114	113	114	106	103	99	96	92	86	119	106	118

5.7.1 NOISE MODELLING

The noise modelling was conducted using the software CadnaA which implements the algorithms contained in ISO 9613-1 and ISO 9613-2. The model accounts for the following factors:

- source sound power levels as specified in Table 3;
- source directivity, tonality and orientation;
- distance attenuation, including source and receptor heights;
- barrier effects due to noise bunds, facility structures, stockpiles and other buildings;
- ground effects; and
- atmospheric attenuation.

The predicted noise levels at the nearest sensitive receptors due to the noise generated by MPC operations are summarised in Table 2 of the Pacific Environment Report.

That report concluded that the noise levels generated by the MPC were predicted to be below the current license limits at the nearest affected receivers in both Minchinbury and Erskine Park.

TABLE 4 – PREDICTED NOISE LEVEL AT THE NEAREST RESIDENTIAL RECEPTORS DUE TO MPC GENERATED NOISE WITH THE CURRENT LICENCE LIMITS

RECEIVER AREA	CRITERIA	PREDICTED NOISE LEVEL $L_{EQ,15MIN}$ dB(A)					
		Neutral Eve	Neutral Night	Adverse 1	Adverse 2	Adverse 3	Adverse 4
Minchinbury	35	28	28	33	32	33	32
Erskine Park	35	25	25	21	25	25	25

5.7.2 NOISE ASSESSMENT CONCLUSIONS

Two separate series of attended Monitoring was carried out by Pacific Environment Limited for the purposes of this modification. The first concluded based upon that Data that MPC Plant operations were inaudible at the nearest potentially affected receivers over and above ambient noise levels.

The subsequent assessment used Noise data taken at varying distance intervals from the exterior of the MPC Building while the Plant was in operation and using approved modelling methods determined the sound power of the MPC using site based (attended) noise measurements. The determined sound power level was then used to predict the noise level at the nearby sensitive receivers due to the operation of the MPC. The predicted noise levels are significantly lower than the Licence noise limits and as a result there are no noise (off-site) impacts being generated by the MPC operations.

The environmental assessment and 'Material Processing Centre Noise Assessment' prepared by Pacific Environment Limited concludes that the predicted noise levels as generated from the MPC operations will be significantly lower than the noise limits imposed by both the Project Approval and the Environment Protection Licenses and as such the proposed modifications sought by the Proponent should be made.

6 Conclusion

This report concludes that overall the proposed extension of MPC operating hours will not have a significant environmental impact, providing the management measures specified in this report are employed and implemented during MPC operations.

An assessment of the potential impacts of the extended hours of operation of the MPC has confirmed the following:

- there is justifiable demand for the extended operating MPC hours due to mechanical stoppages and fine-tuning of the processing cycle to produce a quality recycles product;
- the proposed operating hours for the operation of the MPC Plant will not be audible at the nearest residential receiver (exceeding the noise limit of 36 dBA) and the extended operating hours within the MPC will therefore not result in unacceptable impacts on the nearby suburban residential area or result in any public community interest impacts;
- two separate series of attended Monitoring was carried out by Pacific Environment Limited (**Appendix A**) for the purposes of this modification. The first concluded based upon that data that MPC Plant operations were inaudible at the nearest potentially affected receivers over and above ambient noise levels;
- the subsequent assessment used noise data taken at varying distance intervals from the exterior of the MPC Building while the Plant was in operation and using approved modelling methods determined the sound power of the MPC using site based (attended) noise measurements. The determined sound power level was then used to predict the noise level at the nearby sensitive receivers due to the operation of the MPC. The predicted noise levels are significantly lower than the Licence noise limits and as a result there are no noise (off-site) impacts being generated by the MPC operations;
- the environmental assessment and 'Material Processing Centre Noise Assessment' prepared by Pacific Environment Limited (**Appendix A**) concludes that the predicted noise levels as generated from the MPC operations will be significantly lower than the noise limits imposed by both the Project Approval and the Environment Protection Licenses and as such the proposed modifications sought by the Proponent should be made;
- traffic impacts will remain as per the current traffic patterns at the Facility;
- repairs and maintenance activities carried on within the building during the extended operating hours generate no dust either within or outside the building; and
- there will be no odour impacts resulting from this proposed modification, no putrescible material is authorised and no composting of garden waste is being carried out. Odour is never an issue observed during MPC operations.

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Appendix A

Noise Assessment Report

Pacific Environment Limited



Consulting • Technologies • Monitoring • Toxicology

REPORT

MATERIAL PROCESSING CENTRE NOISE ASSESSMENT

Dial-A-Dump Industries

Job No: 7896A

2 September 2013



PROJECT TITLE: Material Processing Centre Noise Assessment

JOB NUMBER: 7896A

PREPARED FOR: Dial-A-Dump Industries

APPROVED FOR RELEASE BY: E. English

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1 INTRODUCTION

Pacific Environment was engaged by Dial-A-Dump Industries to assess the noise impact of the Materials Processing Centre (MPC) relating to an extension of operating hours at the Dial-a-Dump Industries (DADI) Eastern Creek Facility (The Project).

This assessment is based on and has been developed with regard to meetings and emailed correspondences between the NSW Department of Planning and Infrastructure (DOPI) and Dial-A-Dump Industries (the Proponent), as well as the NSW Industrial Noise Policy.

2 PROJECT DESCRIPTION

The Proponent currently operates a resource recovery facility, including a Materials Processing Centre and Waste Transfer Station (WTS) and a class 2 inert and solid waste landfill at Eastern Creek, New South Wales. The Proponent proposes to extend the operating hours of the MPC as described below.

The Proponent currently operates the Materials Processing Centre (MPC) from 7:00am to 6:00pm (Monday to Friday) and 8:00am to 4:00pm (Saturday, Sunday and Public Holidays).

The Proponent seeks to extend these approved hours by one extra hour each morning (to commence at 6:00am) and four extra hours in the evening (to continue to 10:00pm).

For Saturday, Sunday and Public Holiday hours, an extra two hours in the morning before 8:00am is sought.

The extended operating hours would be limited to just the activities being carried out inside the MPC with the exception of external stockpiling conveyors to the west of the MPC, however does not extend to the running of the chute from the MPC to the landfill.

The MPC is a purpose built structure housing the Plant for production. The MPC during regular operating hours (7:00am to 6:00pm weekdays and 8:00am to 4:00pm weekends and public holidays) accepts trucks which tip comingled and recyclable building and demolition waste onto the working floor. From this point it is segregated for further sorting and processing.

The MPC operations, when running, would consist only of the following elements:

- The running of the fixed plant located wholly inside the MPC (being a series of 52 interconnected electric conveyors, fans and sorting devices);
- Running of the rear MPC external conveyors which take timber pieces from the MPC to the external bays in the rear stockpile yard where they are deposited into stockpiles.

No other external fixtures, machinery or equipment outside the MPC will be in operation.

Figure 2.1 shows the site highlighting the location of the MPC.

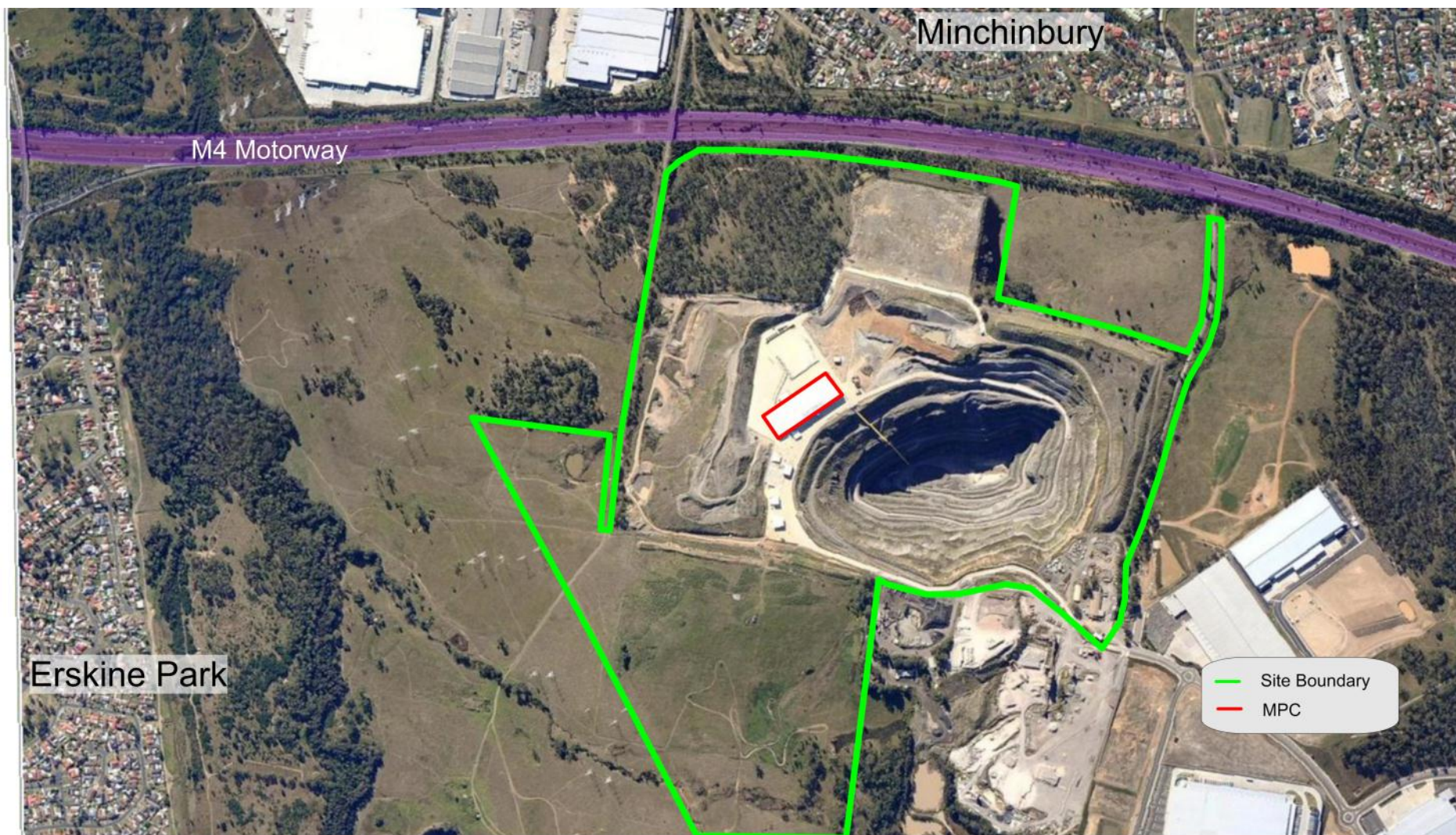


Figure 2.1: Site layout highlighting the location of the MPC (shown in red)

3 SENSITIVE RECEIVERS

The project is surrounded by a mix of commercial and industrial developments to the south and east of the site. The nearest residential receivers are located to the north and west of the project. The residential receivers to the west are located in the suburb of Erskine Park and are approximately 1 km from the site boundary. The intervening land between the project and receivers is park and bush land as well as an easement for high voltage power lines. Residential receivers to the north are located in the suburb of Minchinbury and are approximately 375m from the Licence boundary and approximately 550m from the MPC. The intervening land between Minchinbury and the project contains the M4 motorway corridor, located approximately 60m from receivers.

Table 3.1 presents details of the nearest and most potentially affected residential receivers in Minchinbury and Erskine Park. **Figure 3.1** and **Figure 3.2** present aerial figures of the two residential areas.

Table 3.1: Nearest Sensitive and Potentially Most Affected Receiver Locations

Suburb	Street Number and Name
Minchinbury	3-21 Cobbler Crescent
Minchinbury	1-7 Tod Place
Minchinbury	1-6 Eber Place
Minchinbury	158-192 MacFarlane Drive
Minchinbury	1-10 Bergin Place
Minchinbury	2-22 Barossa Drive
Minchinbury	3-11 Rookin Place
Minchinbury	1-20 Rutherglen Place
Erskine Park	2-44 Warbler Street
Erskine Park	1-19 Swamphen Street
Erskine Park	3-8 Blackbird Glen



Figure 3.1: Aerial of Minchinbury Residential Receivers

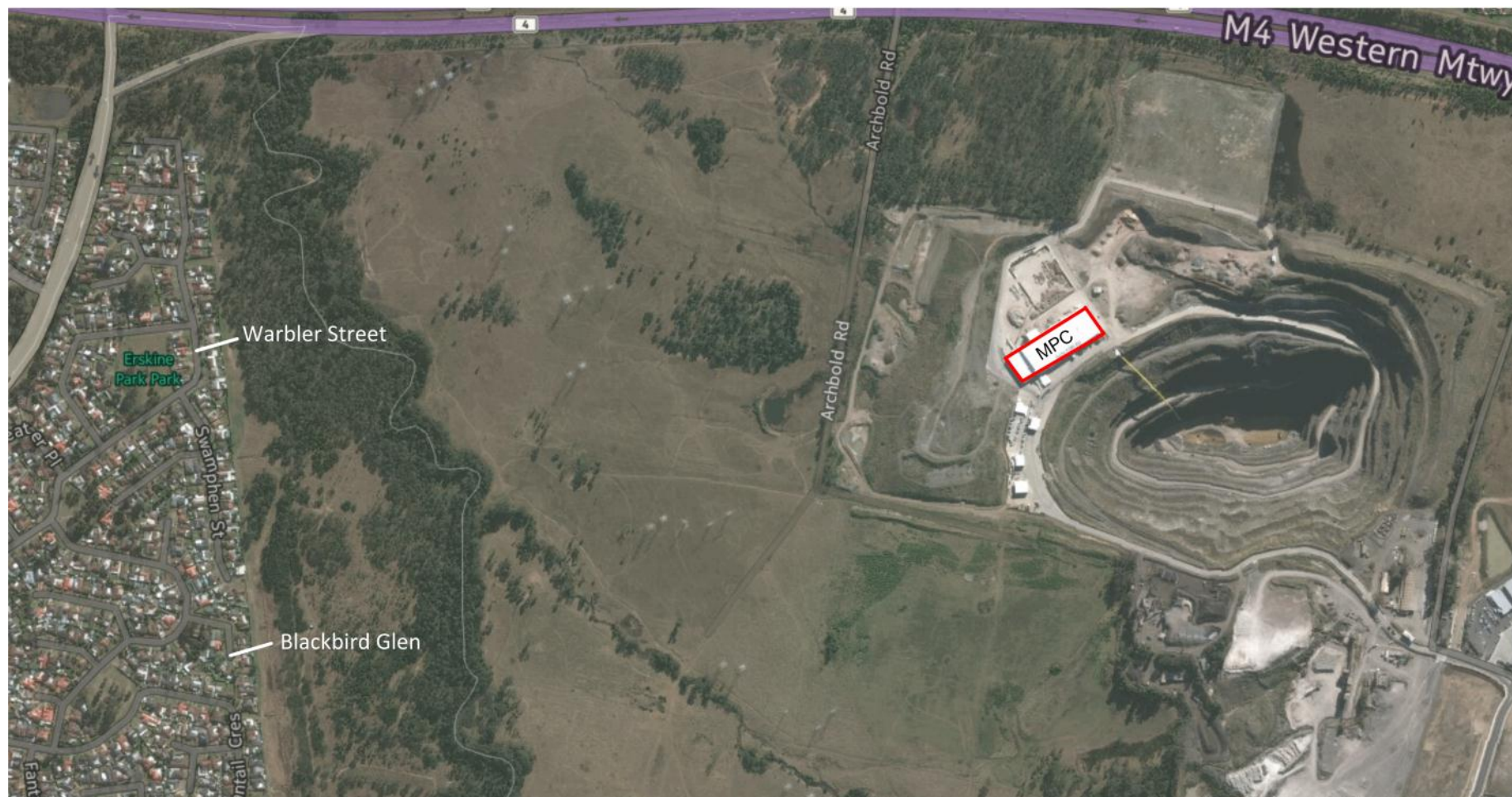


Figure 3.2: Aerial of Erskine Park Residential Receivers

4 NOISE ASSESSMENT CRITERIA

4.1 Existing Project Noise Conditions

DADI Eastern Creek Facility (The Project) is subject to the conditions of the Project Approval, application number 06_0139 (The Project Approval). The Project Licence Noise Level Limits are outlined in Schedule 3, Condition 13 of the Project Approval summarised in **Table 4.1**.

Table 4.1: Licence Noise Level Limits

Receiver	Noise Level Limit LAeq,15min, dB(A) Day
Nearest affected receiver	36

Notes:

- Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the LAeq (15 minute) noise limits. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- The noise emission limits identified apply under meteorological conditions of: Wind speed up to 3m/s at 10 metres above ground level; or Temperature inversion conditions of up to 3oC/100m and wind speed up to 2m/s at 10 metres above the ground

The Hours of Operation Schedule 3, Condition 30 of the Project approval states that the proponent shall comply with the hours of operation outlined in **Table 4.2**.

Table 4.2: Construction and Operation Hours for the Existing Approved Operations

Activity	Day	Time
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 4:00pm
	Sunday and Public Holidays	Nil
Operation	Monday – Friday	7:00am to 6:00pm
	Saturday, Sunday and Public Holidays	8:00am to 4:00pm

4.2 Project Specific Criteria

The Director General's assessment of the original noise impact assessment (NIA) (ERM 2008) for the currently approved operations contained a submission from the EPA (formerly DECCW) which rejected the measured Rating Background Levels (RBL) and recommended criteria that was not based on the measured RBLs.

In consideration of the rejection of these measured RBLs by the EPA, intrusive criteria based on RBLs cannot be set without re-measurement. In addition the EPA has requested that where an extension of hours for operations is proposed, new RBLs be established the satisfaction of the EPA to determine the criteria. In lieu of re-measurement of RBLs, the project specific criteria have been set at the minimum criteria permissible under the Industrial Noise Policy (INP), summarised in **Table 4.3**. Where compliance with this limit is achieved, re-measurement of the RBLs would not be required as a lower limit could not be set using measured RBLs.

As the minimum intrusive criterion has been used, it is assumed that where the intrusive criterion is met, the amenity criteria will also be met.

Table 4.3: Project Specific Noise Limits

Receiver	Noise Level Limit $L_{Aeq,15min}$, dB(A)
	Day
Nearest affected residential receiver (Minchinbury and Erskine Park)	35

The criteria have been set in consideration of:

- The RBLs derived from existing measurements in the previous NIA were not accepted by the EPA.
- The limit is the most stringent permissible under the INP, and re-measurement of RBLs could not set a lower limit.
- This approach was developed in discussion with the Department of Planning.

5 NOISE SOURCE MEASUREMENTS

In order to attempt to establish the noise level of the MPC at the receivers, attended measurements at the nearby sensitive receptors were conducted by Pacific Environment whilst the MPC was operating (for two separate 15 minute sessions) on the 6th, 8th & 20th of February between 6.00pm and 10.00pm. A report of these measurements is presented in **Appendix C**.

The measurements concluded that the MPC noise levels were below the existing ambient noise levels at the nearest sensitive receiver during the assessment period. Section 11.1.2 of the Industrial Noise Policy states that where the existing noise levels are higher than that of the source, the following techniques may be used to determine the noise contribution from a development:

- Measuring the noise emissions from each of the premises at reference locations and then calculating back the noise emissions back to the receiver, &
- Using an accepted noise model calibrated for the particular locality and source.

Considering this, Pacific Environment quantified the sound power level of the proposed MPC operations with regard for *ISO 3744 Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering Methods for an essentially free field over a reflecting plane*.

Measurements to derive a sound power level of the MPC were conducted on 18 June 2013 under normal operating conditions to take into account the noise emission of the MPC and the associated conveyors proposed to operate under the extended hours. The assessment involved measuring the 1/3 octave band equivalent sound pressure level, (L_{eq}) at distinct points around the perimeter of the MPC. A total of 27 measurements were made. The measured sound pressure levels and locations are included in **Appendix B**.

The noise generated from the MPC was noted to be of steady character with no distinct tonal characteristics. Measurements were made with a RION NA-28 Type 1 sound level meter (serial no. 960042). A calibration check was conducted before and after the assessment and no significant drift was noted. Weather was observed as generally overcast with little or no wind. Whilst rain was observed on the day of measurement, no measurements were carried out during periods of rain.

Using the data and with regard to the procedures outlined in ISO 3744 the total sound power level of the MPC was determined, summarised in **Table 5.1**.

Table 5.1: MPC Sound Power Level

Description	Octave Band Centre Frequency [Hz]									Total Sound Power Level		
	Sound Power Levels (dB)									dB (Lin)	dB(A)	dB(C)
	31.5	63	125	250	500	1000	2000	4000	8000			
MPC	114	113	114	106	103	99	96	92	86	119	106	118

6 NOISE MODELLING

6.1 Noise Modelling Methodology

The noise modelling was conducted using the software CadnaA which implements the algorithms contained in ISO 9613-2 and CONCAWE adjustments for meteorological effects. The model accounts for the following factors:

- Source sound power levels as specified in **Table 5.1**.
- Source directivity, tonality and orientation.
- Distance attenuation, including source and receptor heights.
- Barrier effects due to noise bunds, facility structures, stockpiles and other buildings.
- Ground effects
- Atmospheric attenuation.
- Enhancements due to meteorological effects.

The conservative modelling takes into account the prevailing meteorological conditions relevant to the project area. The prevailing meteorological conditions were defined in the original NIA (ERM 2008) and have been applied to this assessment and are summarised in **Table 6.1**.

The proposed extended operating hours take place during the evening (6.00pm to 10.00pm) and night (6.00am to 7.00am weekdays and 6.00am to 8.00am weekends and public holidays) and therefore the applicable meteorological conditions have been considered. Operations during daytime have not been assessed as these are approved under the current Project Approval.

Table 6.1: Modelling Meteorological Conditions

Conditions	Period	Temperature (°C)	Wind Speed (m/s)	Wind Direction (°)	Relative Humidity (%)	Stability Class
Neutral	Eve	15	0	0	80	D
Neutral	Night	10	0	0	80	D
Adverse 1	Eve	15	3	225	80	D
Adverse 2	Night	10	3	135	80	D
Adverse 3	Night	10	3	180	80	D
Adverse 4	Night	10	0	0	80	F

The MPC noise emission was screened for potential modifying factors as defined within the INP. These factors include characteristics of the noise emission such as intermittency, tonality, impulsivity and low frequency noise. On site measurements determined that the noise emission from the MPC was generally steady state without intermittent, tonal or impulsive characteristics. The potential for low frequency noise as a characteristic has been considered.

The INP states that where the difference between A-weighted and C-weighted noise levels is more than 15 dB, a modifying factor of +5 dB must be added to the predicted noise level prior to comparison with the criteria.

6.2 Predicted Noise Levels

The predicted noise levels at the nearest sensitive receptors due to the noise generated by MPC represent the maximum predicted noise level at the receivers within each of the two identified residential areas (Minchinbury and Erskine Park).

A screening test was conducted to determine whether low frequency noise adjustments should be applied to the predicted noise levels at the receivers, presented in **Table 6.2**.

Table 6.2: Predicted Noise Level Screening for Low Frequency Noise

Receiver Area	Predicted Noise Level $L_{eq,15min}$						Unit
	Neutral Eve	Neutral Night	Adverse 1	Adverse 2	Adverse 3	Adverse 4	
Minchinbury	28	28	33	32	33	32	dB(A)
	42	42	45	45	45	44	dB(C)
	14	14	12	13	12	12	Difference (dB)
Erskine Park	20	20	16	25	20	25	dB(A)
	35	35	33	38	35	38	dB(C)
	15	15	17	13	15	13	Difference (dB)

The results of the low frequency screening reveal that in Erskine Park, during neutral evening, night and adverse 1 and 3 meteorological conditions, the difference between the A-weighted and C-weighted levels are 15 dB or more. Therefore in accordance with the INP a 5 dB penalty has been added to the predicted level at the receiver for comparison with the criteria.

The adjusted predicted noise levels are presented in **Table 6.3**.

Table 6.3: Predicted Noise Level at the Nearest Residential Receptors due to MPC Generated Noise

Receiver Area	Criteria	Predicted Noise Level $L_{eq,15min}$ dB(A)					
		Neutral Eve	Neutral Night	Adverse 1	Adverse 2	Adverse 3	Adverse 4
Minchinbury	35	28	28	33	32	33	32
Erskine Park	35	25	25	21	25	25	25

It is apparent from the table that the noise level generated by the MPC during the proposed extended operating hours is predicted to be below the project specific criteria at the nearest affected receivers in both Minchinbury and Erskine Park. In the prevailing noise environment it is expected that the predicted noise levels would be inaudible. This is consistent with the results and conclusions of the *Pacific Environment Report 7480 DADI MPC Noise Measurement*.

7 CONCLUSIONS

This report documents the noise impact assessment of the proposed extended operating hours of the Materials Processing Centre (MPC) at the Dial-a-Dump Industries (DADI) Eastern Creek Facility.

The proposal concerns the extension of hours for the operation of the MPC and associated stockpiling conveyors only. Other activities associated with the facility are not included in the proposed operations.

The nearest and potentially most affected receivers were identified in the suburbs of Minchinbury and Erskine Park.

Existing background noise monitoring was conducted as part of the application for the existing project approval, however they were previously not accepted by the EPA. In consideration of this, the most stringent criterion permissible under the Industrial Noise Policy was used as the project specific criteria.

Previous onsite measurements determined that the MPC operating alone was not measureable within the ambient noise environment at the nearest residential receivers in Minchinbury. Therefore the sound power level of the MPC was determined by onsite attended measurements under normal operating conditions.

Predictive modelling using the determined sound power levels established the predicted noise level at the most affected residential receivers due to the operation of the MPC. The modelling included considerations for the prevailing meteorological conditions and adjustments for low frequency noise, where appropriate.

The predicted noise levels are within the minimum INP criteria under both neutral and adverse meteorological conditions at the most affected receiver locations in Minchinbury and Erskine Park. In addition, based on measurements previously conducted, the noise generated by the MPC is expected to be generally inaudible in the existing ambient noise environment at the nearest residential receiver.

As the MPC generated noise is not predicted to be in excess of the project specific criteria and generally indiscernible at the nearest residences, no adverse off-site noise impact is anticipated as a result.

8 REFERENCES

CONCAWE, CONCAWE's Special Task force on Noise Propagation (1981), The propagation of noise from petroleum and petrochemical complexes to neighbouring communities.

DOP NSW (2009). Eastern Creek Waste Project Approval 06_0139 (as modified)

ERM (2008), Lighthorse Business Centre Noise Impact Assessment

ISO 9613-2 (1996). Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculations.

ISO 3744 (2010). Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering Methods for an essentially free field over a reflecting plane.

NSW EPA (2000). NSW Industrial Noise Policy.

Pacific Environment (2012-1). Report 6723 Genesis Recycling Facility August 2012 Compliance Monitoring

Pacific Environment (2012-2). Report 6723 Genesis Recycling Facility November 2012 Compliance Monitoring

Pacific Environment (2013). Report 7480 DADI MPC Noise Measurement

Appendix A FIGURES



Figure 8.1: Inside MPC



Figure 8.2 Inside MPC



Figure 8.3: Typical Loading Machine.



Figure 8.4: Residue Waste is Recirculated and Deposited within the Building



Figure 8.5 Conveyor System West of the MPC



Figure 8.6 Conveyor System West of MPC Showing Heavy Aggregate Stockpiles on the Concrete Hardstand and Against the Building Wall.

Appendix B NOISE SOURCE MEASUREMENTS

Table 8.1: 1/3 Octave Band Leq [dB] Measured at 30m from MPC perimeter whilst operating

#	1/3 Octave Band Sound Pressure Level, L _{eq} [dB]																											
	25 Hz	31.5 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz
1	61	62	63	60	59	59	60	59	58	56	52	50	50	47	49	50	50	49	46	45	45	44	42	40	37	32	24	18
2	60	60	62	58	57	56	57	54	53	55	51	52	54	51	49	48	50	48	46	45	45	44	42	40	36	32	24	17
3	61	59	62	60	60	59	61	60	59	55	50	49	50	49	49	47	46	44	43	43	42	41	39	38	36	30	24	20
4	62	59	59	57	58	56	57	57	58	55	52	51	52	48	49	46	47	44	43	42	42	40	39	37	35	30	25	22
5	60	64	61	58	64	61	60	59	58	58	52	50	51	51	48	45	46	45	44	44	45	42	41	40	38	33	26	19
6	59	63	61	57	62	60	59	59	57	56	52	52	52	50	48	45	46	44	44	43	44	42	41	40	38	32	25	18
7	59	57	57	58	65	64	59	58	56	57	49	47	48	48	46	44	44	42	42	40	40	38	37	36	33	28	22	19
8	59	57	57	57	63	61	55	54	53	52	50	49	48	47	46	44	44	42	40	40	40	37	36	35	32	26	18	13
9	56	51	52	51	53	55	50	48	47	47	44	41	44	42	40	38	38	35	33	33	33	29	28	26	22	18	15	16
10	55	49	50	48	50	52	51	48	48	50	45	43	43	41	40	39	38	35	32	32	33	28	29	26	21	15	11	12
11	61	60	57	55	57	54	54	51	47	49	46	47	48	43	42	41	41	38	36	36	34	31	31	28	25	20	16	22
12	63	60	57	54	55	52	52	51	52	55	48	47	49	44	44	42	41	38	37	37	35	31	32	29	24	19	14	13
13	64	63	60	59	61	62	67	57	56	56	54	53	58	52	51	49	50	52	50	50	47	44	42	41	40	37	33	28
14	63	62	59	58	59	61	66	56	55	56	55	60	60	55	51	50	50	52	50	49	46	44	42	39	39	36	33	29
15	65	71	66	65	65	70	66	62	57	58	55	55	56	54	52	50	48	47	47	45	43	46	47	42	43	44	41	39
16	65	70	65	63	63	65	64	62	60	63	57	58	57	53	53	51	48	47	48	46	44	47	49	43	43	42	41	39
17	70	63	70	67	68	70	69	66	63	62	59	60	63	60	56	54	54	51	50	48	46	45	44	41	39	35	32	31
18	70	62	70	66	68	68	66	63	63	63	63	61	60	58	57	54	53	52	50	48	46	44	44	41	39	35	32	29
19	61	70	70	66	72	69	69	65	62	62	59	55	56	54	52	51	53	50	48	47	48	46	44	43	40	36	31	26
20	61	69	69	66	71	66	66	62	60	60	59	61	58	55	53	52	55	51	49	47	47	45	44	42	40	36	31	26
21	59	69	66	64	67	64	63	60	59	57	53	53	54	53	52	52	53	50	49	47	48	46	44	43	40	35	29	24
22	58	69	66	64	67	63	60	56	55	57	55	57	57	54	52	51	53	50	49	47	47	46	45	43	40	35	29	23
23	59	60	63	62	65	61	60	58	57	58	50	51	51	48	47	51	52	52	49	48	49	47	46	44	42	37	32	26
24	58	61	62	60	63	58	57	56	55	58	52	50	53	52	52	50	51	51	49	48	48	47	45	44	41	37	32	26
25	61	61	65	63	66	62	59	57	58	57	49	49	52	52	50	50	51	49	48	47	49	47	46	45	42	38	32	26
26	61	60	64	62	65	60	56	54	55	56	51	53	55	52	50	49	50	50	48	46	48	45	44	43	41	37	31	25

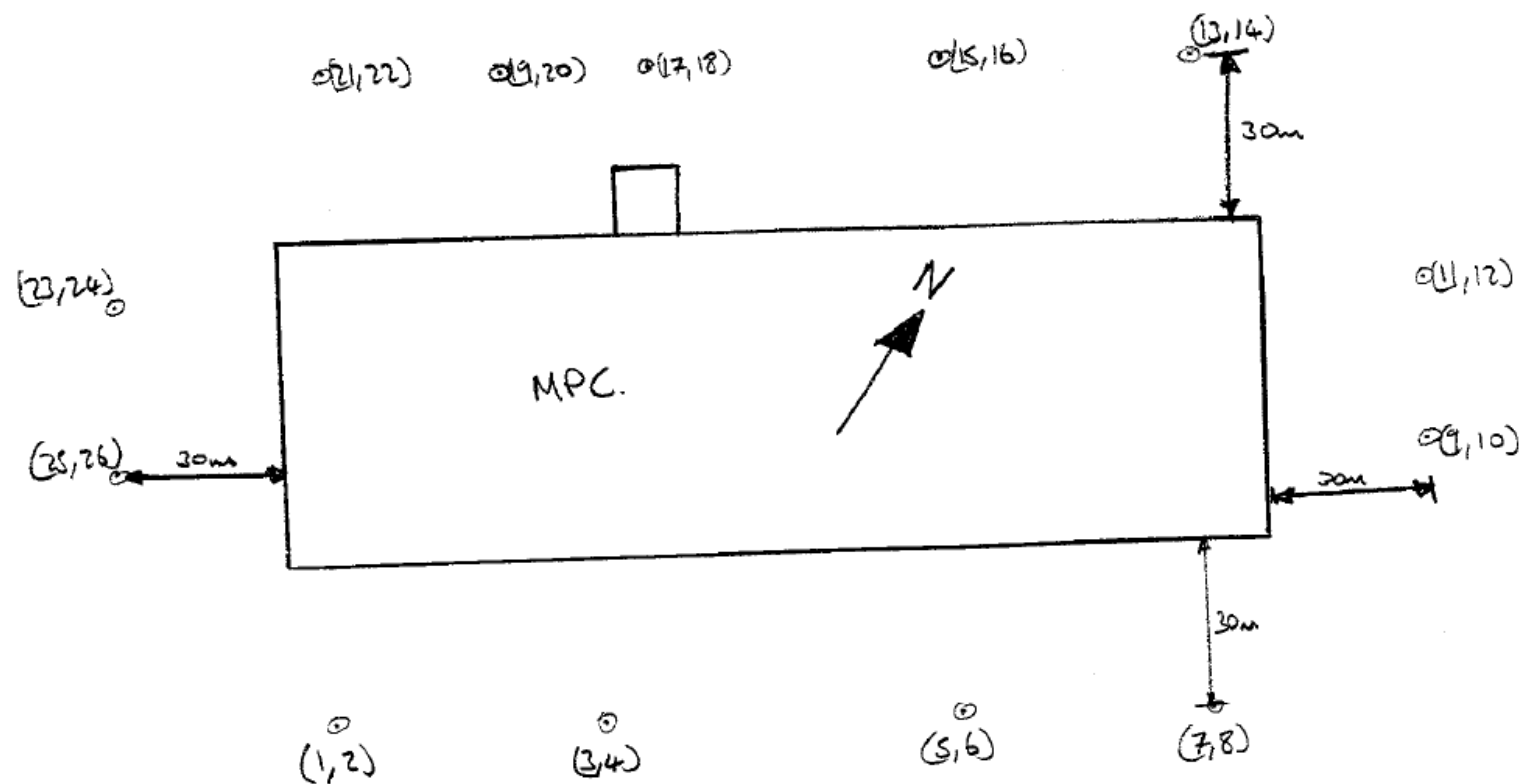


Figure 8.7: Location of measurements as defined in Table 8.1 relative to the MPC.

Appendix C AUDIBILITY MEASUREMENTS

28 February 2013

Kim GlassBorow
Dial a Dump Industries
Alexandria

Dear Kim,

Re: Genesis MPC Noise Measurements

Introduction

Attended noise monitoring was carried out to investigate noise levels of the Material Processing Centre (MPC) at the Genesis waste processing facility in Eastern Creek at the nearest residential receivers in Minchinbury.

Objective of Measurements

The objective of the measurements was to perform noise measurements at the nearest residential receivers located in Minchinbury to determine if the MPC was audible at the receivers during the period 6.00pm-10.00pm.

The measurement period was split into two session, 6.00pm to 8.00pm and 8.00pm to 10.00pm. During each of the sessions, the MPC was operated for one 15 minute period. The measurement operator was not aware of the time the MPC was operating at the time of the measurements.

Measurement Description

Attended measurements were carried out at the nearest residential receivers in Minchinbury on three separate occasions as follows:

- Measurement 1 - Wednesday 6 February 6.00pm to 10.00pm
- Measurement 2 - Friday 8 February, 6.00pm to 10.00pm
- Measurement 3 - Wednesday 20 February, 6.00pm to 10.00pm

Noise measurements were carried out using an ARL Ngara Environmental Noise Logger and a Rion NL-31 Sound Level Meter. Both items' calibration was checked before and after measurements and no significant drift was noted.

During the measurements, the weather conditions were observed at the measurement location and during Measurement 1 and Measurement 2, conditions were observed to be suitable for noise monitoring (no rain and calm wind conditions). During Measurements 3, conditions were deemed suitable after some very light rainfall for approximately 13 minutes during the measurements. It was considered that the observed rainfall did not adversely affect the measurements.

Attended Measurement Results

Table 1 (presented at the end of this letter) presents the results of the operator attended measurements.

A time history for each measurement is presented in Figure 1 to Figure 3.

Discussion

A review of the measurements indicates that at the measurement locations, road traffic noise from the M4 is the most dominate source. Generally road traffic noise was observed to be between L_{Aeq} 55 and 59 dB(A). Peaks in road traffic noise were observed from heavy vehicles passing, accelerating and engine breaking, generally contributing to the L_{A10} and L_{A1} descriptors. Other peaks in the noise environment were generally controlled by the presence of community noise sources such as plane or helicopter flyovers and the use of lawnmowers or whipper snippers.

It was observed that as the overall noise levels decreased across the measurement periods (6.00pm to 10.00pm), the road traffic noise from the M4 also decreased and a noticeable increase in breaks in traffic were observed.

In addition non-anthropogenic sources also contributed to the noise environment and this includes crickets, insects and cicadas as well as birds and intermittent dogs barking from the community. Cricket noise was observed to be generally constant throughout the measurements, road traffic noise from the M4 was still the dominant noise source. Cicadas were observed to be intermittent and generally decreased from approximately 8.00pm onwards.

At no point during the measurements was the MPC observed to be audible amongst the prevailing ambient or background noise environment. A review of the noise measurements did not indicate any discernible change which could be attributed to the MPC operating.

Conclusion

Pacific Environment conducted noise measurements to determine the audibility of the MPC operating at the Genesis Eastern Creek Facility on three separate occasions between 6.00pm and 10.00pm. The measurements determined that the MPC was not audible or discernible within the prevailing ambient and background noise environment.



Chris Marsh
Senior Engineer
Pacific Environment

Table 1: Operator Attended Measurement Results

Measurement	Time (pm)	Noise Level dB(A)				Comments
		L _{Aeq}	L _{A1}	L _{A10}	L _{A90}	
1	6.00-6.15	58	63	60	56	Noise environment dominated by M4 traffic noise. Other noise sources included insects (crickets), occasional bird calls and occasional noise from the community such as horn beep, occasional dog bark and one car passing on McFarlane Drive. Two plane flyovers noted.
1	6.15-6.30	58	62	59	55	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls.
1	6.30-6.45	59	64	60	56	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls. Occasional distant dog barking and intermittent cicadas
1	6.45-7.00	59	63	61	57	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional bird calls. One helicopter and two plane flyovers noted.
1	7.00-7.15	61	71	61	57	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional bird calls. Three helicopter and one plane flyover noted. Lawnmower, just audible, starts 14min into period. Gate slam from community noted.
1	7.15-7.30	59	64	60	57	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional bird calls, helicopter and light plane flyover. Intermittent shouting just audible from community and intermittent lawnmower just audible.
1	7.30-7.45	58	63	60	56	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional bird calls and helicopter flyover.
1	7.45-8.00	58	64	60	56	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional bird calls.
1	8.00-8.15	57	61	58	54	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional just audible dog barks, intermittent voices audible from community and one plane flyover.
1	8.15-8.30	56	61	58	54	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional just audible dog barks and one plane flyover.
1	8.30-8.45	56	60	57	53	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional just audible dog barks and one plane flyover.
1	8.45-9.00	56	61	58	54	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional just audible dog barks

Measurement	Time (pm)	Noise Level dB(A)				Comments
		L _{Aeq}	L _{A1}	L _{A10}	L _{A90}	
1	9.00-9.15	56	60	57	53	Noise environment dominated by M4 traffic noise, other noise sources included crickets, two plane flyovers and distant traffic noise just audible from Great Western Highway during breaks in M4 traffic noise.
1	9.15-9.30	56	62	58	52	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional dog bark, and distant traffic noise just audible from Great Western Highway during breaks in M4 traffic noise.
1	9.30-9.45	55	61	57	53	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional dog bark, and distant traffic noise just audible from Great Western Highway during breaks in M4 traffic noise and one plane flyover.
1	9.45-10.00	54	55	55	54	Noise environment dominated by M4 traffic noise, other noise sources included crickets, occasional dog bark, and distant traffic noise just audible from Great Western Highway during breaks in M4 traffic noise and one plane flyover.
2	6.00-6.15	60	64	61	57	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls.
2	6.15-6.30	60	63	61	58	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls and one plane flyover.
2	6.30-6.45	60	64	61	58	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls and one plane flyover.
2	6.45-7.00	61	64	62	59	Noise environment dominated by M4 traffic noise, other noise sources included crickets and occasional cicadas and bird calls and one horn beep from M4. Lawnmower audible in distance from 8 min20 secs into period (estimated L _{Aeq} 57)
2	7.00-7.15	61	64	62	60	Noise environment dominated by M4 traffic and lawnmower (level increased from previous period). Other noise sources included crickets and occasional cicada and bird calls.
2	7.15-7.30	61	65	63	59	Noise environment dominated by M4 and lawnmower. Lawnmower off at 5min9secs into measurements. Distant accelerating traffic occasionally just audible from Great Western Highway. Other noise sources included occasional bird calls, cicadas and crickets.
2	7.30-7.45	61	65	63	59	Noise environment dominated by M4 traffic. Other sources included lawnmower (new lawnmower source) begins at start of period, insects and occasional bird call and one plane flyover. Another lawnmower source begins at 2min21secs adjacent to measurement position.

Measurement	Time (pm)	Noise Level dB(A)				Comments
		L _{Aeq}	L _{A1}	L _{A10}	L _{A90}	
2	7.45-8.00	61	65	63	57	Significant noise sources include M4 traffic and lawnmower next to measurement position. Other sources include 2 plane flyovers, insects and occasional bird calls. Lawnmower next to measurement position off at 9min30secs into period.
2	8.00-8.15	60	69	62	56	Noise environment dominated by M4 traffic. Other noise sources include insects and some occasional bird calls, dog barks and one plane flyover. Whipper Snipper on near measurement position at 10min7secs into period.
2	8.15-8.30	58	62	60	56	Noise environment dominated by M4 traffic. M4 traffic becomes more intermittent than previous periods. Whipper Snipper turns off at 1min30 secs into period. "Bangs" from nearby houses on two occasions. Other sources included insects, occasional bird calls and dog bark in the distance.
2	8.30-8.45	57	63	59	55	Noise environment dominated by M4 traffic. Other sources include crickets and one plane flyover. Traffic noise from Great Western Highway just audible during breaks in M4 traffic.
2	8.45-9.00	57	63	59	55	Noise environment dominated by M4 traffic. Other sources include crickets and one plane flyover. Traffic noise from Great Western Highway just audible during breaks in M4 traffic.
2	9.00-9.15	58	64	60	55	Noise environment dominated by M4 traffic. Other sources include crickets and one plane flyover. Traffic noise from Great Western Highway just audible during breaks in M4 traffic.
2	9.15-9.30	57	62	59	55	Noise environment dominated by M4 traffic. Other sources include crickets and traffic noise from Great Western Highway just audible during breaks in M4 traffic.
2	9.30-9.45	57	63	59	54	Noise environment dominated by M4 traffic. Other sources include crickets and traffic noise from Great Western Highway just audible during breaks in M4 traffic.
2	9.45-10.00	57	62	58	54	Noise environment dominated by M4 traffic. Other sources include crickets and traffic noise from Great Western Highway just audible during breaks in M4 traffic.
3	6.00-6.15	61	65	63	59	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas.
3	6.15-6.30	60	63	62	58	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas and one plane flyover.
3	6.30-6.45	60	64	62	59	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas, distant dog barking intermittently and one plane flyover. Some low level vegetation rustle also observed.

Measurement	Time (pm)	Noise Level dB(A)				Comments
		L _{Aeq}	L _{A1}	L _{A10}	L _{A90}	
3	6.45-7.00	59	64	61	57	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas and vegetation rustle, distant dog barking intermittently and two plane flyovers.
3	7.00-7.15	59	63	61	58	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas, distant dog barking intermittently, occasional low level vegetation rustle and two plane flyovers.
3	7.15-7.30	60	63	61	58	Noise environment dominated by M4 road traffic. Other noise sources include crickets and one plane flyover.
3	7.30-7.45	59	63	61	57	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas, distant dog barking intermittently, occasional low level vegetation rustle and plane flyover. Very light rain observed for 4 minutes at start of period.
3	7.45-8.00	58	61	60	56	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas.
3	8.00-8.15	58	61	59	56	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas. Light rain observed for 6 minutes at the start of the period. Rain observed not be significant to adversely affect measurement.
3	8.15-8.30	57	60	58	55	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas. "Bang" observed from houses near measurement position.
3	8.30-8.45	56	60	58	54	Noise environment dominated by M4 road traffic. Other noise sources include crickets and intermittent cicadas. Some very light observed for 3 minutes at start of period, not considered to adversely affect measurement.
3	8.45-9.00	56	59	57	55	Noise environment dominated by M4 road traffic. Other noise sources include crickets.
3	9.00-9.15	58	62	59	56	Noise environment dominated by M4 road traffic. Other noise sources include intermittent crickets and one plane flyover.
3	9.15-9.30	58	62	60	56	Noise environment dominated by M4 road traffic. Other noise sources include crickets.
3	9.30-9.45	58	62	59	56	Noise environment dominated by M4 road traffic. Other noise sources include crickets.
3	9.45-10.00	57	61	59	55	Noise environment dominated by M4 road traffic. Other noise sources include crickets and one plane flyover.

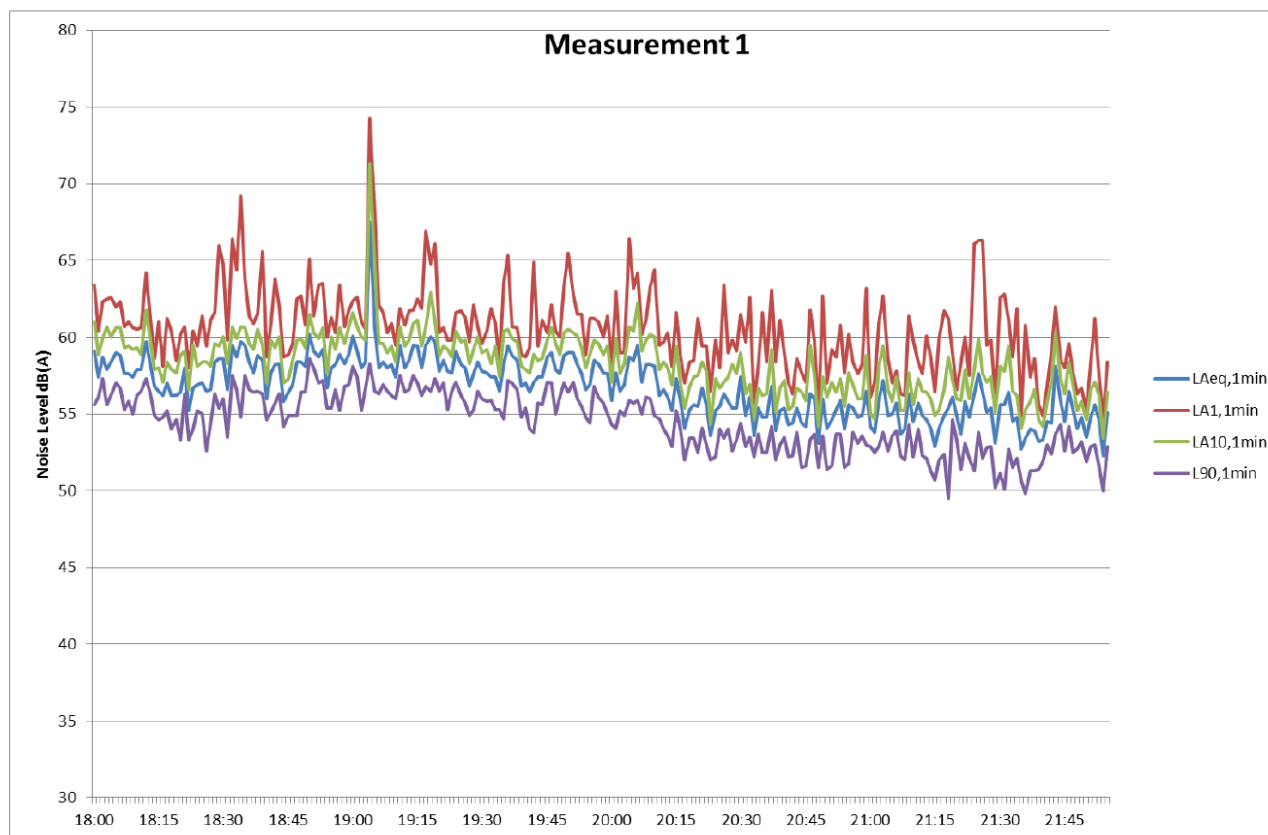


Figure 1: Measurement 1 Time History of noise levels dB(A) as a function of LAeq,1min, LA1,1min, LA10,1min, LA90,1min

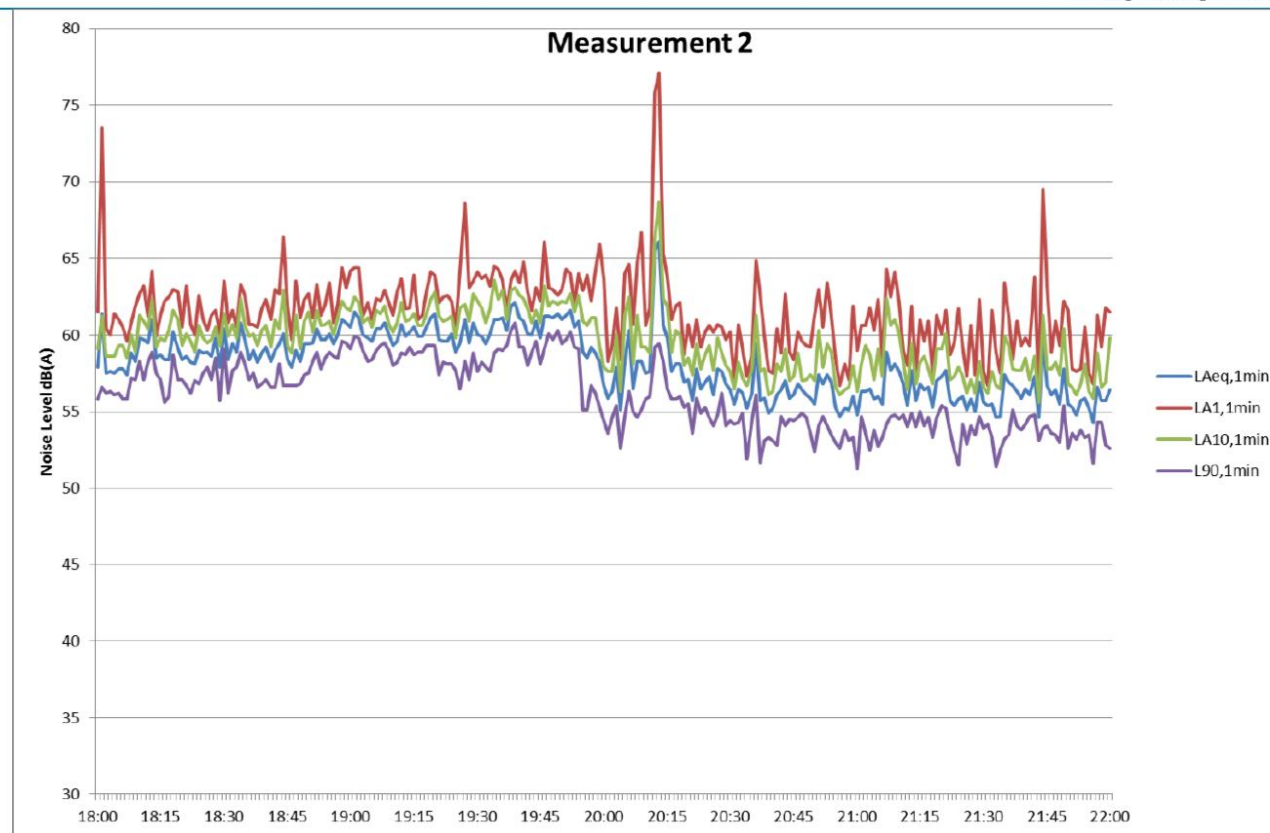


Figure 2: Measurement 2 Time History of noise levels dB(A) as a function of LAeq,1min, LA1,1min, LA10,1min, LA90,1min

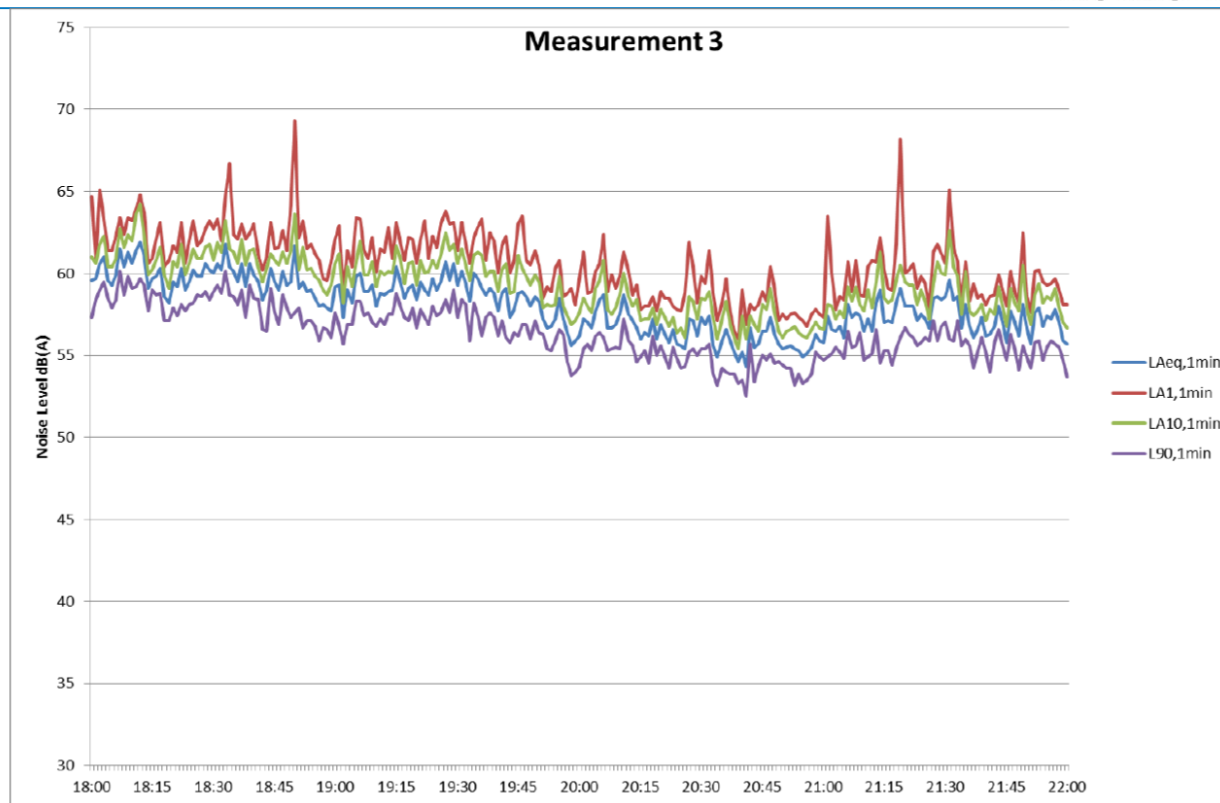


Figure 3: Measurement 3 Time History of noise levels dB(A) as a function of LAeq,1min, LA1,1min, LA10,1min, LA90,1min

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