19.7 BD3742 OF 2019 ANGELA BRINKWORTH V REDLAND CITY COUNCIL

Objective Reference:

Authorising Officer: **David Jeanes, Acting General Manager Community & Customer Services**

Responsible Officer: **Chris Vize, Acting Group Manager City Planning & Assessment**

Report Author: **Michael Anderson, Senior Appeals Planner**

Attachments:

1. **Agenda Item and Minutes of General Meeting - 11 September 2019**
2. **Notice of appeal**
3. **Mediation Agreement**
4. **Correspondence from Mullins Lawyers dated 18 March 2020**
5. **Correspondence from McCarthy Durie Lawyers dated 20 March 2020**
6. **Correspondence from Council dated 16 April 2020**
7. **Partial response from appellant dated 8 May 2020**
8. **Revised OMP dated 15 May 2020**
9. **Draft Conditions**

The Council is satisfied that, pursuant to Section 275(1) of the *Local Government Regulation 2012*, the information to be received, discussed or considered in relation to this agenda item is:

(f) starting or defending legal proceedings involving the local government.

PURPOSE

To provide Council with an update in the matter of Angela Brinkworth (Brinkworth) v Redland City Council (Council) (Planning and Environment Court Appeal (BD3742 of 2019) and set out the relevant information to enable Council to consider its position in the Appeal.

BACKGROUND

Council received an application on 30 July 2018 seeking a development permit for material change of use for the purpose of a cemetery (pet crematorium) on land at 592-602 Redland Bay Road, Alexandra Hills (see Attachment 1), and described as Lot 2 on RP 194117. The owner of the property is Ms Angela F Brinkworth, with the application being lodged on behalf of Ms Brinkworth by Town Planning Alliance Pty Ltd (Development Application Reference: MCU18/0167).

A copy of the proposal plan that formed part of the refusal is extracted below in Figure 1:

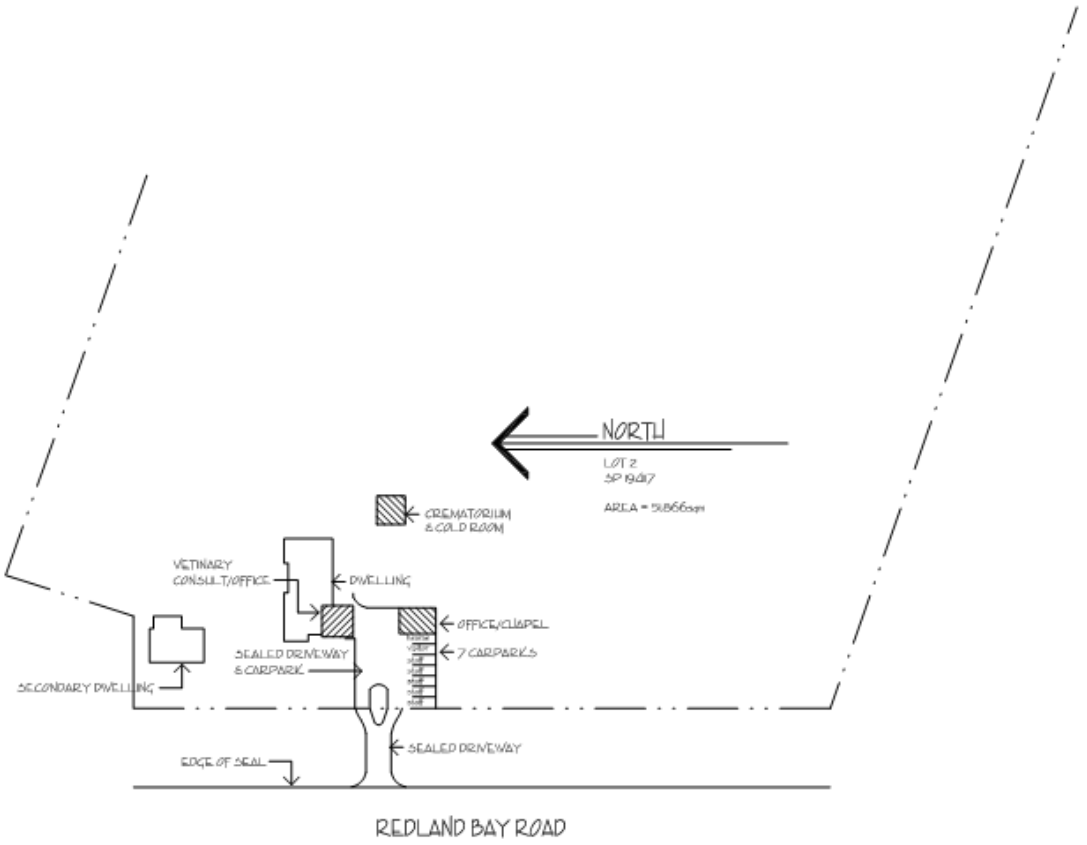

Figure 1 – Proposal plan

The development application was reported to the General Meeting of Council on 11 September 2019 and was recommended for approval by officers.

The development application was refused by Council and the decision notice is dated 18 September 2019. Council's reason for refusal is as follows:

> *Consistency of use*
>
> *Overall outcomes of the Kinross Road structure plan overlay code and environmental protection zone code in the Redlands Planning Scheme and the environmental management zone code in the City Plan seek that development provides for low-key uses that have a very low impact on environmental values, are less intensive than uses in rural or industrial areas, and maintain and contribute to environmental values of the site and surrounding precinct. The application seeks to provide a land use which is typical of an industrial-based activity in terms of operating characteristics and potential for impacts to the natural environment. The development therefore conflicts with the overall outcomes (2) (f) of the Kinross Road structure plan overlay code and (2) (b) (i) (a), (b), (c), (d), (e) and (g) of the environmental protection zone code in the Redlands Planning Scheme and overall outcomes 2 (a) and (d) of the environmental management zone code in the City Plan.*

A copy of the officer's report and minute are included at Attachment 1 for information.

A Notice of Appeal (NOA) was filed in the Planning and Environment Court (P & E Court) on 16 October 2019 and the following orders were sought:

(a) that the appeal be allowed;

(b) that the application be approved subject to reasonable and relevant conditions; and

(c) such further or other orders as the Court deems appropriate.

A copy of the NOA is contained at Attachment 2.

The parties and role in the matter are set out below in Table 1:

Party	Role	Represented By
Angela Brinkworth	Appellant	Thynne & MaCartney Lawyers
Redland City Council	Respondent	
Harridan Pty Ltd	First Co-Respondent by Election	Mullins Lawyers
Hoya Garden Plaza Pty Ltd, Andrew Fisher and Stacey Hsieh	Second Co-Respondents by Election	McCarthy Durie Lawyers

Table 1 – Parties and Representatives

A without prejudice mediation was held between all parties and the Registrar at the P & E Court on 13 December 2019. A Mediation Agreement (confidential) was signed by the parties, and this sets out the areas of agreement and key actions as follows:

-
-
-
-
-

On 2 March 2020, in accordance with the mediation agreement the Appellant provided the following documentation:

An extract of the amended proposal plan is provided in Figure 2 below:

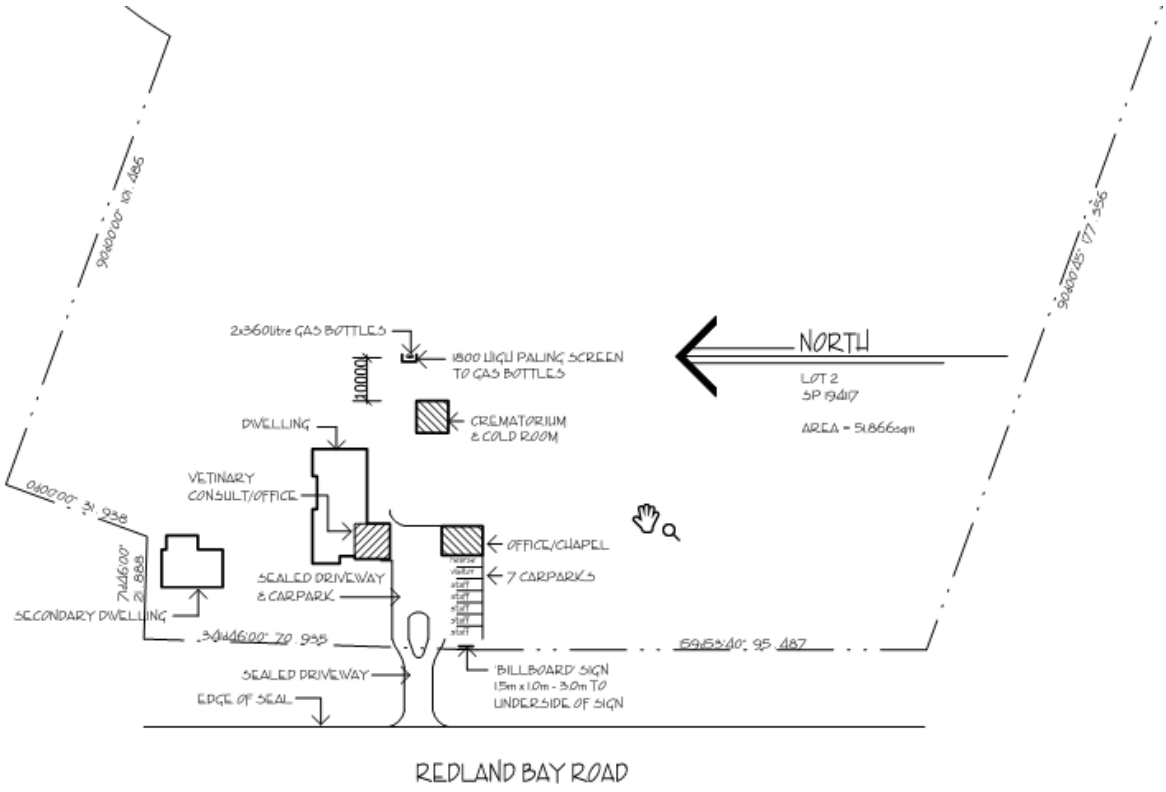

Figure 2 – Amended proposal plan

An extract of the revised concept layout plan is provided in Figure 3 below:

Figure 3 – Landscape plan

The revised proposal plan and landscape plan are contained in Attachment 7.

The following provides a summary and timeline of the relevant actions post receipt of the further information:

- Mullins lawyers on behalf of the First Co-Respondents wrote to the Appellant on 18 March 2020 advising that it notes the stated changes to the development, however their client does not consider the information sufficient to resolve the Appeal. Refer to Attachment 4.
- The lawyer, on behalf of the Second Co-Respondent, provided a response to the revised documentation dated 20 March 2020. A copy of the response is contained at Attachment 5. The comments are summarised as follows:
    - The use should not operate on a Saturday or Sunday.
    - The landscape plan is inadequate to screen the chimney flue and the number of plants is required on the plans.
    - The billboard sign is not consistent with the area and not what was agreed at the mediation.
    - The gas bottle is located within the mapped flood and buffer zone.
    - Comments in respect of the operational management plan.
- A Court Order dated 27 March 2020 sought that the Appellant provide clarification of or additional information required to support the amended plans and documents provided by the Appellant on 2 March 2020 to the Respondent.
- The matter was mentioned for review on 30 April 2020.
- On 16 April 2020 Council wrote to the Appellant, on a without prejudice basis (the correspondence dated 16 April 2020 and is included at Attachment 6), seeking further clarification in respect of:
    - current site activities
    - operation of the crematorium
    - operational management plan
    - on-site signage.
- In accordance with the Court Order of 30 April 2020, the Appellant was to provide further information to the parties regarding the development proposal, including with respect to the matters raised in the without prejudice correspondence from the Respondent dated 16 April 2020. This was to be provided by 15 May 2020. A further review was set down for 22 May 2020.
- A partial response to matters raised by the Respondent and Second Co-Respondent was provided by the Appellant on 8 May 2020 (refer to Attachment 7) and included:
    - town planning response
    - landscape concept plan
    - site plan (revision C).
- A revised operational management plan (OMP) was prepared and submitted on 15 May addressing the comments raised in the correspondence from Council on 16 April 2020 and the comments received from McCarthy Durie Lawyers dated 23 March 2020. A copy of the revised OMP is contained at Attachment 8.

- On 21 May 2020 the Appellant confirmed that the existing vet surgery is currently operating from within the site. The vet surgery may make use of the pet crematorium facility, but the vet remains as a separate and distinct land use. It was also confirmed that there will be a maximum of five (5) staff on site at any one time (combined uses of existing vet and crematorium).
- An adjournment of the 22 May 2020 review has been agreed and a further review is listed for 19 June 2020 where Council will be required to notify of its position.
- Mullins lawyers, on behalf of the First Co-Respondent, confirmed that their client's position in the appeal remains unchanged following the submission of the further information, and they do not consider the information sufficient to resolve the appeal.
- Further comments were received from McCarthy Durie lawyers on behalf of the Second Co-Respondents on 26 May 2020 in respect of the revised information submitted by the Appellant on 8 and 15 May 2020. It is stated that whilst the efforts of the Appellant are appreciated, there remains concern as follows:
    - The billboard sign is unacceptable and does not preclude the words 'crematorium'.
    - The landscape plan is too vague and uncertain.
    - The revised draft OMP seeks to obfuscate the proposed hours of operation.
    - There is no agreement to work on Saturdays or Sundays.
    - 6 monthly testing is not supported and should be quarterly.

ISSUES

Site and locality

Refer to the original GM report contained at Attachment 1 for a full description of the site and surroundings. An aerial of the subject site is provided below in Figure 4.

Figure 4 - Aerial

Assessment framework

The application has been made in accordance with the *Planning Act 2016* (PAct) *Development Assessment Rules* and constitutes an impact assessable application for material change of use under the Redlands Planning Scheme (RPS) version 7.2.

Assessment framework

In accordance with s45 (5) of PAct '*an impact assessment is an assessment that –*

(a) must be carried out -

i) against the assessment benchmarks in a categorising instrument for the development; and

ii) having regard to any matters prescribed by regulation for this subparagraph; and

(b) may be carried out against, or having regard to, any other relevant matter, other than a person's personal circumstances, financial or otherwise.'

Further to the above, in accordance with s45 (6) '*subsections (7) and (8) apply if an assessment manager is, under subsection (3) or (5), assessing a development application against or having regard to –*

(a) a statutory instrument; or

(b) another document applied, adopted or incorporated (with or without changes) in a statutory instrument.'

Subsections (7) and (8) state:

'(7) The assessment manager must assess the development application against or having regard to the statutory instrument, or other document, as in effect when the development application was properly made.

(8) However, the assessment manager may give the weight the assessment manager considers is appropriate, in the circumstances, to—

(a) if the statutory instrument or other document is amended or replaced after the development application is properly made but before it is decided by the assessment manager—the amended or replacement instrument or document; or

(b) another statutory instrument—

i) that comes into effect after the development application is properly made but before it is decided by the assessment manager; and

ii) that the assessment manager would have been required to assess, or could have assessed, the development application against, or having regard to, if the instrument had been in effect when the application was properly made.'

With respect to s45 (5)(a)(ii) above, the matters prescribed by regulation (s31 of the *Planning Regulation 2017*) are the following:

'(1) For section 45(5)(a)(ii) of the Act, the impact assessment must be carried out having regard to—

(a) the matters stated in schedules 9 and 10 for the development; and

(b) if the prescribed assessment manager is the chief executive—

i) the strategic outcomes for the local government area stated in the planning scheme; and

ii) the purpose statement stated in the planning scheme for the zone and any overlay applying to the premises under the planning scheme; and

iii) the strategic intent and desired regional outcomes stated in the regional plan for a region; and

iv) (iv) the State Planning Policy, parts C and D; and

v) (v) for premises designated by the Minister—the designation for the premises; and

(c) if the prescribed assessment manager is a person other than the chief executive or the local government—the planning scheme; and

(d) if the prescribed assessment manager is a person other than the chief executive—

i) the regional plan for a region; and

ii) the State Planning Policy, to the extent the State Planning Policy is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

iii) for designated premises—the designation for the premises; and

(e) any temporary State planning policy applying to the premises; and

(f) any development approval for, and any lawful use of, the premises or adjacent premises; and

(g) the common material.

(2) However—

(a) an assessment manager may, in assessing development requiring impact assessment, consider a matter mentioned in subsection (1) only to the extent the assessment manager considers the matter is relevant to the development; and

(b) if an assessment manager is required to carry out impact assessment against assessment benchmarks in an instrument stated in subsection (1), this section does not require the assessment manager to also have regard to the assessment benchmarks.'

Decision making framework

In accordance with s60(3) of PAct, '*to the extent the application involves development that requires impact assessment, the assessment manager, after carrying out the assessment, must decide –*

(a) to approve all or part of the application; or

(b) to approve all or part of the application, but impose development conditions on the approval; or

(c) to refuse the application.'

Application assessment

The following section of this report provides an overview of the relevant statutory assessment framework and an assessment of the amended plans against the relevant assessment benchmarks and previous stated reason for refusal.

A copy of the officer's assessment of the original development application is contained at Attachment 2. This assessment, in accordance with *the Planning Act 2016*, was undertaken against the Redlands Planning Scheme V7.2 (RPS) and weight afforded to City Plan (v3). City Plan (v3) has been replaced by City Plan (v4) and took effect on 19 February 2020. There were no changes introduced as part of City Plan (v4) relevant to the assessment of the appeal.

The assessment and officer's recommendation in the original General Meeting report remains the same under City Plan (v4). Similarly the summary of submissions, infrastructure charges and information in respect of the development application remain the same. For the purposes of this report and appeal, Council need to consider whether the amended information submitted through the appeal process satisfactorily addresses the stated reasons for refusal. The following section has been considered under the following key issues and corresponding headings:

- land use
- operational management plan
- landscape concept plan
- traffic statement

- amended site plan
- signage.

Land use

Council has instructed experts in the field of town planning and air quality to assess the additional information provided through the appeal process.

Upon consideration of the proposed development application, in accordance with the relevant assessment rules in the PAct and development assessment benchmarks in the RPS and City Plan, Council's town planning expert has expressed that whilst commercial activities are not intended in the zone, the proposal has demonstrated no adverse amenity impacts on nearby sensitive uses, and on that basis the proposal could be supported. It is noted that the nature and scale of the proposal is of a relatively low intensity and can be mitigated through the use of conditions. Council's expert recommends that the following conditions be included:

Hours of operation

- Limit the hours of operation to between 8am and 5pm Monday to Friday; and
- Saturday trading to 4pm could be accepted (consistent with home business code).

Operational management plan

- Approve the operational management plan prepared by MWA Environmental (to be updated and finalised) following comments from the parties in response to mediation material.

Air quality and noise impacts are discussed in the following section. However Council's air quality and noise expert has confirmed that with the addition of a condition to secure updated information in respect of emissions, to be incorporated in the OMP and air quality assessment, the proposed pet crematorium can be operated and achieve compliance with the relevant air quality objectives for human health and amenity.

As set out within the original officer's assessment report (Attachment 1) the RPS has been replaced by the City Plan and therefore weight can be afforded to City Plan in the decision making process. The site is included within the environmental management zone and therefore the intent of the zone in City Plan is considered to represent the most contemporary intentions for this area.

The overall outcomes of the environmental management zone do not restrict the use on the land for particular purposes. Instead these outcomes focus on the scale and impacts of any development. Specifically that development is small-scale. As set out above through the additional information submitted and through the use of conditions it has been demonstrated that the use will remain small-scale and will not result in any adverse impacts on areas of environmental significance or impact upon amenity of the surrounding area.

Operational management plan

Council's air quality expert previously reviewed an air quality and noise impact assessment for the proposed pet crematorium that was prepared by MWA on behalf of the Appellant and dated 1 March 2019 (Air and Noise Assessment). The review of the air and noise assessment found errors in the emission calculations. As a consequence, it was recommended that the report did not provide a suitable basis to specify emission limits for the cremator.

On 16 April 2020 following a review of the OMP Council wrote to the Appellant seeking clarification of the following matters:

- The draft OMP will need to reflect the conditions of approval.
- Ensuring consistency in operating details.
- Clarification of the method of monitoring of the exhaust emissions.
- Revise the emission estimates and dispersion modelling accordingly.

Council requested that this issue be addressed as follows:

> *'7. Council has some concerns about the details contained within the draft OMP more specifically:-*
> *(d) Further to the previous point, the previous MWA Environmental Report includes errors in its calculations of emissions. Consequently, it does not provide a suitable basis to specify the appropriate levels of emissions from the cremator. The emission estimates and dispersion modelling contained in the previous MWA Environmental Report needs to be revised if it is to be used to determine appropriate emission limits.'*

A response was submitted on the 15 May 2020 and included a revised OMP (refer to Attachment 8). The following documents prepared by MWA on behalf of the Appellant were provided:

- Draft Operational Management Plan, Pet Crematorium, 592 - 602 Redland Bay Road, Alexandra Hills, MWA Environmental, 14 May 2020 (draft OMP).
- Air Quality and Noise Impact Assessment, Proposed Pet Crematorium, 592-602 Redland Bay Road, Alexandra Hills, MWA Environmental, 13 May 2020 (Revised Air and Noise Assessment).

Council's air quality expert reviewed the revised material submitted on 15 May 2020 and the draft OMP dated 14 May 2020. Council's air quality and noise expert reviewed the revised emission rate calculations that are contained in the revised air and noise assessment and confirmed that the revised calculations have been conducted correctly. The calculations have been based on standard emission factors so it is reasonable to assume that the emission factors represent normal, efficient operation of the cremator. It is confirmed that the revised air and noise assessment shows that the proposed pet crematorium can be operated and achieve compliance with the relevant air quality objectives for human health and amenity with a good safety margin. For example, nitrogen dioxide (NO2) was predicted to be, at most, 11% of the air quality objective.

The key issue that needs to be resolved in relation to pet cremator is the emission limits that have been proposed in the Draft OMP. The emission limits in the Draft OMP are too lenient and do not reflect proper and efficient operation of the cremator. To illustrate this point, the proposed emission limits are between 23 and 148,000 times greater than the emission rates that were used in MWA's air quality assessment.

It is stated that the proposed emission limits have been derived in an arbitrary way and are not based on the cremator manufacturer's specifications or performance guarantee.

Council's expert recommends that the Appellant should provide revised emission limits in the Draft OMP that:

- Reflect the upper bound of emissions that are likely to occur when the cremator is being maintained and operated strictly in accordance with the manufacturer's specifications/recommendations and in accordance with sound environmental principles
- Ensure that emissions of air pollutants are minimised as far as is practicable.

For this reason it is considered reasonable to include a condition requiring an updated OMP and air quality and noise report which addresses this issue and for this to be submitted to and agreed by Council prior to the commencement of any works on site.

Accordingly, the inclusion of the above condition will ensure compliance with Planning Scheme Policy 6 – Environmental emissions of City Plan.

Landscape Concept Plan

An amended landscape concept plan has been submitted providing some additional landscape treatment to the central median in the access and an additional hedge to the site frontage with Redland Bay Road. The previously proposed *Syzgium austral* (Big Red) has been replaced with *Ficus macrocarpa var.hilli* which has an approximate height at maturity of 10-15 metres.

The revised landscape plan SK001 Revision D is considered acceptable and complies with the requirements of the landscape code in the RPS and landscape code in City Plan.

Traffic Statement

The applicant's traffic expert considers that six (6) car park spaces will be adequate for the following reasons:

- Five (5) staff would be on site at one time, which would generate a demand for approximately three (3) parking spaces based on typical staff rate of 1 space per two employees, as stipulated for other land uses in City Plan.
- Visitors for the crematorium (pet cemetery) would typically involve immediate family only (i.e. low demand and high car occupancy).
- Visitor demands for the veterinary surgery are expected to remain very low, being a home business.

Performance outcome PO8 of the Transport, servicing, access and parking code requires on-site parking:

(1) Is clearly defined, safe and easily accessible;
(2) Accommodates a sufficient number of vehicles, having regard to:
(1) The type and size of development;
(2) Expected resident, employee and customer movements;
(3) The location of the use;
(4) The capacity of the existing road network to accommodate on-street parking; and
(5) Access to public transport.

A total number of seven (7) car parking spaces are proposed. The five (5) members of staff referenced in the traffic report refers to the combined total of employees in the vet practice and the proposed crematorium. This is the worst case scenario. In order to be considered low key, Council's town planning expert, recommends that the proposed crematorium has a maximum of two (2) employees working at the business at one time. It is recommended that this is included as a condition of any approval. Taking into account the justification provided in the traffic report and nature of visitation, the provision of two (2) spaces for staff and five (5) spaces for visitors of the pet crematorium and vet practice (home business) is considered to meet PO8.

Amended Site Plan

The revised site plan SP.01 (c) shows the relocation of the gas bottle outside of any mapped flood and buffer overlay. This change has been made in response to comments made by the Co-Respondent. The crematorium and cold room remain in the same location as previously proposed.

[redacted]

CONCLUSION

Officers are of the opinion that these additional measures and proposed conditions will ensure that the proposed use will be low-key and likely result in minimal impacts to the natural environment and surrounding area generally. Officers are of the opinion that the development meets the relevant assessment benchmarks contained within the RPS and City Plan. Accordingly it is recommended that Council no longer contends that the development application should be refused.

STRATEGIC IMPLICATIONS

Legislative Requirements

Council is required to advise the other parties of its position on the amended plans by 19 June 2020.

Risk Management

Part 6 of the *Planning and Environment Court Act 2016* identifies that the P & E Court may make an order for costs it considers appropriate, if a party has incurred costs in a number of circumstances. Relevantly these include:

- The P & E Court considers the proceedings were started or conducted primarily for an improper purpose, including, for example, to delay or obstruct.
- The P & E Court considers the proceedings to have been frivolous or vexatious (for example, the Court considers a proceeding was started or conducted without reasonable prospects of success).

In accordance with the Court Order, Council will still be required to attend the review hearing on 19 June 2020.

Financial

Legal Services have advised that Council costs associated with contending the appeal would be in [redacted]

It should be noted that should Council decide to contend the appeal then there is a risk of an order of costs being made against Council.

People

There are no people implications associated with this report.

Environmental

There are no environmental implications associated with this report.

Social

There are no social implications associated with this report.

Human Rights

There are no known human rights matters associated with this report.

Alignment with Council's Policy and Plans

The assessment of this offer and the officer's recommendation aligns with Council's policies and plans as referenced in the 'Issues' section of this report.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Legal Services Unit	Ongoing	Council's Solicitor facilitated advice from Counsel and the experts. Advice was also provided in the progress of the appeal.
External Counsel	Ongoing	Provided advice with respect to prospects, mediation strategy, carriage of the appeal and preparation for the hearing.
Town Planning Expert	May 2020	Whilst commercial activities are not intended in the zone, the proposal has demonstrated no adverse amenity impacts on nearby sensitive uses, and on that basis the proposal could be supported. It is noted that the Nature and scale of the proposal is of a relatively low intensity and can be mitigated through the use of conditions.
Air Quality Expert	May 2020	Generally support the revised OMP subject to additional information being agreed and a revised OMP being submitted.

OPTIONS

Option One

That Council resolves as follows:

1. To provide a response stating that it no longer contends that the development application ought to be refused.
2. To provide draft conditions (generally in accordance with those provided in Attachment 9) that ought to be imposed in the event the appeal is allowed.
3. To instruct its solicitors to take all necessary steps to settle the appeal and that parties bear their own costs to this point.
4. That this report and attachments remain confidential until the conclusion of the appeal, subject to maintaining the confidentiality of legally privileged and commercial in confidence information.

Option Two

That Council resolves as follows:

1. To provide a response to the proposed change stating that whilst accepting the proposed changes as a minor change, it will continue to contend the development application ought to be refused for the grounds identified within the Decision Notice.
2. To instruct its solicitors to take all necessary steps to prepare the appeal for a hearing.
3. That this report and attachments remain confidential until the conclusion of the appeal, subject to maintaining the confidentiality of legally privileged and commercial in confidence information.

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OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. **To provide a response stating that it no longer contends that the development application ought to be refused.**
2. **To provide draft conditions (generally in accordance with those provided in Attachment 9) that ought to be imposed in the event the appeal is allowed.**
3. **To instruct its solicitors to take all necessary steps to settle the appeal and that parties bear their own costs to this point.**
4. **That this report and attachments remain confidential until the conclusion of the appeal, subject to maintaining the confidentiality of legally privileged and commercial in confidence information.**

14 REPORT FROM COMMUNITY & CUSTOMER SERVICES

14.4 MCU18/0167 - CEMETERY (PET CREMATORIUM) - 592-602 REDLAND BAY ROAD, ALEXANDRA HILLS

Objective Reference: A4057738

Authorising Officer: Louise Rusan, General Manager Community & Customer Services

Responsible Officer: David Jeanes, Group Manager City Planning & Assessment

Report Author: Justin Leach, Planning Officer

Attachments:
1. Locality Map ⇩
2. Aerial Map ⇩
3. Zoning Map ⇩
4. Plans ⇩
5. Air Quality and Noise Impact Assessment ⇩
6. Preliminary Arborist Report ⇩
7. Assessment Manager Conditions ⇩

PURPOSE

Council has received an application seeking a development permit for material change of use for the purpose of a cemetery (pet crematorium) on land at 592-602 Redland Bay Road, Alexandra Hills (see attachment 1), and described as Lot 2 on RP 194117. The owner of the property is Ms Angela F Brinkworth, with the application being lodged on behalf of Ms Brinkworth by Town Planning Alliance Pty Ltd.

The application has been assessed against the relevant provisions of the *Redlands Planning Scheme V7.2* (RPS) and where warranted, weight has been given to the assessment benchmarks of the City Plan. The proposal is considered to comply with the relevant statutory instruments. The proposal was publicly notified and 124 properly made submissions were received. The key issues identified in the assessment are:

- Consistency of use;
- Car parking;
- Impacts to the environment; and
- Air quality and noise impacts.

The issues outlined above and public submissions have been addressed in the report. It is recommended that the application be granted a **development permit** subject to conditions.

BACKGROUND

Consent for a home based veterinary surgery (C746) as part of a dwelling house was granted by Council on 17 November 1981. The consent required that the applicant provide the necessary infrastructure for the operation of the use in accordance with the *Town Planning Scheme*, including: access and frontage works, internal turning treatments, provision of four (4) car parks and landscaping. The applicant has advised that the surgery is managed by a veterinarian, being a sole operator with no additional staff.

Subsequent to the initial consent, duplication of Redland Bay Road by the Department of Transport and Main Roads (DTMR) occurred during the mid to late 2000s. Due to this the original dwelling, which was located in what is now road reserve was granted demolition approval (reference: BD137439) from Council on 17 August 2006. During the same period of time, the current primary dwelling (Building Approval reference: BD136231) was approved on 11 April 2006,

with construction occurring that year. Subsequent to the construction of the dwelling, Survey Plan SP194117 was endorsed, excising a portion of land from the front of the property as road reserve.

ISSUES

SITE DESCRIPTION

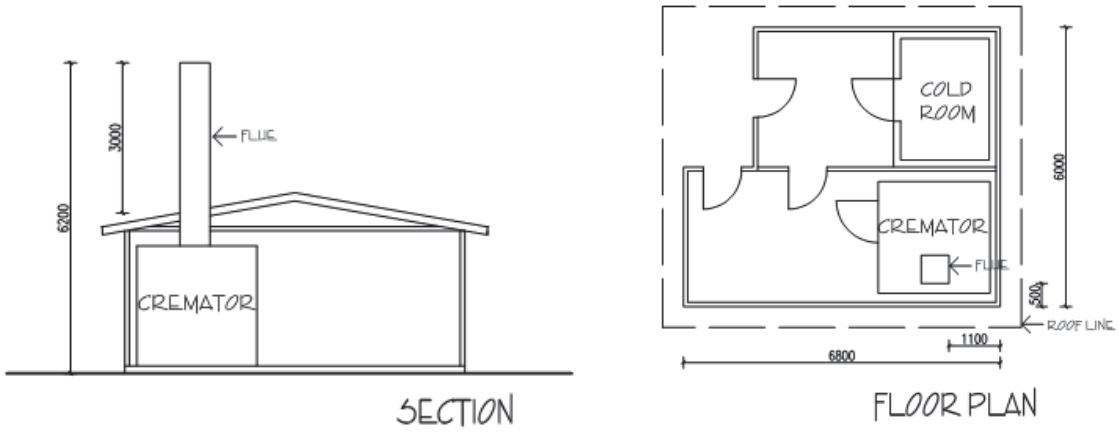
The site has an area of 51,866m^2 and is currently improved by a dwelling, secondary dwelling and two associated outbuildings (see attachment 2). The home based vet operates from the dwelling house. The property is accessed off the eastern side of Redland Bay Road and the land generally slopes mildly towards the centre, where the Hilliards Creek traverses the property from south to north. Towards the frontage of the site the land supports a mix of native and non-native species as forested areas, scattered trees and grassed areas. The rear of the site is comprised largely of forested areas of native vegetation that forms part of the larger surrounding established wildlife habitat corridor. It is noted that a large dam is located at the rear of the site within the densely vegetated area.

The site is dual zoned as environmental protection and conservation zone under the RPS and adjoins a similarly zoned property to the north, open space zone to the west and south and Redland Bay Road to the west. Across Redland Bay Road there is an established residential area of park residential zoned lots, while to the north-west there are some larger properties zoned rural non-urban (sub-area UR1). The site is located approximately 600m from Sheldon College directly to the south.

The property is located on the fringe of the Kinross Road structure plan area (see attachment 3), being defined as within 'Sub-Precinct 6a bushland living'. The structure plan area supports a variety of uses, with the majority of the land being zoned for residential and open space purposes. The northern and eastern sections of the structure plan area have been, or are in the process of being, developed as residential housing product. The western part of the site (nearest to the proposed development) is yet to be developed. It is noted that the closest future residential area in accordance with the structure plan is approximately 300m from the proposed cremator unit.

DEVELOPMENT PROPOSAL

The application is for a material change of use for a cemetery (pet crematorium) as per the plans provided in attachment 4. The proposal includes a cremator and cold room to be located within an existing building on the site. The building will be modified (see plans in the figure below) to include a flue, which will be located 3 metres above the existing roofline. A second shed will be converted to be used for the purposes of a small office/chapel. An LPG cylinder (used to power the cremator) with a length of 3.5m and diameter of 1.5m is proposed to be located in the existing cleared area between the cremator unit and the office/chapel. Vehicular access is provided from the existing crossover from Redland Bay Road and seven car parks are proposed to be provided on site. The crematorium is proposed to be operated by a single person.



Cremator

The cremator is described as an R&Y Engineering Pet Cremator Unit, which is LPG fired and comprises primary and secondary chambers. Features of the cremator, as described in the MWA Environmental Air Quality and Noise Impact Assessment (see attachment 5) are as follows:

- Maximum loading rate of 75kg per hour, with a typical cremation cycle of 90 minutes;
- Temperature controllers to regulate the primary chamber, secondary chamber and flue (exhaust) temperatures. The primary combustion chamber operating temperature is typically set to 1000 degrees celsius. The secondary combustion chamber is designed to operate at a minimum temperature of 850 degrees celsius with minimum residence time of 2 seconds to effectively control potential odour and smoke emissions; and
- Stack height of 6.2m above ground level (3m above existing roofline) and stack exhaust velocity of 15.4m/s.

APPLICATION ASSESSMENT

Planning Act 2016

The application has been made prior to commencement of the City Plan, in accordance with the *Planning Act 2016* (PAct) *Development Assessment Rules* and constitutes an impact assessable application for material change of use under the RPS version 7.2.

Assessment Framework

In accordance with s45 (5) of PAct '*an impact assessment is an assessment that* –

(a) must be carried out -

i) against the assessment benchmarks in a categorising instrument for the development; and

ii) having regard to any matters prescribed by regulation for this subparagraph; and

(b) may be carried out against, or having regard to, any other relevant matter, other than a person's personal circumstances, financial or otherwise.'

Further to the above, in accordance with s45 (6) '*subsections (7) and (8) apply if an assessment manager is, under subsection (3) or (5), assessing a development application against or having regard to* –

(a) a statutory instrument; or

(b) another document applied, adopted or incorporated (with or without changes) in a statutory instrument.'

Subsections (7) and (8) state:

'(7) The assessment manager must assess the development application against or having regard to the statutory instrument, or other document, as in effect when the development application was properly made.

(8) However, the assessment manager may give the weight the assessment manager considers is appropriate, in the circumstances, to—

(a) if the statutory instrument or other document is amended or replaced after the development application is properly made but before it is decided by the assessment manager—the amended or replacement instrument or document; or

(b) another statutory instrument—

i) that comes into effect after the development application is properly made but before it is decided by the assessment manager; and

ii) that the assessment manager would have been required to assess, or could have assessed, the development application against, or having regard to, if the instrument had been in effect when the application was properly made.'

With respect to s45 (5)(a)(ii) above, the matters prescribed by regulation (s31 of the *Planning Regulation 2017*) are the following:

'(1) For section 45(5)(a)(ii) of the Act, the impact assessment must be carried out having regard to—

(a) the matters stated in schedules 9 and 10 for the development; and

(b) if the prescribed assessment manager is the chief executive—

i) the strategic outcomes for the local government area stated in the planning scheme; and

ii) the purpose statement stated in the planning scheme for the zone and any overlay applying to the premises under the planning scheme; and

iii) the strategic intent and desired regional outcomes stated in the regional plan for a region; and

iv) (iv) the State Planning Policy, parts C and D; and

v) (v) for premises designated by the Minister—the designation for the premises; and

(c) if the prescribed assessment manager is a person other than the chief executive or the local government—the planning scheme; and

(d) if the prescribed assessment manager is a person other than the chief executive—

i) the regional plan for a region; and

ii) the State Planning Policy, to the extent the State Planning Policy is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

iii) for designated premises—the designation for the premises; and

(e) any temporary State planning policy applying to the premises; and

(f) any development approval for, and any lawful use of, the premises or adjacent premises; and

(g) the common material.

(2) However—

(a) an assessment manager may, in assessing development requiring impact assessment, consider a matter mentioned in subsection (1) only to the extent the assessment manager considers the matter is relevant to the development; and

(b) if an assessment manager is required to carry out impact assessment against assessment benchmarks in an instrument stated in subsection (1), this section does not require the assessment manager to also have regard to the assessment benchmarks.'

Decision making framework

In accordance with s60(3) of PAct, '*to the extent the application involves development that requires impact assessment, the assessment manager, after carrying out the assessment, must decide –*

(a) to approve all or part of the application; or

(b) to approve all or part of the application, but impose development conditions on the approval; or

(c) to refuse the application.'

SEQ Regional Plan 2017

The site is located within the Urban Footprint in the SEQ Regional Plan 2017.

State Policy & Regulations

State Policy / Regulation	Applicability to Application
State Planning Policy 2017 (SPP)	Bushfire hazard area The entire site is subject to the bushfire prone area mapping of the SPP. Across the site the mapping is separated into three categories as follows: • High potential bushfire intensity; • Medium potential bushfire intensity; and • Potential impact buffer. Development within the site is generally restricted to being within the potential impact buffer area, while the proposed cremator location is on the edge of the medium potential bushfire intensity mapped area. The applicant has noted that the cremator unit is fuelled by LPG, and as such a non-combustible LPG cylinder is proposed to be located in the cleared area between the cremator building and the shed (proposed office) next to the car park at the site frontage. The LPG cylinder is required to be stored within a fire shield (fibre cement sheeting or similar) within bushfire prone areas to ensure compliance with the Australian Standard AS3959. In accordance with the assessment benchmarks of the SPP for natural hazards, risk and resilience it is considered that the proposal will avoid or mitigate the risks to people and property to an acceptable or tolerable level for the following reasons: • The proposed use does not increase the gross floor area of buildings within the bushfire prone area; • The use is confined towards the frontage of the site along Redland Bay Road, which is generally set back from the significant vegetation on-site; • The cremator unit and LPG cylinder are non-combustible and fire resistant materials will be used where required as part of the certification process under Australian Standard AS3959; • The site is easily accessible and the development does not hinder disaster management capabilities; • The proposal does not increase the severity of the natural hazard to this site or adjoining; and • The risk to public safety and the environment are minimised due to the non-combustible nature of the cremator and LPG cylinder.

MSES – Wildlife habitat/regulated vegetation

The site is subject to several categories of biodiversity mapping under the SPP. The mapped categories are as follows:

- Wildlife habitat;
- Regulated vegetation (essential habitat);
- Regulated vegetation (wetland); and
- Regulated vegetation (intersecting a watercourse).

The proposed use is located on a part of the property outside of the mapped areas listed above. There is no habitat removal required, as the proposed use is to be located within existing structures. The existing access and car parking arrangements are to be maintained, minimising impacts to ecological process and fauna movements across the site. The proposal is considered to address the State interest.

	
Koala Habitat Area	The site is within a priority koala assessable development area and is subject to several categories of koala habitat value mapping under the *Planning Regulation 2017* Schedule 11 Part 2. The mapped categories are as follows: • Medium value rehabilitation habitat; • High value rehabilitation habitat; • Medium value bushland habitat; and • High value bushland habitat. The assessment benchmarks for development within a priority koala assessable development area under Schedule 11 Part 2 (6)(3) are as follows: *(a) 'the development does not involve clearing non-juvenile koala habitat trees in a bushland habitat area;* *(b) the development avoids clearing non-juvenile koala habitat trees in an area that is—* *(i) a high value rehabilitation habitat area; or* *(ii) a medium value rehabilitation habitat area;* *(c) if the clearing of non-juvenile koala habitat trees cannot be avoided in an area stated in paragraph (b)—* *(i) the amount of clearing is minimised; and* *(ii) any significant residual impact of the clearing is offset;* *(d) the matters stated in section 2(2)(a) to (e).'* The additional matters mentioned in (d) are that: *(a) 'the development provides, to the greatest extent practicable, safe koala movement measures that are appropriate for—* *(i) the development; and* *(ii) the habitat connectivity value of the premises;* *(b) any clearing of native vegetation complies with part 3;* *(c) measures are implemented to ensure that construction*

activities on the premises do not increase the risk of death or injury to koalas;

(d) any area on the premises that is cleared of native vegetation is progressively rehabilitated, if—

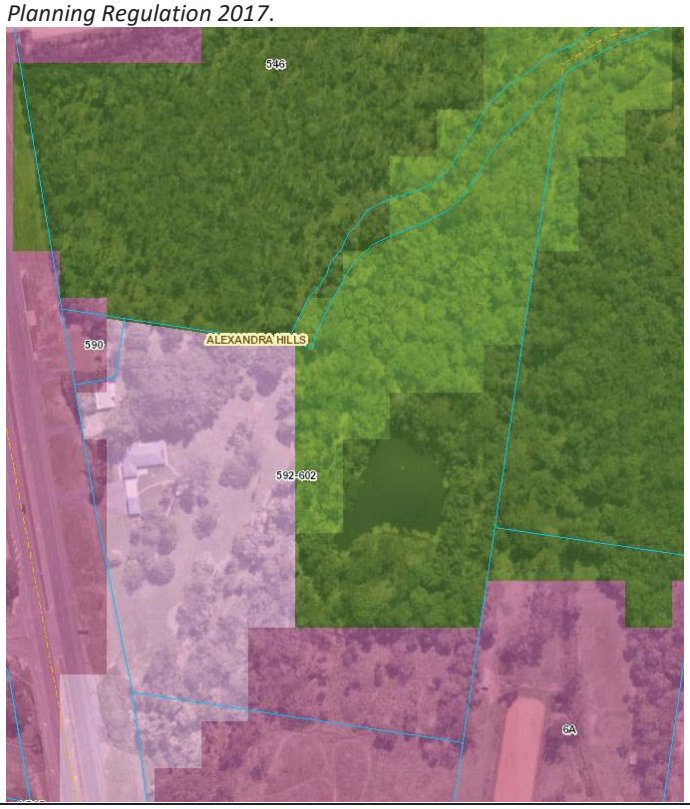
(i) the vegetation was removed as a result of construction activities; and

(ii) the area is to be used to provide for safe koala movement measures, including, if appropriate, koala movement infrastructure;

(e) if an area is to be used to provide for safe koala movement measures—the development involves landscaping that provides food, shelter and movement opportunities for koalas.'

The proposed development is located entirely within the mapped rehabilitation areas at the front of the site. The proposal requires only modifications (internal and external) to existing structures and does not increase the existing development footprint of the site. Accordingly, the removal of non-juvenile koala habitat trees is not necessitated by the development. To support this the applicant has provided an arborist report detailing the existing vegetation (inclusive of koala habitat) in close proximity to the building proposed to house the cremator unit. The report (see attachment 6) provides recommendations for protection and remedial measures (tree trimming) to ensure compliance with the *Regulation*. A condition is recommended to ensure compliance with the report.

Additionally, with the proposed use being located at the frontage of the site adjacent to Redland Bay Road, the impact to the overall koala habitat connectivity of the premises is minimised. It is considered that the proposal complies with Schedule 11 of the *Planning Regulation 2017*.



Redlands Planning Scheme

The application is subject to impact assessment under the RPS. In this regard, the application is subject to assessment against the entire planning scheme in accordance with section 1.2.6 of the RPS. However it is recognised that the following codes are relevant to the application:

- Kinross Road structure plan overlay
- Environmental protection zone code
- Conservation zone code
- Access and parking code
- Infrastructure works code
- Excavation and fill code
- Erosion prevention and sediment control code
- Landscape code
- Stormwater management code
- Bushfire hazard overlay code
- Habitat protection overlay code
- Flood prone, storm tide and drainage constrained land overlay code
- Protection of poultry industry overlay code
- Road and rail noise impact overlay code
- Waterways, wetlands and Moreton Bay overlay code

The subject site is located within the Kinross Road Structure Plan Overlay (KRSPO) area and within Sub-Precinct 6a (bushland living precinct). It is noted that the subject site is also dual zoned as environmental protection and conservation zone, with the proposed use being entirely confined within the environmental protection zoned area at the site frontage. In the event of any inconsistency between the relevant codes, the KRSPO applies. The most relevant parts of this assessment are discussed below.

Consistency of use

Specific outcome S1.7 of the Kinross Road structure plan overlay code seeks the following outcomes in Precinct 6:

(1) Precinct 6 – Bushland Living

(a) ensure uses and other development protect, enhance and provide for the long-term management of environmental values within the precinct;

(b) provide for lifestyle choice in an environmental setting;

(c) ensure uses are low key, cover only a small portion of the land and have a very low impact on environmental values;

(d) ensure development is adequately set back from remnant vegetation to ensure that there is no clearing of remnant vegetation as a result of development (for example, fire management buffers);

(e) no clearing of remnant vegetation that is essential habitat is to occur.

Specifically for Sub-Precinct 6a the KRSPO code seeks:

(2) Sub-Precinct 6a – Bushland Living

(a) provides for single dwelling houses on existing privately owned lots;

(b) protects, enhances and maintains waterways, habitat and movement corridors for koalas and other fauna;

(c) provides opportunity for home businesses, low key tourism and recreational pursuits in an environmental setting;

(d) maintains current lot sizes with no additional lots created;

(e) ensures vehicular movements do not negatively impact upon environmental values and can be managed without detrimental effect or impact on Boundary Road or Redland Bay Road where a property has a State controlled road frontage.

The proposal being for the defined use of a cemetery, does not comply with the above specific outcome S1.7(2), specifically points (a) and (c). Accordingly, the proposal needs to be assessed against the relevant overall outcomes of the KRSPO code, which seeks that:

5.15.8 (2) (f) - Bushland Living Precinct – (Precinct 6)

- *ensures uses and other development protect, enhance and provide for the long-term management and enhancement of environmental values of the Precinct;*
- *provides for lifestyle choice in an environmental setting;*
- *ensures uses are low key, cover only a small portion of the land and have a very low impact on environmental values;*

Sub –Precinct 6a Bushland Living (Multiple Locations)

- *provides for single dwelling houses on existing privately owned lots;*
- *protects, enhances and maintains waterways, habitat and movement corridors for koalas and other fauna;*
- *provides opportunity for home businesses, low key tourism and recreational pursuits in an environmental setting;*
- *maintains current lot sizes with no additional lots created; and*
- *ensures vehicular movements do not negatively impact upon environmental values and can be managed without detrimental effect or impact on Boundary Road or Redland Bay Road where a property has a State controlled road frontage.*

The proposal meets the overall outcomes for Precinct 6 as a whole as the use is low key, covers a small portion of the land and has a very low impact on the environmental values of the site. While the proposal is for a use that is not a single dwelling, home business, tourism or recreational use, it does share characteristics with a home business as it is low key and small scale, as well as being related to the veterinary surgery currently operating on the site as a home business. Given the specific uses referenced in the overall outcome there is a potential conflict with this element, however this is considered to be a minor conflict given the nature of the proposal.

Subject to changes in intent of the zoning of the site under City Plan and in accordance with the Planning Act s45 (6-8) as described in the assessment framework section, it is considered reasonable to give weight to the now relevant assessment benchmarks of the City Plan, being the instrument which has replaced the RPS and taken effect since the lodgement of this application. The outcomes under the relevant zone code in the City Plan are given an overriding weight as they represent the most contemporary intentions for this area.

Changes to zoning intent under City Plan

The site is zoned environmental management under City Plan. The level of assessment remains as impact.

The proposal does not meet performance outcome PO1 of the zone code below:

Development directly supports conservation and environmental management purposes or is a single dwelling house on a lot.

However, the overall outcomes (purpose) of the zone do not restrict the use on the land for particular purposes. Instead these outcomes focus on the scale and impacts of any development in this zone. These outcomes state:

6.2.13.2

1. *The purpose of the Environmental management zone code is to protect land with significant natural values while providing for dwelling houses on privately owned lots.*
2. *The purpose of the code will be achieved through the following overall outcomes:*
    a) *the environmental values and ecological functions of land within this zone are maintained or enhanced;*
    b) *land retains a generally undeveloped character;*
    c) *reconfiguration avoids further fragmentation of land; and*
    d) *development is generally limited to a single dwelling house on a large lot or small scale activities that facilitate the management or conservation of the environmental values on or near the land.*

In accordance with overall outcome 2(d) of the Environmental management zone code above, the City Plan provides a clear distinction from the RPS and the provisions for Sub-Precinct 6a of the KRSPO code. Instead of only allowing certain activities, the overall outcomes of the Environmental management zone code do not specify which activities may be acceptable, but instead the outcomes seek that the development is of small scale that facilitates the management or conservation of environmental values. The matters which demonstrate the consistency of the proposal with the overall outcomes of the Environmental management zone code are discussed below.

Scale of development

- The proposed use is located entirely within the footprint of existing structures, which equates to 0.8% of the site. No tree removal is required as part of the development and there is no interment proposed. As such the land retains a generally undeveloped character and the new use appears to be part of structures that are usually associated with a single dwelling on a large lot.
- The use is low-key. A single cremator unit is proposed in an existing building. The applicant has provided operating characteristics, indicating that animals would likely be picked up from the owner's residence by a single operator, taken to the site for cremation, and ashes returned to the owner. Conditions are recommended to ensure that the low-key nature of the development is retained.
- On occasion if an owner wishes, they may accompany their pet to the site and can make use of the facilities at the on-site office/chapel. The pet owner would be able to enjoy the natural amenity of the surroundings, rather than if this was located in an industrial estate, for example.
- Any intensification of the use would require a new application or a change to the approval. Any additional intensification would be assessed against the relevant planning instrument and on its individual merit.

Environmental impact

- The proposed use is located on the part of the site that is near to Redland Bay Road and is clearly separated from the habitat corridor and Hilliards Creek towards the rear of the site.
- An air quality and noise impact assessment has been submitted by the applicant demonstrating compliance with acoustic and air quality objectives. Detailed discussion is located within the Air Quality and Noise Impacts section of the report.
- The applicant has provided information to demonstrate that the proposal does not increase the risk to persons or property for bushfire hazard.

Location

- The proposed use is impact assessable within the precinct. An application has been received over the subject land and therefore must be assessed on its merits, however it is useful to consider what zones would support a cemetery use. The only zone, other than rural non-urban (not including sub-areas RN1, RN2 and RN3), where a cemetery use is not an inconsistent use, is the community purpose zone sub-area CP1. This sub-area is specifically for cemetery, crematorium and associated uses such as a funeral parlour on land in public or private ownership that will meet the current needs of the City. It is noted that this zone only covers existing cemeteries, and does not plan for future new cemeteries.
- As such, the planning scheme anticipates that the proposed use should be located in an area that has adequate separation from sensitive uses. Where considering the context of the site within its surrounds (see attachment 1), the property has similar characteristics to that of a rural property elsewhere in Redlands Coast, being that it is a large lot, development is well separated from the adjoining properties, and the lot is comprised of a mixture of cleared and forested areas. The key difference between this lot and other rural zoned lots is that the zoning reflects the environmental considerations (in particular the Hilliards Creek which traverses the lot), which have been addressed elsewhere within the report.
- Being a crematorium without interment the use does not require a large area for operation typical of cemetery. Instead the proposed location allows for the facility to be centrally located within Redlands Coast and as such is easily accessed by employees of the business. Additionally, without an interment facility, it is unlikely that the site will be trafficked frequently by the general public, and accordingly a large area for on-site parking is not required.

Existing use/s

- The site has historical approval for home based business on site (veterinary surgery). The veterinarian is a sole operator working from the home. The vet parks their vehicle in the existing double garage attached to the dwelling.
- The existing use and the proposed use are well placed to be co-located due to the nature of the businesses.
- The proposed crematorium is not expected to bring an excessive amount of traffic to the site in terms of visitors, which will maintain the low-key nature of the site. Being located on Redland Bay Road a minor increase to traffic will not cause nuisance to neighbouring residents.

Considering the low-key nature of the use and the locational suitability of the site it is considered that the proposal complies with the assessment benchmarks of the Environmental management zone code.

Air quality and noise impacts

Specific outcome S4.1(2) of the Kinross Road structure plan overlay code seeks the following:

> *'Sensitive land uses are separated from development of land uses that generate emissions to the air and acoustic environments to ensure the impacts of emissions on sensitive uses meet the objectives of the Environmental Protection (Air) Policy 2008, Environmental Protection (Noise) Policy 2008 and State Planning Policy 05/10 Air, Noise and Hazardous Materials.'*

In response to the above provision the applicant has submitted an Air Quality and Noise Impact Assessment by MWA Environmental (see attachment 5). In terms of addressing air quality, the report provides an assessment of the expected cremator emissions, ambient air quality, relevant air quality guidelines, site meteorology, dispersion modelling, and recommendations for managing emissions. The report utilises a conservative approach in that the assessment has been undertaken where the assumption is made that the cremator unit is operating 24 hours per day, every day of the year. As a result, the maximum predicted concentrations at surrounding sensitive receptors are likely to be less than what is stated within the report.

As part of the assessment process, Council commissioned Air Noise and Environment (ANE) to conduct a peer review of the air quality assessment. ANE advised that the adopted pollutants, air quality criteria and prediction methodology of the MWA Assessment are considered appropriate and compliance with the relevant air quality goals are expected.

The peer review also suggested that to ensure the crematorium is managed appropriately to minimise the potential for odour an operational management plan should be put into place. Accordingly, a condition has been recommended for the applicant to implement and provide to Council an operational management plan detailing aspects such as maintenance, monitoring and other operational procedures.

The peer review also addressed the potential for bioaccumulation for contaminants from the proposed facility. The peer review suggested that bioaccumulation is generally a factor considered with much larger industrial combustion sources, such as a waste incinerator, associated with a higher rate of emissions of bioaccumulative compounds such as heavy metals and dioxins/furans. The heavy metals and dioxans/furans associated with pets are present in much smaller amounts than these large facilities. As such, it is considered that the proposal complies with S4.1(2) of the KRSPO with respect to air quality.

In regards to noise impacts the MWA Assessment has assessed the impacts to the nearest sensitive receptor, being a dwelling on the western side of Redland Bay Road, approximately 115m from the cremator unit. The resultant noise levels from the cremator plant, associated equipment, carparking and vehicle noise readily complies with the acoustic quality objectives of the *Environmental Protection (Noise) Policy 2008*. Accordingly, the proposal complies with S4.1(2) of the code in terms of noise impacts.

Car parking

The access and parking code does not provide a specific number of car parks spaces for a cemetery to meet a deemed to comply solution. With the characteristics of the proposal taken into consideration, the use is largely expected to generate traffic through the single operator of the business picking up pets and dropping off the remains to the homes of owners. The use is not expected to be a large generator for visitor traffic as there is no interment on site and it is likely that a pet owner taking their pet to the premises for cremation would be the exception rather than the norm.

As such, the applicant has proposed a total of seven (7) car parks located within the existing sealed parking area at the frontage of the site. This parking provision will be satisfied as follows:

- Two (2) staff parks (not including the garage parking for the existing vet);
- Four (4) visitor parks (two (2) parking spaces for the crematorium and two spaces for the veterinary surgery); and
- One (1) park for the crematorium operational vehicle.

It is noted that there is provision on-site for informal overflow parking if required. Parking on-street is not desirable due to being located on an arterial State controlled road. It is noted that the DTMR has not required any changes to the existing access from Redland Bay Road. The proposal is considered to comply with S1 of the access and parking code.

Impacts to environment

Specific outcome S1.7 for Sub-Precinct 6a of the KRSPO code seeks that:

(2) Sub-Precinct 6a – Bushland Living -

(b) protects, enhances and maintains waterways, habitat and movement corridors for koalas and other fauna;

With respect to protecting, enhancing, and maintaining the waterway located on the site (Hilliards Creek) and habitat corridors, the proposal utilises existing structures on the site and does not increase impervious areas. Accordingly, existing stormwater discharge measures are considered acceptable and there is no requirement for water quality treatment in accordance with the stormwater management code or the assessment benchmarks of the State Planning Policy. Additionally, as described within the air quality impacts section of the report the proposed use does not process the same bioaccumulative compounds at higher rates seen in larger industrial combustion sources. A literature review by Air Noise and Environment has not yielded any results with respect to bioaccumulation issues associated with pet crematoriums. As such, it is considered that the proposal responds to the environmental constraints on site in terms of impacts to waterways and habitat corridors and complies with S1.7 of the KRSPO code.

Landscaping

Due to the historical nature of the site being used as a veterinary clinic, substantial landscaping is existing on the site, creating a sense of place and character and assisting with the blending of the use with the landscape setting. The entry to the site is well defined by an attractive fence and gate combination and landscaping (while not necessarily planted along the boundary fence) is visible from the road and enhances the visual appearance of the buildings from the street. Accordingly, it is considered that the proposal complies with the provisions of the landscape code and no further landscaping is required.

INFRASTRUCTURE CHARGES

In accordance with the *Planning Regulation 2017*, the prescribed amount applicable for infrastructure charges for a crematorium (Schedule 16, Table 1, Column 2) constitutes an "amount for another similar use listed in column 1 that the local government or distributor-retailer decides to apply to the use". The best fit similar use under the *Planning Regulation 2017* would be a cemetery. A cemetery constitutes a "*minor use"* with a prescribed amount of $0.00. Therefore, Infrastructure Charges are not triggered in this instance.

STATE REFERRALS

State Assessment & Referral Agency (SARA)

SARA provided a referral agency response dated 3 September 2018 in regards to the proposed development being located on a state-controlled transport corridor. The Department indicated no objection to the proposed development and had no requirements relating to the application. The Department's referral response will be attached to Council's Decision Notice.

PUBLIC CONSULTATION

The proposed development is Impact assessable and required public notification. The application was publicly notified for 15 business days from 4 April 2019 to 30 April 2019. A notice of compliance for public notification was received on 13 May 2019.

Submissions

There were 124 properly made submissions received during the notification period. However, a further 3 submissions were received which were not properly made but which were accepted under Part 4 Section 19 of the Development Assessment Rules.

1.	**Issue – Air Quality** • Submitters have raised health concerns regarding the smoke/ash fallout impacting on food and drink preparation and consumption as well as respiratory impacts on senior citizens for patrons and staff in the nearby Café and Nursery. • Submitters have raised health concerns regarding the smoke/ash fallout impacting on the health of nearby households, pets, visitors and surrounding wildlife, as well as vegie gardens in the area. • Hilliards creek runs through (and forks) within the proposed development site. This is upstream to an estuary that empties into Moreton Bay. Build-up of pollutants on site and over time may be a danger to wildlife and marine life. • The proposed pet crematorium is less than 600 metres to a school (Sheldon College), with the potential for children with health issues to be impacted by the pollutants.
	Applicant Response • It is understood that the key concern of nearby residents and workers relates to the perceived air quality impacts associated with the proposed pet crematorium. • The development application includes a detailed Air Quality Assessment Report prepared by MWA Environmental to assess the potential air quality impacts associated with the proposal. • The air quality assessment was based upon site-specific meteorological and dispersion modelling of an extensive suite of air pollutant emissions from the pet cremator and has sufficiently demonstrated that the relevant air quality guidelines will be readily satisfied at surrounding sensitive uses. • Council sought a third-party assessment of the Air Quality Assessment Report prepared by MWA Environmental which has concluded that the pet cremator will readily achieve the relevant Air Quality Guidelines at all surrounding sensitive uses. • The CALPUFF Contour Plots in the Air Quality Assessment Report show that the predicted pollutant concentration levels measured at the onsite waterbody and Hilliards creek is well below the relevant Air Quality Guidelines.
	Officer's Comment • A peer review of the Air Quality Assessment Report was commissioned by Council. • The review determined that the assessment undertaken by MWA Environmental demonstrated compliance with the relevant air quality guidelines and the methodologies used within the report were appropriate to address the surrounding sensitive land uses. • Build-up of pollutants affecting persons, pets and wildlife is associated with more intense and larger scale uses.
2.	**Issue - Odour** • Submitters have raised concerns that the anticipated odour will severely detract from the areas liveability.
	Applicant Response • The report by MWA Environmental advises that the primary combustion chamber operating temperature is typically set to 1000^{o}C. The secondary combustion chamber is designed to operate at a minimum temperature of 850^{o}C with minimum residence time of 2 seconds to effectively control potential odour and smoke emissions. The secondary chamber control system will ensure that the operation of the pet

	crematorium does not cause nuisance by way of visible smoke or odour.
	Officer's Comment • The proposed cremator unit is a modern two chamber design which includes measures to effectively control emissions. • A condition has been included for the applicant to apply to Council for approval for an "operational management plan" to ensure that the unit is operated within acceptable limits. • A separate condition regulates the opacity of cremator unit exhaust emissions.
3.	**Issue - Noise** • Submitters have raised concerns that the proposal will increase noise in the area dedicated to rural and residential living.
	Applicant Response • The development application includes a detailed Noise Impact Assessment Report prepared by MWA Environmental to assess the potential noise impacts associated with the proposal. • The report identifies that noise amenity impacts of the development will not result in adverse amenity impacts at surrounding sensitive uses. • Notwithstanding the above, Council has conditioned the hours of operation of the pet crematorium from 8am to 5pm to further limit any potential noise impacts on nearby sensitive uses.
	Officer's Comment • The submitted noise report demonstrates compliance with the Environmental Protection (Noise) Policy for nearby sensitive receptors. • A condition relating to operating hours has been recommended to ensure that noise is minimised outside of business hours.
4.	**Issue – Perceived Impacts** • The proposal has strong potential to cause psychological harm to nearby residents. • A survey was conducted on customers of the neighbouring nursery/cafe. Results indicate that the proposal for a pet crematorium would highly likely result in business loss and earnings as a consequence: 86% of customers indicated that this would negatively affect their decision to visit.
	Applicant Response • The perceived psychological and financial harm to nearby residents and business is understood to be related to the potential air quality concerns. As detailed above, the emissions from the proposed crematorium are well below the relevant Air Quality Guidelines. Furthermore, the control system will ensure that the operation of the pet cremator does not cause nuisance by way of visible smoke or odour.
	Officer's Comment • The perceived air quality impacts have been addressed through the applicant's submission. • Conditions are recommended to ensure that emissions from the cremator unit are minimised and to ensure that continued operation is undertaken in accordance with best practice.
5.	**Issue - Flooding** • The site also has a flooding overlay, which would imply that during flood times, any accumulated pollutants in the water body, would then be washed downstream in potentially concentrated quantities.
	Applicant Response • The proposed crematorium is situated outside of the mapped flood and storm tide hazard overlays and will therefore not be impacted by flooding.
	Officer's Comment • The use is located entirely outside of the mapped flood and buffer areas and as such is not impacted by flooding. • As described in the Air Quality section of the report, accumulation of contaminants within Hilliards Creek is not expected to be at concentrations outside of acceptable limits.
6.	**Issue - Scale of development** • Submitters have raised concerns that if this is the only facility in Redlands Coast, then this would not be a small scale operation. • The proposal may start with low pollutant levels but would be expected to intensify as the business operates over time especially if this is the only facility in Redlands Coast. • The next closest Pet crematorium in Loganholme requires 5 x cremator units to address its market, which is possibly smaller than the Redlands Coast.
	Applicant Response • Council has assessed the development application in its presented form. Any extensions or additional cremator units would require a new Impact Assessable development application to be lodged which would

	be subject to assessment under the current Redland City Plan 2018 or future planning schemes.
	Officer's Comment • The proposal has been assessed on its merits. A single cremator unit operated by one (1) person is approved. Conditions are provided to ensure that the use minimises nuisance to sensitive receptors. • Any future increase in scale or intensity to the use would be subject to a new development application and assessment by Council with respect to the relevant legislation and policies.
7.	**Issue – Outdated Mapping** • The map submitted appears to be outdated as it only shows one house R8 in the Kinross Road area being affected.
	Applicant Response • It is noted that the Air Quality Assessment Report by MWA Environmental includes older aerial imagery and that new residential development has occurred to the north-east of the site on Kinross Road. Notwithstanding, the report remains relevant as it addresses the nearest sensitive uses along Redland Bay Road.
	Officer's Comment • The air dispersion modelling files of the applicant's Air Quality Assessment have been evaluated as part of the peer review process commissioned by Council. The review suggests that all relevant sensitive receptors have been considered as part of the assessment. • Future residential receptors within the Kinross Road structure plan area will be located at minimum 300m to the east of the cremator unit (sub-precinct 5b). It is noted that these receptors are at a greater distance than those located near to the development on the western side of Redland Bay Road, and are likely to be less impacted.
8.	**Issue – Inaccurate Plans** • The shed does not seem big enough to accommodate the cremator and cold room by the dimension/shown on the floor plan.
	Applicant Response • The shed has an area of approximately 51m² and is sufficient in width and dimension to accommodate the proposed cremator and cold room.
	Officer's Comment • Plans have been provided by the applicant to demonstrate that the cremator and cold room can be located within the shed. It is understood that some building works are required for the cremator flue.
9.	**Issue – Size of Structure** • A 6.2m high 500mm wide structure will not retain the generally undeveloped character of the current tree studded landscape and obviously cannot enhance neither the environmental values nor the ecological functions.
	Applicant Response • The proposed crematorium will be conducted within an existing building on the site. The flue has a maximum height of 6.2m and is therefore below the allowable maximum height of 8.5m above ground level. The site cover is 0.8% of the site area and is therefore considered to be consistent with the low intensity built form nature of the area.
	Officer's Comment • The proposed structure is less than 8.5m in height and accordingly is considered to be low-rise in accordance with the planning scheme, which complies with the intent of the zoning.
10.	**Issue – Precedence** • There is concern that if Council approves the cremator unit, it may be the first of others. Once a precedence has been established the owner may seek approval for additional cremator units. It is believed there are about 66 veterinary practices in Redlands Coast with potential for all incinerations to be conducted at this one site.
	Applicant Response • Any additional cremator units or pet crematoriums in the Local Government Area would require a new Impact Assessable development application to be lodged which would be subject to assessment under the current Redland City Plan 2018 or future planning schemes.
	Officer's Comment • Under the City Plan there are certain zonings where a crematorium is anticipated and a code assessable application is required in those instances. In all other instances an impact assessable application is required. Nonetheless, each application is assessed on its merits and approval in this instance does not set a precedence for future crematorium applications.
11.	**Issue – Traffic** • Submitters have raised concerns regarding potential increase in traffic as a result of the pet crematorium.

	Applicant Response • Redland Bay Road is a 4 lane State Controlled Road which is capable of accommodating large volumes of traffic. The proposed pet crematorium is not considered to be a high traffic generator and any increase in traffic from this use would be negligible.
	Officer's Comment • The property is accessed from a State controlled arterial road. The pet crematorium as proposed is not a large traffic generator and the increase in movements along this road will be minor compared to the capacity of the infrastructure.
12.	**Issue – Property value loss** • Submitters have raised concerns regarding the potential significant reduction in house valuation in nearby residential areas.
	Applicant Response • This concern has been noted however the perceived loss in property valuation is not a material planning consideration within the planning scheme.
	Officer's Comment • The applicant has demonstrated, through consultant's reports that any potential impacts can be mitigated or will comply with current laws and policies. There are significant buffers to surrounding residences. • Nevertheless, property value is not a planning consideration as part of the development assessment process.
13.	**Issue – Pet Cemetery** • Submitter has raised concerns that the site could be used as a pet cemetery and traffic could increase from people visiting their pets.
	Applicant Response • The development application does not include a pet cemetery component. There will not be a cemetery component approved as part of this application.
	Officer's Comment • The development is not proposed to include interment. Conditions have been provided to ensure that there is no on-site burial.
14.	**Issue – Stormwater Quality** • Submitter has raised concerns regarding the car parking area and stormwater quality impacts from the development.
	Applicant Response • The application does not propose to increase the impervious area on the site. As such, there are no additional stormwater quality requirements applying to the application.
	Officer's Comment • No additional impervious areas are proposed. Stormwater quality treatment is not made assessable by the Redlands Planning Scheme or State Planning Policy for the development.
15.	**Issue – Notification Processes** • Concerns relating to the notification process – insufficient time given to prepare and lodge a submission.
	Applicant Response • The applicant has carried out public notification in accordance with the requirements of the Planning Act 2016. • The application received four not-properly made submissions however it should be noted that all submissions received have been reviewed and considered throughout the assessment of the application.
	Officer's Comment • The applicant has provided a notice of compliance in accordance with the Planning Act 2016 and the Development Assessment Rules. • The information provided demonstrates that the proposal was advertised by the required means and for the minimum period of 15 business days.
16.	**Issue – Alternative uses** • Submitter has suggested the area would benefit more from alternative land uses such as a small marketplace which would create more jobs in the area.
	Applicant Response • The suggestion is noted however the development application is limited to the assessment of the proposed pet crematorium. Future development applications for alternative proposals will be assessed based on their individual merits.
	Officer's Comment • Assessment of a development application is bound to a proposed use over the requested parcel of land.

	Council must assess and decide such an application on its merits and in accordance with the Planning Act 2016.
17.	**Issue – Conflict with the Planning Scheme** • Submitters have raised concerns that the proposal is inconsistent with the zoning (Environment Management zone) and overlays. • Submitters have indicated that pet crematoriums in surrounding Councils: Logan City, Gold Coast, Brisbane City, Ipswich, Moreton Bay and Sunshine Coast are zoned for Industry, why is it different for Redland Council?
	Applicant Response • The subject development application was lodged to Council in July 2018, under the now superseded Redlands Planning Scheme – Version 7.2. The superseded planning scheme specifies that the only appropriate zoning for a 'Cemetery' would be Community Purposes Zone (CU1 - Cemetery). • Since the application was lodged, Redland City Council have adopted a new planning scheme – Redland City Plan 2018. • A review of the new City Plan has identified that a crematorium is now a defined land use, and furthermore, that there are specific zones in which a crematorium is considered a compatible land use. • The compatible zonings include 'Specialised centre zone', 'Low impact industry zone', 'Medium impact industry zone' and 'Community facilities zone'. • A review of the sites within the locality with the above zoning designations has indicated that these sites are not appropriate for the proposed pet crematorium.
	Officer's Comment • The proposal is in conflict with the Sub-Precinct 6a of the Redlands Planning Scheme Kinross Road structure plan overlay code. • With the City Plan commencing after lodgement of the application it is considered that weight should be given to the Environmental management zone code provisions of the City Plan. The overall outcomes of the zone code provide for 'small scale activities that facilitate management or conservation of the environmental values on or near the land' and does not restrict non-residential development to a limited range of uses. An assessment against the relevant benchmarks has been included within the report.

DEEMED APPROVAL

The approval of this application has not been issued under Section 64 of the *Planning Act 2016*.

STRATEGIC IMPLICATIONS

Legislative Requirements

In accordance with the *Planning Act 2016* this development application has been assessed against the Redlands Planning Scheme V7.2 and other relevant planning instruments.

Risk Management

Standard development application risks apply. In accordance with the *Planning Act 2016* the applicant may appeal to the Planning and Environment Court against a condition of approval or against a decision to refuse. A submitter also has appeal rights.

Financial

There is potential that an applicant may appeal a condition of approval, preliminary approval or a refusal and subsequent legal costs may apply.

People

There are no implications for staff.

Environmental

Environmental implications are detailed within the assessment in the "Issues" section of this report.

Social

Social implications are detailed within the assessment in the "Issues" section of this report.

Alignment with Council's Policy and Plans

The assessment and officer's recommendation align with Council's policies and plans as described within the "Issues" section of this report.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Internal Assessment Teams	25 June 2018	Assessment comments included in decision recommendation.
Division 7 Councillor	25 June 2018 and 30 April 2019	Application called in for decision at Council General Meeting.

Option One

That Council resolves to issue a development permit subject to conditions outlined in Attachment 7.

Option Two

That Council resolves to approve the application without conditions or subject to amended conditions.

Option Three

That Council resolves to issue a preliminary approval subject to additional requirements.

Option Four

That Council resolves to refuse the application.

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2019/308

Moved by: Cr Julie Talty
Seconded by: Cr Peter Mitchell

That Council resolves to issue a development permit subject to conditions outlined in Attachment 7.

LOST 2/9

Crs Peter Mitchell and Julie Talty voted FOR the motion.

Crs Karen Williams, Wendy Boglary, Paul Gollè, Lance Hewlett, Mark Edwards, Murray Elliott, Tracey Huges, Paul Gleeson and Paul Bishop voted AGAINST the motion.

The item was LOST and therefore was deemed as a refusal, the grounds for refusal as follows:

Consistency of use

Overall outcomes of the Kinross Road structure plan overlay code and environmental protection zone code in the Redlands Planning Scheme and the environmental management zone code in the City Plan seek that development provides for low-key uses that have a very low impact on environmental values, are less intensive than uses in rural or industrial areas, and maintain and contribute to environmental values of the site and surrounding precinct. The application seeks to provide a land use which is typical of an industrial-based activity in terms of operating characteristics and potential for impacts to the natural environment. The development therefore

conflicts with the overall outcomes (2) (f) of the Kinross Road structure plan overlay code and (2) (b) (i) (a), (b), (c), (d), (e) and (g) of the environmental protection zone code in the Redlands Planning Scheme and overall outcomes 2 (a) and (d) of the environmental management zone code in the City Plan.

ATTACHMENT 2

In the Planning and Environment Court Held at: Brisbane	Appeal No. BD	of 2019

Between:	**ANGELA BRINKWORTH**	Appellant
And:	**REDLAND CITY COUNCIL**	Respondent

NOTICE OF APPEAL

Filed on:	16 October 2019
Filed by:	Danielle Sibenaler, Broadley Rees Hogan
Service address:	Level 24, One One One 111 Eagle Street BRISBANE QLD 4000
Phone:	07 3223 9100
Fax:	07 3221 5518
Email:	danielle.sibenaler@brhlawyers.com.au

ANGELA BRINKWORTH of care of Broadley Rees Hogan appeals to the Planning and Environment Court at Brisbane against the decision of the Respondent to refuse a development application for a development permit for a material change of use for a cemetery (pet crematorium) on land located at 592-602 Redland Bay Road, Alexandra Hills, described as Lot 2 on SP194117, and seeks the following orders or judgment:

1 that the appeal be allowed;

2 that the development application be approved subject to reasonable and relevant conditions; and

3 such further or other orders as the Court deems appropriate.

The grounds of appeal are:

1 The land the subject of this appeal (the **Land**):

(a) is located at 592-602 Redland Bay Road, Alexandra Hills, described as Lot 2 on SP194117;

(b) has a total area of approximately 51,866m^2; and

(c) is identified as being partially within the Environmental Protection zone and

partially within the Conservation zone pursuant to the 2006 Redlands Planning Scheme (the **Scheme**).

2 The development application which gave rise to this appeal was lodged for and on behalf of the Appellant on or about 30 July 2018 (the **Application**).

3 The Application sought a development permit for a material change of use for a cemetery (pet crematorium) (the **Proposed Development**).

4 At the time the Application was lodged, Version 7.2 of the Scheme was in effect.

5 The Application required impact assessment.

6 The Department of State Development, Manufacturing, Infrastructure and Planning (**SARA**) was a referral agency for the Application pursuant to Schedule 10, Part 9, Division 4, Subdivision 2, Table 4 of the *Planning Regulation 2017.*

7 Under cover of correspondence dated 3 August 2018, the assessment manager issued a confirmation notice for the Application.

8 Under cover of correspondence dated 20 August 2018, the assessment manager requested further information in respect of the Application (the **Information Request**).

9 Under cover of correspondence dated 3 September 2018, SARA provided its referral agency response for the Application.

10 A response to the Information Request was provided on or about 19 March 2019.

11 Public notification of the Application was undertaken. Submissions were received by the assessment manager in response to public notification.

12 On or about 11 September 2019, and notwithstanding the recommendation of the Respondent's officers that the Application be approved subject to conditions, the Respondent decided to refuse the Application.

13 The Respondent's decision to refuse the Application was conveyed to the Appellant by a decision notice dated 18 September 2019 (the **Decision Notice**).

14 The reasons and grounds for refusal of the Application given by the Respondent in the Decision Notice are duplicated below (in italics):

Overall outcomes of the Kinross Road structure plan overlay code and environmental protection zone code in the Redlands Planning Scheme and the environmental management zone code in the City Plan seek that development provides for low-key uses that have a very low impact on environmental values, are less intensive than uses in rural or industrial areas, and maintain and contribute to environmental values of the site and surrounding precinct. The application seeks to provide a land use which is typical of an industrial-based activity in terms of operating characteristics and potential for impacts to the natural environment. The development therefore conflicts with the overall outcomes (2) (f) of the Kinross Road structure plan overlay code and (2) (b) (i) (a), (b), (c), (d), (e) and (g) of the environmental protection zone code in the Redlands Planning Scheme and overall outcomes 2 (a) and (d) of the environmental management zone code in the City Plan.

15 The Appellant appeals the decision of the Respondent to refuse the Application for the reasons set out in paragraphs 16 to 23 of this Notice of Appeal.

16 The Application complies with section 5.15.8(2)(f) of the Kinross Road Structure Plan Area Overlay Code forming part of the Scheme as it:

(a) ensures uses and other development protect, enhance and provide for the long term management and enhancement of environmental values of the Precinct;

(b) provides for lifestyle choice in an environmental setting;

(c) ensures uses are low key, cover only a small portion of the land and have a very low impact on environmental values;

(d) provides for single dwelling houses on existing privately owned lots;

(e) protects, enhances and maintains waterways, habitat and movement corridors for koalas and other fauna;

(f) provides opportunity for home businesses, low key tourism and recreational pursuits in an environmental setting;

(g) maintains current lot sizes with no additional lots created; and

(h) ensures vehicular movements do not negatively impact upon environmental values and can be managed without detrimental effect or impact on Boundary Road or Redland Bay Road where a property has a State controlled road frontage.

17 The Application complies with the Environmental Protection zone code forming part of the Scheme because it provides for a range of low-key uses and other development that:

(a) provides for a lifestyle choice that protects, maintains and positively contributes to environmental values, as contemplated by section 4.6.7(2)(b)(i)(a);

(b) are based on appreciation of the natural environment where for the purpose of education or scientific study, as contemplated by section 4.6.7(2)(b)(i)(b);

(c) encourages enjoyment of the natural environment including recreational and tourism uses that contribute to the public and private landscape network, as contemplated by section 4.6.7(2)(b)(i)(c);

(d) provides opportunities for working from home in a bushland setting, as contemplated by section 4.6.7(2)(b)(i)(d);

(e) are low-key and have a very low impact on environmental values, as contemplated by section 4.6.7(2)(b)(i)(e); and

(f) are less intensive than those in rural or industrial areas and provide economic opportunities, such as small-scale enterprises and, service and cottage industries, as contemplated by section 4.6.7(2)(b)(i)(g).

18 The Application complies with the Environmental Management Zone code

forming part of the Redlands City Plan, namely:

(a) section 6.2.13.2(2)(a) as the environmental values and ecological functions of land within this zone are maintained or enhanced; and

(b) section 6.2.13.2(2)(d) as development is generally limited to a single dwelling house on a large lot or small scale activities that facilitate the management or conservation of the environmental values on or near the land.

19 Contrary to the grounds of refusal, the Application:

(a) provides for low-key uses that have a very low impact on environmental values, are less intensive than uses in rural or industrial areas;

(b) maintains and contributes to environmental values of the site and surrounding precinct;

(c) is not typical of an industrial-based activity in terms of operating characteristics and potential for impacts to the natural environment.

20 There are relevant matters which warrant approval of the Application.

21 In its assessment of the Application, the assessment manager, amongst other things, failed to have regard to the matters it must have regard to pursuant to section 45(5)(a)(ii) of the *Planning Act 2016,* including, but not limited to, any development approval for, and any lawful use of, the premises.

22 Approval of the Application would advance the purpose of the *Planning Act 2016*.

23 The Appellant seeks the following orders or judgment:

(a) that the appeal be allowed;

(b) that the Application be approved subject to reasonable and relevant conditions; and

(c) such further or other orders as the Court deems appropriate.

Broadley Rees Hogan

Broadley Rees Hogan
Solicitors for the Appellant

16 October 2019

If you are named as a respondent in this notice of appeal and wish to be heard in this appeal you must:

(a) within 10 business days after being served with a copy of this Notice of Appeal, file an Entry of Appearance in the Registry where this notice of appeal was filed or where the court file is kept; and

(b) serve a copy of the Entry of Appearance on each other party.

The Entry of Appearance should be in Form PEC – 5 for the Planning and Environment Court.

If you are entitled to elect to be a party to this appeal and you wish to be heard in this appeal you must:

(a) within 10 business days of receipt of this Notice of Appeal, file a Notice of Election in the Registry where this Notice of Appeal was filed or where the court file is kept; and

(b) serve a copy of the Notice of Election on each other party.

The Notice of Election should be in Form PEC – 6 for the Planning and Environment Court.

TO: The Chief Executive Officer
Redland City Council
PO Box 21
CLEVELAND QLD 4163

AND TO: The Chief Executive
Department of State Development, Manufacturing, Infrastructure and Planning
PO Box 15009
CITY EAST QLD 4002

Department of State Development, Manufacturing, Infrastructure and Planning
SARA Brisbane
PO Box 15009
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AND TO: The Principal Submitters

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ATTACHMENT 6

16 April 2020

Your Ref: FID729806
Our Ref: LCM8565
Contact: Clare Burgin – 3829 8940

Attention: Danielle Sibenaler
Thynne Macartney
GPO Box 245
Brisbane QLD 4001

By Email: dsibenaler@thymac.com.au

"Without Prejudice"

Dear Colleagues

Brinkworth v Redland City Council & Ors
Planning and Environment Court - Appeal No. 3742 of 2019

Pursuant to paragraph 1 of Her Honour Judge Kefford's order dated 27 March 2020, Council seeks clarification of and/or additional information required to support the amended plans and documents provided by the Appellant on 2 March 2020.

Accordingly, Council seeks clarification of the following issues:-

Current site activities

1. The information provided relating to an onsite veterinarian business is conflicting. More specifically the draft Operational Management Plan states a veterinary practice is proposed to operate at the site and the Traffic Statement suggests the a veterinary surgery is operating. Could you please confirm if a veterinary practice is currently operating at the site?

    (a) If so, how long has it been operating?
    (b) Has there been time when the veterinarian clinic was not operational? Please provide details of dates and timeframe.
    (c) If not, when did the veterinary services cease?

2. Information is required as to the extent of the dwelling and location of the veterinary surgery if currently operating or proposed to be operating:-

    (a) Operating hours of veterinary practice.
    (b) Details of operation including number of staff.

Operation of Crematorium

3. Is the proposed cemetery (pet crematorium) ancillary to the existing/proposed veterinary surgery?

4. Further clarification is sought of the proposed hours of operation of the crematorium. Whilst it was agreed at the mediation the crematorium would not operate between the hours of 8.00am and 5.00pm on Saturdays, it was never discussed or anticipated the crematorium would operate on Sundays.

Operational Management Plan

5. The Operational Management Plan ("OMP") is in a draft format, is there a final version available?

6. If the proposed development is approved, the OMP will need to be revised to reflect relevant conditions of approval. This should be reflected in the draft OMP.

7. Council has some concerns about the details contained within the draft OMP more specifically:-

    (a) It refers the reader to details contained in various attachments (e.g. Attachment 1 Kleenburn Systems Operating Instructions). For clarity and ease of use of the OMP, primary details should be contained within the OMP. In particular, the OMP should specify:
        I. The minimum primary and secondary chamber temperatures that should be maintained as indicators of effective combustion and performance. The draft OMP is not definitive in this regard. For example, in Section 2.2: "...The primary combustion chamber operating temperature is typically set to 1000°C. The secondary combustion chamber is designed to operate at a minimum temperature of 850°C to effectively control potential odour and smoke emissions."
        II. The minimum residence time in the secondary chamber that will be achieved as an indicator of effective performance and how that is to be maintained and monitored.
        III. The emission limits that need to be achieved by the cremator and that represent proper and efficient operation of the cremator.

    (b) Section 3.3 and 3.4 of the draft OMP require monitoring of the exhaust emissions from the cremator. The draft OMP does not specify the method that should be used to conduct the monitoring. The draft OMP should specify the method that is to be used to monitor emissions. For example, reference should be made to the relevant Australian Standard or US EPA Test Method.

    (c) In relation to the level of emissions that should be achieved by the pet cremator, Section 3.3 of the draft OMP refers the reader to the Air EPP and the previous MWA Environmental Report (Attachment 3 of the draft OMP, "Air Quality and Noise Impact Assessment, Proposed Pet Crematorium, 592 - 602 Redland Bay Road, Alexandra Hills, 1 March 2019"). This cross-referencing lacks clarity. The relevant details should be reproduced in the main part of the OMP.

    (d) Further to the previous point, the previous MWA Environmental Report includes errors in its calculations of emissions. Consequently, it does not provide a suitable basis to specify the appropriate levels of emissions from the cremator. The emission estimates and dispersion modelling contained in the previous MWA Environmental Report needs to be revised if it is to be used to determine appropriate emission limits.

On-site Signage

8. [redacted]

9. A “Billboard sign” with dimensions of 2.4 metres x 1.2 metres, elevated 3m above the ground is excessive in this location and in Council’s opinion, is not consistent with a home based business and proposed small scale nature of the crematorium use.

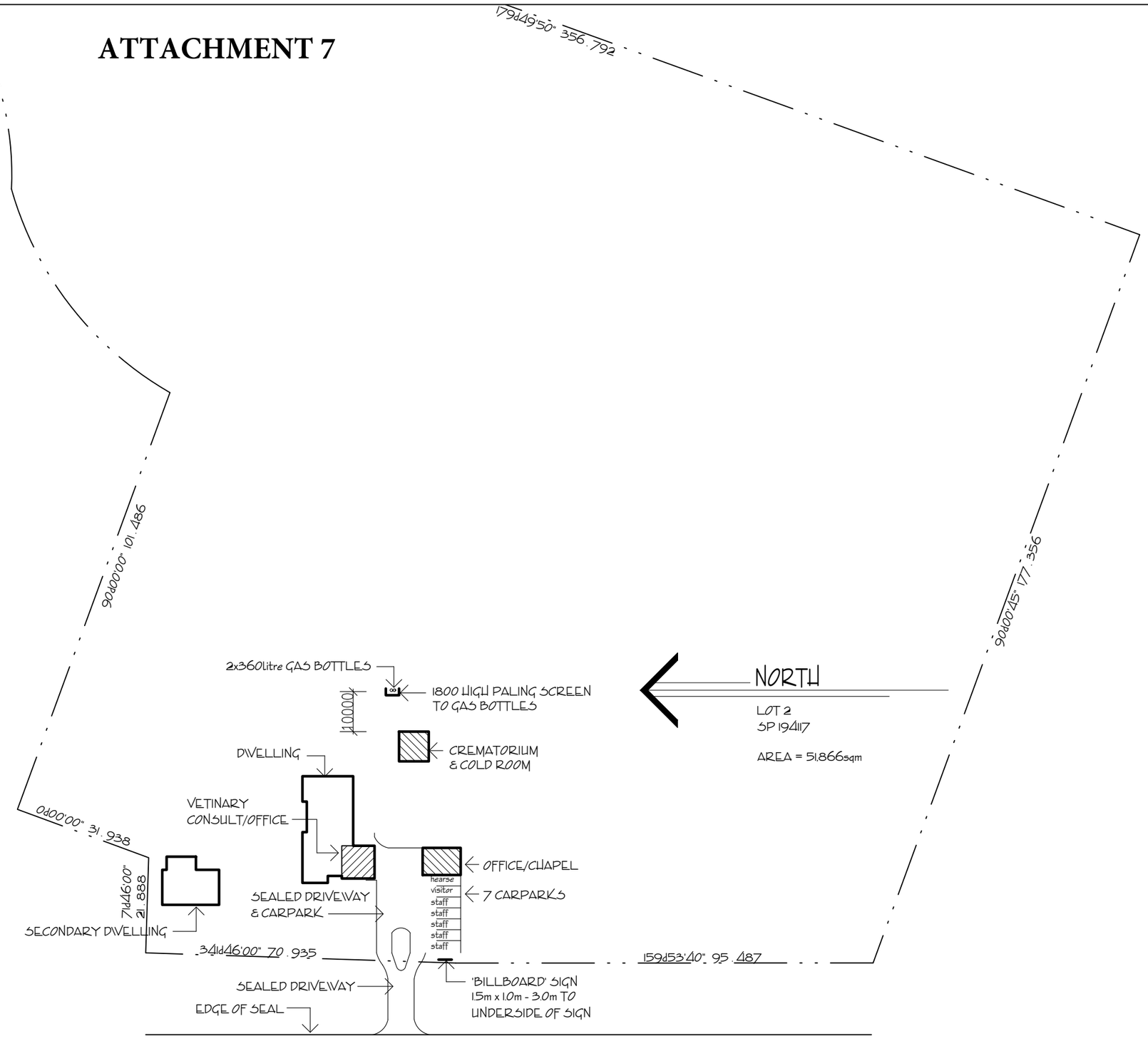
We look forward to clarification of these issues in due course.

Yours Sincerely

[redacted]

Clare Burgin
Solicitor
General Counsel Group
Redland City Council

ATTACHMENT 7



1. ALL WORK TO CONFORM TO ALL RELEVANT AUSTRALIAN STANDARDS.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.
3. USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.

AMMENDMENT	DATE	REV
		A
MEDIATION	04.02.20	B
SIGN & GAS BOTTLES	01.05.20	C

PROJECT:
PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD, ALEXANDRA HILLS Q 4161
for ANGELA BRINKWORTH

TITLE:
SITE PLAN

nic sheldrake
dipc 113479
interact building design
m. 0411 222 932
e nic@interactdesign.com.au

DATE	FEB 2018
DRAWN	N.SHELDRAKE
CHECKED	NS
SCALE	1:1000

PROJECT No.	0418
REVISION	C
PRINT DATE	01.05.20
DRAWING A3	SP 01

08 May 2020

Thynne Macartney
GPO Box 245
Brisbane QLD 4001

Via Email: dsibenaler@thymac.com.au

Attention: **Danielle Sibenaler**

Dear Colleagues,

RE: **BRINKWORTH V REDLAND CITY COUNCIL & ORS**
PLANNING AND ENVIRONMENT COURT - APPEAL NO. 3742 OF 2019

We write in relation to the correspondence from Redland City Council (Council Ref: LCM8565), dated 16 April 2020 and the email from McCarthy Durie Lawyers to Thynne Macartney dated 23 March 2020, seeking clarification of certain items.

Accordingly, we provide the following responses to these items:

On-site Signage

1.

2. The revised Site Plan SP.01(C) shows the face of the billboard sign has been reduced in area from 2.4 metres x 1.2 metres down to 1.5 metres x 1.0 metre. This reduction results in a total face area of 1.5m², which is considered to be reasonable for a business of this nature on a site with a frontage width of 166.43 metres.

   It is important to note that the *Redland City Council Subordinate Local Law No. 1.4 (Installation of Advertising Devices) 2017* does not provide specifications for maximum height and face area for billboard signs, other than in Schedule 4 which stipulates a maximum face area of 22.5m² and a maximum allowable height of 7.5 metres for all free-standing advertising devices, unless otherwise permitted by the subordinate local law. The proposed billboard sign is identified as achieving Schedule 4 of the Local Law No. 14.

Landscape Screening

3. The revised Landscape Plan 2001-003-LCP(D) shows that the Syzygium australe 'Big Red' has been replaced with Ficus microcarpa var. hillii with a pot size of 45L. Ficus microcarpa var. hillii has an approximate height at maturity of 10 – 15 metres.

Gas bottle location

4. The revised Site Plan SP.01(C) shows the required gas bottles to be relocated outside of the mapped flood and buffer overlay. This is depicted in Figure 1 below which shows the new location of the gas bottle in relation to the mapped Flood and Storm Hazard overlay.

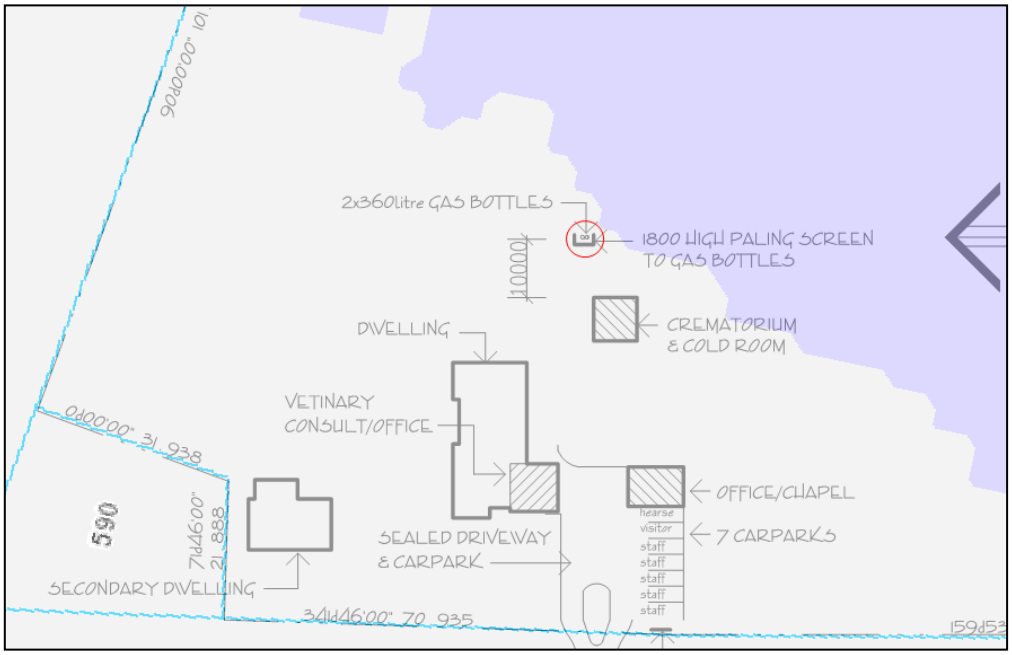


Figure 1 – Location of gas bottles and mapped Flood and Storm Hazard overlay

It is noted that the gas bottle is still located away from the frontage of the site and will be screened with landscaping to mitigate views from Redland Bay road.

Should you wish to discuss the matter further please do not hesitate to contact our office on 3361 9999.

Yours faithfully
TOWN PLANNING ALLIANCE

Vu Nguyen
DIRECTOR

SITE PLAN
SCALE 1:250

ANNOTATION NOTES

1. SITE ENTRY / EXIT
2. EXISTING SYZGIUM HEDGE TO BE RETAINED, HEDGE TO BE SUPPLEMENTED WITH SYZ BR IF REQUIRED IN ORDER ACHIEVE ADEQUATE SCREENING. HEDGE TO MITIGATE VIEWS OF THE CREMATORIUM BUILDING AND GAS TANK
3. EXISTING TREE AT DRIVEWAY ENTRY TO BE RETAINED, TREE TO BE UNDERPLANTED WITH SHRUBS GAR FLO AND PHI XAN
4. ADDITIONAL HEDGE OF FIC HIL TO REDLAND BAY ROAD FRONTAGE INSTALLED AT MAX 2m SPACING AND MINIMUM 45L BAG AT INSTALL TO MITIGATE VIEWS OF THE CREMATORIUM BUILDING AND GAS TANK.
5. ALL EXISTING TREE / SHRUB SPECIES TO BE RETAINED AROUND CREMATOR BUILDING AND GAS TANK. TREE / SHRUB MAINTENANCE WORK TO BE CARRIED OUT AS PER ADVICE SPECIFIED BY TPZ PROJECT ARBORISTS REPORT PREPARED ON 6/09/2018.
6. REFER TO TRAFFIC ENGINEERS DRAWINGS FOR CARPARK LAYOUT

PROPERTY FRONTAGE

EXISTING HEDGE SCREEN PLANTING TO REDLAND BAY ROAD FRONTAGE

LEGEND

- EXISTING TREE TO BE RETAINED
- EXISTING HEDGE TO BE RETAINED
- EXISTING FENCE
- PROPOSED SHRUB AND LOW LEVEL PLANTING
- PROPOSED GROUNDCOVER PLANTING
- PROPOSED LARGE BUFFER PLANTING
- TURF
- CONCRETE AREA - REFER CIVIL ENGINEERS DRAWINGS FOR DETAILS
- EXISTING HARDSTAND
- PROPERTY BOUNDARY

NOTES

1. REFER TO DRAWING 2001-003-SK010 FOR PLANT SPECIES SCHEDULE, IMAGES AND GENERAL NOTES

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

PRELIMINARY

rev	description	drawn	date
D	REVISED ISSUE	HK	01.05.20
C	REVISED ISSUE	RM	26.02.20

ANGELA BRINKWORTH
592 REDLAND BAY ROAD, ALEXANDRA HILLS

LANDSCAPE CONCEPT PLAN SITE PLAN

LAUD ink
landscape architecture and urban design

Office 7, 915 Ann Street, Fortitude Valley, QLD 4006
E eleas@laudink.com.au / jane@laudink.com.au
W www.laudink.com.au

ABN 80 169 838 144

scale	1:250 for A1	job no.	2001-003
date	MAY 2020	rev no.	D

approved E.NICHOLAOU

SK001

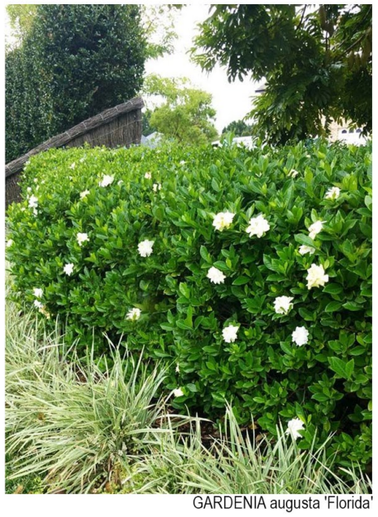
NOTES

1. REFER TO LANDSCAPE CONCEPT PLAN 2001-003-SK001 FOR PLANTING ARRANGEMENT CONCEPT DESIGN PLAN
2.REFER TO CIVIL ENGINEERS DRAWINGS FOR DRIVEWAY AND RETAINED CROSSOVER DETAILS
3. REFER TO ARCHITECTS DRAWINGS FOR ALL FENCE DETAILS
4. LANDSCAPE DETAILED DESIGN IS TO BE COORDINATED WITH HYDRAULIC AND ENGINEERING DESIGN TO CONFIRM LOCATIONS OF UNDERGROUND SERVICES PRIOR TO CONSTRUCTION
5. IRRIGATION TO BE INSTALLED TO ALL COMMUNAL AREAS. DESIGN TO BE RESOLVED DURING DETAILED DESIGN PHASE
5.LANDSCAPE GENERAL STANARDS.
5.1 SOIL TO AS 4419 PLANTING BEDS CULTIVATION MINIMUM DEPTH 100mm
GRASSED AREAS (TURF) 150mm PLANTING AREAS 150mm. SOURCE IMPORT TOP SOIL THAT COMPLIES WITH AS 4419.
5.2 MULCH TO AS 4454 PROVIDE MULCH WHICH IS FREE OF DELETERIOUS AND EXTRANEOUS MATTER SUCH AS SOIL, WEEDS AND STICKS.
5.3 STAKE SIZES FOR PLANTS 1-2.5m HEIGHT TWO 50 x 50 x 1800mm STAKES PER PLANT PROVIDE TIES FIXED SECURELY TO THE STAKES, ONE TIE AT HALF THE HEIGHT OF THE MAIN STEM, OTHERS AS NECESSARY TO STABLILISE PLANT. FOR PLANTS <2.5m HIGH 50mm HESSIAN WEBBING STAPLED TO THE STAKES.
6. FOR ALL STREETSCAPE WORKS REFER TO THE FOLLOWING REDLAND CITY COUNCIL STANDARD DRAWINGS FOR LANDSCAPE CONSTRUCTION DETAILS:
6.1 LANDSCAPING
6.1.1 IPWEA GS-010 LANDSCAPING-STREET TREE PLANTING DETAILS INCLUDING ROOT BARRIER
6.1.2 IPWEA GS-011 LANDSCAPING-STREET TREE PLANTING DETAILS WIDE MEDIAN
6.1.3 IPWEA GS-012 LANDSCAPING-STREET TREE PLANTING DETAILS NARROW MEDIAN

PROPOSED PLANT SPECIES LIST

CODE	PLANT SPECIES	COMMON NAME	CENTRES (mm)	POT SIZE	APPROX. HEIGHT (AT MATURITY)
SHRUBS					
FIC HIL	FICUS microcarpa var.Hillii	Chinese Banyan	2000mm	45L	10 - 15m
GAR FLO	GARDENIA augusta 'Florida'	Fragant Gardenia	750mm	200mm	
PHI XAN	PHILODENDRON 'Xanadu'	Xanadu	500mm	200mm	
GROUND COVERS					
LIR SW	LIRIOPE muscari 'Stripey White'	Stripey White	500mm	140mm	
LOM lon	LOMANDRA longifolia	Mat Rush	750mm	140mm	
TUL vio	TULBAGHIA violacea	Society Garlic	500mm	140mm	
TURF					
TURF	CYNODON dactylon	Green Couch			

PROPOSED SHRUBS


GARDENIA augusta 'Florida'


PHILODENDRON 'Xanadu'


FICUS microcarpa var.Hillii

GROUNDCOVERS


LIRIOPE MUSCARI 'Stripey White'


LOMANDRA longifolia


TULBAGHIA violacea

PRELIMINARY

rev	description	drawn	date
C	REVISED ISSUE	HK	01.05.20
B	REVISED ISSUE	RM	26.02.20

ANGELA BRINKWORTH
592 REDLAND BAY ROAD, ALEXANDRA HILLS
LANDSCAPE CONCEPT PLAN
PLANT SPECIES SCHEDULE, IMAGES & NOTES

LAUD ink
landscape architecture and urban design

Office 7, 915 Ann Street, Fortitude Valley, QLD 4006
E eleas@laudink.com.au / jane@laudink.com.au
W www.laudink.com.au

ABN 80 169 838 144

scale | NTS for A1 | job no. | 2001-003
date | MAY 2020 | rev no. | C

approved E.NICHOLAOU

SK001

Ref: L12920/PAK/18-156

15 May 2020

Ms Angela Brinkworth
C/- Thynne + Macartney
GPO Box 245
Brisbane QLD 4001

Attention: Ms Danielle Sibenaler

Dear Danielle,

Re: Response to OMP Review
P&E Appeal No. 3742 of 2019
Pet Crematorium
Redland Bay Road, Alexandra Hills

Further to your request, I wish to provide the following response to the issues raised in a letter from Clare Burgin of Redland City Council dated 16 April 2020 and an email from Ian Neil of McCarthy Durie Lawyers dated 23 March 2020 with respect to the draft Operational Management Plan prepared for the Alexandra Hill Pet Crematorium.

The following provides Redland City Council's (RCC) comments and our responses:

RCC Item 1 Comment

5. The Operational Management Plan ("OMP") is in a draft format, is there a final version available?

RCC Item 1 Response

The OMP is issued as a Draft for the present purpose of submission to the parties, once agreed it can be issued as a final document for inclusion as part of approval conditions.

RCC Item 2 Comment

6. If the proposed development is approved, the OMP will need to be revised to reflect relevant conditions of approval. This should be reflected in the draft OMP.

Max Winders & Associates Pty Ltd tas MWA Environmental
Level 15, 241 Adelaide St, Brisbane GPO BOX 3137, Brisbane Qld 4001
P 07 3002 5500 F 07 3002 5588 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084

RCC Item 2 Response

The draft OMP has been updated in Section 1.1 to reflect it is a draft and a final version will be prepared to reflect and include development approval conditions.

RCC Item 3 Comment

7. Council has some concerns about the details contained within the draft OMP more specifically:-

(a) It refers the reader to details contained in various attachments (e.g. Attachment 1 Kleenburn Systems Operating Instructions). For clarity and ease of use of the OMP, primary details should be contained within the OMP. In particular, the OMP should specify:

I. The minimum primary and secondary chamber temperatures that should be maintained as indicators of effective combustion and performance. The draft OMP is not definitive in this regard. For example, in Section 2.2: "...The primary combustion chamber operating temperature is typically set to 1000°C. The secondary combustion chamber is designed to operate at a minimum temperature of 850°C to effectively control potential odour and smoke emissions."

II. The minimum residence time in the secondary chamber that will be achieved as an indicator of effective performance and how that is to be maintained and monitored.

III. The emission limits that need to be achieved by the cremator and that represent proper and efficient operation of the cremator.

RCC Item 3 Response

I. In terms of the minimum operating temperatures for operating conditions, a 5% variance below normal operating conditions is recommended without adverse impact upon combustion efficiency i.e. Primary chamber minimum 900C whilst the secondary chamber minimum is 850C.

II. The manufacturer provides that the minimum residence time of the cremator is 2 seconds. This is verified at design/construction stage of the unit and can be included as part of regular maintenance checks conducted by the supplier on at least an annual basis.

III. Emission limits have been calculated and are included in the OMP.

Section 3.2 of the OMP has been updated to include the above cremator operation conditions.

RCC Item 4 Comment

7. Council has some concerns about the details contained within the draft OMP more specifically:-

(b) Section 3.3 and 3.4 of the draft OMP require monitoring of the exhaust emissions from the cremator. The draft OMP does not specify the method that should be used to conduct the monitoring. The draft OMP should specify the method that is to be used to monitor emissions. For example, reference should be made to the relevant Australian Standard or US EPA Test Method.

RCC Item 4 Response

We have obtained advice from emissions testing companies who advise that for pet cremators the following pollutants and test standards are to be used.

Table 1: Methods

Parameter	Reference method	NATA accreditation
Traverse point requirements	AS4323.1	Yes
Gas velocity, temperature & static pressure	USEPA Method 2	Yes
Stack gas density	USEPA Method 3	Yes
Oxygen & carbon dioxide	USEPA Method 3A	Yes
Moisture	USEPA Method 4	Yes
Carbon Monoxide	USEPA Method 10	Yes
Speciated & Total Volatile Organic Compounds	USEPA Method 18	Yes
PAHs	CARB 429	Yes
Heavy Metal (Ni, Pb, Hg, Mn, V, Cd)	USEPA Method 29	Yes
Particle size distribution (PSD)	USEPA Method 5	Yes
Oxides of nitrogen – as NO_2	USEPA Method 7E	Yes
Sulphur Dioxide	USEPA Method 6C	Yes
Fluoride	USEPA Method 13B	Yes
Formaldehyde	USEPA Method 18	Yes
Hydrogen Sulphide	USEPA Method11	Yes

The OMP has been updated to reflect the above.

RCC Item 5 Comment

7. Council has some concerns about the details contained within the draft OMP more specifically:-

(c) In relation to the level of emissions that should be achieved by the pet cremator, Section 3.3 of the draft OMP refers the reader to the Air EPP and the previous MWA Environmental Report (Attachment 3 of the draft OMP, "Air Quality and Noise Impact Assessment, Proposed Pet Crematorium, 592 - 602 Redland Bay Road, Alexandra Hills, 1 March 2019"). This cross-referencing lacks clarity. The relevant details should be reproduced in the main part of the OMP.

RCC Item 5 Response

The OMP has been updated to reflect the above request.

RCC Item 6 Comment

7. Council has some concerns about the details contained within the draft OMP more specifically:-

(d) Further to the previous point, the previous MWA Environmental Report includes errors in its calculations of emissions. Consequently, it does not provide a suitable basis to specify the appropriate levels of emissions from the cremator. The emission estimates and dispersion modelling contained in the previous MWA Environmental Report needs to be revised if it is to be used to determine appropriate emission limits.

Item 6 Response

A revised report, correcting the emission estimate calculations has been prepared which identifies lower pollutant levels than the previous reporting. Emission limits have been derived from these predicted levels to achieve compliance with all air quality indicators considered.

The following provides McCarthy Durie Lawyers (MDL) comments and our responses:

MDL Item 1 Comment

1. The MWA draft Operational Management Plan, at Item 2.2 "Site Activities" for some reason states that the cremator will "…typically be operated between the hours of 8am and 5pm, Sunday to Friday with no operation on Saturdays between 8am and 5pm". The proposal, so far as we are aware, was never suggested as intended to operated on any Sunday, and at the mediation on 13 December 2019, it was agreed that the proposal would not operate on any Saturday. For certainty, the proposal should be limited to operation Mondays to Fridays between the hours of 8am and 5pm, and any reference to 'typically' should be omitted from any conditions of approval.

MDL Item 1 Response

The client advises that the Pet Cremator will not operate on Sundays unless in the event of emergency conditions that require operation i.e. mass pet deaths etc.

Typically, it is anticipated that the cremator will only operate during the time period 8am to 5pm Monday to Friday but demand may require longer periods on each day, other than 8am to 5pm Saturdays under any circumstances and not at all on Sundays unless an emergency situation as identified above.

It must be noted that the air quality impact assessment undertaken demonstrates compliance with offsite air quality for operation 24 hours/7 days per week.

The OMP has been updated to reflect the above.

MDL Item 5 Comment

5. With regards the draft OMP reference to "Monitoring - Air Quality" at Item 3.3 et seq., our clients request some additional obligations, namely:

(a) the OMP-referenced "Attachment 3" reporting template appears not have been provided as yet;

(b) add at end of (i): "Compliance levels shall be reviewed and recorded annually on the anniversary of commissioning. In the event that the Environmental Protection (Air) Policy 2019 is changed the OMP shall be updated to reflect the requirements brought by such changes" ;

(c) add at end of (ii): "A record of official certification shall be uploaded to a publicly viewable website" ;

(d) amend 3.3 final paragraph replacing "…two years…" with "quarterly" and add at end of that paragraph "Each quarterly set of Emissions Test results shall be uploaded to a publicly viewable website ;

(e) add to Item 3.4 after first sentence " Each daily reading using the Ringleman Scale shall be confirmed and recorded with timestamped photographic evidence showing the matching Ringleman card (or app screenshot) with actual chimney opacity in frame. Each daily reading shall be uploaded to a publicly viewable website".

MDL Item 5 Response

(a) The reporting referenced in Attachment 3 is the air quality and noise impact assessment prepared by MWA Environmental, now updated May 2020. There is no proposed reporting template for air emissions testing, this will be responsibility of the testing company to provide a suitable report.

(b) The OMP has been amended to include EPP Air (2019) or any subsequent versions.

(c) The OMP has been updated to reflect the requested addition

(d) Emissions testing is an expensive undertaking and quarterly testing is considered excessive. We have amended the requirement to six monthly testing for the first year and then at the end of the second year and added "*Each set of Emissions Test results shall be uploaded to a publicly viewable website"*

(e) The OMP has been updated to reflect this request.

MDL Item 6 Comment

6. At Item 5 of the draft OMP "Complaints Response Procedure" in paragraph 1, replace "…or…' with "…and…".

MDL Item 6 Response

The OMP has been updated with the changes

Please contact the undersigned for any clarification of the above.

Yours sincerely,

Paul King
Principal Engineer

Enc. Updated Draft OMP May 2020

DRAFT V2

OPERATIONAL MANAGEMENT PLAN

PET CREMATORIUM

592 – 602 REDLAND BAY ROAD, ALEXANDRA HILLS

Prepared for:
Ms Angela Brinkworth

Prepared by:
MWA Environmental

14 May 2020

Max Winders & Associates Pty Ltd tas MWA Environmental
Level 15, 241 Adelaide St, Brisbane GPO BOX 3137, Brisbane Qld 4001
P 07 3002 5500 **F** 07 3002 5588 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084

CONTENTS **PAGE**

1.0 INTRODUCTION

1.1 Background

This DRAFT Operational Management Plan (OMP) applies to the Pet Crematorium proposed to be located at 592 - 602 Redland Bay Road, Alexandra Hills. The scope of site operations to be managed by the OMP includes cremator maintenance and operating parameters, site hours of operation, noise, air quality and odour management and general site operations.

This Draft OMP will be updated to a final version to include reference to relevant conditions of the development approval and shall include the development approval as an attachment to provide a single document for site operations.

1.2 Objective

The objective of the OMP is to manage all necessary daily, weekly, monthly, six monthly and annual maintenance and operational procedures associated with the Crematorium and specifically the cremator to ensure the equipment operates as efficiently as possible, thereby minimising the potential for adverse noise and air quality amenity impacts on surrounding sensitive receptors.

1.3 Responsible Persons

The Crematorium Manager is responsible for the initial and ongoing implementation, conduct, reporting and documentation of all aspects of this OMP. The Manager may delegate the responsibility for implementing some or all of the OMP, to other designated staff.

The responsible person and persons having delegated authority for implementation and recording of the OMP shall be recorded in the Responsible Persons Section of OMP Records, along with the date of appointment. The names of all such delegated responsible persons shall be kept up to date and current at all times in the Responsible Persons Section of the OMP Records.

1.4 Implementation

The OMP shall be implemented immediately upon approval and thereafter shall be applied continuously during the life of the Cremator and Crematorium.

1.5 Timing

The OMP requires the responsible persons, including delegated responsible persons, to take specific actions in a timely manner to fulfil the objective of the OMP. The actions, frequency, timing and person responsible will be identified in the relevant sections of the OMP.

1.6 Reviews

The effectiveness of the OMP in achieving the objective shall be reviewed regularly by the Responsible Person, or authorised delegate, as follows:

(i) 3 months from commencement of OMP;
(ii) 6 months from commencement of OMP;
(iii) Annually thereafter, unless air quality complaints are received and then the review schedule will revert to (ii) above.

Each review shall be formally documented, signed by the Responsible Person, and included in the OMP Records in the Review Section.

1.7 Records

The OMP will have a record file that consists of the following sections:

1. Responsible Persons
2. Document Control and Approval
3. Daily/Weekly/Monthly/Six Monthly Maintenance Activity Logs
4. Annual Maintenance Log
5. Complaints Register
6. Review Reports

Each of these sections shall be described in more detail later in the OMP

2.0 SITE INFORMATION

2.1 Site Location

The Pet Crematorium is proposed to be located at 592 – 602 Redland Bay Road, Alexandra Hills on land with a real property description of Lot 2 on SP194117. The subject site is located on land zoned EM - Environmental Management Zone under the Redland City Plan. The nearest residential dwellings are located to the west of the site on land zoned Low Density Residential, with larger allotments located to the south and east of the site on land zoned Recreational and Open Space. A large vegetated acreage with a garden nursery is located to the north of the site. A site plan is included as **Figure 1**.

2.2 Site Activities

A private veterinarian practice is proposed to operate at the subject site with the pet crematorium proposed to compliment the services offered. The crematorium will cater for the cremation of deceased pets collected from surrounding veterinary clinics or brought to the site by individual pet owners.

The proposed pet cremator unit is manufactured by R&Y Engineering in Sumersby, New South Wales. The proposed unit is specifically designed for private pet cremations, veterinary practices and animal control facilities. An existing shed on the property is proposed to be fitted out to include the cremator unit and a cold room for the storage of deceased pets.

This OMP relates to the daily, weekly, monthly, six monthly and annual maintenance activities to be performed at the site and specifically on the Cremator installed on the site. Use of the cremator is driven by demand for cremation services from the surrounding community.

- Cremator Operating Hours will typically be between the hours of 8am and 5pm, Monday to Friday.

- No operation is to occur on Saturdays between 8am and 5pm under any circumstances.

- Operations outside the time periods 8am to 5pm Monday to Friday may be required as demand dictates.

- Operations on Sundays would only occur in the case of an emergency i.e. mass pet death/pandemic.

The proposed cremator is an R&Y Engineering Kleenburn Cremator which is fuelled by LPG and comprises both primary and secondary combustion chambers. The

crematorr is a modern low-emission system incorporating best-practice emission control systems including:

- Temperature controllers installed to regulate the Primary Chamber, Secondary Chamber, and Flue (Exhaust) Temperatures
- Best practice residence time of exhaust gases within the secondary to effectively mitigate odour and particulates.

The primary combustion chamber operating temperature is typically set to 1000 ^{O}C. The secondary combustion chamber is designed to operate at a minimum temperature of 850^{O}C to effectively control potential odour and smoke emissions. The secondary chamber control system will ensure that the operation of the pet crematorr does not cause nuisance by way of visible smoke or odour. The proposed crematorr will be fuelled by LPG with a maximum gas-firing rate up to 1.58 MBTU/hour.

Air pollutant releases from the crematorr are generated from both fuel combustion and also from the combustion of biological remains. Emissions from the pet crematorr will be released via a vertical discharge stack located above crematorr room roofline. The height of the building is approximately 3.2 metres with the stack discharge point proposed to be located 3 metres above roof level.

The Kleenburn Systems Operating Instructions for the proposed crematorr, including General Maintenance requirements and troubleshooting identification, are included as **Attachment 1**.

3.0 MANAGEMENT OF CREMATOR OPERATIONS

3.1 Training

Training of the site staff including maintenance staff and sub-contractors will require a multi-faceted approach so that the objective of the OMP may be achieved by the collaboration and co-operation of all personnel involved. Regular discussions are to be held with maintenance staff and managers to identify the maintenance parameters required to be followed under the OMP and to ensure that the Cremator is operating efficiently and correctly. Records of meetings/training shall be kept in a dedicated file.

3.2 Cremator Operation Conditions

The minimum primary and secondary chamber operating temperatures to be maintained when operating are:

- Primary Chamber 950^{o}C (typical operating temperature 1000^{o}C less 5%)
- Secondary Chamber 850^{o}C

The purpose of maintaining these minimum temperatures is to achieve efficient combustion and in the case of the Secondary Chamber to effectively control odour and smoke emissions.

The minimum residence time in the Secondary Chamber shall be 2 seconds as per cremator manufacturer design specification. The emission limits (maximum) that apply to stack emissions are as provided in **Table 1** below and are set to ensure compliance with offsite air quality criteria at all sensitive land uses.

Table 1: **Derived Emission Limits for Cremator Operation**

Pollutant	Maximum Emission Rate To achieve no greater than 80% of Limit (g/s)
PM_{10}	0.6
$PM_{2.5}$	0.3
NO_2	6.3
CO	117.0
SO_2	3.7
Acetaldehyde	4E-01
Antimony	8E-02
Arsenic	8E-04
Beryllium	3E-05
Cadmium	8E-04
Chromium VI	8E-04
Copper fumes	3E-02
Formaldehyde	7E-01
Hydrogen chloride	1E+00
Fluoride	5E-02
Lead	8E-02
Nickel	3E-03
Selenium	2E-02
Zinc chloride fumes	2E-01
Dioxins and furans	2E-08
Benzo(a)pyrene (as marker for PAH)	3E-05

3.3 Maintenance Activity Logs

Daily, Weekly, Monthly, Six Monthly and Annual maintenance activity logs shall be kept by maintenance staff to identify maintenance associated works conducted on the Cremator. The logs shall include, but not be limited to, records of date, time, staff members, activities conducted, and issues noted. Logs shall be kept on file for the purpose of complaint investigation and training should issues be identified that may require alternate work practices. Example maintenance logs are included in **Attachment 2**.

3.4 Monitoring – Air Quality

A nominated staff member shall regularly assess emissions from the Cremator during operation by way of visual inspection of the flue emissions. Records shall be kept where inspections identify any air quality issues that require further action to change or modify and the outcomes of such actions.

Air quality monitoring (testing) of the operational cremator must be conducted within 60 days of commissioning to verify the operational emissions are within suitable limits to ensure achievement of acceptable air quality outcomes at surrounding land uses.

The requirement for emissions compliance shall be on the basis of:

(i) Install, operate and maintain the pet cremation unit so that airborne emissions comply with the May 2020 reporting prepared by MWA Environmental (included as **Attachment 3**) and Schedule 1 Air Quality Objectives of the Environmental Protection (Air) Policy 2019. Compliance levels shall be reviewed and recorded annually on the anniversary of commissioning. In the event that the Environmental Protection (Air) Policy 2019 is changed the OMP shall be updated to reflect the requirements brought by such changes.

The *Redlands Planning Scheme Policy 5 – Environmental Emissions* includes the following section.

> 5.5.1 Air Quality Objectives
>
> (1) Air quality objectives are contained in Schedule 1 of the *Environmental Protection (Air) Policy 2008* under the *Environmental Protection Act 1994*. These standards are required to protect human health and amenity.
>
> (2) If the emissions from a proposed development include other air pollutants, odour criteria and ambient air quality standards set for Australian conditions will be accepted. If no suitable Australian ambient air quality standard exists, an ambient air quality standard from another country or organisation may be used with appropriate justification.
>
> **Note -**
>
> Additional reference material for assessment and measurement of air quality -
>
> - *Australian Standard 4323.3:2001 Stationary Source Emissions - Determination of Odour Concentration by Dynamic Olfactory.*
> - *Odour Impact Assessment from Development Guideline, Department of Environment and Heritage Protection.*
>
> (3) Where the proposed development is a sensitive land use located within close proximity to an existing or proposed incompatible land use, there may be a requirement to demonstrate as a minimum, that the relevant ambient air standards will be achieved at this development site. In some instances the term "close proximity" may be referred to as the prescribed separation distance set out in a code that is either relevant to the proposed development or the nearby incompatible land use.

The air quality criteria have been based upon:

(a) the air quality objectives specified in the Queensland Environmental Protection (Air) Policy 2008.

(b) The extensive suite of air quality guidelines specified in the Brisbane City Council CityPlan 2014 Air Quality Planning Scheme Policy and associated codes have also been referenced for this assessment.

(c) the National Environmental Protection Measure ("NEPM") standards with the inclusion of an annual average PM10 guideline.

Presented in **Table 2** is a summary of the air quality guidelines and health outcomes adopted.

Table 2: Adopted Air Quality Guidelines

Pollutant	Averaging time	Health outcome protected	Criteria including background (µg/m^3)	Reference
Acetaldehyde	1 hour	Odour	42	BCC City Plan
Antimony and compounds	1 hour	Health and wellbeing	9	BCC City Plan
Arsenic and compounds (as total metal content in PM_{10})	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.09	BCC City Plan
	Annual	Health and wellbeing	6ng/m^3	EPP(Air) 2008
Benzo(a)pyrene (as marker for PAH)	Annual	Health and wellbeing	0.3ng/m^3	EPP(Air) 2008
Beryllium and compounds	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.004	BCC City Plan
Cadmium and compounds (as total metal content in PM_{10})	Annual	Health and wellbeing	5ng/m^3	EPP(Air) 2008
Carbon monoxide	8 hours	Health and wellbeing	11,000	EPP(Air) 2008
Chromium VI compounds	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.09	BCC City Plan
Copper dusts and mists	1 hour	Health and wellbeing	18	BCC City Plan
Copper fumes	1 hour	Health and wellbeing	3.7	BCC City Plan
Dioxins and furans (as TCDD TEF)	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.000002	BCC City Plan
Formaldehyde	30 minutes	Protecting aesthetic environment	110	EPP(Air) 2008
	24 hours	Health and wellbeing	54	EPP(Air) 2008
Hydrogen chloride	1 hour	Health and wellbeing	140	BCC City Plan
Hydrogen Fluoride	24 hour	Health and Biodiversity of ecosystems (other than protected areas)	2.9	EPP (Air)
	30 day		0.84	EPP (Air)
	90 day		0.5	EPP (Air)
Hydrogen Fluoride	90 day	Health and Biodiversity of Ecosystems (for protected areas)	0.1	EPP (Air)
Lead and compounds (as total metal content in TSP)	Annual	Health and wellbeing	0.5	EPP(Air) 2008
Nickel and compounds (as total metal content in PM_{10})	Annual	Health and wellbeing	0.02	EPP(Air) 2008
Nitrogen dioxide	1 hour	Health and wellbeing	250	EPP(Air) 2008
	Annual		62	EPP(Air) 2008
PM_{10}	24 hours	Health and wellbeing	50	EPP(Air) 2008
	Annual	Health and wellbeing	25	NEPM Standard
$PM_{2.5}$	24 hours	Health and wellbeing	25	EPP(Air) 2008
	Annual		8	EPP(Air) 2008
Sulphur dioxide	1 hour	Health and wellbeing	570	EPP(Air) 2008
	24 hours		230	EPP(Air) 2008
	Annual		57	EPP(Air) 2008

Timing: At all times

(ii) Provide certification to Council from a suitably qualified person that airborne emissions from the pet cremation unit complies with the above air quality criteria and Schedule 1 *Air Quality Objectives of the Environmental Protection (Air) Policy 201*9 by way of compliance with the Emission Limits of **Table 1**. A record of official certification shall be uploaded to a publicly viewable website.

Timing: Within 60 days of the commencement of the use.

Air emissions testing shall be conducted by suitably qualified persons and shall assess emissions on the basis of the following suite of pollutants.

- Carbon Monoxide
- Oxygen Content
- Total Solid Particulates
- Sulphur Dioxide
- Oxides of Nitrogen (NO2)
- Total Heavy Metals
- Hydrogen Fluoride
- Hydrogen Sulphide
- Formaldehyde
- Total VOC
- Polyaromatic Hydrocarbons

Emissions testing shall be conducted in accordance with the following methods.

Table 1: Methods

Parameter	Reference method	NATA accreditation
Traverse point requirements	AS4323.1	Yes
Gas velocity, temperature & static pressure	USEPA Method 2	Yes
Stack gas density	USEPA Method 3	Yes
Oxygen & carbon dioxide	USEPA Method 3A	Yes
Moisture	USEPA Method 4	Yes
Carbon Monoxide	USEPA Method 10	Yes
Speciated & Total Volatile Organic Compounds	USEPA Method 18	Yes
PAHs	CARB 429	Yes
Heavy Metal (Ni, Pb, Hg, Mn, V, Cd)	USEPA Method 29	Yes
Particle size distribution (PSD)	USEPA Method 5	Yes
Oxides of nitrogen – as NO_2	USEPA Method 7E	Yes
Sulphur Dioxide	USEPA Method 6C	Yes
Fluoride	USEPA Method 13B	Yes
Formaldehyde	USEPA Method 18	Yes
Hydrogen Sulphide	USEPA Method11	Yes

The emissions testing results must inform compliance and certification of compliance. Should the emissions testing identify non-compliance, immediate rectification works shall be implemented to achieve compliance.

Following the commissioning testing, further emissions test shall be conducted at 6 monthly intervals for the first year, then at the end of year 2 year following commencement of use to assess the ongoing performance of the cremator with the results provided to Council. The ongoing testing shall be targeted at pollutants identified from the commissioning testing as being the most limiting in terms of emission compliance. Each set of Emission Test results shall be uploaded to a publically viewable website.

3.5 Visual Monitoring – Air Quality

Other than the above physical stack emissions testing, there is an ongoing operational requirement to undertake visual assessment of stack emissions on a daily basis when the cremator is in use. Each daily reading using the Ringelmann Scale shall be confirmed and recorded with timestamped photographic evidence showing the matching Ringelmann card (or app screenshot) with actual chimney opacity in frame. Each daily reading shall be uploaded to a publicly viewable website.

A quantitative measure of stack visible emissions is the Ringelmann Scale whereby the visible emissions shall not exceed Ringelmann 1 which is equivalent to 20% opacity (Black smoke density). Should emissions from the cremator exhaust stack be other than steam or heat haze, and exceed Ringelmann 1 opacity, operation of the cremator should cease until the cause of the visible emissions is found and the problem rectified.

3.6 Monitoring – Noise

The operation of the cremator unit shall comply with the noise limits at sensitive receptors as identified in the May 2020 reporting prepared by MWA Environmental (included as **Attachment 3**). To verify compliance, prior to commencement of use, during the commissioning phase, noise testing shall be conducted to verify compliance and appropriate certification issued to Council.

This may be conducted on the following basis:

(i) Install, operate and maintain the pet cremation unit so that noise emissions comply with the reporting prepared by MWA Environmental “May 2020.
Timing: At all times

(ii) Provide certification to Council from a suitably qualified person that noise emissions from the pet cremation unit and site operations complies with the reporting prepared by MWA Environmental “May 2020”
Timing: Prior to the commencement of use.

4.0 MAINTENANCE MANAGEMENT PLANS

The following specific management plans apply to daily, weekly, monthly, six monthly and annual maintenance requirements for the Cremator.

4.1 Cremator Daily Maintenance

DAILY	Cremator
Objective	
	To ensure appropriate maintenance is undertaken to effectively eliminate air pollutant emissions from the Cremator operations in regard to nearby sensitive uses.
Application	
	This Daily Maintenance Management Plan applies to the Cremator on any day it is operated.
Tasks/Actions	

	• Open main load door and clean out any residual material (ashes) prior to operation for the day. Use Clean-out brush to pull ashes out of the refuse chamber.
	• Undertake visual inspection of internal lining to identify any cracking or distortion that may require rectification.
	• Prior to start up undertake a visual inspection of internal and external components.
	• Note load procedure: time of loading, quantity of load – record in record sheet.
	  ▪ Check all controls are operating and no error messages are evident.
	  ▪ Upon completion of each cremation, open main load door and clean out/collect any residual material in the cremator bed prior to next cremation.
	  ▪ Undertake visual inspection of cremator exhaust to assess opacity as described in Section 3.4.

Responsible Person	
	The Manager shall be responsible for: • ensuring that appropriate maintenance activities are undertaken on a daily basis to a satisfactory standard. • The timely investigation and action upon any complaints. • Shutting down the Cremator if non-conformance with operational parameters is found. • Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.
Reporting and Review	
	The Daily Maintenance Log included in **Attachment 2** is to be completed at the end of each day the Cremator is used. Records shall be kept of any air quality complaints, and any causes of excessive emissions and actions taken to change procedures to reduce emissions as required. Documentation shall be as per Complaints Response Procedure.

4.2 Cremator Weekly Maintenance

WEEKLY	Cremator
Objective	
	To ensure appropriate maintenance is undertaken to effectively eliminate air pollutant emissions from the Cremator operations in regard to nearby sensitive uses.
Application	
	This Weekly Maintenance Management Plan applies to the Cremator and should be followed every week the Cremator is used.
Tasks/Actions	
	• Check main chamber and remove any slag build-up (glass) within • Check internal chamber lining for shrinkage, fill any gaps with fibre • Grease bearings of exhaust fan with Lithium based grease every 50 hours of operation. • Check door runners and bearings for loose hardware and build-up. • Clean unit with soap and water for health reasons • Undertake check of all instrumentation for correct operation. • Review records of week operation to identify any operational parameters outside of acceptable range. • Undertake repair/maintenance to any defective components prior to operation.
Responsible Person	
	The Manager shall be responsible for: • ensuring that appropriate maintenance activities are undertaken on a weekly basis to a satisfactory standard. • The timely investigation and action upon any complaints. • Shutting down the if non-conformance with operational parameters is found. • Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.
Reporting and Review	
	The Weekly Maintenance Log included in **Attachment 2** is to be completed at the end of each week the Cremator is used. Records shall be kept of any air quality complaints, and any causes of excessive emissions and actions taken to change procedures to reduce emissions as required. Documentation shall be as per Complaints Response Procedure.

4.3 Cremator Monthly Maintenance

MONTHLY	Cremator
Objective	
	To ensure appropriate maintenance is undertaken to effectively eliminate air pollutant emissions from the Cremator operations in regard to nearby sensitive uses.
Application	
	This Monthly Maintenance Management Plan applies to the Cremator and should be followed every month the Cremator is used.
Tasks/Actions	
	• Check door gasket for proper seal to unit to maintain integrity • Check condition of refractory lining – repair/replace as required to maintain temperature.
Responsible Person	
	The Manager shall be responsible for: • ensuring that appropriate maintenance activities are undertaken on a monthly basis to a satisfactory standard. • The timely investigation and action upon any complaints. • Shutting down the Cremator if non-conformance with operational parameters is found. • Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.
Reporting and Review	
	The Monthly Maintenance Log included in **Attachment 2** is to be completed at the end of each month the Cremator is used. Records shall be kept of any air quality complaints, and any causes of excessive emissions and actions taken to change procedures to reduce emissions as required. Documentation shall be as per Complaints Response Procedure.

4.4 Cremator Six Monthly Maintenance

ANNUAL	Cremator
Objective	
	To ensure appropriate maintenance is undertaken to effectively eliminate air pollutant emissions from the Cremator operations in regard to nearby sensitive uses.
Application	
	This Six-monthly Maintenance Management Plan applies to the Cremator and should be followed every year the Cremator is used.
Tasks/Actions	
	• Check door runners and bearings for loose hardware and build-up. • Check fan belts for slip and adjust accordingly. • Check spark plugs • Test run empty to ensure correct operating conditions and temperatures/flow rates are achieve before putting unit back into service.
Responsible Person	
	The Manager shall be responsible for: • ensuring that appropriate maintenance activities are undertaken on an annual basis to a satisfactory standard. • The timely investigation and action upon any complaints. • Shutting down the Cremator if non-conformance with operational parameters is found. • Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.
Reporting and Review	
	The Six-monthly Maintenance Log included in **Attachment 2** is to be completed at the end of each year the Cremator is used. Records shall be kept of any air quality complaints, and any causes of excessive emissions and actions taken to change procedures to reduce emissions as required. Documentation shall be as per Complaints Response Procedure.

4.5 Cremator Annual Maintenance

ANNUAL	Cremator
Objective	
	To ensure appropriate maintenance is undertaken to effectively eliminate air pollutant emissions from the Cremator operations in regard to nearby sensitive uses.
Application	
	This Annual Maintenance Management Plan applies to the Cremator and should be followed every year the Cremator is used.
Tasks/Actions	
	• Check door runners and bearings for loose hardware and build-up, tighten and clean (annually). • Check fan belts for slip and adjust accordingly. • Check, clean and reset spark plugs • Clean stack/flue internal faces as necessary. • Test run empty to ensure correct operating conditions and temperatures/flow rates are achieve before putting unit back into service.
Responsible Person	
	The Manager shall be responsible for: • ensuring that appropriate maintenance activities are undertaken on an annual basis to a satisfactory standard. • The timely investigation and action upon any complaints. • Shutting down the Cremator if non-conformance with operational parameters is found. • Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.
Reporting and Review	
	The Annual Maintenance Log included in **Attachment 2** is to be completed at the end of each year the Cremator is used. Records shall be kept of any air quality complaints, and any causes of excessive emissions and actions taken to change procedures to reduce emissions as required. Documentation shall be as per Complaints Response Procedure.

5.0 COMPLAINTS RESPONSE PROCEDURE

The responsible person is the Manager as per **Section 1.3** of this Operational Management Plan.

The following actions will be undertaken in regard to complaint management

1. A complaint phone number and email address shall be indicated on signage and website available to the public. If the phone is not attended an automatic answering service shall be provided for day-time and out-of-hours messages. The phone and email messages will be directed to the Responsible Person and will be checked daily.

2. All details regarding a noise, air quality or odour complaint shall be recorded on the standard complaint form **(Attachment 4)** and filed in the Complaints Section of the OMP Records.

3. The Responsible Person will investigate the subject matter of the complaint and review the maintenance logs to firstly confirm that the Cremator has been appropriately maintained and is operating correctly. The Responsible Person shall then inspect the unit to determine any faults which may have occurred and to verify any non-compliance with standard operating parameters.

4. The Responsible Person shall implement any actions necessary related to operations of the incinerator, or any actions related to amendment of the MMP, as required, in conjunction with the maintenance staff as appropriate.

5. The Responsible Person shall document the complaint investigation, relevant evidence and the recommended response as a report in the Complaints Section of the OMP Records.

6. The timing of the complaint investigation and implementing response actions is very important in effectively eliminating any potential adverse outcomes from the complaint management process.

MWA Environmental
May 2020

FIGURE

DRAWING REFERENCE
REDLAND CITY COUNCIL RED-E-MAP

City Plan Version 1

Precinct Boundary
- Precinct Boundary

Zones
- Low Density Residential
- Low-medium Density Residential
- Medium Density Residential
- Character Residential
- Tourist Accomodation
- Principal Centre
- Major Centre
- District Centre
- Local Centre
- Neighbourhood Centre
- Specialised Centre
- Recreation and Open Space
- Environmental Management
- Conservation
- Low Impact Industry
- Medium Impact Industry
- Waterfront and Marine Industry
- Community Facilities
- Emerging Communities
- Mixed Use
- Rural

0 50 100 150 200m

CLIENT
ANGELA BRINKWORTH
C/- INTERACT BUILDING DESIGN

PROJECT
PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD
ALEXANDRA HILLS QLD

TITLE
SITE LOCATION AND SURROUNDING LAND USES

JOB	ALEXANDRA HILLS	**FIGURE 1**
JOB NO.	18-156	
DATE	01/03/19	DWG NUMBER
SCALE	1:6000 (A4)	**18-129-1**
REV.		

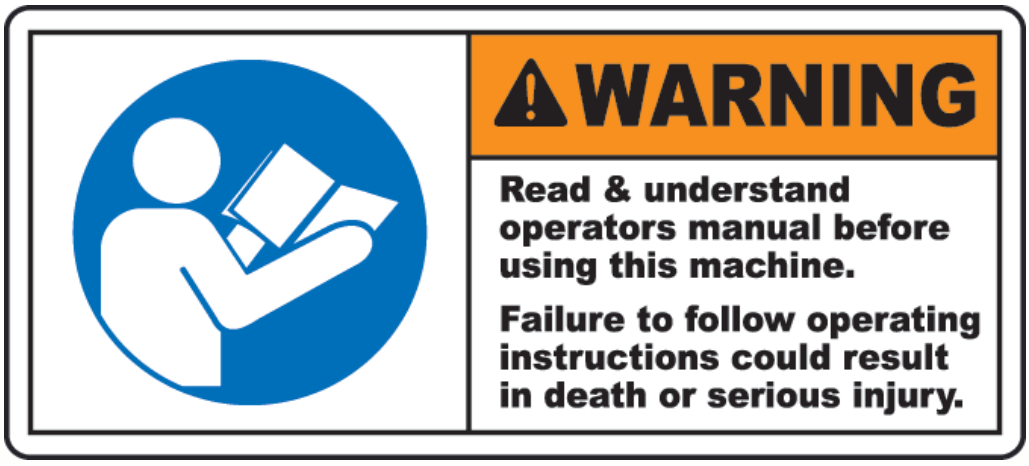
Max Winders & Associates Pty Ltd tas MWA Environmental
Level 15, 241 Adelaide St, Brisbane. GPO BOX 3137, Brisbane Qld 4001
P 07 3002 5500 F 07 3002 5588 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084

ATTACHMENT 1
Operators Manual

Pet Cremator Operating Instructions

KLEENBURN SYSTEMS

A Division of R & Y Engineering



Office & 24/7 Service: 02 4372 1585
Ray Mobile: 0414 239 585
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ryeng83@hotmail.com

R & Y Engineering

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Email: ryeng83@hotmail.com

Pet Cremator Operating Instructions

Start Up:

Keep all doors closed except when “loading” or “raking” the cremator

1. Turn on Electrical Isolator on cabinet
2. Check Gas Valve is ’ON’
3. Press ‘FANS START’ button
4. Switch both burners to ‘ON’
5. System will purge – ‘PURGING’ lamp will illuminate
6. Burners will proceed to light
7. Once burner flame is established – burner ‘ON’ lamps will illuminate
8. Turn ‘LOAD’ switch to ‘HI’

To Load Cremator:

1. Turn ‘LOAD’ switch to ‘LOW’
2. Allow at least 90 seconds for burners to drive to ‘LOW’ flame and cremator draughts to balance
3. Remove name plaque from casket
4. Prepare loading device in line with loading door
5. Keep to one side of loading door
6. Open loading door
7. Insert casket and close loading door
8. Do not leave loading door open for longer than absolutely necessary
9. Leave burners in ‘LOAD’ position for at least 10 minutes.
10. Turn ‘LOAD’ switch to ‘HI’
11. Temperature controllers left in ‘AUTO’ mode will modulate burners to correct preset temperatures
12. Cremation is in progress
13. Between cremations; turn top blower ‘ON’ to cool top chamber, turn top blower ‘OFF’ before reloading cremator.

Shut Down:

1. At cremation end – turn burner switches to ‘OFF’
2. Turn ‘LOAD’ switch to ‘LOW’
3. Press ‘SHUT DOWN’ button
4. Fans will shut down automatically at preset ‘TIME’ or ‘TEMPERATURE’ end

R & Y Engineering

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Pet Cremator Operating Instructions

Emergency Situations:

1. Power Failure:

a. Keep all doors firmly closed
b. Start alternative power supply and 'RESTART' cremator
c. If no alternative supply - leave all doors firmly closed and restart cremator on resumption of supply
d. Some external stack emissions may be present

2. Gas – Fuel Failure

*** All units are fitted with OPSO regulators and isolation ball valves ***

a. No fuel supply:
   - Check isolation valve is 'ON' – do not attempt to turn 'ON' if valve is tagged in the 'OFF' position
   - OPSO may have tripped

b. To shut off fuel supply in an emergency:
   - Isolation valve is fitted to each unit
   - LPG systems also have isolators at the supply tank
   - Natural gas supply – valve is fitted outside the building

IMPORTANT :
Please locate and note the location of valves before operating the unit

3. General:

a. Always ensure exhaust fan is 'ON' before opening any door - especially if temperature is above 30°C.
b. Always keep exhaust fan running in any cremation process.
c. Do not enter or place limbs inside chambers unless power is isolated and a second person is present.
d. Exercise caution around cremator units as there are hot surfaces.
e. Always wear gloves and any appropriate safety equipment supplied when opening doors when unit is in operation.
f. Always stand to one side when opening doors.

R & Y Engineering

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Pet Cremator Operating Instructions

General Information

1. Power supply consumption

- 220 – 240 V / 380 – 415 V / 20 Amps

NOTE: Refer to burner manual for all other settings and maintenance

2. Temperature Instruments

• Main burner operating setting point	750°C
• Main flame alarm set point	800°C
• Secondary burner operating setting point	850°C
• Secondary flame alarm set point	900°C

- The cremator unit is designed to run on negative pressure. Always turn the exhaust fan ON when opening doors.
- The burner operation and sequence is interlocked for safety.
- The exhaust fan MUST be running to activate the pressure switch before the secondary burner will start .The secondary burner must be firing before the main burner will fire.
- Should the exhaust fan fail - the burners will STOP.
- Should the secondary burner fail - the main burner will STOP.

3. General Safety Information

a. Always ensure exhaust fan is ‘ON’ before opening any door - especially if temperature is above 30C

b. Always keep exhaust fan running in any cremation process

c. Do not enter or place limbs inside chambers unless power is isolated and a second person is present

d. Exercise caution around cremator units as there are hot surfaces

e. Always wear gloves and any appropriate safety equipment supplied when opening doors when unit is in operation

f. Always stand to one side when opening doors

R & Y Engineering

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Pet Cremator Operating Instructions

General Maintenance:

ENSURE Power is ISOLATED to individual items before servicing

1. The exhaust fan unit is subject to constant high temperatures and care should be taken to regularly grease the bearings (at a minimum of every 50 hours of use) using high temperature Lithium based grease.
2. Every 6 months check the fan belts for slip and adjust accordingly. Loose belts wear quickly and reduce suction pressure from the cremator unit, resulting in excess fuming and over-temperatures.
3. Spark Plugs should be checked, cleaned and reset annually, or more frequently if workload is high (more than 60 hours per week).
4. Flues should be checked and cleaned every 2 years.
5. Door runners and bearings should be checked for loose hardware or build-up and should be tightened and/or cleaned annually.

TROUBLESHOOTING

1. Exhaust fan will not start

CHECK	RESOLVE
Is the power 'ON'?	Turn power 'ON'
Has the circuit breaker overloaded?	Check circuit breaker
Is the air pressure sensor tube blocked?	Clean the air pressure tube
Are the fan belts broken or slipping?	Replace or tighten belts as necessary
Motor Fault	Call R & Y Engineering 02 4372 1585

2. Secondary Burner will not start or fire

CHECK	RESOLVE
Is the exhaust fan 'ON'? Is the lamp 'ON'?	If the exhaust fan runs but the lamp is not on, check the pressure switch sensor tube
Is the burner switch 'ON'?	Turn burner switch to 'ON'
Has the control circuit breaker overloaded?	Check control circuit breaker
Has the burner circuit breaker overloaded?	Check burner circuit breaker

R & Y Engineering

PO Box 6166 West Gosford NSW 2250

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Email: ryeng83@hotmail.com

Pet Cremator Operating Instructions

TROUBLESHOOTING *Continued*

3. Secondary Burner goes to FAIL

CHECK	RESOLVE
Is fuel available?	Ensure fuel available
Is the fuel valve 'ON'	Turn the fuel valve 'ON'
Does the motor run?	Test Motor
Is the flame supervision photo cell clean?	Clean the photo cell
Is the ignition spark available?	Clean and reset spark plugs
Is the solenoid valve faulty?	Test and replace coil
Has the OPSO tripped?	Reset OPSO

4. Secondary Burner – Flame lights but goes to FAIL

CHECK	RESOLVE
Is the photo cell dirty or faulty?	Clean or replace photo cell as required
Is the air damper jammed?	Ensure damper moves freely
Is the fuel supply inconsistent?	Ensure consistent fuel supply

5. Main Burner will not start or fire

CHECK	RESOLVE
Has the main burner circuit breaker overloaded?	Check main burner circuit breaker
Is the after burner 'ON' and firing?	Turn after burner 'ON' and check its firing
Is the burner switch 'ON'?	Ensure Turn burner switch 'ON'

R & Y Engineering

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Pet Cremator Operating Instructions

TROUBLESHOOTING *Continued*

6. Main Burner goes to FAIL

CHECK	RESOLVE
Is fuel available?	Ensure fuel available
Is the fuel valve 'ON'	Turn the fuel valve 'ON'
Is the flame supervision photo cell clean?	Clean or replace photo cell as required
Is the ignition spark available?	Clean and reset spark plugs
Is the solenoid valve faulty?	Test and replace coil

7. Main Burner – Flame lights but goes to FAIL

CHECK	RESOLVE
Is the photo cell dirty or faulty	Clean or replace photo cell as required
Is the air damper jammed?	Ensure damper moves freely
Is the fuel supply inconsistent?	Ensure consistent fuel supply

For all other technical troubleshooting please contact :

R & Y Engineering Office 24/7 on 02 4372 1585

Ray on 0414 239 585

Tristan on 0417 266 678

ATTACHMENT 2
Example Maintenance Logs

Daily Maintenance Log

Week Beginning:_____

Staff member to initial each day once the task has been completed

No.	Task	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	Open main load door and clean out any residual material (ashes) prior to operation for the day. Use Clean-out brush to pull ashes out of the refuse chamber.							
2	Undertake visual inspection of internal lining to identify any cracking or distortion that may require rectification.							
3	Prior to start up undertake a visual inspection of internal and external components.							
4	Note load procedure: time of loading, quantity of load – record in record sheet.							
5	Check all controls are operating and no error messages are evident.							
6	Upon completion of each cremation, open main load door and clean out/collect any residual material in the cremator bed prior to next cremation.							
7	Undertake visual inspection of cremator exhaust to assess opacity as described in Section 3.4.							

Notes:

Weekly Maintenance Log

Staff member to initial each week once the task has been completed

No.	Task	Week Beginning: _____	Week Beginning: _____	Week Beginning: _____	Week Beginning: _____
1	Check main chamber and remove any slag build-up (glass) within.				
2	Check internal chamber lining for shrinkage, fill any gaps with fibre.				
3	Grease bearings of exhaust fan with Lithium based grease every 50 hours of operation.				
4	Check door runners and bearings for loose hardware and build-up.				
5	Clean unit with soap and water for health reasons				
6	Undertake check of all instrumentation for correct operation.				
7	Review records of week operation to identify any operational parameters outside of acceptable range.				
8	Undertake repair/maintenance to any defective components prior to operation.				

Notes:

Monthly Maintenance Log

Staff member to initial each month once the task has been completed

No.	Task	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	Ensuring that appropriate maintenance activities are undertaken on a monthly basis to a satisfactory standard.												
2	The timely investigation and action upon any complaints.												
3	Shutting down the Cremator if non-conformance with operational parameters is found.												
4	Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.												

Notes:

Six-Monthly Maintenance Log

Staff member to initial each month once the task has been completed

No.	Task										
1	Ensuring that appropriate maintenance activities are undertaken on a monthly basis to a satisfactory standard.										
2	The timely investigation and action upon any complaints.										
3	Shutting down the Cremator if non-conformance with operational parameters is found.										
4	Undertaking necessary repair/maintenance works promptly such that the cremator is only operated within permissible operational air quality limits.										

Notes:

Annual Maintenance Log

Staff member to initial each year once the task has been completed.

No.	Task	20__	20__	20__	20__	20__	20__	20__	20__	20__	20__
1	Check door runners and bearings for loose hardware and build-up, tighten and clean (annually).										
2	Check fan belts for slip and adjust accordingly.										
3	Check, clean and reset spark plugs.										
4	Clean stack/flue internal faces as necessary.										
5	Test run empty to ensure correct operating conditions and temperatures/flow rates are achieve before putting unit back into service.										

Notes:

ATTACHMENT 3
May 2020 MWA Environmental Reporting

AIR QUALITY AND NOISE IMPACT ASSESSMENT

PROPOSED PET CREMATORIUM

592 - 602 REDLAND BAY ROAD

ALEXANDRA HILLS

Prepared for:

Ms Angela Brinkworth
C/- Interact Building Design

Prepared by:

MWA Environmental

13 May 2020

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C/- Interact Building Design

Client Address: 755 Mount Cotton Road, Sheldon

Client Contact: Ms Angela Brinkworth

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CONTENTS TABLE

1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

MWA Environmental has been engaged by Angela Brinkworth to prepare an Air Quality and Noise Impact Assessment for a proposed pet crematorium at 592 - 602 Redland Bay Road, Alexandra Hills.

This report has considered the potential air quality and noise impacts from the proposed pet crematorium upon surrounding sensitive land uses. The report has been prepared as part of a response to Information Request issued by Redland City Council (RCC), dated 20 August 2018, Ref: MCU18/0167.

The relevant extract from the Redland City Council Information Request is included below:

> **3. Acoustic and Air Quality Information**
> Pertinent information has not been provided to Council to demonstrate compliance with the Environmental Protection Zone Code in terms of noise generation and air quality impacts. Provide further information to Council in regards to the cremation device/equipment to demonstrate compliance with the Environmental Protection Zone Code Specific Outcomes S4.4 and S4.5 in regards to noise generation and air quality impacts. If required please provide the following reports:
>
> Acoustic Assessment
> Refer to the *Redland Planning Scheme Policy 5 – Environmental Emissions* for further guidance. The acoustic assessment must provide initial information which includes:
>
> - location of existing and proposed residential dwellings and other sensitive receptors;
> - proposed operational hours, site operations and activities.
>
> Air Quality Assessment
> Submit a report, prepared by a suitably qualified person, detailing the predicted odour and air quality impacts from the proposed use upon surrounding land uses.
>
> The report is to include, but not limited to:
>
> - methodology and criteria applicable to the development. Please note that calculations should be based on worst case scenario;
> - all relevant operations including frequency, times, waste storage etc.;
> - topography and prevailing winds (including the use of meteorological data programs such as TAPM);
> - proximity of sensitive receptors; and
> - control measures to be employed at the proposed development to achieved satisfactory emission levels and air quality objectives. *Please note: where control measures involve structural works, plans must be provided indicating proposed works.*

An Air Quality and Noise Impact Assessment report was subsequently prepared and issued by MWA Environmental on 1 March 2019. This May 2020 report provides an update to the previous assessment as a result of identified errors in calculated emission rates which previously overestimated the impact of the development.

This Air Quality and Noise Impact Assessment has been prepared to assess whether Specific Outcomes S4.4 and S4.5 of the *Environmental Protection Zone Code* are satisfied at surrounding sensitive uses.

1.2 SITE DESCRIPTION

The subject site is located at 592 – 602 Redland Bay Road, Alexandra Hills and has a real property description of Lot 2 on SP194117.

The subject site is located on land zoned *EM - Environmental Management Zone* under the Redland City Plan.

Surrounding land uses are described as follows:

To the North: Large vegetated acreage with a garden nursery located to the north of the site on land zoned *EM - Environmental Managemen*t.

To the East: Large acreage allotments with existing dwellings to the east of the site on land zoned *Recreational and Open Space*.

To the South: Large allotments with existing dwellings to the south land zoned *Recreational and Open Space*.

To the West: The nearest residential dwellings to the subject site are located to the west on land zoned *Low Density Residential.*

The location of the subject site and surrounding land uses are presented in **Figure 1**.

1.3 PROPOSED DEVELOPMENT

A private veterinarian practice is proposed to operate at the subject site with the pet crematorium proposed to compliment the services offered. The crematorium will cater for the cremation of deceased pets, collected from surrounding veterinary clinics or brought to the site by individual pet owners.

The proposed pet cremator unit is manufactured by R&Y Engineering in Sumersby, New South Wales. The proposed unit is specifically designed for private pet cremations, veterinary practices and animal control facilities.

An existing shed on the property is proposed to be fitted out to include the cremator unit and a cold room for the storage of deceased pets.

Architectural plans of the proposed crematorium fit-out including location of the cremator unit are included in **Attachment 1**.

The proposed hours of operation of the veterinarian practice and pet crematorium are 8am to 5pm.

Operation of the cremator is proposed between 8am and 5pm, however for the purpose of this report, 24-hour operation of the cremator has conservatively been assessed.

1.4 ENVIRONMENTAL PROTECTION ZONE CODE

The Air Quality and Noise Impact Assessment has been prepared to assess whether Specific Outcomes S4.4 and S4.5 of the *Environmental Protection Zone Code* are satisfied at surrounding sensitive uses.

The relevant extracts from the code are included below.

Specific Outcome S4.4

Noise generated by the use or other development is compatible with that experienced in the natural environment setting of this zone.

Specific Outcome S4.5

Air quality impacts are eliminated or mitigated to a level that is compatible with a natural environment setting and with adjoining residential development by not emitting vibration, odour, fumes, smoke, vapour, steam, soot, ash, dust, grit, oil, radio or electrical interferences beyond an approved development envelope, where one exists, or the property boundary, whichever is the lesser.

Section 2 of this report provides an assessment of potential air quality impacts from the proposed cremator, with **Section 3** providing an assessment of potential noise impacts.

1.5 SURROUNDING SENSITIVE USES

The nearest sensitive residential use is located a minimum of 115 metres to the west of the proposed crematorium across Redland Bay Road.

A total of 19 surrounding residences have been included in the dispersion modelling as sensitive receptors for this assessment. The location of the sensitive receptors includes in the assessment are shown on the aerial photograph included as **Figure 2**.

2.0 AIR QUALITY ASSESSMENT

2.1 DESCRIPTION OF CREMATOR EMISSIONS

It is proposed to install and operate a R&Y Engineering animal cremator at the subject site. The proposed cremator unit to be installed at the site is a modern low-emission system incorporating emission control systems including:

- Temperature controllers installed to regulate the Primary Chamber, Secondary Chamber, and Flue (Exhaust) Temperatures

- Best practice minimum 2 second residence time of exhaust gases within the secondary to effectively mitigate odour and particulates.

The primary combustion chamber operating temperature is typically set to 1000 ^{O}C. The secondary combustion chamber is designed to operate at a minimum temperature of 850^{O}C with minimum residence time of 2 seconds to effectively control potential odour and smoke emissions. The secondary chamber control system will ensure that the operation of the pet cremator does not cause nuisance by way of visible smoke or odour.

The proposed cremator will be fuelled by LPG with a maximum gas-firing rate up to 1.58 MBTU/hour. Information regarding the proposed cremator unit is provided in **Attachment 2**.

Emissions from the pet cremator will be released via a vertical discharge stack located above cremator room roofline. The height of the building is approximately 3.2 metres with the stack discharge point proposed to be located 3 metres above roof level. The location and height of the cremator exhaust flue in relation to the existing building on the subject site is shown on the drawings included as **Attachment 1**.

Based upon equipment specifications for the proposed pet cremator supplied by the manufacturer the following representative emission source parameters have been modelled:

Stack Internal Diameter:	500mm
Exhaust Exit Velocity:	15.4 metres / second
Emission Temperature:	180^{O}C at outlet
Stack Height:	6.2 metres above ground level

Air pollutant emissions from the pet cremator are generated from both fuel combustion and from the combustion of biological remains.

For air pollutant emissions generated from the combustion of LPG, reference has been made to the air pollutant emission factors published in *AP42 Section 1.5 Liquefied Petroleum Gas Combustion (USEPA, 2008).*

Air pollutant emission rates generated from the combustion of biological remains have been estimated based upon the manufacturer specifications and published emission factors from the *Bay Area Air Quality Management District (BAAQMD) Permit Handbook Chapter 11.6 – Crematories* (Lee, C., 2009)

The following comprehensive suite of air pollutants associated with the operation of the pet cremator has been assessed in the dispersion modelling:

- Acetaldehyde
- Antimony
- Arsenic
- Benzo(a)pyrene (as marker for PAH)
- Beryllium
- Cadmium
- Carbon monoxide
- Chromium VI
- Copper dusts and mists
- Copper fumes
- Dioxins and furans (as TCDD TEF)
- Formaldehyde
- Hydrogen Chloride
- Hydrogen Fluoride
- Nickel
- Nitrogen dioxide
- Particulate Matter as PM_{10}
- Particulate Matter as $PM_{2.5}$
- Sulphur dioxide

It is noted that due to the rarity of dental amalgam use in animals, emissions of Mercury are not assessed.

A summary of the emission estimation techniques, emission factors and emission rates modelled for the purpose of this assessment is provided in **Attachment 3**.

The manufacturer specifies the proposed unit as capable of cremating up to 75 kilograms per hour. Operation of the proposed cremator has conservatively assessed the pet cremator operating at peak load continuously for every hour of the day and day of the year. This is considered to be a conservative basis for the assessment of potential air quality impacts from the proposed pet cremator.

2.2 AMBIENT AIR QUALITY

The Queensland Government operates a network of ambient air quality monitoring stations across the state. Annual ambient monitoring datasets are published through the Queensland Government data portal and are available for the years 2010 to 2017.

Key air pollutant emissions associated with the proposed cremator include particulates and oxides of Nitrogen. Ambient air quality data for these pollutants is routinely monitored at a nearby monitoring station located at Springwood. Reference has been made to ambient Carbon Monoxide monitoring at South Brisbane in the absence of any nearby stations monitoring Carbon Monoxide.

An analysis of ambient air quality data for the most recent three years of monitoring has been undertaken. A summary of the relevant ambient air quality statistics for inclusion in the dispersion modelling assessment as ambient concentrations is presented in **Table 1**.

Table 1: Ambient Air Pollutant Concentrations Applied to Assessment

Pollutant	Averaging Period	Concentration (µg/m³)	Statistical Reference
Sulphur Dioxide	1-hour average	5.2	1-hour average 90th percentile over 3 years from 2015 to 2017 at Springwood
	24-hour average	4.5	24-hour average 90th percentile over 3 years from 2015 to 2017 at Springwood
	Annual Average	2.7	Average over 3 years from 2015 to 2017 at Springwood
PM_{10}	24-hour average	14.0	24-hour average 70th percentile over 3 years from 2015 to 2017 at Springwood
	Annual Average	12.2	Average over 3 years from 2015 to 2017 at Springwood
$PM_{2.5}$	24-hour average	6.0	24-hour average 70th percentile over 3 years from 2015 to 2017 at Springwood
	Annual Average	5.2	Average over 3 years from 2015 to 2017 at Springwood
NO_2	1-hour average	26.3	1-hour average 90th percentile over 3 years from 2015 to 2017 at Springwood
	Annual Average	10.3	Average over 3 years from 2015 to 2017 at Springwood
Carbon Monoxide	8-hour average	180	8-hour average 70th percentile over 3 years from 2015 to 2017 at South Brisbane

Note 1: Conservatively increased to higher percentiles for Sulphur Dioxide and Nitrogen Dioxide due to a high proportion of zero values

Ambient monitoring of other air pollutants that may to be discharged from the pet cremator is not routinely undertaken by the Queensland Government. Ambient concentrations of these pollutants are assumed to be negligible for the purposes of this assessment.

2.3 RELEVANT AIR QUALITY GUIDELINES

The *Redlands Planning Scheme Policy 5 – Environmental Emissions* includes the following section.

> 5.5.1 Air Quality Objectives
>
> (1) Air quality objectives are contained in Schedule 1 of the *Environmental Protection (Air) Policy 2008* under the *Environmental Protection Act 1994*. These standards are required to protect human health and amenity.
>
> (2) If the emissions from a proposed development include other air pollutants, odour criteria and ambient air quality standards set for Australian conditions will be accepted. If no suitable Australian ambient air quality standard exists, an ambient air quality standard from another country or organisation may be used with appropriate justification.
>
> **Note -**
>
> Additional reference material for assessment and measurement of air quality -
>
> - *Australian Standard 4323.3:2001 Stationary Source Emissions - Determination of Odour Concentration by Dynamic Olfactory*.
> - *Odour Impact Assessment from Development Guideline, Department of Environment and Heritage Protection.*
>
> (3) Where the proposed development is a sensitive land use located within close proximity to an existing or proposed incompatible land use, there may be a requirement to demonstrate as a minimum, that the relevant ambient air standards will be achieved at this development site. In some instances the term "close proximity" may be referred to as the prescribed separation distance set out in a code that is either relevant to the proposed development or the nearby incompatible land use.

This assessment has therefore referred to the air quality objectives specified in the Queensland *Environmental Protection (Air) Policy 2008.*

The extensive suite of air quality guidelines specified in the Brisbane City Council *CityPlan 2014 Air Quality Planning Scheme Policy* and associated codes have also been referenced for this assessment.

Consideration has also been given to the National Environmental Protection Measure ("NEPM") standards with the inclusion of an annual average PM_{10} guideline.

Presented in **Table 2** is a summary of the air quality guidelines and health outcomes adopted for this assessment.

In accordance with accepted practice, assessment of model predicted concentrations for objectives with averaging periods less than or equal to 1 hour are made against the 99.9th percentile concentrations. For air pollutant objectives with longer averaging times, assessment is based upon the maximum predicted concentrations.

Table 2: Adopted Air Quality Guidelines

Pollutant	Averaging time	Health outcome protected	Criteria including background (µg/m^3)	Reference
Acetaldehyde	1 hour	Odour	42	BCC City Plan
Antimony and compounds	1 hour	Health and wellbeing	9	BCC City Plan
Arsenic and compounds (as total metal content in PM_{10})	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.09	BCC City Plan
	Annual	Health and wellbeing	6ng/m^3	EPP(Air) 2008
Benzo(a)pyrene (as marker for PAH)	Annual	Health and wellbeing	0.3ng/m^3	EPP(Air) 2008
Beryllium and compounds	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.004	BCC City Plan
Cadmium and compounds (as total metal content in PM_{10})	Annual	Health and wellbeing	5ng/m^3	EPP(Air) 2008
Carbon monoxide	8 hours	Health and wellbeing	11,000	EPP(Air) 2008
Chromium VI compounds	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.09	BCC City Plan
Copper dusts and mists	1 hour	Health and wellbeing	18	BCC City Plan
Copper fumes	1 hour	Health and wellbeing	3.7	BCC City Plan
Dioxins and furans (as TCDD TEF)	1 hour	IARC Group 1 carcinogen (known human carcinogen)	0.000002	BCC City Plan
Formaldehyde	30 minutes	Protecting aesthetic environment	110	EPP(Air) 2008
	24 hours	Health and wellbeing	54	EPP(Air) 2008
Hydrogen chloride	1 hour	Health and wellbeing	140	BCC City Plan
Hydrogen Fluoride	24 hour	Health and Biodiversity of ecosystems (other than protected areas)	2.9	EPP (Air)
	30 day		0.84	EPP (Air)
	90 day		0.5	EPP (Air)

Pollutant	Averaging time	Health outcome protected	Criteria including background (µg/m^3)	Reference
Hydrogen Fluoride	90 day	Health and Biodiversity of ecosystems (for protected areas)	0.1	EPP (Air)
Lead and compounds (as total metal content in TSP)	Annual	Health and wellbeing	0.5	EPP(Air) 2008
Nickel and compounds (as total metal content in PM_{10})	Annual	Health and wellbeing	0.02	EPP(Air) 2008
Nitrogen dioxide	1 hour	Health and wellbeing	250	EPP(Air) 2008
	Annual		62	EPP(Air) 2008
PM_{10}	24 hours	Health and wellbeing	50	EPP(Air) 2008
	Annual	Health and wellbeing	25	NEPM Standard
$PM_{2.5}$	24 hours	Health and wellbeing	25	EPP(Air) 2008
	Annual		8	EPP(Air) 2008
Sulphur dioxide	1 hour	Health and wellbeing	570	EPP(Air) 2008
	24 hours		230	EPP(Air) 2008
	Annual		57	EPP(Air) 2008

2.4 SITE METEOROLOGY

To enable assessment of air pollutant concentrations at surrounding sensitive uses as a result of emissions from the pet cremator, detailed dispersion modelling has been conducted using the TAPM / CALMET / CALPUFF modelling suite.

Following accepted methodology for detailed assessment, the TAPM software was utilised to develop a prognostic meteorological model which generated a year of representative hourly meteorological data for the region.

TAPM has been used to predict meteorological parameters specific to the region including temperature, wind speed, wind direction and stability classification. The model accesses databases of surface characteristics (terrain height, soil and vegetation) and synoptic weather analyses provided by CSIRO to carry out these analyses. TAPM is able to process the output data to produce input meteorological data files suitable for input to the CALMET / CALPUFF modelling system i.e. hourly predictions of meteorological parameters over a full year and generation of surface, upper air and geophysical data files.

Technical discussion of the model algorithms, inputs and model validation studies are provided in the *Part 1: Technical Paper* (Hurley, 2002) and *Part 2: Summary of Verification Studies* (Hurley *et al*, 2002)[1,2].

The centre coordinates for the model grid were Latitude -27˚38’30” and Longitude 153°17’. The following nested model grids were applied to the TAPM modelling:

40 x 30 km grid (total area 1200 km x 1200 km)
40 x 10 km grid (total area 400 km x 400 km)
40 x 3 km grid (total area 120 km x 120 km)
40 x 1 km grid (total area 40 km x 40 km)

Twenty-five vertical grid levels were modelled.

The TAPM model was set up to generate a site-specific meteorological data file for the locality, based upon synoptic analysis data for the representative Year 2016, as provided by CSIRO.

Observed wind speeds and wind directions for the Bureau of Meteorology (BoM) Redlands station was incorporated into the TAPM model as assimilation data. Considering topographical influences, the Redlands station was given a radius of influence of 15km over 2 vertical levels with a quality factor of 0.9.

The TAPM output was processed using the CALTAPM software to produce a 3-dimensional data file suitable for input to the diagnostic CALMET model as an ‘initial

[1] Hurley, P.J. (2002) The Air Pollution Model (TAPM) Version 2: User Manual. Aspendale: CSIRO Atmospheric Research Internal Paper.
[2] Hurley, P.J. (2002) The Air Pollution Model (TAPM) Version 2: Part 1: Technical Description. Aspendale: CSIRO Atmospheric Research Technical Paper.

guess field'. The CALMET model further resolved the prognostic meteorology to a finer terrain, land use and soil type resolution of 100 metres over a 6 x 6 km area covering the subject site and surrounding region for the purpose of dispersion modelling.

Analysis of the CALMET derived meteorology for the subject land including a wind rose, wind frequency graph, monthly average temperatures graph and tabulated stability class analysis is contained in **Attachment 4**.

2.5 MODELLING METHODOLOGY

The modelling intent is to determine whether the addition of the air pollutant emissions released from the pet crematorium to representative ambient concentrations (where applicable) measured by the Queensland Government, satisfies the relevant air quality criteria at surrounding sensitive uses.

Detailed dispersion modelling has been conducted using the CALPUFF modelling system to assess the exposure of surrounding sensitive uses to emissions from the proposed pet crematorium.

A nested CALPUFF model was set up to assess dispersion within a 1100m x 1100m area covering the subject site and surrounding sensitive use. Give the location of the proposed crematorium with respect to surrounding sensitive uses, gridded receptors at 20 metre spacing have been represented over the modelling domain. Discrete receptors have also been represented in the dispersion model at 19 residential dwellings located in proximity to the subject site.

Building wake effects have been considered on the dispersion of the pet crematorium exhaust discharge. Building wakes were input to the dispersion model using the BPIP utility for CALPUFF.

Concentrations have been predicted at discrete receptors representing surrounding sensitive uses. The model-predicted air pollutant concentrations were added to the ambient air pollutant concentrations as presented in **Table 1**, to assess the cumulative air pollutant exposure at these sensitive locations.

2.6 RESULTS OF DISPERSION MODELLING

A summary of the highest predicted air pollutant concentrations with the inclusion of ambient concentrations (where applicable) at the nominated surrounding sensitive uses are presented in **Table 3**.

Detailed tabular results for each modelled discrete receptor are provided in **Attachment 5**.

The results of the dispersion modelling demonstrate that emissions from the proposed pet cremator will readily comply with the relevant air quality criteria at all surrounding sensitive uses.

It is also noted that the assessment is highly conservative based upon operation of the cremator at the maximum loading rate, for 24-hour operation, for every day of the year. As a result of the conservative assumptions applied to the assessment, the maximum predicted concentrations at surrounding sensitive uses is likely to be overstated.

In addition to the discrete receptor modelling, gridded receptor modelling has been undertaken for a selection of key pollutants (refer **Attachment 6**).

The graphical outputs have only been provided for the following air pollutants with other air pollutant concentrations predicted to be a small percentage of the relevant air quality planning criteria;

- Nitrogen Dioxide
- PM_{10}
- $PM_{2.5}$

Table 3: Summary of Modelling Results at Surrounding Sensitive Uses including Ambient (where applicable)

Pollutant	Averaging time	Maximum Predicted Concentrations at Surrounding Sensitive Uses (µg/m^3)	Air Quality Guideline (µg/m^3)	Complies ?
Acetaldehyde	1 hour	0.0017	42	Yes
Antimony	1 hour	0.0004	9	Yes
Arsenic	1 hour	3.9E-04	0.09	Yes
	Annual	2.2E-05	6.0E-03	Yes
Benzo(a)pyrene (as marker for PAH)	Annual	6.4E-07	3.0E-04	Yes
Beryllium	1 hour	1.8E-05	4.0E-03	Yes
Cadmium	Annual	8.1E-06	5.0E-03	Yes
Carbon monoxide	8 hours	183.4	11,000	Yes
Chromium VI	1 hour	1.8E-04	0.09	Yes
Copper fumes	1 hour	3.6E-04	3.7	Yes
Dioxins and furans (as TCDD TEF)	1 hour	1.8E-08	2.0E-06	Yes
Formaldehyde	30-minute	5.7E-04	110	Yes
	24 hours	2.3E-04	54	Yes
Hydrogen chloride	1 hour	0.9	140	Yes
Hydrogen Fluoride	24-hour	4.5E-03	2.9	Yes
	30 day	0.001	0.84	Yes
	90 day	0.0008	0.5 / 0.1	Yes
Lead	Annual	4.9E-05	0.5	Yes
Nickel	Annual	2.8E-05	0.02	Yes
Nitrogen dioxide	1 hour	28.1	250	Yes
	Annual	10.4	62	Yes
PM_{10}	24 hours	14.6	50	Yes
	Annual	12.3	25	Yes
$PM_{2.5}$	24 hours	6.6	25	Yes
	Annual	5.3	8	Yes
Sulphur dioxide	1 hour	7.3	570	Yes
	24 hours	5.6	230	Yes
	Annual	2.8	57	Yes

2.7 MANAGEMENT OF EMISSIONS

As described in **Section 2.1**, the R&Y Engineering animal cremator to be installed at the site is a modern low-emission system incorporating emission control systems applicable to the small-scale cremator including:

- Temperature controllers installed to regulate the Primary Chamber, Secondary Chamber, and Flue (Exhaust) Temperatures

- Best practice minimum 2 second residence time of exhaust gases within the secondary to effectively mitigate odour and particulates.

Given the modern control systems integrated into the proposed pet cremator, management of visible emissions from operation of the cremator may be addressed through an appropriate development approval condition such as the following:

> *"The activity shall not result on the discharge of visible emissions from the cremator exhaust with an opacity in excess of 20 percent for an aggregate of more than 5 minutes in any 1-hour period or more than 20 minutes in any 24-hour period"*

3.0 NOISE IMPACT ASSESSMENT

3.1 EXISTING NOISE ENVIRONMENT

To enable an assessment of the existing noise exposure on the subject site, long-term noise measurements have been undertaken using a noise datalogger placed at a free-field location within the subject site over a continuous seven-day period from 21 January to 29 January 2019.

The location of the noise datalogger is as shown on **Figure 3**.

The datalogger recorded noise levels are included as graphical traces of noise level versus time in **Attachment 7**.

The datalogger used was a Rion NL42 noise datalogger, pre-calibrated to 94 dB at 1kHz using a Bruel & Kjaer Sound Level Calibrator, Type 4231. At post-calibration the datalogger exhibited less than ±0.1 dB deviation.

The results of the noise datalogger measurements are summarised in **Table 4.** The subject site is located in close proximity to Redland Bay Road, with traffic noise being the dominant influence on the background noise levels recorded. Weather conditions during the noise monitoring period were predominantly fine.

The recorded noise levels are presented as statistical components, which are described as:

L_1: Noise level exceeded for 1 percent of the measurement period, referred to as the adjusted maximum sound pressure level.

L_{10}: Noise level exceeded for 10 percent of the measurement period, referred to as the averaged maximum sound pressure level.

L_{90}: Noise level exceeded for 90 percent of the measurement period. AS1055.1–1997[3] notes that the L_{90} is described as the background sound pressure level.

L_{eq}: An "average" measurement, and as per AS1055.1–1997 defined as the value of the sound pressure level of a continuous steady sound state, that within a measurement period, has the same mean square sound pressure as a sound under consideration whose level varies with time.

[3] Australian Standard *AS 1055.1-1997 Acoustics – Description and measurement of environmental noise, Part 1: General procedures*

Table 4: **Ranges of Datalogger Recorded Noise Levels 21 to 29 January 2019**

PARAMETER	PERIOD	RECORDED NOISE LEVELS – dB(A)		
		MINIMUM	MAXIMUM	AVERAGE
L_1	Daytime (7am-6pm)	57.1	75.8	61.4
	Evening (6pm-10pm)	54.4	88.1	60.3
	Night-time (10pm-7am)	47.6	72.9	57.1
L_{10}	Daytime (7am-6pm)	53.7	74.0	57.4
	Evening (6pm-10pm)	50.0	69.2	56.2
	Night-time (10pm-7am)	37.6	69.1	51.7
L_{90}	Daytime (7am-6pm)	38.6	55.1	48.2
	Evening (6pm-10pm)	35.5	56.2	43.3
	Night-time (10pm-7am)	29.4	56.8	38.4
L_{eq}	Daytime (7am-6pm)	50.3	67.0	54.5
	Evening (6pm-10pm)	46.2	75.8	52.8
	Night-time (10pm-7am)	37.1	63.9	48.1

The statistical noise level parameters recorded at the noise datalogger location included the following:

Rating Background Level – Day = 47 dB(A)

Rating Background Level – Evening = 40 dB(A)

Rating Background Level – Night = 33 dB(A)

3.2 NOISE ASSESSMENT CRITERIA

3.2.1 REDLAND PLANNING SCHEME POLICY 5 - ENVIRONMENTAL EMISSIONS

The *Redland Planning Scheme, Part 11 - Planning Scheme Policy 5 - Environmental Emissions*, describes the requirements for the preparation and submission of technical reporting for sites that have the potential to emit, or be impacted adversely from, environmental emissions such as air or noise.

The purpose of the policy is to enhance or protect acoustic environmental values of Redland City in a manner consistent with the objectives in the *Environmental Protection (Noise) Policy 2008*.

Therefore, based upon the *Environmental Emissions* policy requirements the applicable noise criteria is derived from *Environmental Protection (Noise) Policy 2008* **("the Policy")** to protect the acoustic amenity at the nearest noise sensitive uses from the proposed development at the subject site.

3.2.2 ACOUSTIC QUALITY OBJECTIVES

The *Environmental Protection (Noise) Policy 2008* **("the Policy")** specifies Acoustic Quality Objectives for sensitive receptors to enhance or protect acoustic amenity. The applicable Acoustic Quality Objectives from Schedule 1 of the policy are presented in **Table 5.**

Table 5: Acoustic Quality Objectives

Sensitive Receptor	Period	Acoustic Quality Objectives (measured at the receptor) dB(A)			Environmental Value
		($L_{Aeq,adj,1\text{-}hour}$)	($L_{A10,adj,1\text{-}hour}$)	($L_{A1,adj,1\text{-}hour}$)	
Dwelling (for outdoors)	Daytime and evening	50	55	65	Health and wellbeing
Dwelling (for indoors)	Daytime and evening	35	40	45	Health and wellbeing
	Night-time	30	35	40	Health and wellbeing, in relation to the ability to sleep

A typical 7 dBA reduction by the building envelope with windows open, was considered to derive the representative external noise criteria from the respective indoors noise limits[4].

[4] AS3671 states approximate 10 dB(A) noise reduction through a façade with 10% open area. Thus approximately 7 dB(A) noise reduction through a façade with 20% open area. A large 1200x1800 sliding window relates to approximately 10% open area. A large 2100x2300 sliding glass door represents approximately 20% open area. Thus, 7dB(A) noise reduction is conservatively

3.3 CREMATOR PLANT AND EQUIPMENT NOISE

The proposed cremator unit will be located within an existing shed on the subject site which when fitted out will also include a cold room. The cremator is a package unit which incorporates fans and burners within the confines of a metal enclosure.

On the basis of experience with larger cremator units, for the purpose of assessment, noise from the cremator unit at 1 metre has been adopted as being 85 dB(A).

Noise emitted via the above roof level discharge flue will be significantly lower due to the internal design of the primary and secondary chambers and the attenuating affect of these and the stack itself. Adopted emission point (flue exit) noise level of 65 dB(A) is considered appropriate for assessment.

The nearest sensitive residential use is located a minimum of 115 metres to the west of the proposed cremator across Redland Bay Road. The resultant noise levels at the nearest existing residential dwelling has been calculated as follows.

Cremator Package Unit Internal

Source Level		85 dB(A) at 1 metre
Building Façade Transmission Loss Sheetmetal Walls and Roof		15 dB(A)
Distance Attenuation (Cremator to LDR dwelling)		115 metres = 20 log(115/1) = 41 dB(A)
Resultant Noise Level	=	85 – 41 - 15
	=	**29 dB(A) external to existing residential dwelling**

adopted based upon a large sliding glass door in the affected façade. Openings larger than 20% open area are unlikely to be necessary for ventilation during the night period.

Cremator Discharge Stack Noise

Source Level		65 dB(A) at 1 metres
Distance Attenuation (Cremator to LDR dwelling)		115 metres = 20 log(115/1) = 41 dB(A)
Resultant Noise Level	=	65 – 41
	=	**24 dB(A) external to existing residential dwelling**

Refrigeration Unit for Cold Room

Source Level		76 dB(A) at 1 metre
Building Façade Transmission Loss Sheetmetal Walls and Roof		15 dB(A)
Distance Attenuation (Cremator to LDR dwelling)		115 metres = 20 log(115/1) = 41 dB(A)
Resultant Noise Level	=	76 – 41 - 15
	=	**20 dB(A) external to existing residential dwelling**

The logarithmic sum of the noise from the cremator unit and cold room within the building façade and the stack above the roof of the building is:

= 29 + 24 + 20

Resultant Noise at Nearest Resident = **31 dB(A)**

The adopted night period noise criterion from **Table 5** of **37 dB(A) LAeq** (30 dB(A) + 7 dB(A)) will thus be readily satisfied at this location.

3.4 SITE CARPARKING AND VEHICLE NOISE

Site carparking and vehicle noise has been assessed considering operation of the business during the day period. On the basis of experience with vehicle movement and carparking noise sources, a sound power level of 89 dB(A) Lmax has been adopted. In order to calculate the resultant LAeq noise level at the nearest existing residential dwelling to the west, the following calculations are provided considered the following parameters.

It is assumed that two parking bay movement (in/out) per hour will occur at all 7 proposed carparking bays within a peak hour.

Vehicle Movement Noise

Sound Power Level		81 dB(A) @ 1 metre @ 5km/hr = 44 dB/m
Based on 14 car movement in hour		=44+10log(14) +10log(28/60min) = 52 dB(A)/m
Length of driveway turnaround is 30m		=52+10log(30m) = 68 dB(A)
Distance Attenuation (Entry to LDR dwelling)		80 metres = 20 log(80/1) = 38 dB(A)
Resultant Noise Level	= 68 – 38 =	**30 dB(A) external to existing residential dwelling**

Carparking Noise

Sound Power Level		81 dB(A) @1 metre
Duration of Carpark Use per hour (car start, take-off) = 81+10log(5/60)		= 70 dB(A)
Distance Attenuation (Carpark to LDR dwelling)		80 metres = 20 log(80/1) = 38 dB(A)
Resultant Noise Level	=	70 – 38
	=	**32 dB(A) external to existing residential dwelling**

The combined noise source level from carparking and vehicle movement noise is:

= 30 + 32

Resultant Noise at Nearest Resident = **34 dB(A)**

The adopted day and evening period noise criterion from **Table 5** of **42 dB(A) LAeq** (35 dB(A) + 7 dB(A)) will thus will be satisfied in this location considering the worst case peak hour scenario.

It is also noted that the resultant noise levels will also readily comply with the night noise criteria of 37 dB(A).

4.0 CONCLUSION

MWA Environmental has been engaged by Angela Brinkworth to prepare an Air Quality and Noise Impact Assessment for a proposed pet crematorium at 592 - 602 Redland Bay Road, Alexandra Hills.

This report has considered the potential air quality and noise impacts from the proposed pet crematorium upon surrounding sensitive land uses. The report has been prepared as part of response to Information Request issued by Redland City Council (RCC), dated 20 August 2018, Ref: MCU18/0167.

A detailed air quality assessment based upon site-specific meteorological and dispersion modelling of an extensive suite of air pollutant emissions from the pet cremator, has demonstrated that the relevant air quality guidelines will be readily satisfied at surrounding sensitive uses.

Assessment of the potential noise impact of the proposed pet cremator has been undertaken by assessing the appropriate noise limits at the nearest sensitive residential dwelling, including day and evening noise measurements and prediction of resultant noise levels.

The assessment identifies that noise amenity impacts of the development will not result in adverse amenity impacts at surrounding sensitive uses.

The Air Quality and Noise Impact Assessment has demonstrated that Specific Outcomes S4.4 and S4.5 of the *Environmental Protection Zone Code* have been satisfied at surrounding sensitive uses.

It is recommended the pet crematorium be approved with relevant and reasonable conditions.

MWA Environmental
13 May 2020

FIGURES

DRAWING REFERENCE
REDLAND CITY COUNCIL RED-E-MAP

City Plan Version 1

Precinct Boundary
- Precinct Boundary

Zones
- Low Density Residential
- Low-medium Density Residential
- Medium Density Residential
- Character Residential
- Tourist Accomodation
- Principal Centre
- Major Centre
- District Centre
- Local Centre
- Neighbourhood Centre
- Specialised Centre
- Recreation and Open Space
- Environmental Management
- Conservation
- Low Impact Industry
- Medium Impact Industry
- Waterfront and Marine Industry
- Community Facilities
- Emerging Communities
- Mixed Use
- Rural

0 50 100 150 200m

CLIENT
ANGELA BRINKWORTH
C/- INTERACT BUILDING DESIGN

PROJECT
AIR QUALITY AND NOISE IMPACT ASSESSMENT
PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD
ALEXANDRA HILLS QLD

TITLE
SITE LOCATION AND SURROUNDING LAND USES

JOB	ALEXANDRA HILLS	**FIGURE 1**
JOB NO.	18-156	
DATE	01/03/19	DWG NUMBER
SCALE	1:6000 (A4)	**18-129-1**
REV.		

Max Winders & Associates Pty Ltd tas MWA Environmental
Level 15, 241 Adelaide St, Brisbane. GPO BOX 3137, Brisbane Qld 4001
P 07 3002 5500 F 07 3002 5588 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084

LEGEND

- SITE BOUNDARY
- R19 SENSITIVE RECEPTORS
- CREMATOR FLUE

DRAWING REFERENCE

GOOGLE EARTH PRO AERIAL 2017.

CLIENT

ANGELA BRINKWORTH
C/- INTERACT BUILDING DESIGN

PROJECT

AIR QUALITY AND NOISE IMPACT ASSESSMENT

PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD
ALEXANDRA HILLS QLD

TITLE

NOMINATED DISCRETE RECEPTORS

JOB	ALEXANDRA HILLS	**FIGURE 2**
JOB NO.	18-156	
DATE	01/03/19	DWG NUMBER
SCALE	1:6000 (A4)	**18-129-2**
REV.		

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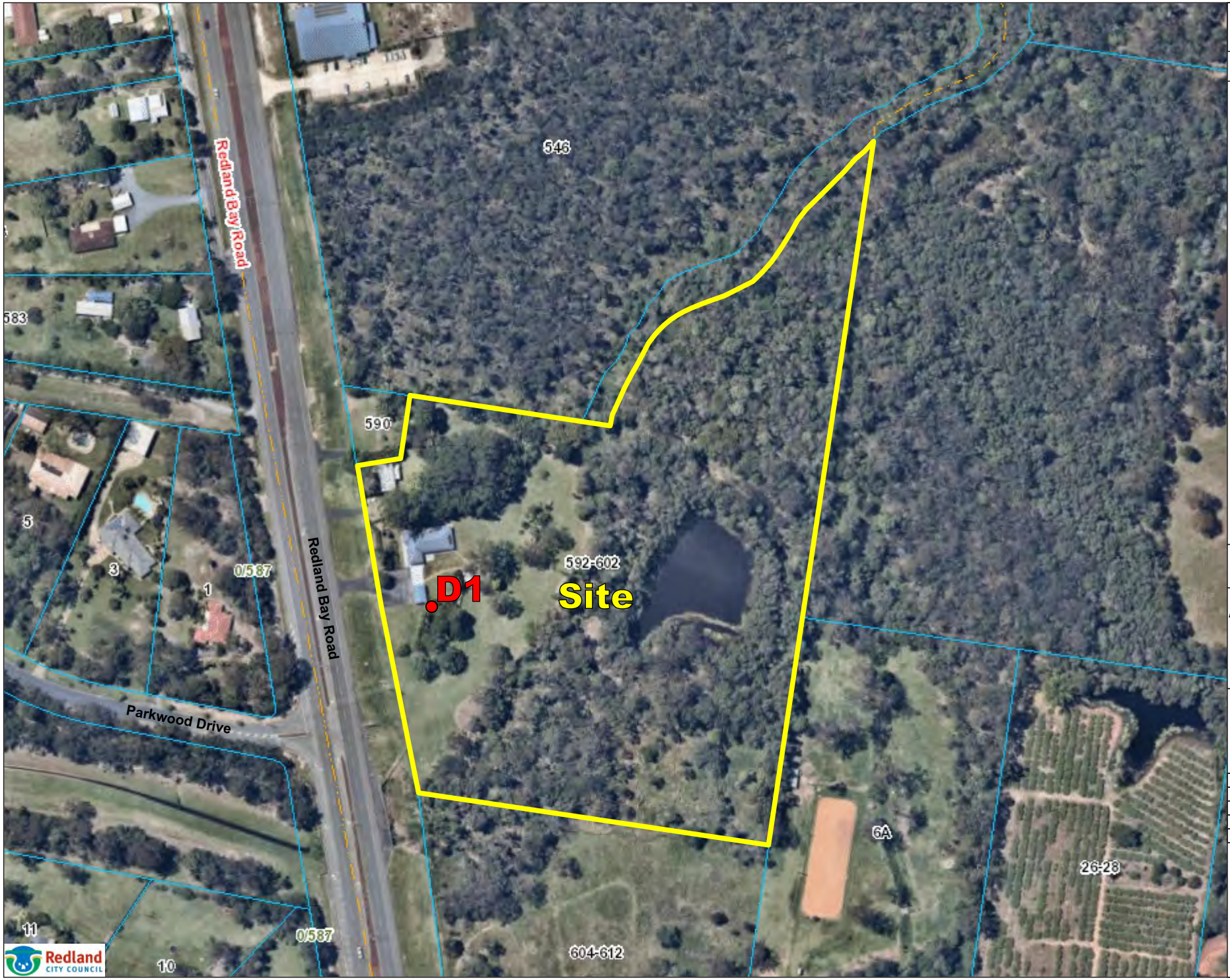
W www.mwaenviro.com.au
ABN 94 010 833 084



LEGEND

SITE BOUNDARY

D1 NOISE DATALOGGER LOCATION

DRAWING REFERENCE

REDLAND CITY COUNCIL RED-E-MAP

N

0 20 40 60 80m

CLIENT

ANGELA BRINKWORTH
C/- INTERACT BUILDING DESIGN

PROJECT

AIR QUALITY AND NOISE IMPACT ASSESSMENT

PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD
ALEXANDRA HILLS QLD

TITLE

NOISE MONITORING LOCATION

JOB	ALEXANDRA HILLS	**FIGURE 3**
JOB NO.	18-156	
DATE	01/03/19	DWG NUMBER
SCALE	1:2500 (A4)	**18-129-3**
REV.		

mwa ENVIRONMENTAL

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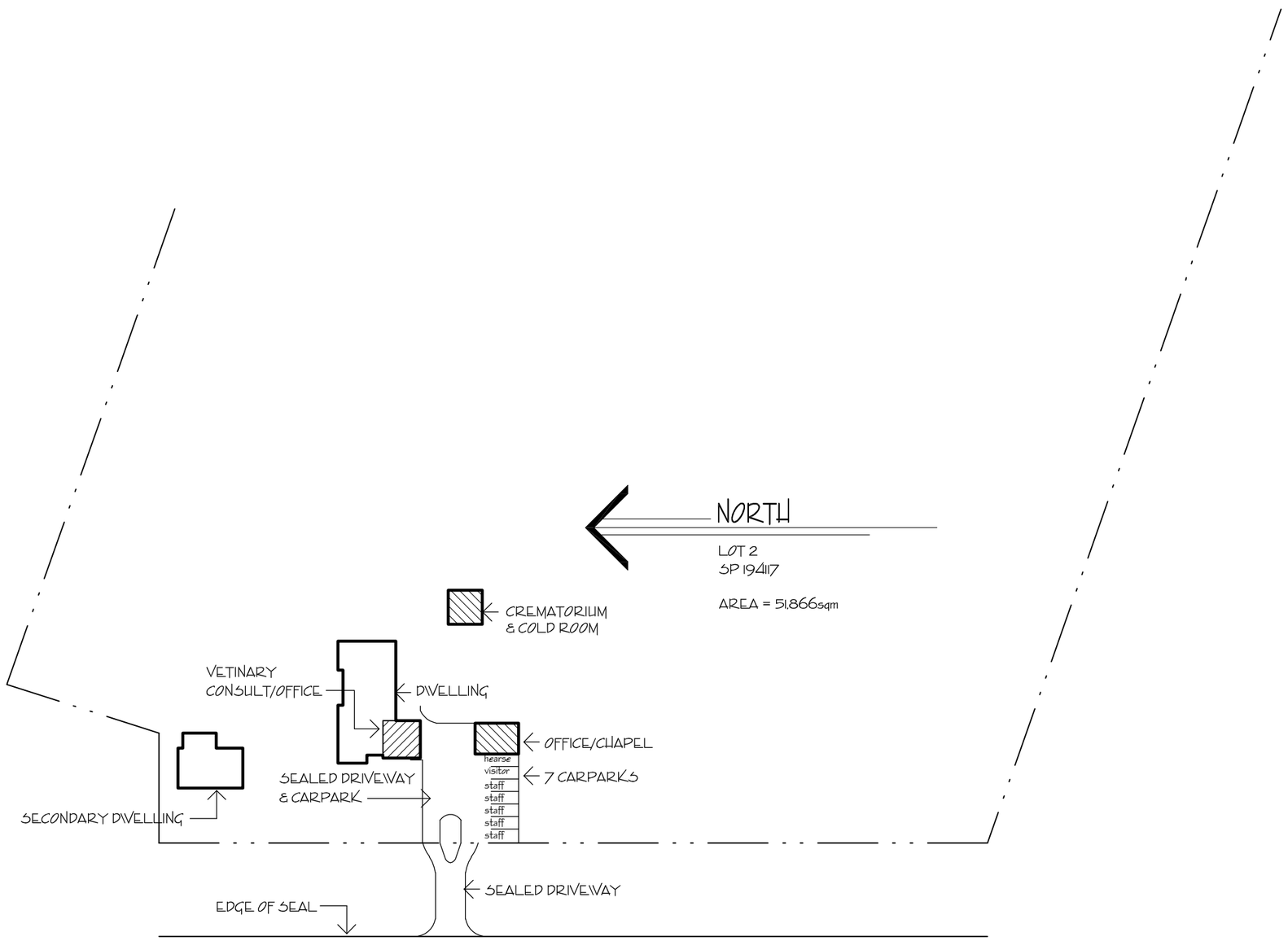
ABN 94 010 833 084

ATTACHMENT 1

Architectural Drawings



REDLAND BAY ROAD

1. ALL WORK TO CONFORM TO ALL RELEVANT AUSTRALIAN STANDARDS.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.
3. USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.

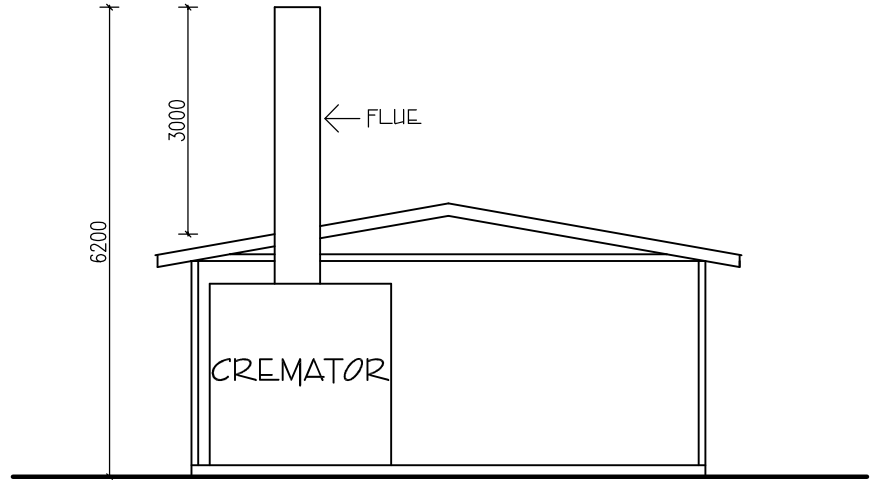
AMMENDMENT	DATE	REV
		A

PROJECT:
PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD, ALEXANDRA HILLS Q 4161
for ANGELA BRINKWORTH

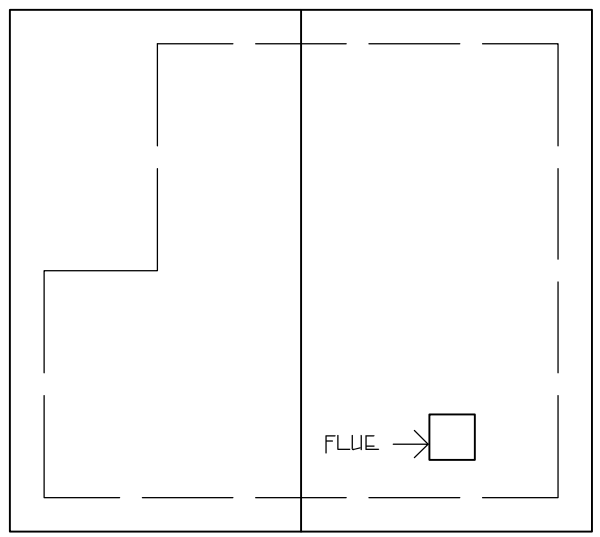
TITLE:
SITE PLAN

nic sheldrake
qbcc 113479
interact building design
m. 0411 222 932
e nic@interactdesign.com.au

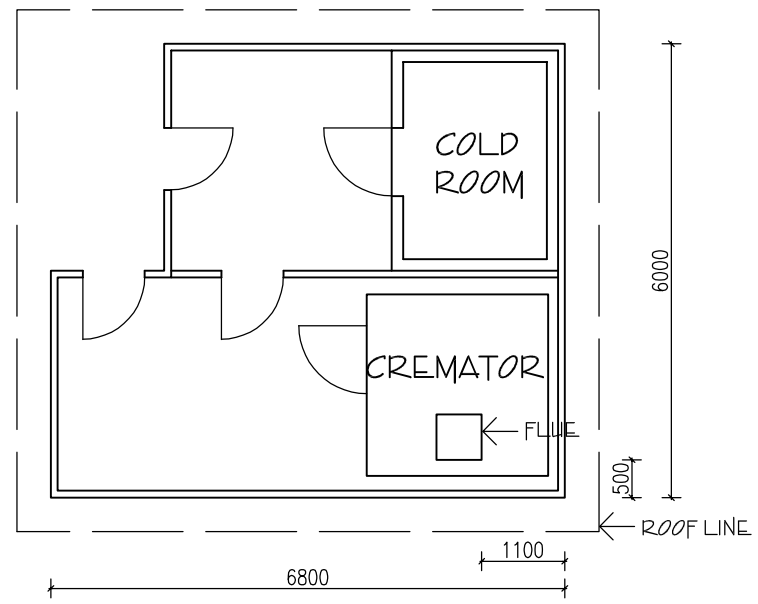
DATE	FEB 2018
DRAWN	N.SHELDRAKE
CHECKED	NS
SCALE	1:1000
PROJECT No.	0418
REVISION	A
PRINT DATE	04.04.18
DRAWING A3	SP 01



SECTION



ROOF PLAN



FLOOR PLAN

1. ALL WORK TO CONFORM TO ALL RELEVANT AUSTRALIAN STANDARDS.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.
3. USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.

AMMENDMENT	DATE	REV
		A

PROJECT:
PROPOSED PET CREMATORIUM
592 REDLAND BAY ROAD, ALEXANDRA HILLS Q 4161
for ANGELA BRINKWORTH

TITLE:
FLOOR PLAN

nic sheldrake
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interact building design
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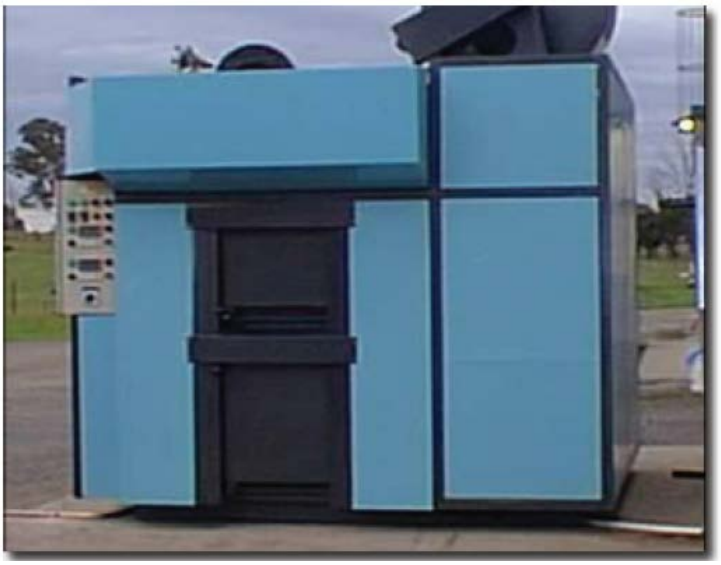
e nic@interactdesign.com.au

DATE	FEB 2018
DRAWN	N.SHELDRAKE
CHECKED	NS
SCALE	1:100

PROJECT No.	0418
REVISION	A
PRINT DATE	22.02.19
DRAWING A3	SP 02

ATTACHMENT 2

Relevant Cremator Specifications



Summary of Cremation Unit Parameters

Manufacturer:	R & Y Engineering
Model:	Pet Cremation Unit
Maximum Loading Rate:	75kg/hour
Typical Cremation Cycle:	90 minutes
Stack Outlet Diameter:	500mm
Stack Exhaust Velocity:	15.4 m/s
Stack Temperature:	180 °C
Stack Height:	3 metres above roof line
Minimum Residence Time:	2 seconds
Recommended Fuel:	LPG
Main Burner:	0.9 GJ/hour
	Temperature Controlled with manual firing selection
Secondary Burner:	0.6 GJ/hour
	Temperature Controlled with manual firing selection

ATTACHMENT 3

Summary of the emission estimation techniques, emission factors and emission rates

SUMMARY OF INPUTS

Parameter	Value	Units	Reference
Maximum Gas Firing Rate	1.42	MBTU/hr	Calculated based on primary chamber gas consumption at 0.9GJ/hr and secondary chamber gas consumptionat 0.6GJ/hr
Maximum Hourly Burn Rate	75	kg/hr	Supplied by Manufacturer
Hours Per Day Cremator Operation	24	hours	Conservative Assessment
Maximum Daily Weight Cremated	1800	kg/day	MWA Calc

EMISSION FACTORS FOR LPG COMBUSTION

Reference: AP42 Chapter 1.5 - Liquefied Petroleum Gas Combustion

Pollutant	Volume basis	Energy basis	
	(lb/10³ gal)	(lb/MMBTU)	(grams/MMBTU)
Carbon monoxide	7.5	0.08	37.2
Oxides of Nitrogen	13	0.14	64.4
Particulate matter ≤10.0 µm	0.7	0.01	3.5
Particulate matter ≤2.5 µm	0.7	0.01	3.5
Sulfur dioxide	0.1S	1.09E-07	5.0E-05
Total volatile organic compounds (Total VOC)	1	0.01	4.96

S - The Australian standard is 100 mg/kg	0.0001	kg/kg
Heat value for conversion:	91.5	MMBTU/1000 gal

EMISSION RATES FOR LPG COMBUSTION

Pollutant	Emission Rate (g/hour)	Emission Rate (g/s)	Emission Rate (kg/day)	Reference
Carbon monoxide	52.8	0.01	1.27	MWA Calc
Oxides of Nitrogen	91.5	0.03	2.20	
Particulate matter ≤10.0 µm	4.9	0.001	0.12	
Particulate matter ≤2.5 µm	4.9	0.001	0.12	
Sulfur dioxide	7.0E-05	2.0E-08	1.7E-06	
Total volatile organic compounds (Total VOC)	7.0	0.002	0.17	

Emission Factors from Cremation of Body (including case wrappings)

Pollutant	Emission Factor	Units	Emission Factor	Units	Reference
PM_{10}	1.13	lb/ton	0.56	kg/tonne	USEPA WebFIRE
NOx	3.56	lb/ton	1.78	kg/tonne	AP-42 Table 2.3-1
CO	2.95	lb/ton	1.47	kg/tonne	AP-42 Table 2.3-1
SO2	2.17	lb/ton	1.08	kg/tonne	AP-42 Table 2.3-1
POC	0.299	lb/ton	0.15	kg/tonne	AP-42 Table 2.3-1
Acetaldehyde	1.30E-04	lb/150 lb	8.67E-04	kg/tonne	BAAQMD Permit Handbook
Antimony	3.00E-05	lb/150 lb	2.00E-04	kg/tonne	BAAQMD Permit Handbook
Arsenic	3.00E-05	lb/150 lb	2.00E-04	kg/tonne	BAAQMD Permit Handbook
Beryllium	1.40E-06	lb/150 lb	9.33E-06	kg/tonne	BAAQMD Permit Handbook
Cadmium	1.10E-05	lb/150 lb	7.33E-05	kg/tonne	BAAQMD Permit Handbook
Chromium, hx	1.40E-05	lb/150 lb	9.33E-05	kg/tonne	BAAQMD Permit Handbook
Copper	2.70E-05	lb/150 lb	1.80E-04	kg/tonne	BAAQMD Permit Handbook
Formaldehyde	3.40E-05	lb/150 lb	2.27E-04	kg/tonne	BAAQMD Permit Handbook
Hydrogen chloride	7.20E-02	lb/150 lb	4.80E-01	kg/tonne	BAAQMD Permit Handbook
Hydrogen fluoride	6.60E-04	lb/150 lb	4.40E-03	kg/tonne	BAAQMD Permit Handbook
Lead	6.60E-05	lb/150 lb	4.40E-04	kg/tonne	BAAQMD Permit Handbook
Nickel	3.80E-05	lb/150 lb	2.53E-04	kg/tonne	BAAQMD Permit Handbook
Selenium	4.40E-05	lb/150 lb	2.93E-04	kg/tonne	BAAQMD Permit Handbook
Zinc	3.50E-04	lb/150 lb	2.33E-03	kg/tonne	BAAQMD Permit Handbook
Chlorinated dibenzodioxins and furans	1.40E-09	lb/150 lb	9.33E-09	kg/tonne	BAAQMD Permit Handbook
PAH (benzo(a)pyrene equivalents)	4.90E-08	lb/150 lb	3.27E-07	kg/tonne	BAAQMD Permit Handbook

Emission Rates from Cremation of Body (including case wrappings)

Pollutant	Value	Units	Reference	Value	Units	Reference
PM_{10}	0.01	g/s	MWA Calc	1.0	kg/day	MWA Calc
NOx	0.04	g/s		3.2	kg/day	
CO	0.03	g/s		2.7	kg/day	
SO2	0.02	g/s		2.0	kg/day	
POC	3.11E-03	g/s		0.3	kg/day	
Acetaldehyde	1.81E-05	g/s		2E-03	kg/day	
Antimony	4.17E-06	g/s		4E-04	kg/day	
Arsenic	4.17E-06	g/s		4E-04	kg/day	
Beryllium	1.94E-07	g/s		2E-05	kg/day	
Cadmium	1.53E-06	g/s		1E-04	kg/day	
Chromium, hx	1.94E-06	g/s		2E-04	kg/day	
Copper	3.75E-06	g/s		3E-04	kg/day	
Formaldehyde	4.72E-06	g/s		4E-04	kg/day	
Hydrogen chloride	1.00E-02	g/s		0.9	kg/day	
Hydrogen fluoride	9.17E-05	g/s		8E-03	kg/day	
Lead	9.17E-06	g/s		8E-04	kg/day	
Nickel	5.28E-06	g/s		5E-04	kg/day	
Selenium	6.11E-06	g/s		5E-04	kg/day	
Zinc	4.86E-05	g/s		4E-03	kg/day	
Chlorinated dibenzodioxins and furans	1.94E-10	g/s		2E-08	kg/day	
PAH (benzo(a)pyrene equivalents)	6.81E-09	g/s		6E-07	kg/day	

Total Emission Rates from Cremation of Body and Gas Combustion

Pollutant	Value	Units	Reference	Value	Units	Reference
PM_{10}	1.31E-02	g/s	MWA Calc	1.14	kg/day	MWA Calc
$PM_{2.5}$	1.31E-02	g/s	Note: Used PM2.5 emission from Gas Combustion and conservatively adopted the PM10 emission rate from Body Combustion	1.14	kg/day	
NOx	6.25E-02	g/s	MWA Calc	5.40	kg/day	
CO	4.54E-02	g/s		3.92	kg/day	
SO2	2.26E-02	g/s		1.95	kg/day	
VOCs	5.07E-03	g/s		0.44	kg/day	
Acetaldehyde	1.81E-05	g/s		0.00	kg/day	
Antimony	4.17E-06	g/s		0.00	kg/day	
Arsenic	4.17E-06	g/s		0.00	kg/day	
Beryllium	1.94E-07	g/s		0.00	kg/day	
Cadmium	1.53E-06	g/s		0.00	kg/day	
Chromium, hx	1.94E-06	g/s		0.00	kg/day	
Copper	3.75E-06	g/s		0.00	kg/day	
Formaldehyde	4.72E-06	g/s		0.00	kg/day	
Hydrogen chloride	1.00E-02	g/s		0.86	kg/day	
Hydrogen fluoride	9.17E-05	g/s		0.01	kg/day	
Lead	9.17E-06	g/s		0.00	kg/day	
Nickel	5.28E-06	g/s		0.00	kg/day	
Selenium	6.11E-06	g/s		0.00	kg/day	
Zinc	4.86E-05	g/s		0.00	kg/day	
Chlorinated dibenzodioxins and furans	1.94E-10	g/s		2E-08	kg/day	
PAH (benzo(a)pyrene equivalents)	6.81E-09	g/s		6E-07	kg/day	

ATTACHMENT 4

Analysis of CALMET-Generated Meteorological Data

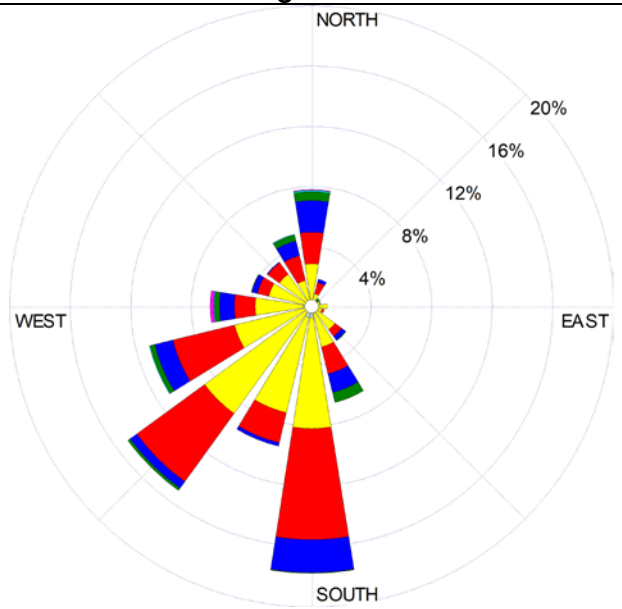
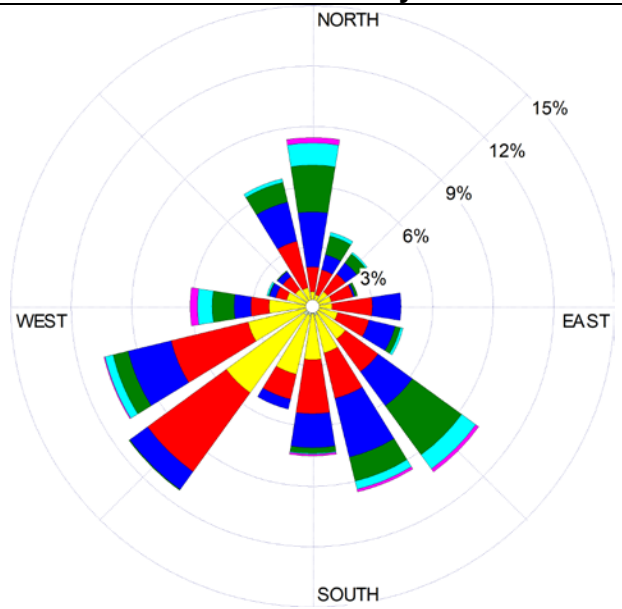
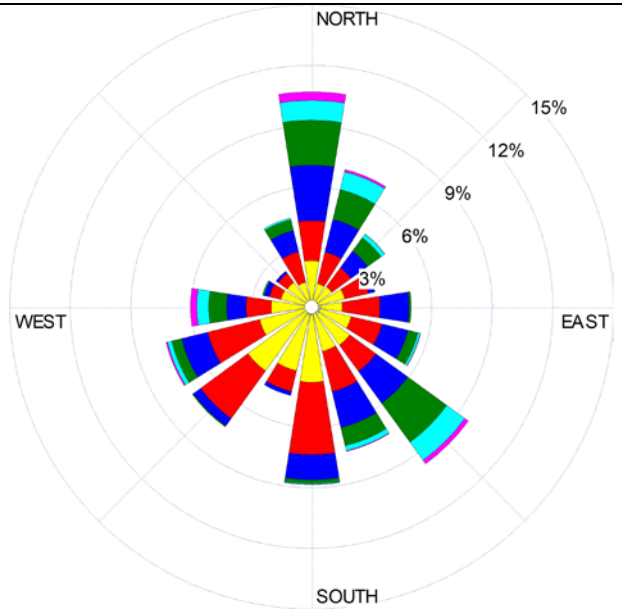
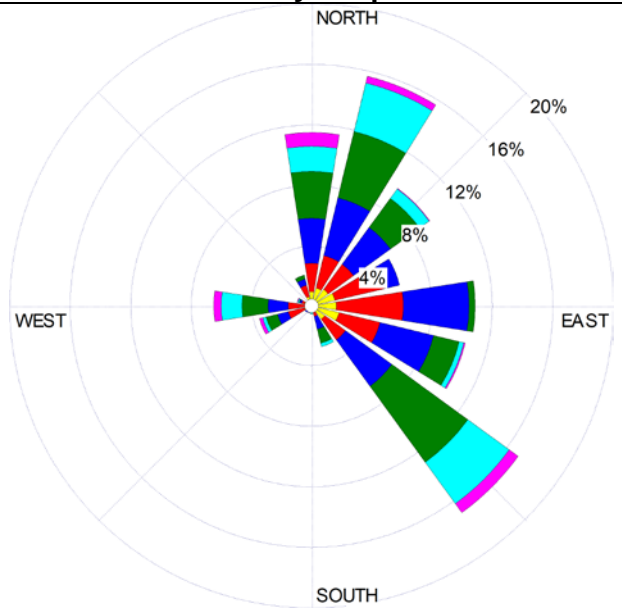
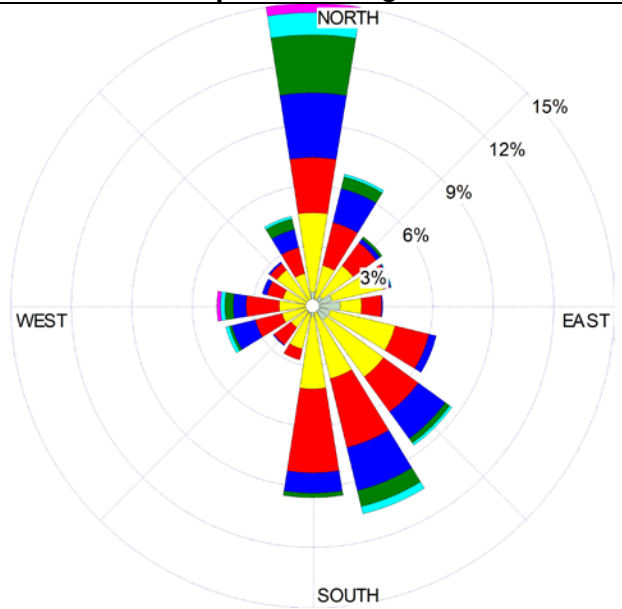
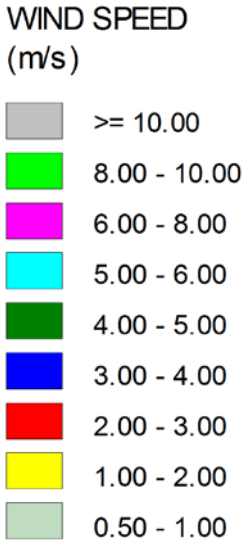
Midnight to 6am	6am to Midday	Annual
		
Calms 4.42%	Calms 1.32%	Calms 3.43%
Midday to 6pm	**6pm to Midnight**	**Key**
		
Calms 0.96%	Calms 7.01 %	

Figure A4.1 Diurnal wind roses for the Site as generated by CALMET

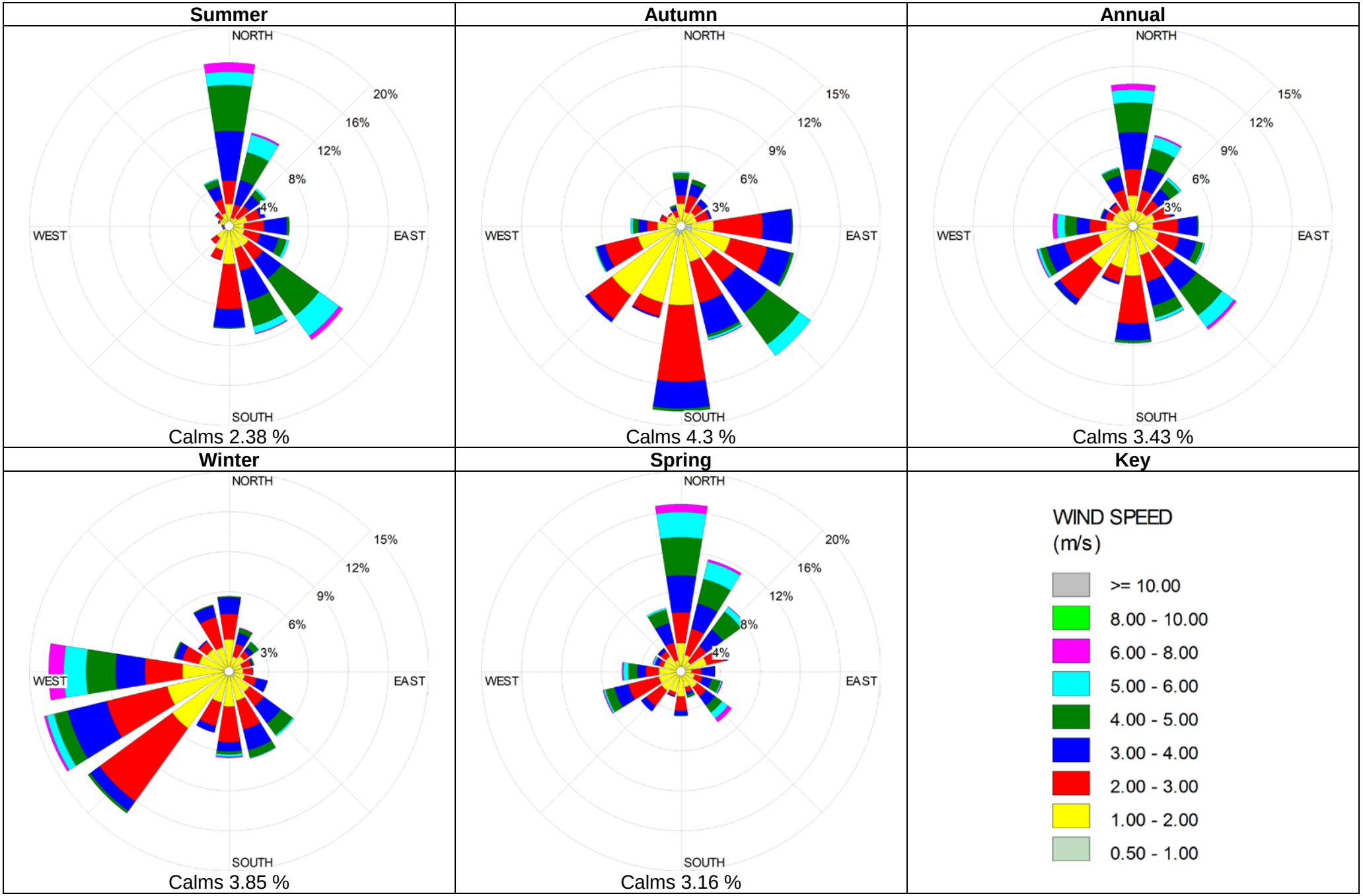


Figure A4.2 Seasonal wind roses for the Site as generated by CALMET

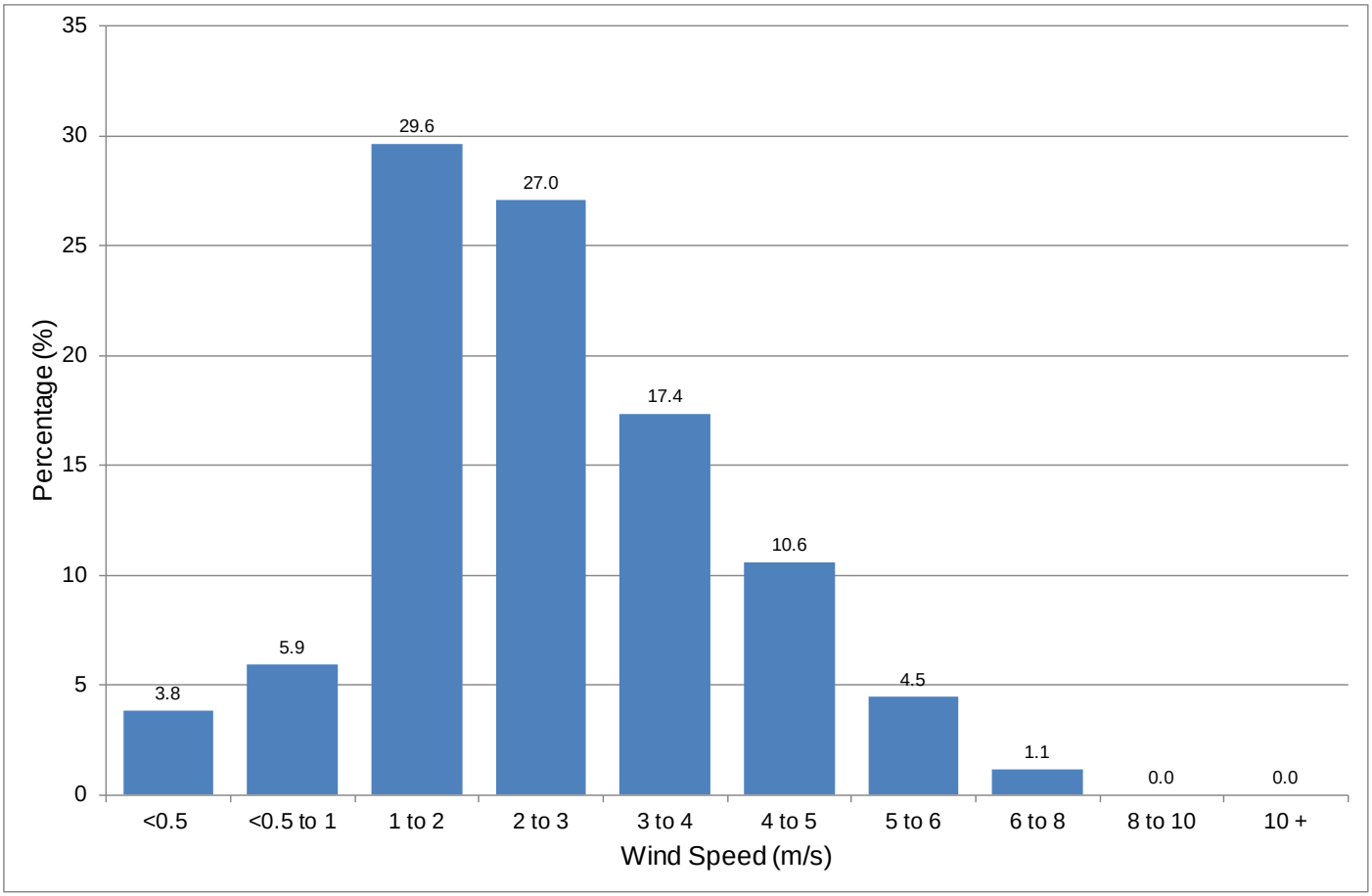


Figure A4.3 Wind frequency graph for the Site as generated by CALMET

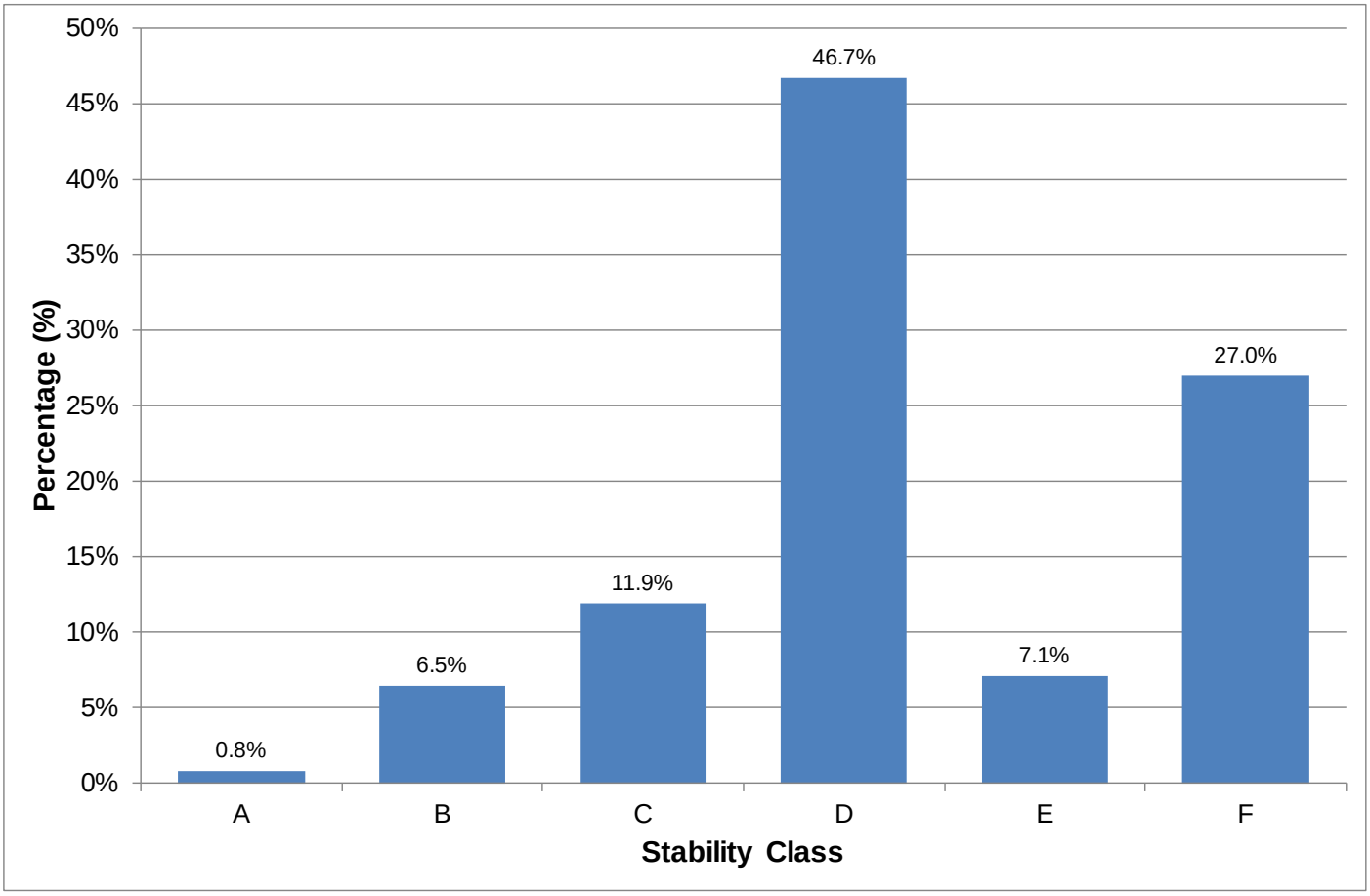


Figure A4.4 Stability Class Histograms for the Site as generated by CALMET

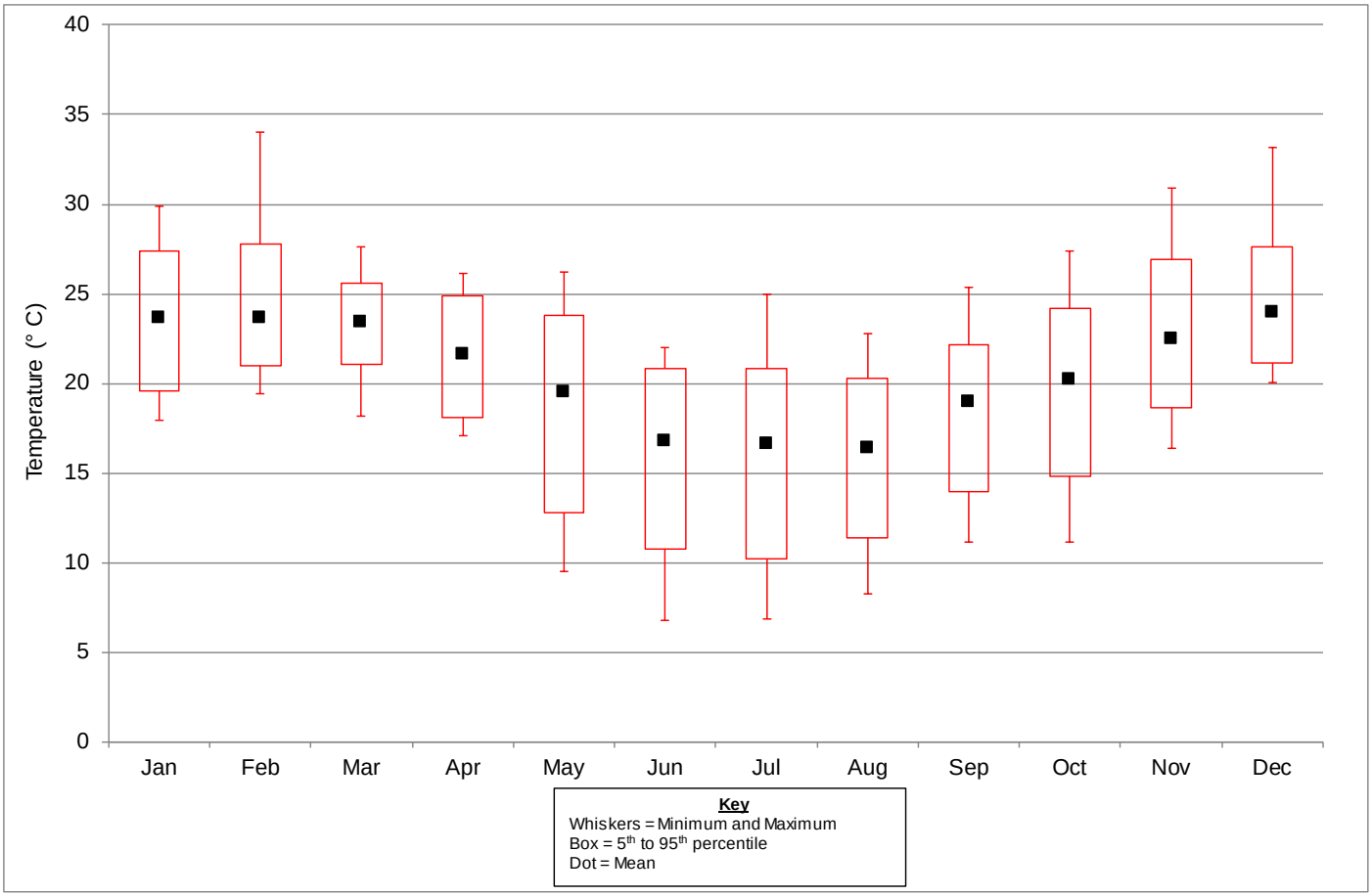


Figure A4.5 Box and Whisker plot of monthly temperature for the Site as generated by CALMET

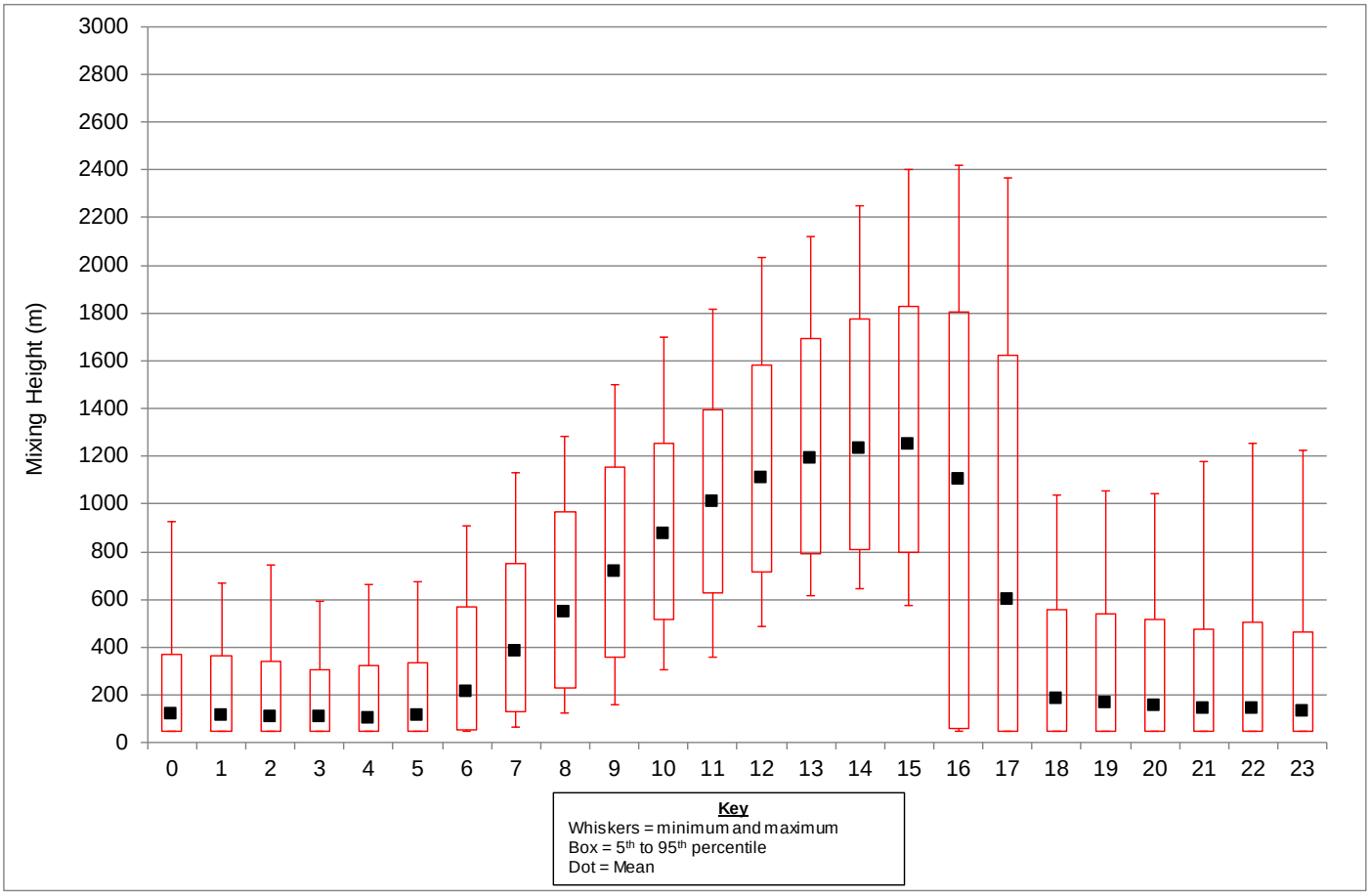


Figure A4.6 Box and Whisker plot of diurnal mixing height for the Site as generated by CALMET

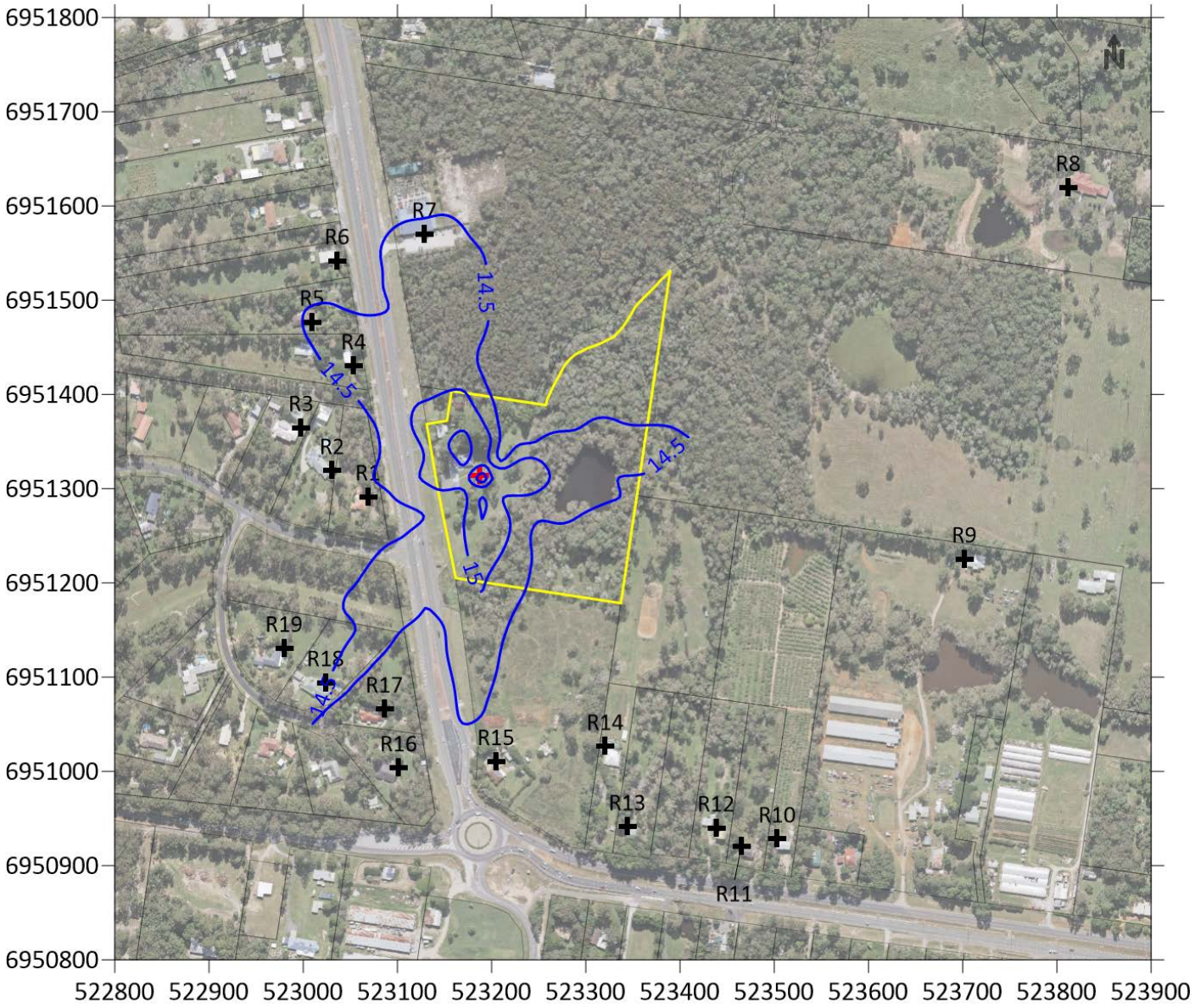
ATTACHMENT 5

Predicted Air Pollutant Concentrations
Tabulated Results for All Sensitive Receptors

Pollutant	Averaging time	Concentrations at Sensitive Receptors (µg/m^3)																		Air Quality Guideline (µg/m^3)
		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	
Acetaldehyde	1 hour	0.0016	0.0013	0.0012	0.0016	0.0015	0.0014	0.0016	0.0007	0.0006	0.0005	0.0005	0.0005	0.0008	0.0009	0.0012	0.0017	0.0016	0.0014	0.0010	42
Antimony	1 hour	0.0004	0.0003	0.0003	0.0004	0.0003	0.0003	0.0004	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004	0.0004	0.0003	0.0002	9
Arsenic	1 hour	3.7E-04	2.9E-04	2.8E-04	3.8E-04	3.4E-04	3.3E-04	3.6E-04	1.6E-04	1.4E-04	1.3E-04	1.1E-04	1.2E-04	1.8E-04	2.0E-04	2.7E-04	3.9E-04	3.6E-04	3.2E-04	2.3E-04	0.09
	Annual	1.9E-05	1.7E-05	1.5E-05	2.2E-05	1.5E-05	1.5E-05	1.8E-05	2.3E-06	1.9E-06	1.2E-06	1.5E-06	1.7E-06	3.4E-06	4.7E-06	1.1E-05	1.1E-05	1.3E-05	1.0E-05	6.6E-06	6.0E-03
Benzo(a)pyrene (as marker for PAH)	Annual	6.1E-07	4.8E-07	4.6E-07	6.2E-07	5.6E-07	5.4E-07	5.9E-07	2.6E-07	2.2E-07	2.1E-07	1.9E-07	1.9E-07	2.9E-07	3.2E-07	4.5E-07	6.4E-07	5.9E-07	5.2E-07	3.8E-07	3.0E-04
Beryllium	1 hour	1.7E-05	1.4E-05	1.3E-05	1.8E-05	1.6E-05	1.5E-05	1.7E-05	7.4E-06	6.4E-06	5.9E-06	5.3E-06	5.4E-06	8.3E-06	9.2E-06	1.3E-05	1.8E-05	1.7E-05	1.5E-05	1.1E-05	4.0E-03
Cadmium	Annual	6.9E-06	6.2E-06	5.5E-06	8.1E-06	5.7E-06	5.4E-06	6.7E-06	8.3E-07	7.0E-07	4.6E-07	5.4E-07	6.1E-07	1.3E-06	1.7E-06	4.0E-06	4.1E-06	4.9E-06	3.7E-06	2.4E-06	5.0E-03
Carbon monoxide	8 hours	183.4	182.7	181.9	183.0	182.5	182.3	183.0	180.9	180.7	180.5	180.6	180.6	180.9	181.2	182.3	182.7	182.1	182.8	181.9	11,000
Chromium VI	1 hour	1.7E-04	1.4E-04	1.3E-04	1.8E-04	1.6E-04	1.5E-04	1.7E-04	7.4E-05	6.4E-05	5.9E-05	5.3E-05	5.4E-05	8.3E-05	9.2E-05	1.3E-04	1.8E-04	1.7E-04	1.5E-04	1.1E-04	0.09
Copper fumes	1 hour	3.4E-04	2.6E-04	2.5E-04	3.4E-04	3.1E-04	3.0E-04	3.3E-04	1.4E-04	1.2E-04	1.1E-04	1.0E-04	1.0E-04	1.6E-04	1.8E-04	2.5E-04	3.6E-04	3.3E-04	2.9E-04	2.1E-04	3.7
Dioxins and furans (as TCDD TEF)	1 hour	1.7E-08	1.4E-08	1.3E-08	1.8E-08	1.6E-08	1.5E-08	1.7E-08	7.4E-09	6.4E-09	5.9E-09	5.3E-09	5.4E-09	8.3E-09	9.2E-09	1.3E-08	1.8E-08	1.7E-08	1.5E-08	1.1E-08	2.0E-06
Formaldehyde	30-minute	5.4E-04	4.2E-04	4.1E-04	5.5E-04	4.9E-04	4.8E-04	5.2E-04	2.3E-04	2.0E-04	1.8E-04	1.6E-04	1.7E-04	2.6E-04	2.9E-04	4.0E-04	5.7E-04	5.2E-04	4.6E-04	3.4E-04	110
	24 hours	1.5E-04	1.4E-04	1.1E-04	2.3E-04	1.9E-04	1.4E-04	2.0E-04	4.5E-05	4.1E-05	2.6E-05	2.8E-05	2.9E-05	4.8E-05	7.1E-05	1.3E-04	1.6E-04	1.3E-04	1.9E-04	1.4E-04	54
Hydrogen chloride	1 hour	0.9	0.7	0.7	0.9	0.8	0.8	0.9	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.7	0.9	0.9	0.8	0.6	140
Hydrogen Fluoride	24-hour	3.0E-03	2.8E-03	2.1E-03	4.5E-03	3.7E-03	2.8E-03	3.8E-03	8.6E-04	8.0E-04	5.0E-04	5.4E-04	5.7E-04	9.4E-04	1.4E-03	2.5E-03	3.0E-03	2.5E-03	3.6E-03	2.6E-03	2.9
	30 day	8E-04	9E-04	8E-04	9E-04	7E-04	7E-04	1E-03	1E-04	1E-04	5E-05	6E-05	6E-05	1E-04	2E-04	6E-04	7E-04	7E-04	5E-04	3E-04	0.84
	90 day	5E-04	6E-04	5E-04	8E-04	6E-04	6E-04	8E-04	1E-04	7E-05	4E-05	5E-05	5E-05	1E-04	2E-04	4E-04	5E-04	5E-04	4E-04	2E-04	0.5 / 0.1
Lead	Annual	4.1E-05	3.7E-05	3.3E-05	4.9E-05	3.4E-05	3.2E-05	4.0E-05	5.0E-06	4.2E-06	2.7E-06	3.2E-06	3.7E-06	7.5E-06	1.0E-05	2.4E-05	2.4E-05	2.9E-05	2.2E-05	1.4E-05	0.5
Nickel	Annual	2.4E-05	2.2E-05	1.9E-05	2.8E-05	2.0E-05	1.9E-05	2.3E-05	2.9E-06	2.4E-06	1.6E-06	1.9E-06	2.1E-06	4.3E-06	6.0E-06	1.4E-05	1.4E-05	1.7E-05	1.3E-05	8.3E-06	0.02
Nitrogen dioxide	1 hour	28.0	27.6	27.6	28.0	27.8	27.8	27.9	27.0	26.9	26.9	26.8	26.8	27.1	27.2	27.5	28.1	27.9	27.7	27.4	250
	Annual	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.3	10.3	62
PM_{10}	24 hours	14.4	14.4	14.3	14.6	14.5	14.4	14.5	14.1	14.1	14.1	14.1	14.1	14.1	14.2	14.4	14.4	14.4	14.5	14.4	50
	Annual	12.3	12.3	12.2	12.3	12.2	12.2	12.3	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	25
$PM_{2.5}$	24 hours	6.4	6.4	6.3	6.6	6.5	6.4	6.5	6.1	6.1	6.1	6.1	6.1	6.1	6.2	6.4	6.4	6.4	6.5	6.4	25
	Annual	5.3	5.3	5.2	5.3	5.2	5.2	5.3	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	8
Sulphur dioxide	1 hour	7.2	6.8	6.7	7.3	7.1	7.0	7.2	6.1	5.9	5.9	5.8	5.8	6.2	6.3	6.7	7.3	7.2	6.9	6.5	570
	24 hours	5.2	5.2	5.0	5.6	5.4	5.2	5.4	4.7	4.7	4.6	4.6	4.6	4.7	4.8	5.1	5.2	5.1	5.4	5.1	230
	Annual	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.7	57

ATTACHMENT 6

CALPUFF Contour Plots

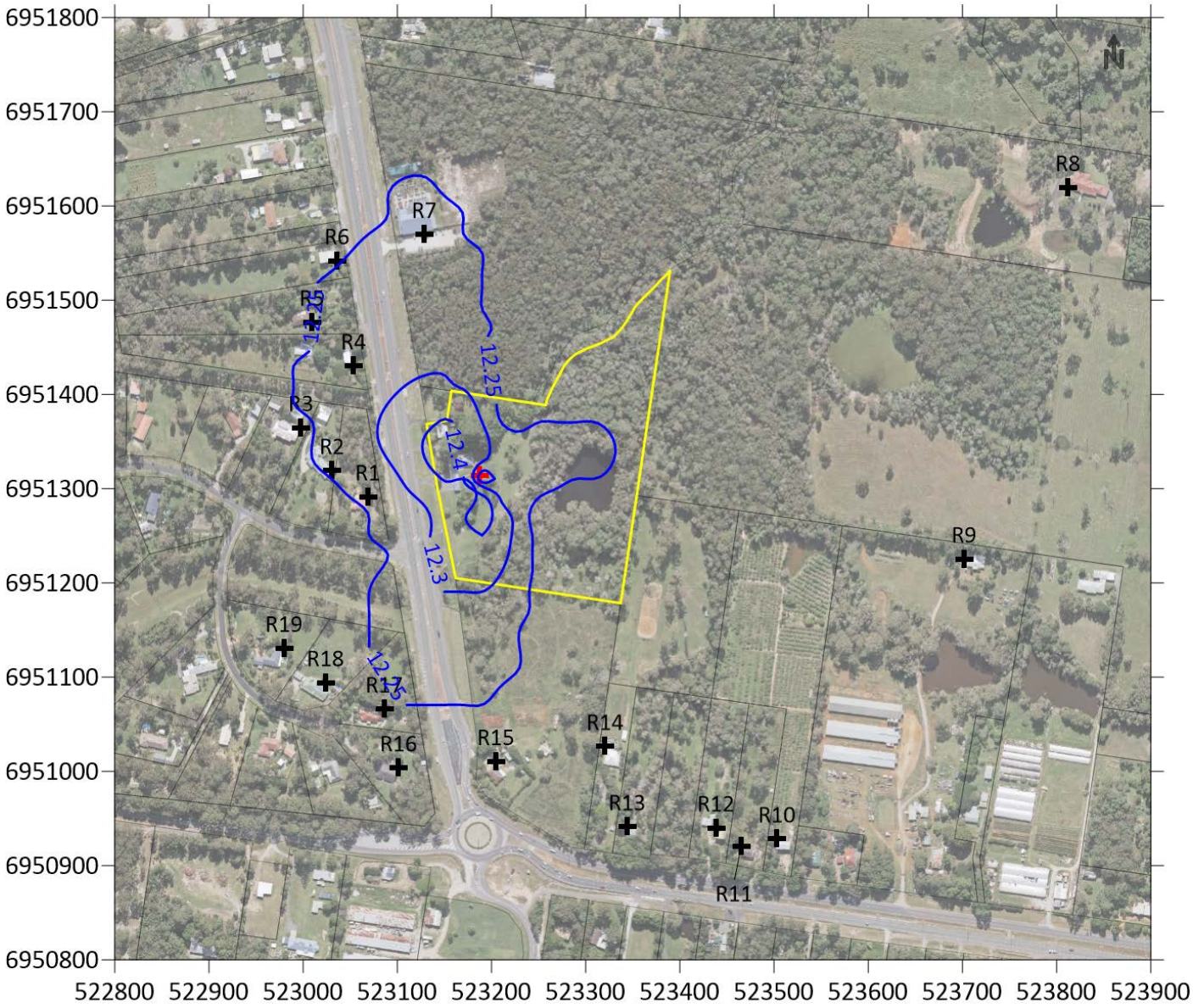


	Sensitive Receptors
	Stack Location

Alexandra Hills 18-156

Maximum PM_{10} 24-hour average ground level concentrations including ambient

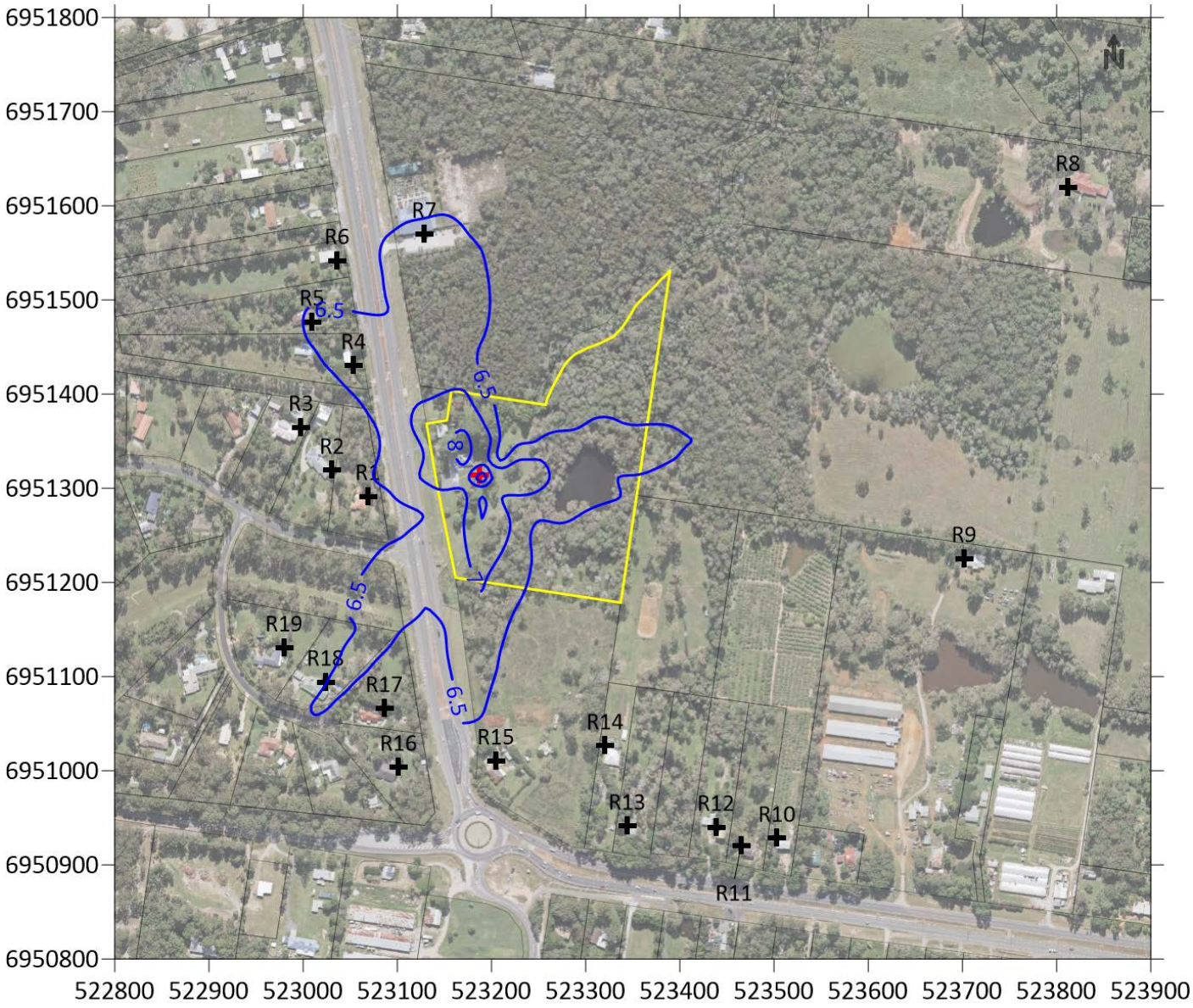
Figure A6.1	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	PM_{10}	24-hour Maximum	50	µg/m³	2020-05-13



Alexandra Hills 18-156

Annual average PM_{10} ground level concentrations including ambient

Figure A6.2	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	PM_{10}	Annual	25	µg/m³	2020-05-13

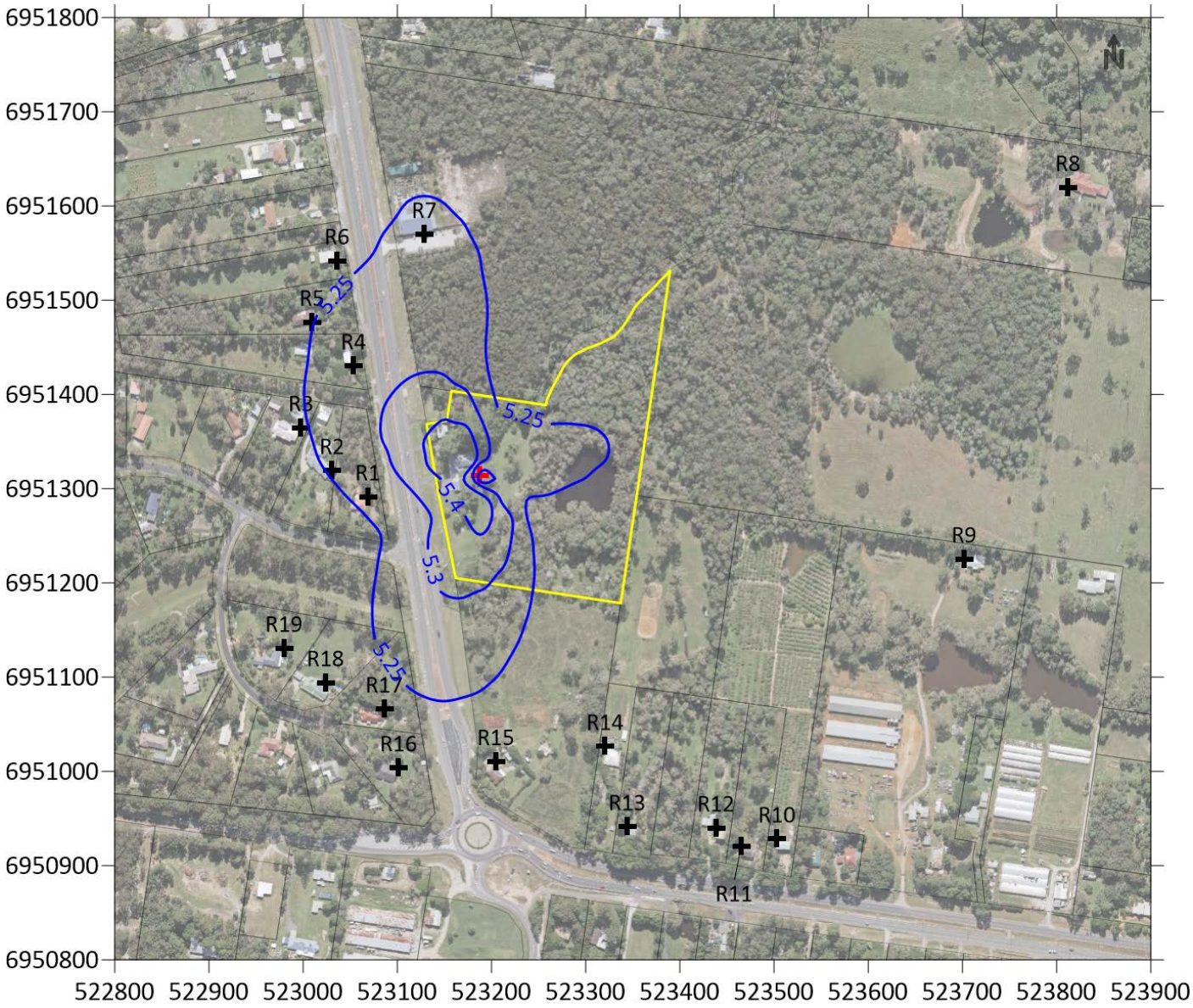


	Sensitive Receptors
	Stack Location

Alexandra Hills 18-156

Maximum $PM_{2.5}$ 24-hour average ground level concentrations including ambient

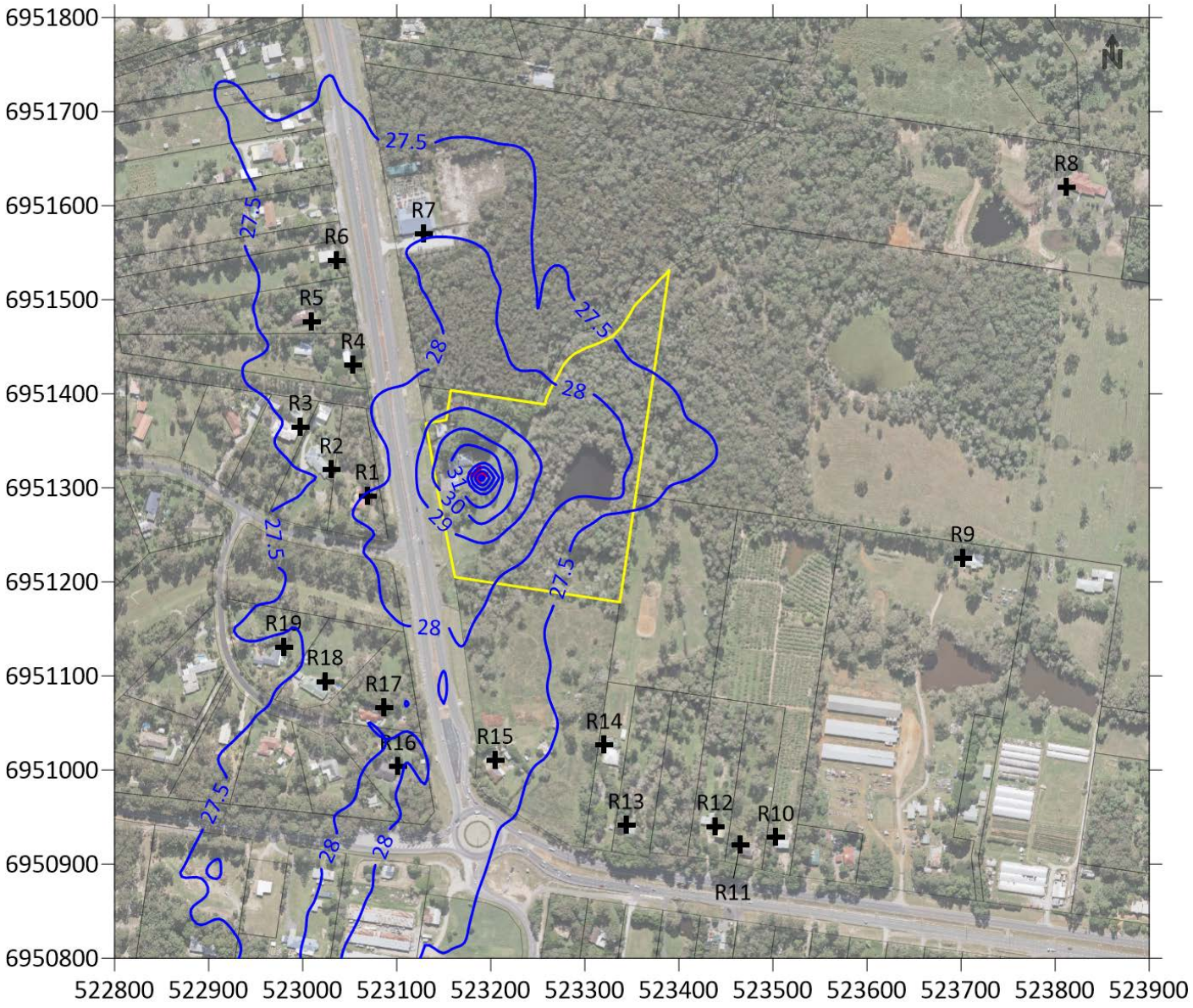
Figure A6.3	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	$PM_{2.5}$	24-hour Maximum	25	µg/m³	2020-05-13



Alexandra Hills 18-156

Annual average $PM_{2.5}$ ground level concentrations including ambient

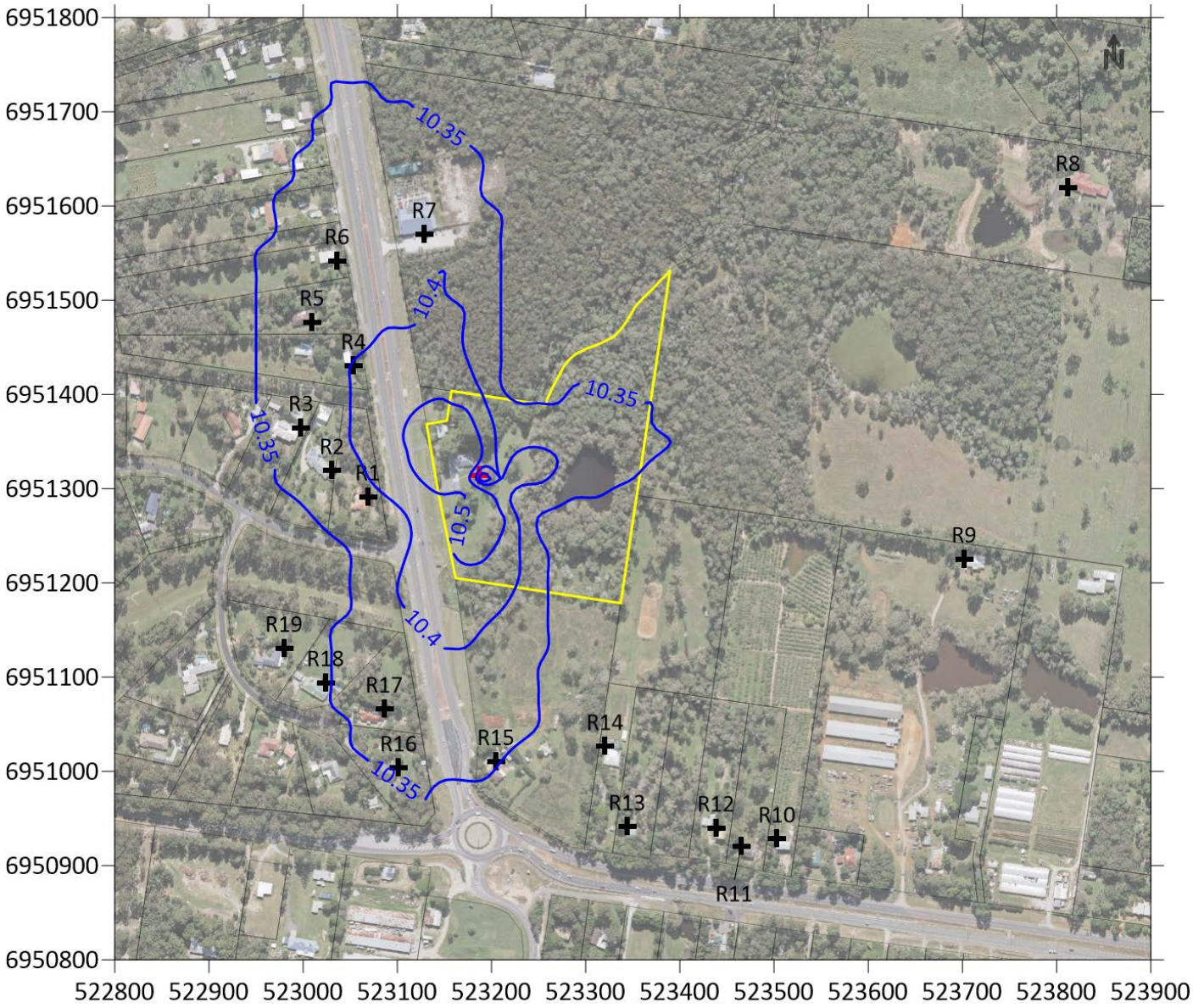
Figure A6.4	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	$PM_{2.5}$	Annual Average	8	µg/m³	2020-05-13



Alexandra Hills 18-156

1-hour average 99.9th percentile ground level concentrations of Nitrogen Dioxide including ambient

Figure A6.5	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	Nitrogen Dioxide	1-hour average 99.9th percentile	250	µg/m³	2020-05-13



	Sensitive Receptors
	Stack Location

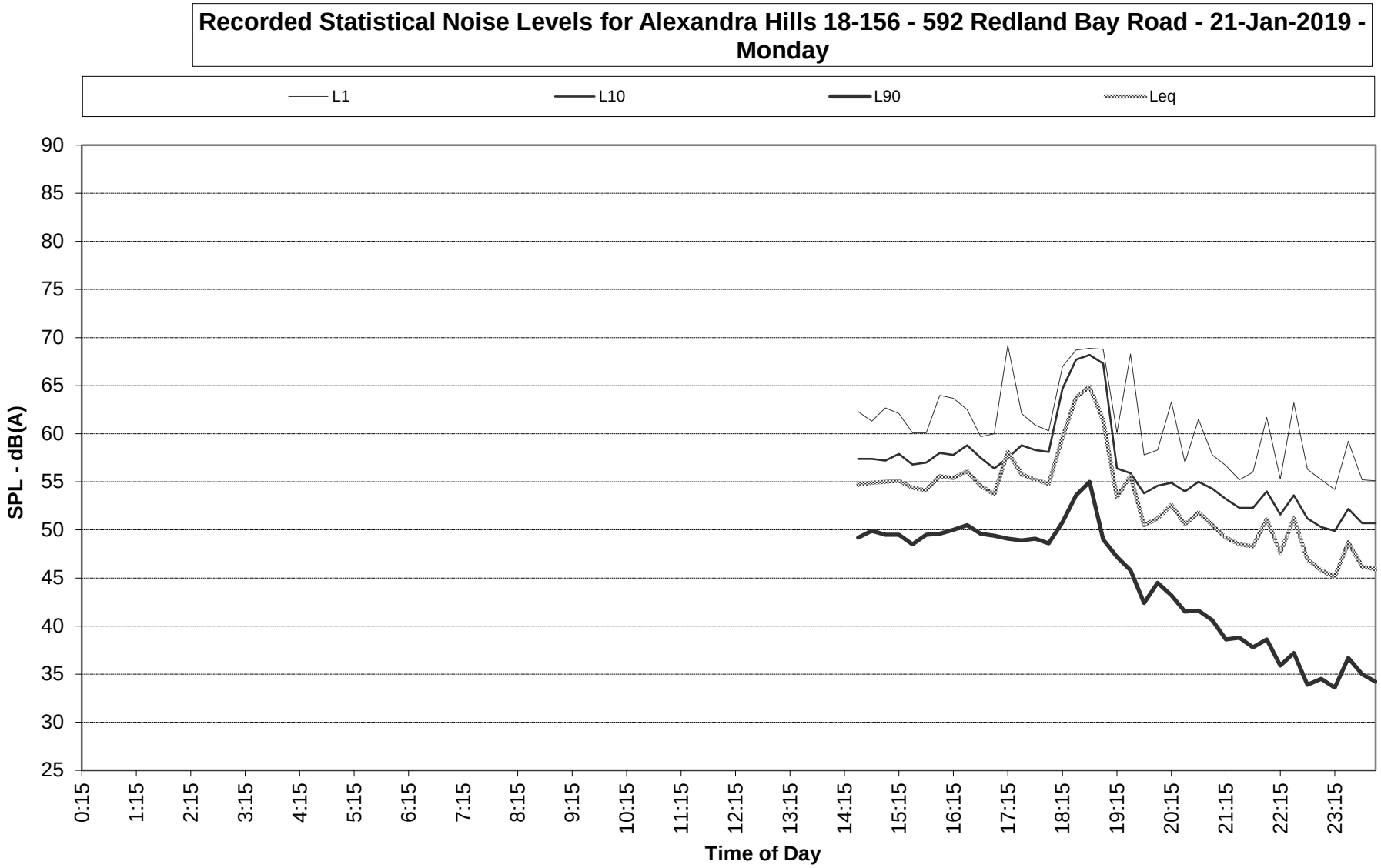
Alexandra Hills 18-156

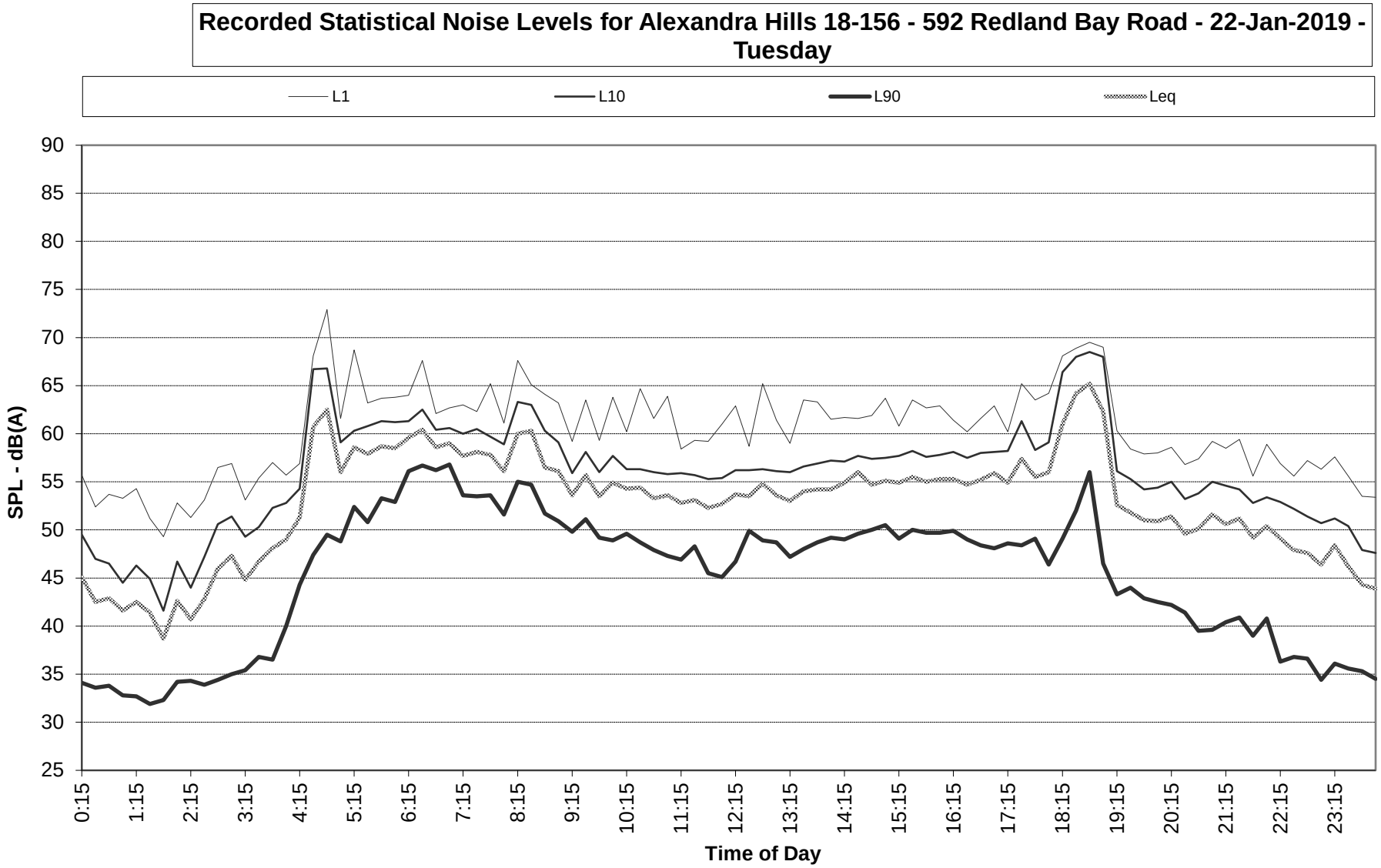
Annual average ground level concentrations of Nitrogen Dioxide including ambient

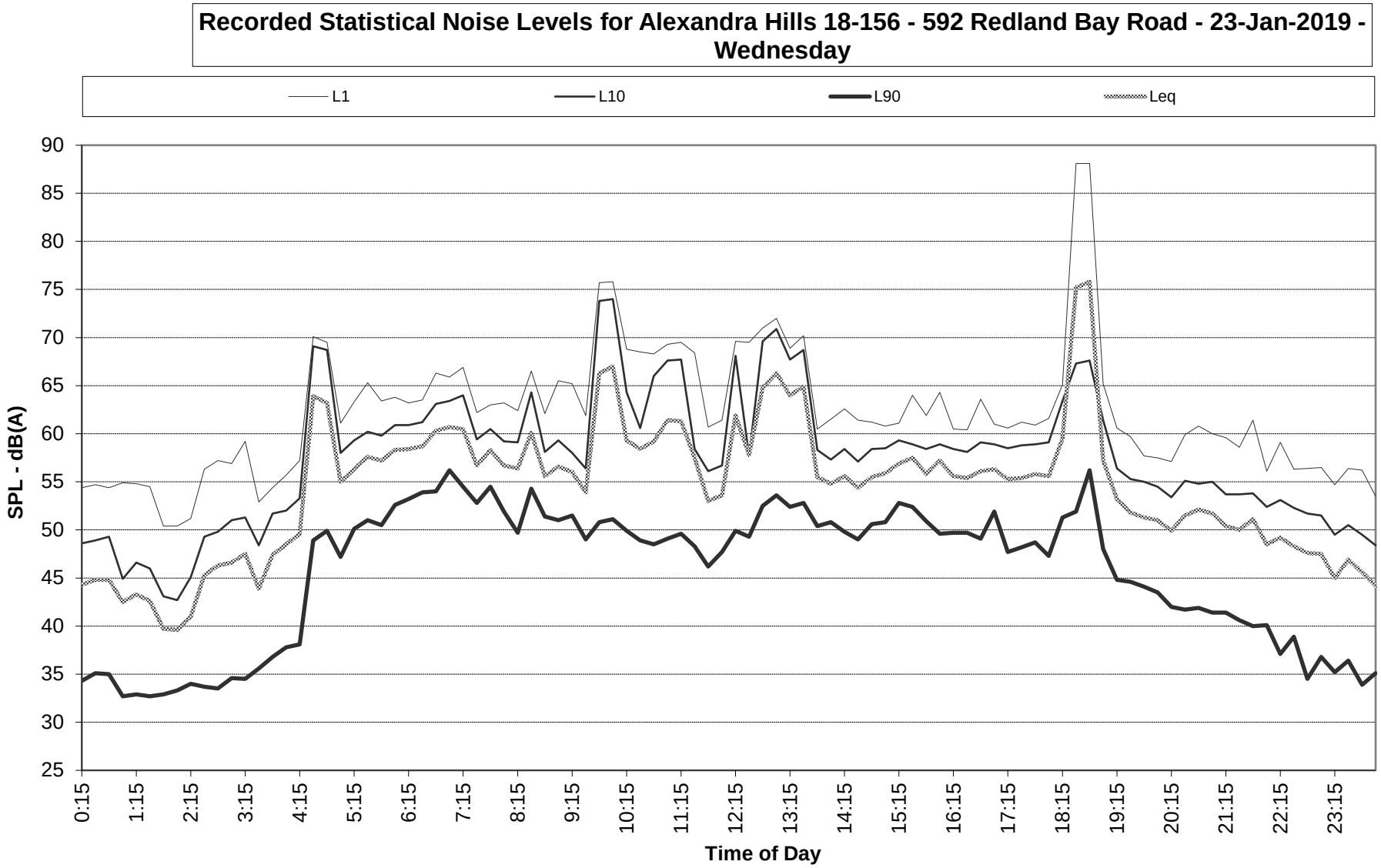
Figure A6.6	Source	Pollutant	Averaging Period	Guideline	Units	Date
mwa ENVIRONMENTAL	Pet Cremator	Nitrogen Dioxide	Annual Average	62	µg/m³	2020-05-13

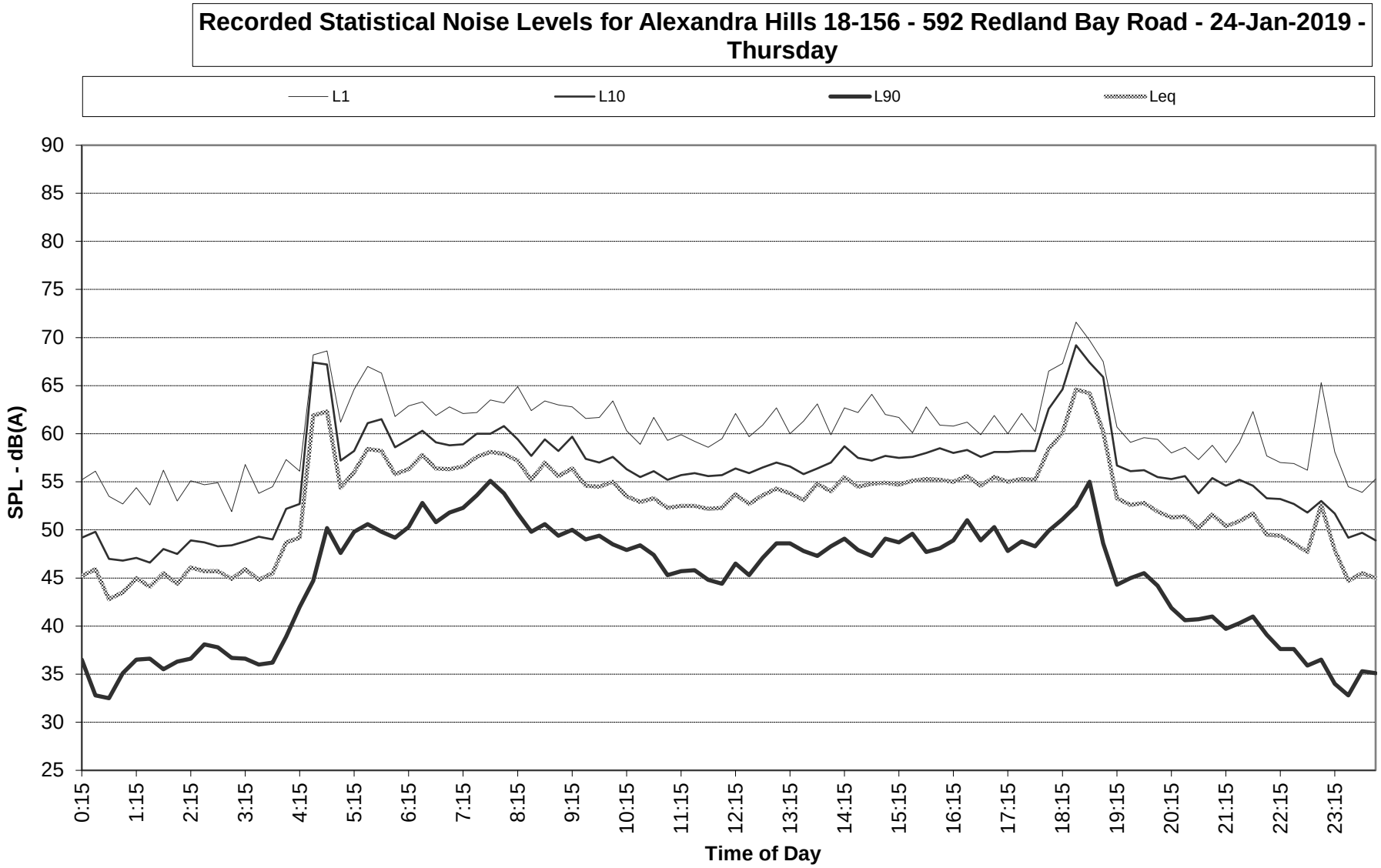
ATTACHMENT 7

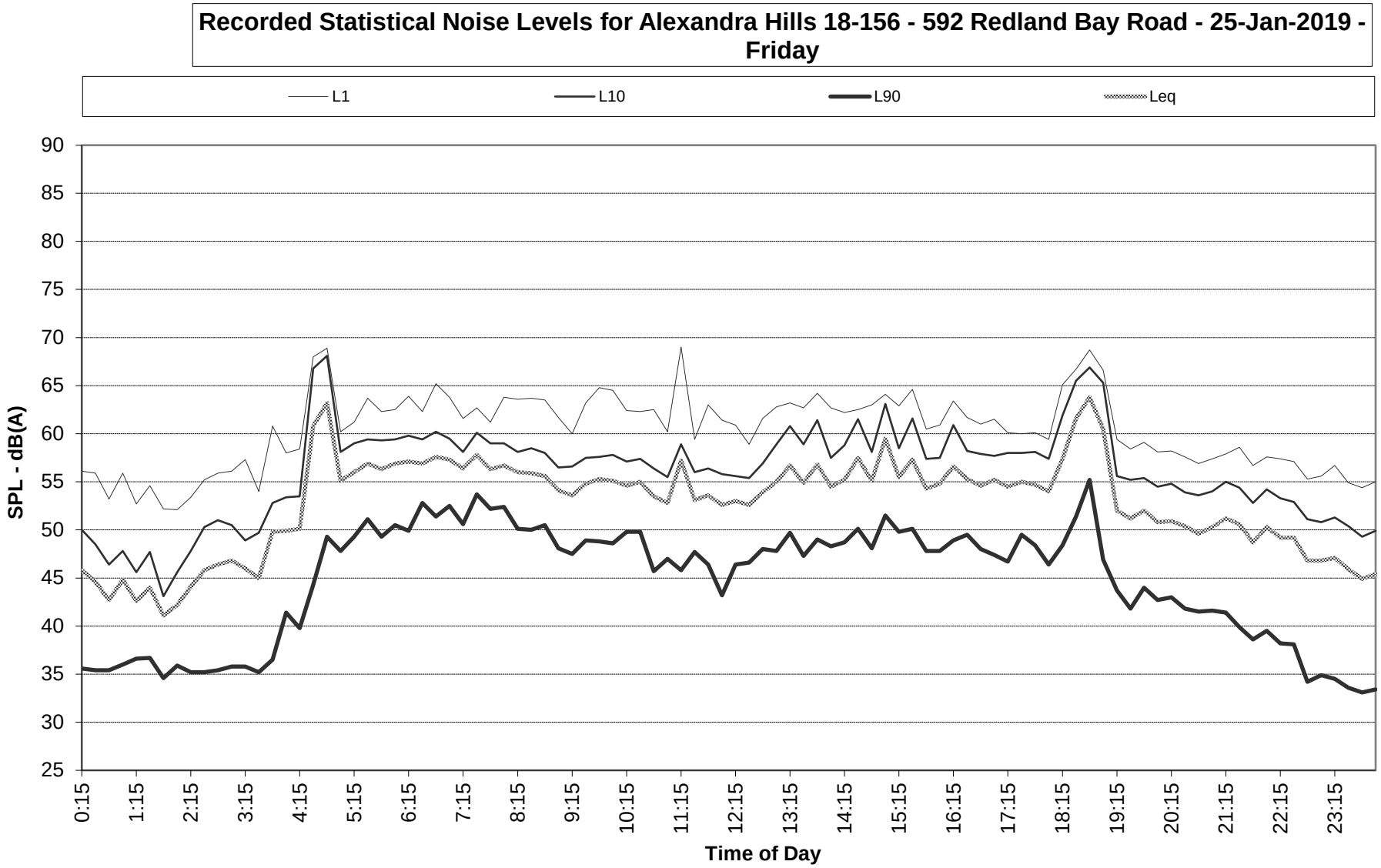
Noise Datalogging Charts


Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 21-Jan-2019 - Monday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
1:15
2:15
3:15
4:15
5:15
6:15
7:15
8:15
9:15
10:15
11:15
12:15
13:15
14:15
15:15
16:15
17:15
18:15
19:15
20:15
21:15
22:15
23:15
Time of Day

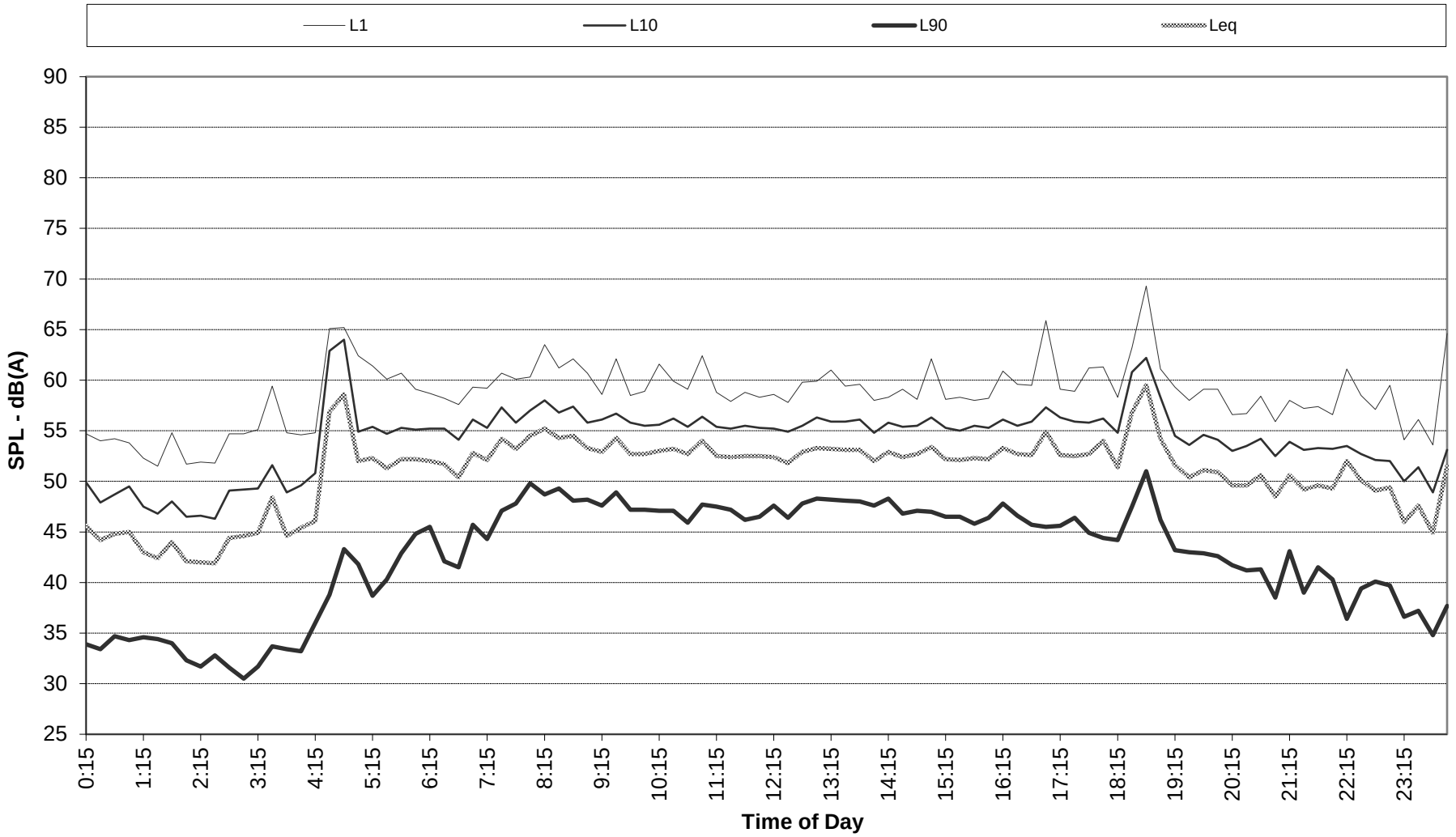

Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 22-Jan-2019 - Tuesday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
1:15
2:15
3:15
4:15
5:15
6:15
7:15
8:15
9:15
10:15
11:15
12:15
13:15
14:15
15:15
16:15
17:15
18:15
19:15
20:15
21:15
22:15
23:15
Time of Day

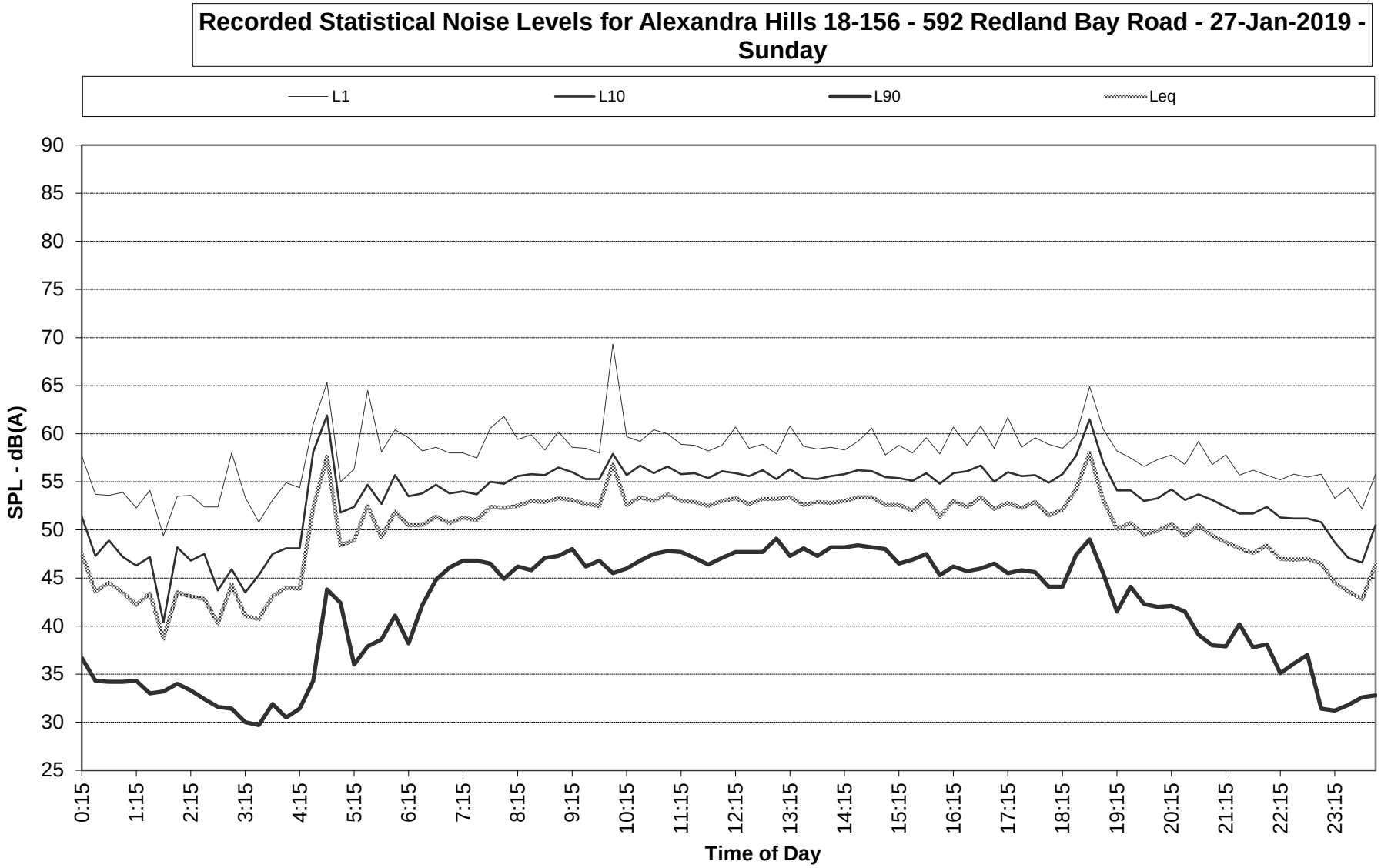

Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 23-Jan-2019 - Wednesday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
1:15
2:15
3:15
4:15
5:15
6:15
7:15
8:15
9:15
10:15
11:15
12:15
13:15
14:15
15:15
16:15
17:15
18:15
19:15
20:15
21:15
22:15
23:15
Time of Day


Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 24-Jan-2019 - Thursday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
1:15
2:15
3:15
4:15
5:15
6:15
7:15
8:15
9:15
10:15
11:15
12:15
13:15
14:15
15:15
16:15
17:15
18:15
19:15
20:15
21:15
22:15
23:15
Time of Day


Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 25-Jan-2019 - Friday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
1:15
2:15
3:15
4:15
5:15
6:15
7:15
8:15
9:15
10:15
11:15
12:15
13:15
14:15
15:15
16:15
17:15
18:15
19:15
20:15
21:15
22:15
23:15
Time of Day

Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 26-Jan-2019 - Saturday




Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 27-Jan-2019 - Sunday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
25
0:15
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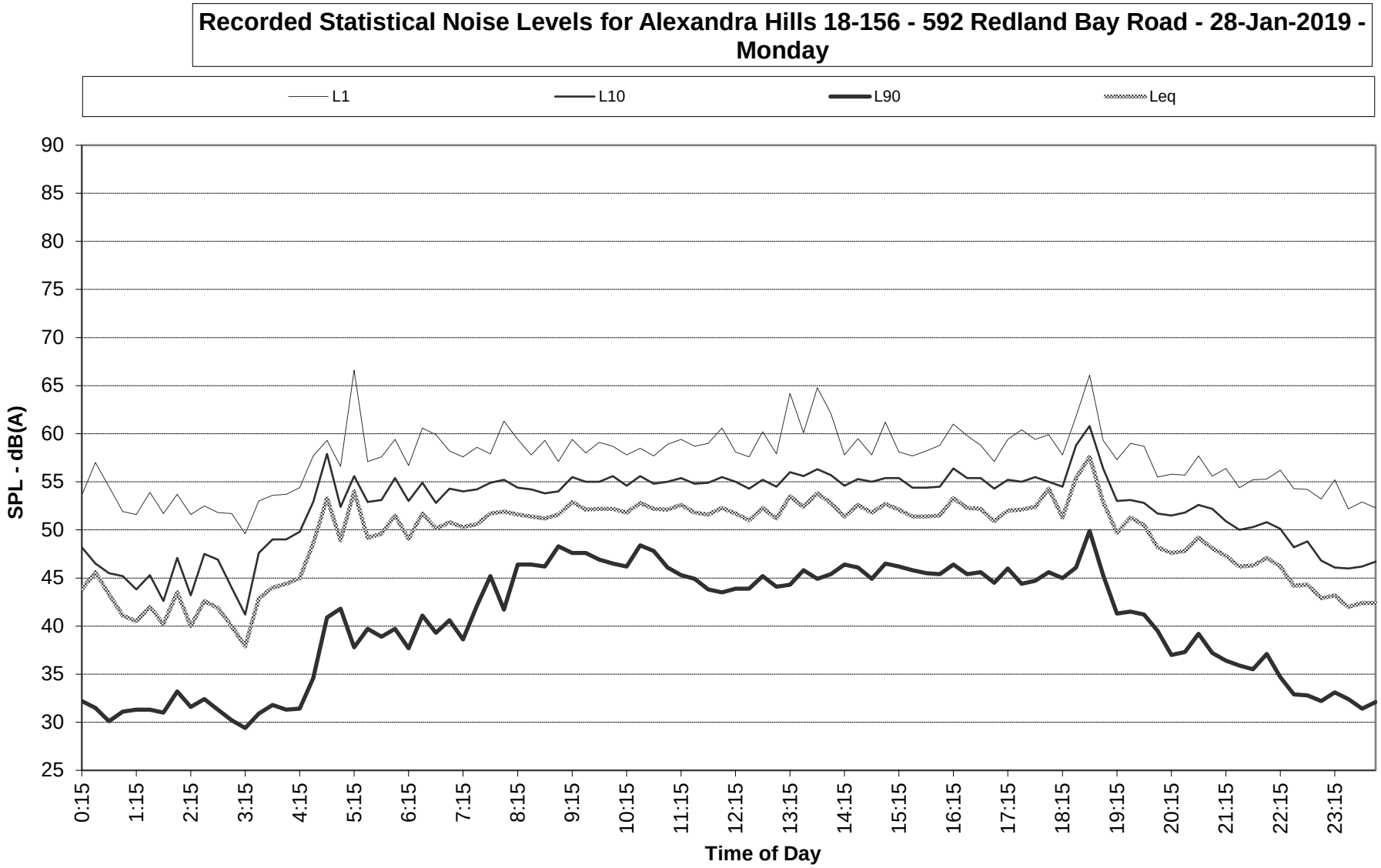
Time of Day


Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 28-Jan-2019 - Monday
L1
L10
L90
Leq
SPL - dB(A)
90
85
80
75
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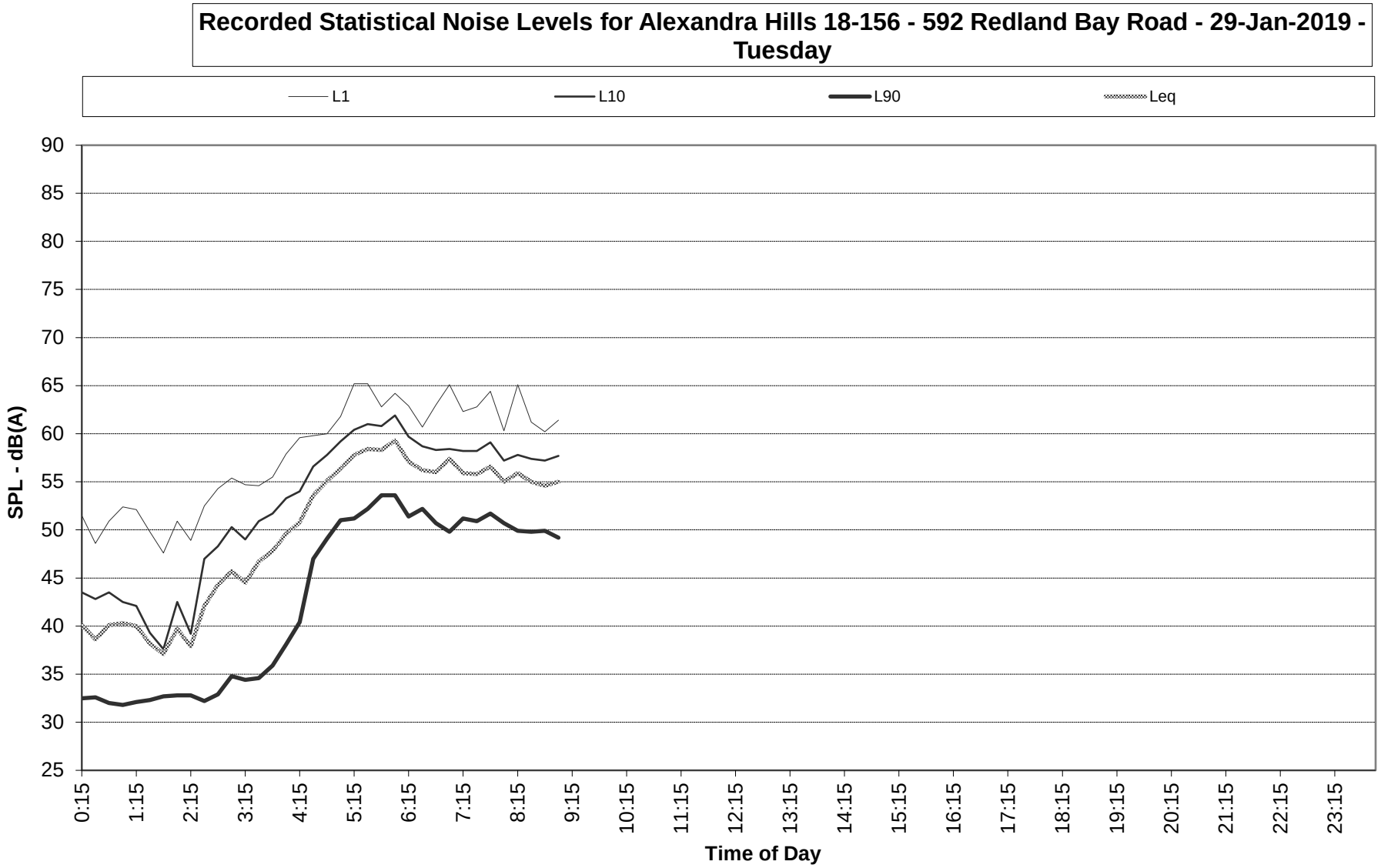
Time of Day


Recorded Statistical Noise Levels for Alexandra Hills 18-156 - 592 Redland Bay Road - 29-Jan-2019 - Tuesday
L1
L10
L90
Leq
SPL - dB(A)
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85
80
75
70
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55
50
45
40
35
30
25
0:15
1:15
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Time of Day

ATTACHMENT 4
Complaints Form

Complaint Record

Pet Crematorium

Date and Time: _____

How complaint received? (Please circle): Phone Letter Email In Person

Complainant's Name: _____

Complainant's Address/contact details: _____

Description of Complaint/Incident:

_____

_____

_____

_____

Actions Undertaken:

_____

_____

_____

_____

_____

Person Completing Form – Name/Title: _____

Signed: _____ **Date**: _____

Review of Actions Undertaken:

_____

_____

_____

ATTACHMENT 9

Appeal 3742 of 2019 – Brinkworth v Redland City Council – Draft conditions

ASSESSMENT MANAGER CONDITIONS	TIMING
1. Comply with all conditions of this approval, at no cost to Council, at the timing periods specified in the right-hand column. Where the column indicates that the condition is an ongoing condition, that condition must be complied with for the life of the development.	
Approved Plans and Documents	
2. Undertake the development in accordance with the approved plans and documents referred to in Table 1, subject to the conditions of this approval and any notations by Council on the plans.	Prior to the use commencing and ongoing.

Plan/Document Title	Reference Number	Prepared By	Plan/Doc. Date
Site Plan (as amended in red)	SP01 Rev C	Nic Sheldrake	01/05/2020
Floor Plan	SP02 Rev A	Nic Sheldrake	22/02/2019
Summary of Cremation Unit Parameters	-	The Applicant	No date.
Preliminary Arborists Report	TPZ 9.20	TPZ Project Arborists	05/09/2018
Landscape Concept Plan – Site Plan	2001-003-SK001 Rev D	LAUDink	01/05/2020
Landscape Concept Plan – Plant Species Schedule, Images & Notes	2001-003-SK001 Rev C	LAUDink	01/05/2020

Table 1: Approved Plans and Documents

Conditioned Works Assessment	
3. Submit to Council, and receive approval for, Conditioned Works Assessment for the documents and works referred to in Table 2:	Prior to site works commencing.

Document or Works Item	Assessment Criteria
Air Quality and Noise Impact Assessment Report	• Environmental management zone code • City Plan Planning Scheme Policy 6 – Environmental emissions
Operational Management Plan	• Environmental management zone code • City Plan Planning Scheme Policy 6 – Environmental emissions

Table 2: Conditioned Works Assessment

4.	Comply with all conditions and approved plans in the Conditioned Works Approval.	Prior to the use commencing.
Inspections		
5.	Arrange with Council for the following inspections to be carried out at the relevant time in accordance with Table 4: Inspections below. **Table 4: Inspections** For the pre-start, on maintenance/compliance and off maintenance inspections, at least **five (5) business days** notice must be given to Council. For all other inspections, a minimum of **24 hours** notice must be given to Council. The development must pass a Compliance Inspection before the issue of a Certificate of Classification. *Advice Note: The Civil Consulting Engineer should inspect the works and satisfy themselves that the works are satisfactory prior to booking the respective inspections. In instances where Council's representative(s) fails an inspection, Council will charge a re-inspection fee prior to re-visiting the site. The cost of this re-inspection is identified in Council's Register of Fees and is reviewed each financial year.*	
Use and Operation		
6.	Interment of remains on-site is not permitted under this approval.	Ongoing.
7.	Operate the crematorium so that a maximum of two (2) employees are working at the business at any one time.	Ongoing.
Air Quality		
8.	The activity shall not result in the discharge of visible emissions from the cremator exhaust with an opacity in excess of 20 percent for an aggregate of more than 5 minutes in any 1-hour period or more than 20 minutes in any 24-hour period.	Ongoing.
9.	Submit to Council, and receive approval for, a revised operational management plan for Conditioned Works Assessment in accordance with the assessment criteria listed in Table 2: Conditioned Works of this approval. As a minimum, the plan must include: • Emission concentration limits for the operation of the cremator;	As part of the request for Conditioned Works Assessment.

Inspection	Timing
Compliance Inspection	On completion of the development in accordance with the approval and its conditions.

	• Post commissioning test for air pollutants; and • A testing regime every six months for the first year of operation and then annually thereafter.	
10.	Submit to Council, and receive approval for a revised Air Quality and Noise Impact Assessment for Conditioned Works Assessment in accordance with the assessment criteria listed in Table 2: Conditioned Works of this approval. The plan must include: • Emission concentration limits for the operation of the cremator.	As part of the request for Conditioned Works Assessment.
11.	Operate the use in accordance with an approved operational management plan.	Ongoing.
Hours of Operation		
12.	Operate the pet crematorium between the hours of 8:00am to 5:00pm Monday to Friday only, excluding public holidays.	Ongoing.
Design		
13.	Locate, design and install outdoor lighting, where required, to minimise the potential for light spillage to cause nuisance to neighbours.	Prior to the use commencing and ongoing.
Parking		
14.	Provide a minimum of seven (7) car parks in accordance with the approved site plan. Access to car parking spaces, bicycle spaces, bin bays, vehicle loading and manoeuvring areas and driveways must remain unobstructed and available during the approved hours of operation. Loading and unloading operations must be conducted wholly within the site.	Prior to the use commencing and ongoing.
General		
15.	Provide temporary drainage during the building construction phase such that discharge from all constructed roofs and paved areas is disposed of to a lawful point of discharge in accordance with the Queensland Urban Drainage Manual (QUDM). Maintain the temporary system for the duration of the building works.	During construction.
16.	Notify Council within 24 hours of any damage to Council infrastructure as a result of construction activities. Rectify the damage in consultation with Council.	As indicated in the condition.

17.	Undertake the development works so that there is no risk to public safety at any time on the site, adjacent public land, road reserve or private property. Should the site be unattended or abandoned, public safety must still be maintained.	During the construction phase.
18.	Rectify any damage done to the road verge during construction, including topsoiling and re-turfing.	Prior to the issue of a Certificate of Classification.
Stormwater Management		
19.	Manage stormwater discharge from the site in accordance with the Redland Planning Scheme Policy 2 – Infrastructure Works, so as to not cause an actionable nuisance to adjoining properties.	Prior to the issue of a Certificate of Classification and ongoing.
Utilities		
20.	Pay the cost of any alterations to existing public utility mains, services or installations due to building and works in relation to the proposed development, or any works required by conditions of this approval. Any cost incurred by Council must be paid at the time the works occur in accordance with the terms of any cost estimate provided to perform the works, or prior to plumbing final or the use commencing, whichever is the sooner.	At the time of works occurring.
21.	Connect the development to external reticulated water and electricity.	Prior to the issue of a Certificate of Classification.
22.	Provide water connections and water meters in accordance with Council's Standard Drawings. Provide details to Council of the water meters and their locations.	Prior to the issue of a Certificate of Classification.
Waste Management		
23.	Install a screened refuse storage area. The storage area must be impervious, well drained, provided with a hose cock, enclosed and illuminated for night time use.	Prior to the issue of a Certificate of Classification and ongoing.
Erosion and Sediment Control		
		During the construction phase.

24.	Design, implement and maintain measures and practices in accordance with "Best Practice Erosion and Sediment Control" published by the International Erosion Control Association (Australasian Chapter) (2008).	
25.	Implement dust control measures at each phase of site development and operation in accordance with IECA (2008) Best Practice Erosion and Sediment Control.	During construction phase.
Vegetation Management		
26.	Undertake remedial work and protect those trees identified within the approved Preliminary Arborists Report, dated 01/03/2019 by implementing tree protection measures in accordance with Australian Standard AS4970-2009 – Protection of Trees on Development Sites. All tree protection measures must be in place prior to any development works commencing. Note: Any remedial work should be undertaken by a suitably qualified arboricultural contractor with a minimum AQF Level 5 Qualification in Horticulture (Arboriculture) or Arboriculture and in accordance with the recommendations in the Preliminary Arborists Report.	Prior to works commencing and during the construction phase.
Landscaping		
27.	Landscape the site in accordance with the approved plan(s). Do not use any species listed as declared or non-declared weed species in the Redlands Coast Biosecurity Plan 2018-2023.	Prior to the use commencing.
28.	Provide organic mulch to all garden bed areas at a minimum depth of 100mm.	Prior to the use commencing.

ADDITIONAL APPROVALS

The following further **Development Permits** are necessary to allow the development to be carried out.

- Building Works approval.

Further approvals, other than a Development Permit, are also required for your development. This includes, but is not limited to, the following:

- Conditioned Works Assessment as detailed in Table 2 of the conditions.
- Plumbing and drainage works.
- Installation of advertising devices.

REFERRAL AGENCY CONDITIONS

- **Queensland Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)**
  Refer to the attached correspondence from the Department dated 3 September 2018 (DSDMIP reference 1808-6820 SRA).

ASSESSMENT MANAGER ADVICE

- **Advertising Devices**
  Installation of advertising devices are regulated by the Redland City Council Subordinate Local Law No. 1.4. Any advertising device proposed for the premises may require approval under the Local Law.

  Further information on advertising devices can be obtained from the Redland City Council website:
  https://www.redland.qld.gov.au/info/20166/business_support_and_advice/299/advertising_signage

- **Live Connections**
  Redland Water is responsible for all live water and wastewater connections. Contact *must* be made with Redland Water to arrange live works associated with the development.

  Further information can be obtained from Redland Water on 07 3829 8999.

- **Bushfire Hazard**
  Council's Bushfire Hazard Overlay identifies the site as subject to medium level bushfire hazard. Further advice on this matter should be sought from a building certifier.

- **Coastal Processes and Sea Level Rise**
  Please be aware that development approvals issued by Redland City Council are based upon current lawful planning provisions which do not necessarily respond immediately to new and developing information on coastal processes and sea level rise. Independent advice about this issue should be sought.

- **Hours of Construction**
  Please be aware that you are required to comply with the *Environmental Protection Act* in regards to noise standards and hours of construction.

- **Services Installation**
  It is recommended that where the installation of services and infrastructure will impact on the location of existing vegetation identified for retention, an experienced and qualified arborist that is a member of the Australian Arborist Association or equivalent association, be commissioned to provide impact reports and on site supervision for these works.

- **Fire Ants**

  Areas within Redlands Coast have been identified as having an infestation of the Red Imported Fire Ant (RIFA). Biosecurity Queensland should be notified on 13 25 23 of proposed development(s) occurring in the Fire Ant Restricted Area before earthworks commence. It should be noted that works involving movements of soil associated with earthworks may be subject to movement controls and failure to obtain necessary approvals from Biosecurity Queensland is an offence. It is a legal obligation to report any sighting or suspicion of fire ants within 24 hours to Biosecurity Queensland on 13 25 23. The Fire Ant Restricted Area as well as general information can be viewed on the Department of Agriculture and Fisheries (DAF) website www.daf.qld.gov.au/fireants

- **Cultural Heritage**

  The *Aboriginal Cultural Heritage Act 2003* requires anyone who carries out a land use activity to exercise a duty of care. Further information on cultural heritage duty of care is available on the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) website: https://www.datsip.qld.gov.au/resources/datsima/people-communities/cultural-heritage/cultural-heritage-duty-care.pdf

  The DATSIP has established a register and database of recorded cultural heritage matters, which is also available on the Department's website: https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-search-request

  Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) is the registered cultural heritage body in the Redland City local government area. It is recommended you consult with QYAC in relation to aboriginal and cultural heritage matters prior to the commencement of works on site. QYAC can be contacted on 07 3415 2816 or admin@QYAC.net.au

  Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during construction or operation of the development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. Please contact DATSIP for further information.

- **Fauna Protection**

  It is recommended an accurate inspection of all potential wildlife habitats be undertaken prior to removal of any vegetation on site. Wildlife habitat includes trees (canopies and lower trunk) whether living or dead, other living vegetation, piles of discarded vegetation, boulders, disturbed ground surfaces, etc. It is recommended that you seek advice from the Queensland Parks and Wildlife Service if evidence of wildlife is found.

- **Environment Protection and Biodiversity Conservation Act**

Under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act* (the EPBC Act), a person must not take an action that is likely to have a significant impact on a matter of national environmental significance without Commonwealth approval. Please be aware that the listing of the Koala as **vulnerable** under this Act may affect your proposal. Penalties for taking such an action without approval are significant. If you think your proposal may have a significant impact on a matter of national environmental significance, or if you are unsure, please contact Environment Australia on 1800 803 772. Further information is available from Environment Australia's website at www.ea.gov.au/epbc

Please note that Commonwealth approval under the EPBC Act is independent of, and will not affect, your application to Council.