Solitaire Robertson

cc. Andrew Guerin

Carterton District Council

PO Box 9, Carterton

24th October 2018

Dear Solitaire,

RE: Further information request under Section 92(1) of the Resource Management Act 1991 for the application for an early childhood Education Centre with onsite remediation

Thank you for Council's patience in this matter.

We have now obtained the further information requested, and the responses from the technical experts are attached:

A. Barclay Traffic Planning – Supplementary Traffic Assessment;
B. EcoAgriLogic Ltd – Detailed Site Investigation Report;
C. Marshall Day Acoustics – Minor amendment to the Assessment of Noise Effects report;
D. EQOnz – Supplementary information regarding the onsite wastewater system.

The Barclay Traffic Planning supplementary report now include assessment of road width, sight distances, traffic speeds and traffic generation. All the information taken account, it is still considered that the proposed childcare and associated traffic will have no more than minor effect on the traffic on Dalefield Road.

The Detailed Site Investigation Report contains data of further analysis and sampling. The sheep dip has been located as most probably under the driveway east of the dwelling. Concentration of arsenic above the Soil Contaminant Standards are located in the area that is currently fenced and is proposed to be planted. There is no contamination in the play area or other land children will have access to. All contaminated land has been identified and isolated.

The Marshall Day Acoustics report has been amended and now includes the correct number of 30 preschool children, 20 of whom would be over two years of age and 10 under two years of age. This was a typing error in the original report and the updated children age split does not change the assessment as the prediction was carried out with the right age split.

Andy Duncan from EQOnz has addressed the concerns raised by Council in the supplementary information provided. There will be no nappie-washing on site, and no commercial bleaches will be used, only domestic cleaning products. A water meter is fitted to the supply, and it will be monitored to estimate wastewater flow production. The initial system assessment is still valid – namely that the

proposed water use is unlikely to be surpassed and the existing septic tank is capable of coping with the proposed use.

Also attached are letters supporting the proposal, that the applicant privately received, and a letter from the applicant.
We hope that the information provided are to Council's satisfaction and we would like now to proceed to a pre-hearing meeting.

Nāku noa, nā

Edita

Edita Babos

Planner/Landscape Architect

06 370 0800 (x708)

Tomlinson & Carruthers

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11 September 2018

Ms Vanessa Potiki
Resource Management Planner
Tomlinson and Carruthers Surveyors Limited
P O Box 246
MASTERTON 5840

Dear Vanessa

PROPOSED CHILDCARE CENTRE AT 683 DALEFIELD ROAD CARTERTON

Thank you for forwarding the Carterton District Council's request for further information in relation to the above application, and copies of relevant submissions on the proposal. I respond as follows.

1. Background

   Lauren Spicer and Diana Cruse have applied for resource consent to establish a child care centre at 683 Dalefield Road, Carterton. Barclay Traffic Planning provided specialist traffic engineering advice as part of preparation for the application.

   The council has now requested further information on the application under Section 92 of the Resource Management Act 1991, and has also received five submissions from neighbours and other interested parties.

2. Council request

   The Council's request is contained in Section 1 of its letter of 31 August 2018. It notes characteristics of Dalefield Road such as width and drainage, and asks for further analysis of likely safety effects.

3. Submissions

   Five submissions have been referred to me for comment, all from neighbours of the subject site. The parties include Mr J and Mrs K Foreman, Monique Leerschool, Mr Tony and Mrs Amanda Robinson, Ms Jill Livestre and Ms Robyn Sivewright.

   I have read the five submissions carefully, and it appears to me that many of the issues raised by the Council are also reflected in the submissions.

   Common issues include width of the road, sight distances, traffic speeds and the effect of additional traffic.

   Accordingly I propose to deal with the concerns together, as set out in the following section.

4. Comment on matters raised.

Road width

As noted in my report, width of Dalefield Road at the entry driveway for the proposed child care is only 4.9 metres. Measurements taken during my site indicate that some positions are even less, at 4.3 metres. This could make it difficult for vehicles to pass each other, especially in the case of large trucks.

It is important however to base an assessment on the full trafficable width of the road, not just the sealed width. Figures 1 and 2 below show the roadway either side of the proposed childcare entrance, and it will be seen that there are unsealed shoulders as well as the seal, and cars can in fact pass reasonably easily.

Figure 1: View of Dalefield Road looking east

Roads of this type are common, and are an effective treatment in rural areas where traffic volumes are low and a full sealed formation six or seven metres wide cannot be justified.

With low existing and future flows I believe continued safe operation of Dalefield Road can be expected.

Figure 2: View of Dalefield Road looking west

Sight distances

Some submitters and the Council express concern about visibility. While visibility is something of a relative term my sight line measurements at the site were in excess of 100 metres, which I would regard as very satisfactory for a road of this type.

Note that sight distances are normally measured between points 1.05 metres above the pavement, to replicate a typical driver eye height.

Traffic speeds

Some submitters express concern about the potential for excessive speed on Dalefield Road.

Undoubtedly the most significant road elements in this regard are the two 90-degree bends either side of the proposed childcare centre. Cars negotiating these bends need to make a substantial reduction in speed as they approach, with an associated risk of loss-of-control crashes. It may however be offset by lower speeds between the bends.

Speed management at and between the bends is however a wider concern for the Council, and outside the scope of this application.

Traffic generation

Traffic generation calculations in the traffic report are based on flows in and out of the child care site. It can be noted however that this does not necessarily translate directly into flows on the road. For example, where children originate further up the valley beyond the site, there will be no increase in traffic because the children would be travelling past the site anyway on their way to an

alternative childcare centre. Some increase would apply to roads south of No. 683, however to some extent there would be a redistribution of existing traffic rather than entirely new travel.

Once these factors are taken into account it is apparent that the potential for additional accident exposure will be very small indeed.

5. Conclusion

I confirm my support for the proposal.

Yours faithfully

Bill Barclay

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Detailed Site Investigation Report

683 Dalefield Road

Carterton

Prepared for Lauren Spicer

7 October, 2018

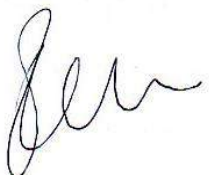
EcoAgriLogic Limited

Abbreviations

GWRC	Greater Wellington Regional Council
HAIL	Hazardous Activities and Industries List (October 2011)
MfE	Ministry for the Environment
NES	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
PSI	Preliminary Site Investigation Report
SLUR	Selected Land Use Register

Certification

This report is certified by Dr. Esther F. Dijkstra of EcoAgriLogic Ltd. PO Box 190, Carterton 5743, who has not less than 15 years of experience as a soil and contaminated site professional, whose highest qualification is PhD Environmental Sciences, University of Amsterdam (1997).



Esther Dijkstra, 7 October 2018

Contents

Detailed Site investigation Report (SIR)

Summary

EcoAgriLogic Ltd was commissioned by Lauren Spicer to prepare a Detailed Site Investigation Report (SIR) to determine the potential soil contamination of part of 683 Dalefield Road, Carterton. In December 2017, a PSI was prepared for the same site by EcoAgriLogic Ltd.

A woolshed with dip bath and yards were located on a section of this property, along Dalefield Road. The woolshed and yards have since been removed (figure 1). The dip bath has been filled in and no longer visible.

A car parking area for an Early Childhood Centre has been proposed for the area of the former sheep dip. The Outdoor Exploration Area for the Early Childhood Centre will be located to the north west of the current dwelling.

This SIR presents an assessment of contamination risk with respect to the proposed change of use by consideration of previous activities at the location, the intended land use scenario and the analysis results of soil sampling. This report will determine the National Environmental Standard (NES, 2011) soil contamination status at the site.

EcoAgriLogic Ltd collected representative soil samples and tested them for a range of heavy metal contaminants.

Arsenic concentrations above the soil contaminant standard for rural residential use (MfE, 2011) are found in 2 samples and linked to former use of the site as sheep dip. The arsenic concentrations are below the soil contaminant standard for high density residential use (MfE, 2011).

It is recommended that the area of the former sheep dip is being managed by means of fencing and planting to eliminate the exposure pathway of soil contact. The site can be developed for car parking if a permanent cover is used to eliminate soil contact.

With these recommendations in place, the level of heavy metals, including arsenic, it will be highly unlikely to have an adverse effect on human health. The area of the former sheep dip can therefore be developed for car parking purposes.

The heavy metal concentrations of the Outdoor Exploration Area and Pet Pen sampling locations are well below the soil contaminant standard for rural residential use (MfE, 2011) and highly unlikely to have an adverse effect on human health.

1 Introduction

EcoAgriLogic Ltd was commissioned by Lauren Spicer to prepare a Detailed Site Investigation Report (SIR) to determine the potential soil contamination of part of 683 Dalefield Road, Carterton. In December 2017, a PSI was prepared for the same site by EcoAgriLogic Ltd.

A woolshed with dip bath and yards were located on a section of this property, along Dalefield Road. The woolshed and yards have since been removed (figure 1). The dip bath has been filled in and no longer visible.

It is the intention to develop the area of the former sheep dip for car parking for the proposed Early Childhood Centre in the buildings adjacent to the site. The Outdoor Exploration Area is also part of this investigation.

1.1 Objective

This report has been prepared for the purposes of land use change and has been completed in accordance with the "Contaminated Land Management Guidelines No1: reporting on contaminated Sites in New Zealand" (MfE, 2011). This report includes all requirements for a Detailed Site Investigation report (SIR).

This report presents an assessment of contamination risk with respect to the proposed change of use by consideration of previous activities at the location, the intended land use scenario and the analysis results of soil sampling. This report will determine the National Environmental Standard (NES, 2011) soil contamination status at the site.

1.2 Scope of work undertaken

To achieve the project objective, the scope of works outlined in Table 1 was undertaken.

Table 1. Scope of Works

Work Activity	Description
Detailed site investigation	Completing a site walk over, reviewing selected historical aerial photographs from ca. 1943, reviewing GWRC and combined Wairarapa Councils' online geographic information systems records relating to the site and vicinity, interview with neighbours
Field work	The collection and analysis of selected soil samples from 4 transects within the site The collection and analysis of selected soil samples from 3 transects within the proposed play area of the proposed Early Childhood Centre
Soil Results Analysis	A comparison of laboratory soil analytical results with applicable land use guideline values and Wellington regional background values.
Reporting	Preparation of this report summarising the findings of the SIR

2 Site Description

2.1 Site Identification

The area of the former sheep dip is located at 683 Dalefield Road, west of Carterton (figure 1).

The client would like to redevelop this area as a carpark for the proposed Early Childhood Centre in the buildings adjacent to the site (figure 2).

The Outdoor Exploration Area is to the Northwest of the buildings (figure 2). This is proposed to be developed as a play area for children.

Figure 1 Location of 683 Dalefield Road, Carterton. The blue line represent the property boundary, the orange shaded area is the location of the former woolshed and yards

Figure 2 Proposed outlay of the carpark for the Centre. The Outside Exploration Area is inside the grey line

Table 2. Site identification

Street Address	683 Dalefield Road, Carterton
Legal Description	LOT 3 DP 478234 Certificate of title 664162
Site Owner	Lauren and Matt Spicer
District Plan Zoning	Rural

2.2 Site condition

The area of the former sheep dip was first inspected on Wednesday the 6 of December 2017 by Esther Dijkstra of EcoAgriLogic Ltd., accompanied by Lauren Spicer. A second inspection took place on 21 September 2018. This time the area of the proposed Outdoor Exploration area was also visited.

The site was entered from Dalefield Road, west of Carterton. The area containing the former woolshed, sheep dip bath and yards is part of a larger property containing a dwelling, sheds and pasture for grazing.

Description of the site condition on 6th December 2017:
This site is flat and completely fenced. It is located in the south eastern corner of the property, between the driveway and Dalefield Road. The site is approximately 930 m^2. The site contains mature trees, a playhouse, yards and a chicken coop.

North of the playhouse a concreate slab is visible. It is unclear if this was part of a sheep dip structure.

A new shed was built on the north eastern boundary, approximately on the location of the old wool shed.

There were no visible signs of contamination or plant stress at the time of inspection of the site.

The surrounding land is in agricultural use (pasture).

Description of the site condition on 21 September 2018:
Since the visit in December 2017, a new carpark has been constructed along the driveway and the area of the former sheep dip has been fully fenced. A new garage has been constructed along the north western boundary.

The Outdoor Exploration Area is located north west of the dwellings. This area is completely fenced and landscaped.

To the north east of the building is a fully fenced pet pen. This had lambs in it at the time of the site inspection.

	Sampling site “under trees located to the left of the trees and play house. Most likely, the concreate slab in the foreground was part of a sheep dip
	Sampling site ‘yard’ located inside the yards
	Sampling site ‘along drive’
	Sampling site ‘north of shed’

Figure 3 Photos of the sampling sites in December 2017

	Newly constructed parking area and garage. Site completely fenced.
	Outdoor exploration area
	Outdoor exploration area

Figure 4 Photos of the sampling sites in September 2017

3 Historical Data

3.1 Review of aerial photographs

Two aerial photographs (see appendix B) have been used to assess the historical use of the site as detailed below. The photographs were sourced from Greater Wellington Regional Council.

c. 1943 – The earliest photograph is from 1943. This aerial photograph clearly shows that there was no shearing shed or yards on the site

1963 – This aerial photograph shows the shed. Also visible in the photograph are a number of pens/yards. A dip bath has been identified after an interview with neighbours. It was located inside the areas with the holding pens.

2003 – This area photograph shows that a house north of the site, but no woolshed. Mature trees are in the yards.

The Google Earth photograph of 2004 shows no woolshed.
The Google Earth photograph of 2010 shows a shed on the north eastern boundary of the site.

3.2 Anecdotal information

Neighbours Tony Robinson and Monique and Peter Leerschool were interviewed on Friday 14th September 2018. They identified the location of the sheep dip on the aerial photograph of the 1960s inside the pens.
Both Tony and Peter remember the dip bath being present.

Tony used the dip as a young boy for dipping sheep during the late 1960' and early 1970s. He said that it was an older style dip, without the concreate dripping pad. According to Tony, the holding pens were relatively small and the sheep would only have a small area to drip dry before they would go into the surrounding paddocks.

Peter used the woolshed during the 1980s and 1990s. He never used the sheep dip, but he remembers it being present.

4 Applicable Criteria

The site is not registered on Greater Wellington's Selected Land Use Register (SLUR). The SLUR records sites that fit the definitions in the Ministry for the Environment's Hazardous Activities and Industries List (HAIL).

Historical evidence (aerial photographs) and anecdotal information indicate that the site most likely contained a woolshed and yards. The site had a dip bath.

4.1 NES

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) came into effect on 1 January 2012.
The NES applies to land where an activity which is described in the MfE's HAIL is being or has been undertaken, or it is more than likely that such an activity or industry has been undertaken.

A former woolshed, dip bath and yard is an activity on the HAIL. Hence the NES applies to this piece of land.

The NES is administered by territorial authorities; in respect of the site the relevant territorial authority is Carterton District Council (CDC).

Soil Contaminant Standards (SCSs) are given for 12 priority contaminants under the NES for five land-use scenarios. Methods for setting applicable numerical standards for contaminants in soil are also prescribed for the protection of human health. Laboratory analytical results from this assessment were compared against the soil contaminant standard for residential use.

4.2 GWRC Regional Plan

The GWRC Regional Plan for Discharges to Land defines "contaminated site": a site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses or is likely to pose an immediate or long term hazard to human health or the environment. Therefore, the laboratory results were also compared to recognised regional background concentrations.

5 Sampling method

EcoAgriLogic conducted a soil investigation giving consideration to the following guidelines:

- Contaminated Land Management Guideline No. 5, Site Investigation and Analysis of Soils (MfE 2004, revised 2011).
- Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (MfE, 2011).

The area of the former sheep dip was sampled on Friday the 19th of January 2018. The sampling transects can be found in figure 5.

The Outdoor Exploration Area and the pet pen were sampled on 21 September 2018. Additionally the area of the former sheep dip was sampled, as soil had been dumped from the area where the new garage is now located. These sampling locations can also be found in figure 5.

Four transects were sampled, three across the former yards and one in the area north of the current shed. Each transect contains 4 samples taken 1-2 meters apart. The 4 samples on each transect were combined to one bulk sample.

A further 3 samples were taken, one from the Outdoor Exploration area on the north side and one on the south side and one sample from the pet pen. For these samples, 5 subsamples were collected, about 1 meter apart. The pile inside the fenced area of the former sheep dip and yards was randomly sampled. This sampled contains about 15 subsamples.

The samples were taken with a stainless steel auger from 0 -15 cm.

All soil samples were collected in sample containers supplied by Hill Laboratories.

All samples were analysed for heavy metals. The sample of the pile was also analysed for DDT and Dieldrin.
These are the hazardous substances that could be present given the use of the site as sheep yards (HAIL, MfE, 2011).
The most commonly used chemical to control sheep parasites in New Zealand was arsenic (MfE, 2006).

Arsenic was used to control parasites on sheep from 1840s until the 1980s. Arsenic is a semi-metallic element that does not break down in soil and may slowly leach down through the soil and contaminate ground and surface water. Very high concentrations of arsenic have been measured in soil in the vicinity of former sheep-dips in New Zealand.

The chemicals used more recently (after 1960) to treat sheep parasites usually readily break down.

The samples were sent to Hill Laboratories for testing.

The full laboratory results can be found in Appendix A.

Details of the analytical methods used by Hill Laboratories and laboratory accreditation for analytical methods are in the attached Hill Laboratories report. All standard laboratory procedures were adhered to by Hill Laboratories who are accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this

accreditation is internationally recognised. The tests reported in this document have been performed in accordance with the terms of accreditation.

Figure 5 Approximate location of sampling transects at 683 Dalefield Road, Carterton

6 Results

The full analysis report can be found in Appendix A.

Of the four the sample transects only site ‘along drive’ has arsenic concentrations above 17 mg/kg (Table 3); the soil contaminant standard for rural residential, 25% produce (MfE, 2011).

The concentration of arsenic in the sample of site ‘along drive’ is well below the soil contaminant standard for high density residential with permanently paved yards and driveways and no produce.

Sites ‘under trees’ and ‘yards’ are above the background values for arsenic, but below the applicable soil contaminant standard.

Site ‘north of shed’ has background levels of arsenic.

All other heavy metal concentrations analysed do not exceed the soil contaminant standard for rural residential use (MfE, 2011).

The concentrations of copper and nickel are all at or below the natural background concentrations for heavy metals in greywacke soils (GWRC, 2005).

Table 4 shows the results for the samples taken in September 2018.
The heavy metal results of the both locations in the Outside Exploration area, as well as the heavy metal results of the Pet Pen location are all at or below the natural background concentrations for heavy metals in greywacke soils (GWRC, 2005).

The arsenic concentration of the sample from the pile inside the fenced area of the former sheep dip is well the soil contaminant standard for rural residential, 25% produce (MfE, 2011), but below the soil contaminant standard for high density residential with permanently paved yards and driveways and no produce.

The total DDT and Dieldrin concentrations are below the soil contaminant standard for rural residential, 25% produce (MfE, 2011). DDT and Dieldrin don't occur natural, there are therefore no background values for DDT and Dieldrin.

Table 3 Heavy metal screen results December 2017

	Yards	Along drive way	Under Trees	North of Shed	Soil Contaminant Standard[1]	Soil Contaminant Standard[2]	Background Concentrations[3]
Total Recoverable Arsenic (mg/kg)	11	22	11	6	17	45	<2-7
Total Recoverable Cadmium (mg/kg)	0.23	0.18	0.23	0.27	0.8	230	<0.1-0.2
Total Recoverable Chromium (mg/kg)	23	22	22	22	290	1500	11-21
Total Recoverable Copper (mg/kg)	18	13	15	11	>10,000	>10,000	7-19
Total Recoverable Lead (mg/kg)	44	16.6	20	17.5	160	500	9.4-34.0
Total Recoverable Nickel (mg/kg)	12	11	11	11	400[4]	1,200[5]	6-21
Total Recoverable Zinc (mg/kg)	119	71	141	74	7400[4]	60,000[5]	44-121

[1] Soil Contaminant Standard for rural residential / lifestyle use (based on scenario of 25% of all produce consumed is home-grown); MfE, 2011
[2]Soil Contaminant Standard for high density residential; MfE, 2011
[3] Background soils concentration ranges in soils in the Wellington Region; Main soil Type 4 (Wairarapa Alluvium). GWRC (2005)
NL No Limit
[4]NEPC, 1999 Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.
[5]NEPC, 1999 Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

Table 4 Heavy metal screen, DDT and Dieldrin results September 2018

	Pet Pen	Play Area North	Play Area South	Yards Pile	Soil Contaminant Standard[1]	Soil Contaminant Standard[2]	Background Concentrations[3]
Total Recoverable Arsenic (mg/kg)	4	3	4	41	17	45	<2-7
Total Recoverable Cadmium (mg/kg)	0.37	0.30	0.36	0.19	0.8	230	<0.1-0.2
Total Recoverable Chromium (mg/kg)	26	16	21	23	290	1500	11-21
Total Recoverable Copper (mg/kg)	13	8	9	15	>10,000	>10,000	7-19
Total Recoverable Lead (mg/kg)	15.0	12.3	14.2	20	160	500	9.4-34.0
Total Recoverable Nickel (mg/kg)	14	7	9	10	400[4]	1,200[5]	6-21
Total Recoverable Zinc (mg/kg)	87	52	66	91	7400[4]	60,000[5]	44-121
Total DDT Isomers (mg/kg)	-	-	-	<0.03	45	400	-
Dieldrin (mg/kg)	-	-	-	7.4	1.1	70	-

[1] Soil Contaminant Standard for rural residential / lifestyle use (based on scenario of 25% of all produce consumed is home-grown); MfE, 2011
[2]Soil Contaminant Standard for high density residential; MfE, 2011
[3] Background soils concentration ranges in soils in the Wellington Region; Main soil Type 4 (Wairarapa Alluvium). GWRC (2005)
NL No Limit
[4]NEPC, 1999 Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.
[5]NEPC, 1999 Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

7 Discussion

After a site inspection and considering the previous site activities and soil testing results, this investigation concludes that the topsoil of the former sheep-dip and

yards site contains concentrations of arsenic at and just below the rural residential National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES, 2012).

The elevated arsenic concentration in the samples ‘along driveway’ and ‘yards pile’ most likely reflect the use of the site as woolshed and yards.

Anecdotal evidence indicates that there was a sheep dip with a dip bath on the site. The dip is visible within the yard structure attached to the woolshed on aerial photographs of 1963 (Appendix B).

There is no visible indication of a sheep dip on the site today. The most likely location of the dip is underneath the driveway east of the dwelling. It would most likely have been filled in after it became redundant.

Arsenic is very toxic to humans and animals and is a known human carcinogen (MfE, 2006). Toxic effects associated with exposure to arsenic include irritation of the stomach and intestines, skin changes, reduced nerve function and damage to blood vessels. Repeated exposures to lower concentrations of arsenic can result in concentrations in the body that are fatal or can cause serious health effects. Concentrations of arsenic high enough to be fatal to a young child from a single exposure (e.g. eating soil) have been measured at sheep-dip sites in New Zealand. Direct skin contact with high concentrations of arsenic can irritate the skin.

The immediate risk form exposure to arsenic in soil is by ingesting soil and dust, in particular by children and young stock. The level of arsenic found in the sample of woolshed is well below the levels of arsenic found at old sheep-dip sites, occasionally exceeding 10,000mg/kg.

The level of arsenic found in the sample of the former sheep-dip and yards site is more likely to cause a chronic, long term risk (e.g. over 30 years) from lower exposure and hence do not apply to stock.

The main exposure pathway is by touching and breathing in contaminated soil or dust when gardening and eating vegetables grown on a contaminated area. This is a medium and longer term risk and only when developed for rural residential use.
The risk will be negligible if exposure to soil pathway is removed by permanently covering the soil and therefore restricting access to the contamination.

The risk to surface and groundwater is deemed to be low as arsenic is not very mobile. It binds strongly to soil particles. Surface runoff is considered a low risk. The area of the site is flat, and in permanent pasture. Surface runoff of contaminated sediment is considered minimal.

8 Recommendation

After a site inspection and considering the current and previous site activities, this investigation concludes that the topsoil of the area of the former sheep dip site will need to be managed to prevent people getting into contact with the elevated levels of arsenic, in particular along the drive way.

Currently the site is fenced and access to the soil will be further reduced by planting the site with shrubs and covering the soil for the proposed carpark with a permanent cover, such as base course, concrete or asphalt.

With these recommendations in place, the level of heavy metals, including arsenic, it will be highly unlikely to have an adverse effect on human health. The site can therefore be developed for car parking purposes.

However, if the site in future is going to be developed for rural residential use, it is recommended that the site is further investigated to establish the extent (horizontal and vertical spread) of the contamination before land use changes occur.

The concentrations of heavy metals in Outdoor Exploration Area are at background levels and highly unlikely to have an adverse effect on human health.

References

Assessing and managing Risks associated with Former Sheep-dip Sites. A guide for local authorities. Ministry for the Environment, 2006.

Contaminated Land Management Guidelines No. 2. Hierarchy and Application in New Zealand of Environmental Guideline Values. Ministry for the Environment, 2003.

Contaminated Land Management Guidelines No. 5. Site Investigation and analysis of Soils. Ministry for the Environment, 2011.

Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Ministry for the Environment, 2011.

National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Ministry for the Environment, 2012.

NEPC, 1999. Schedule B(7a) Guideline on Health-Based Investigation Levels, National Environmental Protection Measure, National Environment Protection Council, Australia.

WRC, 1999. Regional Plan for Discharges to Land for the Wellington Region. Wellington Regional Council, December 1999

Appendix A – Laboratory Results

Hill Laboratories
TRIED, TESTED AND TRUSTED

R J Hill Laboratories Limited
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Private Bag 3205
Hamilton 3240 New Zealand

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T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

ANALYSIS REPORT

Client:	Eco AgriLogic Limited	Lab No:	1911353 SPv1
Contact:	Dr E Dijkstra	Date Received:	20-Jan-2018
	C/- Eco AgriLogic Limited	Date Reported:	24-Jan-2018
	PO Box 190	Quote No:	
	Carterton 5743	Order No:	
		Client Reference:	
		Submitted By:	Dr E Dijkstra

Sample Type: Soil

Sample Name:		Yards	Along Driveway	North of Shed	Under Trees	
Lab Number:		1911353.1	1911353.2	1911353.3	1911353.4	
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	11	22	6	11	-
Total Recoverable Cadmium	mg/kg dry wt	0.23	0.18	0.27	0.23	-
Total Recoverable Chromium	mg/kg dry wt	23	22	22	22	-
Total Recoverable Copper	mg/kg dry wt	18	13	11	15	-
Total Recoverable Lead	mg/kg dry wt	44	16.6	17.5	20	-
Total Recoverable Nickel	mg/kg dry wt	12	11	11	11	-
Total Recoverable Zinc	mg/kg dry wt	119	71	74	141	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, Interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Ara Heron BSc (Tech)
Client Services Manager - Environmental

Hill Laboratories
TRIED, TESTED AND TRUSTED
R J Hill Laboratories Limited
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Certificate of Analysis

Client:	Eco AgriLogic Limited	**Lab No:**	2053081	SPv1
Contact:	Eco AgriLogic Limited	**Date Received:**	22-Sep-2018	
	PO Box 190	**Date Reported:**	01-Oct-2018	
	Carterton 5743	**Quote No:**		
		Order No:		
		Client Reference:	Spicer	
		Submitted By:	Dr E Dijkstra	

Sample Type: Soil

Sample Name:		Dalefield Road Yards Pile 21-Sep-2018	Dalefield Road Pet Pen 21-Sep-2018	Dalefield Road Play Area North 21-Sep-2018	Dalefield Road Play Area South 21-Sep-2018	
Lab Number:		2053081.1	2053081.2	2053081.3	2053081.4	
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	41	4	3	4	-
Total Recoverable Cadmium	mg/kg dry wt	0.19	0.37	0.30	0.38	-
Total Recoverable Chromium	mg/kg dry wt	23	26	16	21	-
Total Recoverable Copper	mg/kg dry wt	15	13	8	9	-
Total Recoverable Lead	mg/kg dry wt	20	15.0	12.3	14.2	-
Total Recoverable Nickel	mg/kg dry wt	10	14	7	9	-
Total Recoverable Zinc	mg/kg dry wt	91	87	52	66	-
DDT Screening in Soil						
2,4'-DDD	mg/kg dry wt	< 0.005	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.005	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.005	-	-	-	-
4,4'-DDE	mg/kg dry wt	0.006	-	-	-	-
2,4'-DDT	mg/kg dry wt	< 0.005	-	-	-	-
4,4'-DDT	mg/kg dry wt	0.008	-	-	-	-
Total DDT Isomers	mg/kg dry wt	< 0.03	-	-	-	-
Dieldrin in Soil by GC/ECD						
Dieldrin	mg/kg dry wt	7.4	-	-	-	-

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.
Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-4
DDT Screening in Soil*	Sonication extraction, Florisil cleanup, GC-ECD analysis. Tested on dried sample	0.005 - 0.03 mg/kg dry wt	1
Dieldrin in Soil by GC/ECD	Sonication extraction, Florisil cleanup, GC-ECD analysis. Tested on dried sample	0.005 mg/kg dry wt	1

IANZ ACCREDITED LABORATORY

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.

Carole Rodgers-Carroll BA, NZCS
Client Services Manager - Environmental

Appendix B – Aerial photographs

Ca 1943

1963

2003

MARSHALL DAY Acoustics

EARLY CHILDHOOD EDUCATION CENTRE
683 DALEFIELD ROAD, DALEFIELD
ASSESSMENT OF NOISE EFFECTS

Rp 001 r02 20171311 | 3 September 2018

84 Symonds Street
PO Box 5811 Wellesley Street
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www.marshallday.com

Project: **EARLY CHILDHOOD EDUCATION CENTRE**
683 Dalefield Road, Dalefield, Carterton
Assessment of Noise Effects

Prepared for: **Cruse Education Services**
45 Oxford Street
Landsdowne
Masterton 5810

Attention: **Diana Cruse**

Report No.: **Rp 001 r02 20171311**

Document Control

Status:	Rev:	Comments	Date:	Author:	Reviewer:
Draft	-		23 April 2018	Micky Yang	Mat Cottle
Final	01	Updated traffic numbers	17 April 2018	Micky Yang	-
	02	Update children numbers	3 September 2018	Micky Yang	-

TABLE OF CONTENTS

1.0 INTRODUCTION

Cruse Education Services has engaged Marshall Day Acoustics (MDA) to assess the potential noise impacts of a proposed early childhood education centre (ECEC) for 30 children to be established at 683 Dalefield Road, Dalefield, Carterton.

The purpose of this report is to assess compliance with noise performance standards in the Wairarapa Combined District Plan (WCDP), and to form a part of an application for Resource Consent.

A Glossary of Terminology is included in Appendix A.

2.0 APPLICATION SITE

Figure 1 shows the existing application site (highlighted in blue) and neighbouring sites. The site is bounded by Dalefield Road on the north-eastern and south-eastern side. To the north-west is empty land and to the south-west is a dwelling (not shown in Figure 1).

Figure 1: Application Site

3.0 PROPOSAL

This proposal relates to the establishment of a new ECEC and is described in full in the application documents. The proposed site layout is shown in Appendix B.

3.1 Facility Description

3.1.1 Building

The existing building would be retained and fitted out to include indoor activity spaces, sleep rooms, a staff room, a kitchen and office space and ablution/laundry facilities.

The main pedestrian entrance to the centre would be located next to the car park.

3.1.2 Outdoor Exploration Area

An outdoor exploration area (OEA) is proposed along the entire north-western portion of the site.

No elevated play structures (EPS) are proposed. However, children are free to climb nearby trees.

It is noted that tree-climbing has been taken into consideration when predicting noise levels from children's outdoor activity.

3.1.3 Mechanical Plant

Details of any proposed mechanical plant have not yet been finalised.

3.2 Operating Times

Normal opening hours for the ECEC would be from 7:00 am to 6:00 pm, Monday to Friday (excluding public holidays).

It is noted that staff only may be present on the site outside the above hours to carry out administrative tasks or make preparations in advance of children arriving at the facility.

As per the Ministry of Education (MOE) licensing requirements[1], children would have access to the outdoor exploration areas. MDA considers 70% OEA utilisation during operating hours as a reasonable and conservative assumption to estimate children's daily outdoor time. Under this scenario, outdoor play/activities could occur for approximately 8 hours of the 12-hour daytime period prescribed in the WCDP.

3.3 Number of Children / Staff

It is intended that the ECEC would cater for up to 30 preschool children, 20 of whom would be over two years of age and 10 under two years of age. The number of staff on site would be seven.

3.4 Vehicle Parking and Movements

11 parking spaces would be provided on-site in a car park along the south-eastern portion of the site as shown on the plans, accessed via a one-way driveway off Dalefield Road. It is understood that a 10-seater minivan would be purchased to be used during peak hours. Up to three runs during the peak hour times are proposed using the minivan.

3.5 Written Approvals

To MDA's knowledge, written approvals have been obtained from the owner's/occupiers of the following nearby properties:

- 665 Dalefield Road
- 710 Dalefield Road
- 718 Dalefield Road

Council must not, when considering the application, have regard to any effect on a person who has given their written approval to the application (Section 104 (3)) of the Resource Management Act 1991.

It is noted that 611 Dalefield Road has given verbal approval.

[1] Refer to Ministry of Education Premises and facilities licensing criteria 13 (PF13) found at http://www.education.govt.nz/early-childhood/running-an-ece-service/the-regulatory-framework-for-ece/licensing-criteria/centre-based-ece-services/redownloadpdf

3.6 Acoustic Mitigation

There is no acoustic mitigation proposed in the plan. It is noted however, that a new 1.5m timber paling fence is to be constructed along the entire eastern and a portion of the southern boundary of the OEA. The palings are side by side and do not overlap. Additionally, there are no vertical palings behind each joint. Therefore, this fence is not considered to be acoustically effective however, could be practicably upgraded should the need arise

4.0 NOISE PERFORMANCE STANDARDS

The application site is situated on land zoned *Rural – Primary Production* in the WCDP, as are all immediately adjacent neighbours. The applicable noise performance standards are given in Part A of the WCDP in Chapter 4.5.2 (f). The relevant sub-clauses are reproduced below:

(i) "The sound level from activities within any site, excluding mobile sources associated with primary production (e.g. tractors, harvesters), shall not exceed the following limits within any measurement time interval in the stated time-frames, when assessed at any point within the notional boundary of any dwelling on any site within the rural Zone but excluding any dwelling on the property where the sound levels are generated, and at any point within the boundary of any site within the Residential Zone:

Daytime	*7.00am – 7.00pm*	*55dBA L10*
Nighttime	*7.00pm – 7.00am*	*45dBA L10*
	9.00pm – 7.00am	*75dBA Lmax*

(ii) All sound levels shall be measured in accordance with NZS 6801:1999 "Acoustics – Measurement of Environmental Sound", and assessed in accordance with NZS 6802:1991 "Assessment of Environmental Sound"."

5.0 EXISTING NOISE ENVIRONMENT

5.1 Ambient Measurements

A site inspection was carried out on 8 February 2018 between 1720 – 1830 hrs, during which ambient noise levels were measured, in accordance with the relevant standards, at the positions marked MP1 to MP3 as indicated on the figure in Appendix C.

The weather during the measurements was fine with a light north-westerly breeze (1.6 – 3.3 m/s) and 7 okta cloud cover. These conditions were within the allowable parameters for measuring outdoor noise.

MP2 was chosen to be representative of the noise received at 683 Dalefield Road.

Table 1 summarises the measurement results and the measurement positions are shown in Appendix C.

Table 1: Measured Ambient Noise Levels

Measurement Position	Measurement		Measured Level (dB) (1)				Noise Source (2)
	Start Times	Duration min:sec	L_{A10}	L_{Aeq}	L_{A90}	L_{AFmax}	
MP1 *Near 710 Dalefield Road Road*	17:21	15:00	39	39	36	65	Distant traffic, wind noise from trees, bird noise, some insect (i.e. cicadas) noise, occasional dogs, distant farming noise (reverse beeps)
MP2 *Opposite 683 Dalefield Road*	17:42	15:00	44	43	34	64	Traffic noise, wind noise from trees, occasional dog barks
MP3 *Near 659 Dalefield Road*	18:10	15:00	43	41	33	70	Traffic noise, wind noise in trees, farming noise

Notes to Table 1:

(1) An explanation of technical terms is provided in Appendix A
(2) The controlling noise source is underlined

As shown in Table 1, the ambient noise levels ranged from 39 to 44 dB L_{A10}. It is considered that these noise levels would be representative of the daytime noise level during the operating hours of the ECEC given that the location is quite rural and is not located adjacent to a road with high vehicle usage.

Background measurements were within the range of 33 dB L_{A90} to 36 dB L_{A90}.

These measurements indicate that the existing noise environment is typical of what would be expected in a rural environment affected by low traffic activity.

5.2 Reverse Sensitivity

5.2.1 Noise Criteria

ECECs are licensed in accordance with the Education Act 1989 under the Education (Early Childhood Services) Regulations 2008, which prescribe the minimum standards that each licensed service must meet. MOE licensing criteria are used to assess how the centres meet the minimum standards required by the regulations.

Licensing criterion relating to noise levels, along with guidance to help ECECs meet the required standards, are found under *Premises and facilities licensing criterion 12 (PF12)* in "Licensing criteria for centre-based ECE services"[2].

The guidance in PF12 (reproduced in Appendix D) refers to the recommendations of the World Health Organization which states that for an *outdoor setting* (i.e. outdoor play area) the recommended maximum noise exposure level in childhood education environments is 55 dB L_{Aeq} in relation to annoyance from an external source.

[2] http://www.education.govt.nz/early-childhood/running-an-ece-service/the-regulatory-framework-for-ece/licensing-criteria/centre-based-ece-services/redownloadpdf

5.2.2 Assessment

As the measured noise level of 43 dB L_{Aeq} does not exceed WHO guidelines, acoustic mitigation in the form of an acoustic barrier to reduce external noise within the OEA would not be required. It is considered that the noise level within the OEA would not increase significantly due increase traffic use on Dalefield Road or from other noise sources.

6.0 PREDICTED NOISE LEVELS AND ASSESSMENT OF EFFECTS

6.1 Predicted Noise Levels

The significant noise sources from the proposed activity would be the sounds (voices) of children whilst playing outside, the arrival and departure of cars in the car park and noise generated during construction of the facility. These noise sources are addressed separately below.

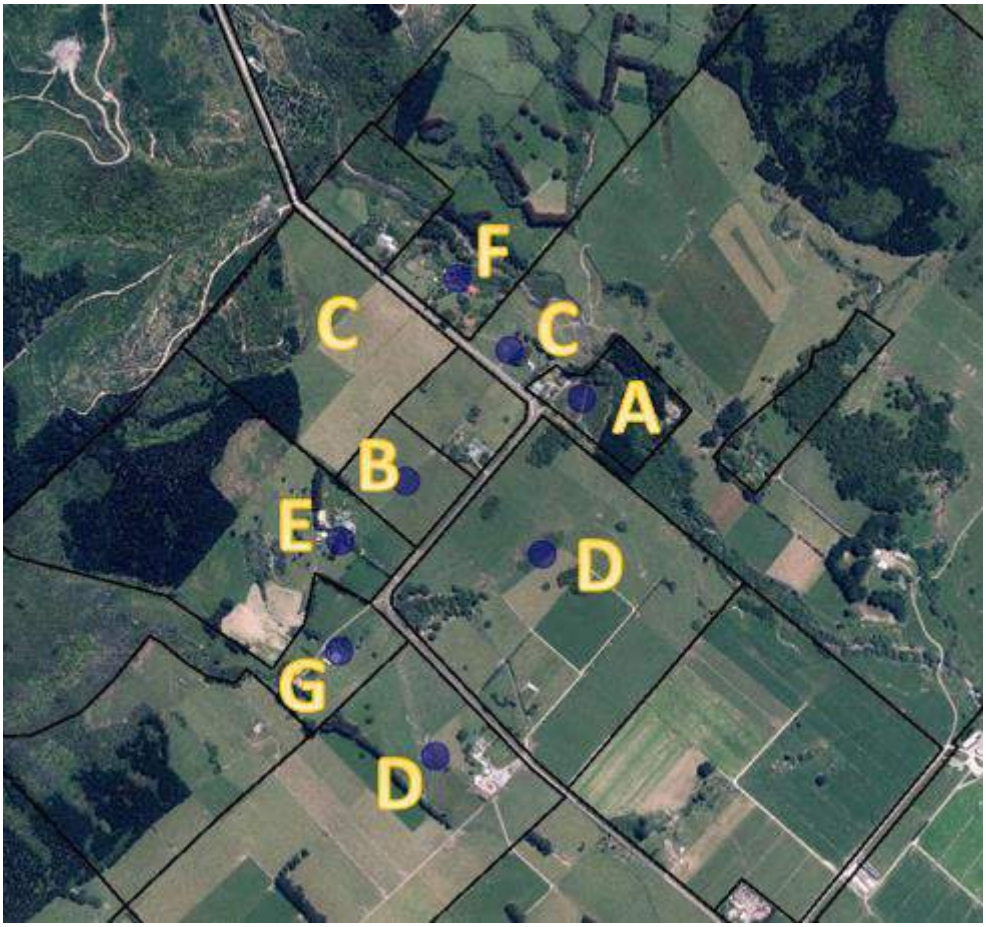
It is noted that indoor activities typically do not influence the overall noise level at site boundaries. Noise from mechanical plant and potential cumulative effects are also discussed in the following sections.

The nearest potentially affected sites in relation to the proposed activity are given below and shown in Figure 21:

- 611 Dalefield Road (D)
- 649 Dalefield Road (G)
- 659 Dalefield Road (E)
- 665 Dalefield Road (B)
- 710 Dalefield Road (A)
- 718 Dalefield Road (C)
- 734A Dalefield Road (F)

Note that for receiving sites that do not have a property on it, the receiver location was placed on the boundary.

Figure 21: Receiver locations



6.1.1 Children's Outdoor Play

An assessment of the overall noise emission from children's outdoor play activity has been completed based on MDA's previous observations and measurements of children playing actively at other childcare centres.

With a worst-case circumstance whereby all 30 children are outside playing, the noise levels predicted to be received within the nearest potentially affected boundaries have been calculated and are shown in Table 2.

Table 2: Predicted Noise Levels from Children's Outdoor Play

Receiver Location	Predicted Noise Level (dB L_{A10})
611 Dalefield Road	36
649 Dalefield Road	25
659 Dalefield Road	30
665 Dalefield Road	35
710 Dalefield Road	35
718 Dalefield Road	36
734A Dalefield Road	33

Based on the results in Table 4, the relevant noise limit of 55 dB L_{A10} would be readily complied with at all nearest receivers.

This compliance would be achieved taking into consideration:

- The shielding effects of the proposed ECEC building (where applicable)
- Time averaging (-1dB [3]) as permitted in terms of the relevant acoustic standard (New Zealand Standard NZS 6802:2008 "*Assessment of Environmental Noise*", Table 2)

6.1.2 Car Park Vehicle Activity

The following traffic flow numbers have been used in the modelling:

- The busiest peak hour (32 vehicle trips, including both arrivals and departures) is anticipated to occur in the morning[4]
- The total daily number of vehicle trips is 133[5]

Previous measurements of cars moving at carpark speed have been used to predict the noise levels generated by the use of the car parking area during:

- A peak hour for a total of 16 vehicles entering and exiting the car park. The predicted peak hour noise levels (no averaging) received at the nearest potentially affected notional boundaries are presented in Table 3
- The prescribed time frame of 7:00 am to 7:00 pm (with averaging) for a total of 44 vehicles. The results are presented in Table 5.

Table 3: Predicted Noise Levels from Vehicles Using the Car Park – Peak Hour and Daytime

Receiver Location	Predicted Noise Level (1) (dB L_{A10})	
	AM Worst Case Peak Hour (no averaging)	Averaged Over the Day
611 Dalefield Road	34	30
649 Dalefield Road	<25	<25
659 Dalefield Road	<25	<25
665 Dalefield Road	<25	<25
710 Dalefield Road	<25	<25
718 Dalefield Road	<25	<25
734A Dalefield Road	<25	<25

Based on the results in Table 3, the relevant noise limits would be readily complied with at all receivers.

[3] Based on a prescribed time frame of 7:00 am to 7:00 pm (12 hrs daytime) with less than 80% duration of the specific sound (i.e. children playing outside) in the prescribed time frame

[4] Assumed by MDA

[5] Supplied by Barclay Traffic Planning

6.1.3 Mechanical Plant

As previously stated the details of proposed mechanical plant have not been finalised. It is likely that the centre would use mechanical plant such as heat pump(s) to provide heating and cooling. It is understood that mechanical plant would not generally operate at night or during weekends.

Any mechanical plant/services installed, should be designed to meet the relevant noise limits.

It is considered that with appropriate selection of equipment in terms of noise emission characteristics and with typical methods of noise control (if required) and appropriate location on the site, noise levels from mechanical plant/services would be able to readily comply with the relevant noise limits.

6.1.4 Cumulative Noise

Cumulative noise effects from children playing outside and peak traffic movements in the carpark are not anticipated because the individual predictions are made based on reasonable worst-case scenarios. Additionally, it is not possible for all of the children to be playing outside while they are all arriving / departing by vehicle.

Regardless, the resultant overall noise levels from all activity on the site during the daytime period (7:00 am to 7:00 pm) is predicted to be:

Table 4: Resultant noise levels

Receiver Location	Predicted Noise Level (dB L_{A10})
611 Dalefield Road	36
649 Dalefield Road	25
659 Dalefield Road	30
665 Dalefield Road	35
710 Dalefield Road	35
718 Dalefield Road	36
734A Dalefield Road	33

6.1.5 Construction Noise

Construction noise involved in the development of the facility would be on a scale typical of what might occur for a residential project. It is considered that with normal building practices and working hours, construction noise will generally comply with the relevant limits, provided that any work close to boundaries is undertaken with due consideration.

6.2 Overall Operation Noise Effects

Noise from children playing in the OEA are predicted to range from 25 – 36 dB L_{A10}..The existing ambient noise environment at nearby receivers is greater than this, ranging between 39 dB L_{A10} to 44 dB L_{A10}. In addition, the existing background noise level ranges between 33dB L_{A90} and 36dB L_{A90}.

Based on the above, the proposed ECEC would be audible at some receiver locations some of the time. However, MDA considers the received sound would not be intrusive and therefore concludes that no adverse amenity effects would occur.

7.0 CONCLUSION

Marshall Day Acoustics has assessed the potential acoustic impacts of a proposal to establish an early childhood education centre at 683 Dalefield Road, Dalefield, Carterton, accommodating a total of 30 children.

Based on the predicted sound levels, which considers screening from intervening buildings and the reduction in sound with distance, MDA is of the opinion that the proposed facility can be operated so as to readily comply with the relevant noise limit of 55 dB L_{A10} at all nearby Rural zoned receivers.

Construction noise is considered to be typical of a residential project and is anticipated to be able to comply with the relevant noise limits.

MDA considers the proposal to be compatible with the objectives and policies of the WDCP with respect to noise generated in rural zones with dwellings. The predicted noise levels readily comply with the limits in the WDCP and the noise emitted from the centre is predicted to not result in any adverse amenity effects whatsoever.

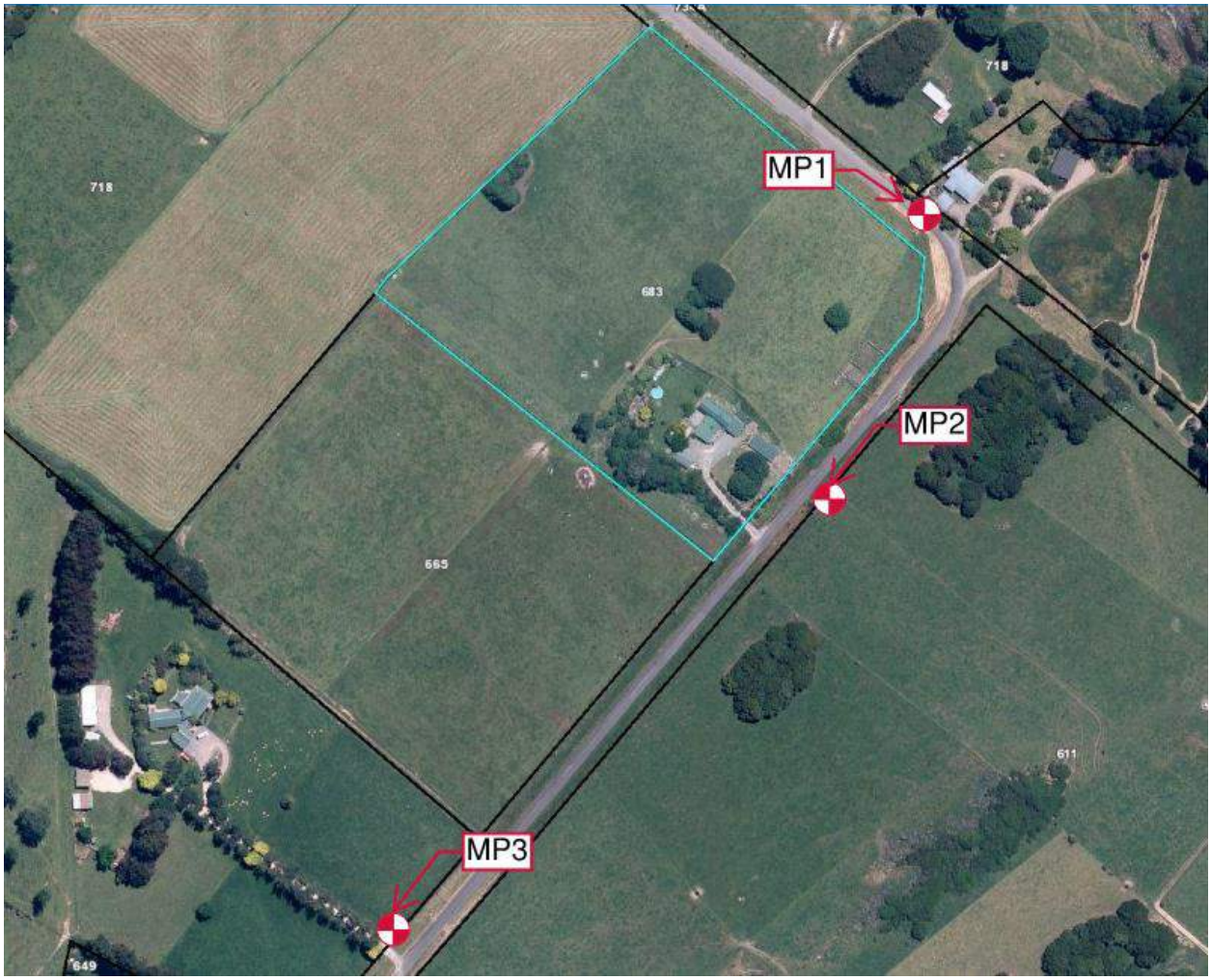
APPENDIX A GLOSSARY OF TERMINOLOGY

Ambient Noise	Ambient Noise is the all-encompassing noise associated with any given environment and is usually a composite of sounds from many sources near and far.
dBA	A measurement of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
L_{eq}	The time averaged sound level (on a logarithmic/energy basis) over the measurement period (normally A-weighted).
L_{90}	The sound level which is equalled or exceed for 90% of the measurement period. L_{90} is an indicator of the mean minimum noise level and is used in New Zealand as the descriptor for background noise (normally A-weighted).
L_{10}	The sound level which is equalled or exceeded for 10% of the measurement period. L_{10} is an indicator of the mean maximum noise level and is used in New Zealand as the descriptor for intrusive noise (normally A-weighted).
L_{AFmax}	The maximum sound level recorded during the measurement period (normally A-weighted).
Notional Boundary	A line 20 metres from any side of a dwelling or the legal boundary where this is closer to the dwelling[6].
NZS 6801:2008	New Zealand Standard NZS 6801:2008 *"Measurement of Environmental Sound"*
NZS 6802:2008	New Zealand Standard NZS 6802:2008 "*Assessment of Environmental Noise*".
Prescribed time frame	'Daytime', night-time', 'evening', or any other relevant period specified in any rule or national environmental standard or in accordance with 8.3.2 in NZS 6802:2008.

[6] Source: Section 3 Definitions in NZS 6801:2008

APPENDIX B PROPOSED SITE PLAN

APPENDIX C MEASUREMENT POSITION LOCATIONS



APPENDIX D MOE LICENSING CRITERIA AND GUIDANCE

EDUCATION.govt.nz
from the Ministry of Education

Licensing criteria for centre-based ECE services

PF12 Heating, lighting, noise, and ventilation

Criteria

Premises and facilities criterion 12

§ Parts of the building or buildings used by children have:

lighting (natural or artificial) that is appropriate to the activities offered or purpose of each room;
ventilation (natural or mechanical) that allows fresh air to circulate (particularly in sanitary and sleep areas);
a safe and effective means of maintaining a room temperature of no lower than 16°C; and
acoustic absorption materials if necessary to reduce noise levels that may negatively affect children's learning or wellbeing.

Related to clause 45(1)(a)(ii) of standard.

Rationale/Intent:

To ensure the safety and wellbeing of children.

Guidance

Noise

The World Health Organization (1999) has recommended maximum noise exposures in early childhood education environments:

SETTING	HEALTH EFFECT	LEQ (DBA)	LMAX (DBA)
Outdoors	Annoyance (from external source)	55	-

APPENDIX E ACOUSTIC SCREEN CONSTRUCTION OPTIONS

Type	Constructions [Refer Notes (1) to (4) below]	
Timber [6]	Supporting Structure:	Timber, steel or aluminium posts and rails.
	Cladding Option 1:	*Plywood* panelling [5] with a minimum surface mass of 10 kg/m^2 (18mm minimum thickness).
	Cladding Option 2:	*Timber Palings* (minimum thickness of 20-25mm) either overlapped or close-boarded with battens over gaps between palings [6].
Fibre Cement	Supporting Structure:	Timber, steel or aluminium.
	Cladding Option 1:	9mm (min. thickness) *Fibre Cement* sheet (1 layer)
	Cladding Option 2:	7mm (min. thickness) *Compressed Fibre Cement* sheet (1 layer)
Acrylic	Supporting Structure:	Steel, aluminium or concrete.
	Infill panels:	12mm thick *Acrylic panels*.
Glass	Supporting Structure:	Steel, aluminium or concrete.
	Infill Panels:	Laminated glass (6mm minimum thickness).
Brick	Supporting Structure:	Concrete footing.
	Infill:	70mm mortared brick
Concrete	Supporting Structure:	Concrete footing.
	Infill:	Reinforced concrete or mortared concrete block (filled or unfilled).
Earth Bund		Earth or suitable fill material.

Notes:

(1). Any proposed acoustic screen shall be designed and certified by a suitably qualified structural engineer and relevant consents sought from the local council and other interested parties prior to its construction

(2). Acrylic and glass sections can be used to provide an acoustic screen while retaining visual transparency

(3). For all fence constructions, ensure that there are no gaps in the screen or between the ground and the bottom of the screen

(4). Any proposed acoustic screen shall be designed with input from a suitably qualified acoustic consultant

(5). Grooved plywood, manufactured to resemble a timber paling fence design, can be used to achieve a similar look to a close boarded fence design

(6). Plywood panelling is preferred to a close boarded fence design for long term durability

EQOnz ltd
672 Te Whiti Road, RD4, Masterton
Email: andy@eqo.org.nz
T :06 3708175
M : 027 4182378

Early childhood centre CDC ref 180020

Attn. Building team

23rd October 2018

Carterton District Council

Carterton District Council issued a request for further information as follows:

3. In relation to the existing septic tank, the EQOnz report noted that if actual water use surpassed 1200 litres per day then the system will need to be reassessed. Please confirm that with the proposed use of up to 30 children, staff and parents over the 24 hour period that this water use is unlikely to be surpassed. If there is any possibility that this will be surpassed then we will need further information to demonstrate what will be needed to upgrade the onsite wastewater system to cope with the proposed use. Please also address the potential disposal of powerful bleaches, nappy soakers, disinfectants and whether this will affect the effective operation of the wastewater system. If it is likely to adversely affect its operation then whether measures will be undertaken to restrict their disposal.

I have discussed the limitations and issues regarding the onsite wastewater system and as a result the following has been agreed:

- There will be no nappie-washing facility. Nappies will be disposable and taken away by the parents. This reduces biological load on the wastewater system, but also hydraulic load.
- No commercial type bleaches will be used, and cleaning products used will be more in line with domestic a type situation.
- The supply is fitted with a water meter that can be monitored to estimate wastewater flow production.

With these prerequisites in place I am comfortable that the system assessment is still valid. Changes to procedures or occupancy rates will require re-evaluation.

Regards

Andy Duncan

B.Eng(Hons) M.Eng MIPENZ CPEng

Letter in Support of the Proposed Early Childhood Centre,
683 Dalefield Road, Carterton.

Thursday 25 October 2018

To whom it may concern.

I am writing to explain some of the reasons that underpin my passion and commitment to this application.

We have something very special, this whenua, this land. I don't believe that we own it, we are merely guardians. To me, to have something so special, makes me want to share it with others, rather than keep it to myself. I have always felt like this, and we really do have a little piece of paradise. To have an opportunity to share this with our community and to be able to benefit our community is wonderful.

Nature as a link to supporting mental wellness is a key message in Aotearoa New Zealand at the moment. This month saw the Mental Health Awareness Week with the theme of **Let nature in, strengthen your wellbeing – Mā te taiao kia whakapakari tōu oranga!** This centre has this location as the key to using nature to strengthen our community's mental health through the tamariki, their whānau and wider programmes that we will be promoting and supporting. To be able to immerse our philosophy in an environment that reflects our core values is vital.

I have been part of both the National review of the mental health system, as well as 'Closing the Loop' (Capital Coast, Wellington DHB and Wairarapa DHB). What was mentioned was the lack of places for support in the Wairarapa south of Masterton. There are many, but maybe not reaching all areas of the community. We hope to be a place where whānau can feel a sense of belonging and safety in order to seek support. I am currently part of the Rakau Raroa programme, an initiative by like minds, like mine, and run by Changing Minds. This supports my knowledge to be able to respond to others in distress.

Education, and in particular early childhood education, is already heading towards an awareness of the way that nature is important in the immediate environment for our akonga (learners). We want to create a model that can be used throughout Aotearoa and the world, that shows how connecting to nature is important in our education system and society.

Moreover, it is vital that we love our natural environment in order to want to look after it. Through our approach, we will be not only using this land, but we will be learning to love it, and therefore care for it. It is my hope that these tamariki and their whānau will then become future leaders in using sustainable practices, taking the time to grow, nurture and care for Papatūānuku, the Earth.

The location is also key to our underpinning Te Ao Māori approach. It is important that we have connections to the maunga, the awa, the whenua. Our philosophy is grounded in

kaitiakitanga, which can mean guardianship. We are all guardians of the land, our tamariki, the whānau and the community. I believe that we can create a place where this is evident and beneficial to Carterton.

Carterton currently has an absence of any early childhood centre that has been developed using a Māori kaupapa, there are no Kohanga Reo currently in Carterton. We would like to address this, and work together with the local iwi to ensure that our philosophy and approach can be for all of our community, and to meet commitments that have been set through Te Tiriti o Waitangi.

Both Dee and I have our Masters' degree and we both intend to do research here within our centre. We plan to use this research to benefit early childhood education, as well as strengthening community.

It is my intention to explain in this letter that we are not intending to ruin this beautiful countryside, but to share it and use it for the benefit of others.

Ngā mihi nui,
Lauren Spicer
BTeach (ECE); M(ECE)

97 Cobden Road
RD 1
Carrington
Carterton 5791

5 September 2018

Carterton District Council
PO Box 9
Carterton 5713

Re: Resource Consent application 180020
Cruse/ Spicer, 683 Dalefield Road, Dalefield, Carterton

We write in support of the proposed early childhood education (ECE) centre at 683 Dalefield Road, Carterton.

While there are local child care facilities, the Carterton district is lacking in an ECE centre that has tikanga Maori and respect for our natural environment as more than just "operating principles", rather truly engrained in everything it does.

This centre will provide an enriched learning experience for our young citizens by embracing it's rural setting, teaching children to respect Papatuanuku (Mother Earth) and helping to grow well-rounded humans.

The team behind the proposed centre are intelligent, kind and supportive people.

We strongly believe that the children who are lucky enough to attend the centre will be given the most amazing opportunities to be nurtured, learn and grow.

The centre and it's teachers will enrich not only the lives of the children who attend the centre but also their parents and caregivers. As parents, we have learned so much from Lauren Spicer about our own children's development as well as gaining valuable parenting skills. Teaching tamariki is far more than a job for Lauren, it is a calling that she is passionate about. Having a centre that is about supporting the family alongside the child can only be a good thing for our community. A real community asset.

As parents of three young children and as Carterton ratepayers, we strongly support the proposed Cruse/ Spicer Dalefield Road early childhood education centre and implore the Council to approve the relevant consent application.

This is the ECE centre we want our children to be part of.

Yours sincerely,

Fiona Murray and Graeme Bell

Jessica Whyte
15 Mill Grove
Carterton, 5713
0211461170
jesswhyte@xtra.co.nz
27/8/18

Carterton District Council

Dear Carterton District Council:

I am a long-time resident of Carterton, and I am writing to express my concern in the opposition to Resource Consent Application 180020, Spicer / Cruse 683 Dalefield Road Carterton.

I am in support of this Early Childhood Centre [ECE] providing care in our area for our young people and their families.

I feel that providing an ECE with the underpinning values of teaching our tamariki about their whenua, kaupapa while addressing all areas of their wellbeing of Taha Tinana, Taha Wairua, Taha Hinengaro, Taha Whanau, will only have infinite positive outcomes for our tamariki and their whanau.

We know from research that our Maori children have don't have as favorable outcomes in regard to education and health as Pakaha, for this center to go ahead it helps to embrace these tamariki and bridge the inequities that they face.

Having this center will have immense positives for our people and our community, not only for now but for generations to come.

It saddens me that the resource consent may not go ahead.

Please accept this letter in support of this consent being accepted.

Sincerely,

Jessica Whyte

To whom it may concern,

RE: Resource Consent Application 180020 – Spicer/Cruse 683 Dalefield Rd, Carterton

I've known Lauren Spicer in a teaching capacity, and Dee Cruse through her work with Ngati Kahungunu ki Wairarapa, for a number of years. I know both woman to be passionate about both tamariki and their cultural heritage.

It is my understanding that Lauren and Dee wish to open an Early Childhood Centre at 683 Dalefield Rd, and that they have encountered some opposition from neighbours in relation to the opening of this centre.

I write in support of the opening of this early childhood centre.

This centre plans to offer quite a unique teaching philosophy to both the tamariki in attendance, as well as their whānau, and the wider community. Enabling tamariki to share in a rich learning environment, based around Te Ao Māori, where Māori tikanga and language are treasured, celebrated and practiced will allow Māori tamariki (and others) to take pride in their cultural heritage. This partnership is essential according to the early childhood curriculum document (Te Whāriki) and the Treaty of Waitangi. This pride, can only lead to positive outcomes to Māori and non-Māori tamariki alike. Māori tamariki have a right to learn in an environment where their culture is treasured and celebrated in a non-tokenistic way. I also believe that children considered "at risk" will benefit from a teaching philosophy focused around a Te Ao Māori way of doing, as well as being in an environment that respects and teaches about the need to look after Papatūānuku; respect and the teaching of caring for Papatūānuku will hopefully help these tamariki to be more sustainable in the future.

Dee and Lauren have a wealth of knowledge and passion that they are willing to share with tamarki, whānau and the wider early childhood education community, please allow them the opportunity to do so!

Thank you for reading my letter of support. Should you wish to contact me in relation to this, please feel free to call me on 021 023 55454.

Regards,

Catherine Cameron, BA, MEd, Grad Dip Tch (ECE)

Carterton resident and early childhood teacher

Carterton District Council
PO Box 9
Carterton

Re: Resource Consent Application 180020, Spicer / Cruse

I write in support of Resource Consent Application 180020.

Philosophy and location:

I live in rural South Wairarapa and am a parent of two preschool children. My children spend some time each week in private care at 683 Dalefield Road, under the Paua childcare programme. I choose this care over other local options because my children ask to "go to Lauren's", because I value the caregiver's holistic approach to childcare and because there is outdoor space available for my children to explore.

Like many other Wairarapa families who either live rurally or commute to work, driving to childcare is part of our daily routine. In my case, I need to drive to care, wherever it be located and the semi-rural location in this case is not a barrier for us.

Contribution to Carterton's wellbeing:

I am self-employed and have no fixed location for work. When my children are in care in Dalefield, I work from Carterton. This means I support the Carterton community through renting a desk at 3mile co-working space, buying lunch from a Carterton café, using the local supermarket, pharmacy and post office and supporting the local op shops.

Contribution to our children's wellbeing:

There is a growing demand for nature based childcare, where children attach to nature at an early age and develop cognitive, physical, social, emotional and spiritual skills through outdoor play. These opportunities are evident in the care our children receive at 683 Dalefield Road, and when provided in combination with kaupapa Maori and the links to Kahungunu ki Wairarapa, we witness our children learning in ways that we have not experienced in other childcare environments.

I therefore support this application to establish a new childcare centre in the Carterton District, that I am sure will be a national and international exemplar.

Nāku iti noa, nā
Lynly Selby-Neal
(Gus, Cameron and Clara)

394 Cannock Road
RD4 Martinborough, 5784.
06 3086537

Carterton District Council,
Planning Department,
Holloway Street,
P.O. Box 9
Carterton 5743

24 August 2018

Mike Buckham
16 Memphis Grove,
Totara Park,
Upper Hutt 5018
Mobile: 021 053 4020
Email: mbuckham@gmail.com

Re: Resource Consent Application 180020: Spicer/Cruse 683 Dalefield Road, Carterton

To whom it may concern,

I fully support the Resource Consent Application listed above. As an educator in the Wairarapa for the past ten years, I have worked with young people from throughout the South Wairarapa District and beyond on a daily basis. I have seen, firsthand, that the benefits of a quality Early Childhood Education are manyfold and flow throughout the lives of our tamariki, whānau and communities. Quality early learning provides a strong foundation for the learning journeys and lives of our children.

The centre proposed for 683 Dalefield Road will provide a vital link in the learning journey of our local tamariki by providing empowering opportunities for learning, holistic development, critical connections for whānau and the community, and building important relationships with peers, whānau, and local iwi. It's rural, nature-based setting is an amazing place for exploration of and connection with Papatūānuku, enriching both the land and the learning of the young people. Tamariki who attend this centre will begin to grow into confident, connected learners who will attend local primary, intermediate and secondary kura as they add more knowledge and wisdom to their kete. The centre will truly be an asset to the region, now and in the future, as it grows into a showcase for early childhood education in the Wairarapa.

I believe the above-listed Resource Consent Application should be granted.

Nāku, nā

Mike Buckham
Educator
Signed 24 August 2018

15 Daniel Street
Martinborough 5711

Resource Consent Department
Carterton Council
Holloway Street
Carterton

To whom it may concern,

Re: Resource Consent Application 180020
Spicer / Cruse
683 Dalefield Road, Carterton

I am writing to you to express my support for the new day care centre being proposed at the above address by Dee Cruse and Lauren Spicer.

My 13 month old daughter Ellie Greenall is currently being cared for by Lauren Spicer at this address as her educator, and over the last few months I have had the honour of getting to know both Lauren and Dee, and learn about the amazing vision they have for turning the home at 683 Dalefield Road into a day care centre for tamariki and their whānau. Not only is what they are proposing ground breaking from an educational sense (e.g. using Reggio Emilio principles) but they also want to consciously involve parents and the wider community in the centre, and in particular reach out to parents who may need extra help and support. I can see the daycare centre doing great good for the community.

Lauren and Dee are both incredibly dedicated, well respected members of the community, and what strikes me most about them is the passion, wisdom and experience they bring to their early childhood education vision for the centre.

Lauren cares for my daughter Ellie in a natural, fun filled and loving environment, with an inspiring emphasis on ensuring Ellie's individual personality, learning style and preferences are respected. Ellie has blossomed while in Lauren's care, and I feel strongly that I would like other children to receive a similar boost. Lauren also gently helps the tamariki she cares for learn Te Reo Māori as part of a Te Ao Māori model. Lots of daycare centres tend to use descriptions like this but Lauren really, really lives this, and we love our daughter being there and learning from her. We are especially excited that Ellie could be part of a visionary daycare centre where community and nature are at the heart of what the children do. We are passionate about supporting such a special place succeed. It could bring such happiness to the children who attend, and set them up so well for their future life. I can't think of better kaitiaki (guardians) than Lauren and Dee.

I understand that a number of concerns exist around traffic and the use of natural resources by the daycare centre. Having been to Lauren's house

regularly, I know that she is passionate about using natural resources and ensuring that the footprint she leaves on the land is as gentle as possible. For instance lots of the toys she chooses are wooden and upcycled, rather than plastic, and I know that Lauren has been giving careful consideration to how she can minimise traffic. I feel confident that her daycare centre would make great efforts to be mindful of how it can minimise its impact on its neighbours. As the centre is located some distance away from its neighbours I feel that any noise from the centre would be minimal.

Thank you for taking the time to consider my letter, and I look forward to hearing about next steps when the hearing is arranged.

Yours sincerely,

Kate Greenall