MWH

Meeting the challenge

Wairarapa Aggregates Ltd

Proposed Gravel Extraction and Cleanfill Operation

Carterton District Council

Resource Content Application and Assessment of Effects

May 2008

Quality Assurance Statement	
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Wairarapa Aggregates

Gravel Extraction and Cleanfill Operation
Carterton District Council
Resource Consent Application Assessment of Effects (AEE)

Contents

Executive Summary

Wairarapa Aggregates operates solely in the Wairarapa area and provides a regionally significant source of aggregates to the three Wairarapa districts. It is anticipated that there will be an ongoing demand for aggregate to be supplied within the area, and in order to satisfy that demand, Wairarapa Aggregates (the applicant) will need to continue to provide aggregate products from within the region.

This document provides the information necessary to accompany an application for land use consent to authorise activities associated with the establishment and ongoing operation of a land-based quarry and cleanfill operation. This document has been prepared in accordance with the requirements of the Resource Management Act 1991 (the RMA). It includes a description of the site and locality, the activities proposed at the site and the statutory framework within which the activities must be assessed, an assessment of the actual and potential effects of the activities on the environment, and an outline of the ways in which any adverse effects arising from the activities can be avoided, remedied or mitigated, as required by the 4th Schedule of the RMA.

This document relates specifically to the parts of the project that relate to consents from Carterton District Council (CDC). However, it should be noted that resource consent is required from Greater Wellington Regional Council, for a stormwater discharge permit. This has been applied for at the same time.

Part One – Resource Consent Application Form

The following resource consent is being applied for:

Land use consent (section 9 Resource Management Act 1991)

To undertake:

- activities associated with mineral extraction in the Rural zone (Operative Carterton and Proposed Wairarapa Combined District Plans); and
- the construction and ongoing operation of a cleanfill operation on the same site.

Form 9 of the Resource Management Act 1991

Application for Resource Consent under section 88 of the Resource Management Act 1991

To: Carterton District Council
PO Box 9
CARTERTON

We: Wairarapa Aggregates
C/O MWH New Zealand Limited
Level 1, 123 Taranaki Street
PO Box 9624, Te Aro
Wellington, New Zealand

apply for the resource consent described below:

Land use consent (section 9 Resource Management Act 1991)

To undertake:

- activities associated with mineral extraction in the Rural Environment Zone
- earthworks associated with the construction and ongoing operation of a proposed cleanfill operation

1 The name and address of the owner and occupier of the land to which this application relates is:

Kiwi Lumber (Masterton) Ltd

Norman Avenue, Waingawa,

Masterton.

2 The location of the proposed activities is:

Please refer to the locality map in Section 3 of this report.

3 A description of the activities to which the application relates is:

The establishment and operation of a land based quarry and with an associated clean fill operation.

4 The following additional resource consents are required in relation to this proposal and have been applied for at the same time:

- Stormwater Discharge Permit for the discharge stormwater/washwater that will enter into a waterbody.

5 Attached in accordance with the Fourth Schedule of the Resource Management Act 1991, is an assessment of effects on the environment in the detail that corresponds with the scale and significance

of the effects that the proposed activities may have on the environment in accordance with section 88 of, and the Fourth Schedule to, the Act.

Please refer to the information contained in Section 5 of the attached Supporting Information.

6 Attached is information required to be included in the application by the district plan, regional plan, the Resource Management Act 1991, or any regulations made under the Act or regulations.

Please refer to the information contained in Section 4 of the attached Supporting Information.

7 The duration sought for the consent, pursuant to section 123 of the Resource Management Act 1991, is 14 years, although it is noted that the works will take place over a maximum of 7 years once they have commenced.

.....

Signature of applicant or person authorised

to sign on behalf of applicant

.....

Date

Addresses for service:

MWH New Zealand Limited
P O Box 9624
Te Aro
WELLINGTON

Attention: Callum Sayers

Resource Planner

Telephone No. 04 381 6727

Fax No. 04 381 6739

callum.a.sayers@mwhglobal.com

Part Two – Supporting Information

1 Introduction

1.1 Purpose of the Document

Wairarapa Aggregates (the applicant) has entered into a Profit a Pendre agreement with Kiwi Lumber (being the landowner), allowing the applicant the rights to the gravel resources located on the site.

Aggregate extraction operations in the Wairarapa region in the future are expected to continue as they are at present, with production levels gradually rising in line with increasing demand. In order to meet the current demand, and the anticipated increase in demand from within the region, it is important to have a resource available. The proposed site is anticipated to be able to assist in the supply of aggregate to satisfy the demand from within the region for a period of approximately seven years.

The purpose of this document is to provide the information necessary to support an application for resource consent from Carterton District Council (CDC) to authorise the extraction of gravel and an associated cleanfill operation on the proposed site. This document has been prepared in accordance with the requirements of the Resource Management Act 1991 (the RMA) and includes an Assessment of Effects on the Environment (AEE). It contains a description of the proposed works, the statutory framework within which the application must be assessed, an assessment of the actual and potential effects of the activities on the environment, and the ways in which any adverse effects arising from the activities can be avoided, remedied or mitigated.

1.2 Structure

This application document has been structured to facilitate an understanding of:

- the physical works associated with the extraction of gravel from the site and the cleanfill operation
- the actual and potential effects on the environment associated with the activities
- methods to avoid, remedy or mitigate those effects.

Part One of this document contains the Resource Consent Application Form (Form 9) to HCC for the necessary resource consents.

Part Two of this document contains the supporting information for the application. This is a description and assessment of effects on the environment. It contains the following sections:

- Section 1 – the **introduction**, which sets the scene for the information to follow

- Section 2 – a **description of the proposed activities** that this application is seeking consent for
- Section 3 – a summary of the **environmental setting** within which the activities would occur
- Section 4 - the **relevant legislative and policy framework** that must be considered for the application
- Section 5 – the **assessment of effects** on the environment
- Section 6 – an assessment of **notification** to the use of the proposal
- Section 7 – covers the **consultation** undertaken by the applicant in relation to the proposed activities
- Section 8 – provides a **conclusion** of the proposal

Appendices containing technical reports and further information have also been provided where they are referred to directly in this document.

1.3 Consent Sought

The proposed works are located within Carterton District and are covered by the Operative Carterton District Plan and Proposed Wairarapa Combined District Plan. The following resource consents are therefore being sought:

Land use consent (section 9 Resource Management Act 1991)

To undertake:

- activities associated with mineral exploration and production on the site described
- construction and ongoing operation of a proposed cleanfill operation

A term of 14 years is sought for the consent, although it is noted that the works are anticipated to only take place over a maximum of 7 years once they have commenced.

2 Proposed Works

2.1 Introduction

This section of the application provides a description of the proposed activity, including the physical works that are proposed to be carried out over the duration of the operation, and general principles relating to the extraction of the gravel material and the drainage of stormwater from the excavation site. This section will also detail the operation of the cleanfill operation which is proposed to be carried out on site.

It is proposed that that applicant will extract gravel from the site to a depth where the quarry floor will be approximately 0.5 metres above the existing water table. It is anticipated that an associated mobile crushing plant will be located in the existing quarry floor that is located on site. From this location, extraction of the gravel will commence. Gravel will be transported into the mobile crusher and processed accordingly, with approximately 10% of product being washed. Over the anticipated quarry operation life time, approximately 300,000m^3 of gravel is expected to be extracted from the site.

The quarry will also provide a cleanfill operation, which will be brought onto site by contractors many of whom will be arriving to purchase and export gravel from the site. The cleanfill that is deposited on site will comply with Greater Wellington Regional Council Guidelines for cleanfill. The cleanfill material will be progressively used to rehabilitate the site. The rehabilitation will occur at times when there is a suitable amount of cleanfill available. The exact finished ground level of the rehabilitated site has not yet been determined, as this will be determined by the availability of cleanfill. A Quarry Management Plan provides further detail on the proposed works, and is attached as Appendix A.

As part of the proposal, stormwater will be generated from the 11.6ha site. Stormwater will flow in a west to east direction, which will result in stormwater collecting sediment from across the open quarry site. Stormwater will leave the site and will ultimately enter into an area which is covenanted by the Queen Elizabeth II National Trust (QE2) as its final receiving environment. It is this aspect of stormwater that will require resource consent from Greater Wellington regional Council.

Water that is required for the washing of the aggregate has been source from the Carterton District Council Water Supply pond that is located adjacent to the proposed quarry site. Carterton District Council has determined that there is currently a surplus of 22 litres per second in the water storage pond, which has the ability to be provided to other users. The applicant has entered into an agreement which allows 11 litres per second to be extracted over the crushing and washing cycle of the operation. This part of the operation will be undertaken over a period of approximately four months of the year, therefore a year round supply of water for washing of aggregate is not required. A copy of the letter of agreement between the applicant and Carterton District Council is attached as Appendix B.

Resource consent is also required from Greater Wellington regional Council for the activity, as it involves the discharge of used water from the washing process. For completeness, all of the activities involved in the construction of the gravel extraction and associated cleanfill operation are described here, even though this

document applies only to the consent sought from Carterton District Council for the earthworks and use of the land for the activity. It should be noted that an application is made in parallel for the Regional Council Consent, accompanied by appropriate documentation.

3 Environmental Setting

3.1 Site Description

The proposed Kiwi Lumber Quarry site is located immediately to the north of the current Kiwi Lumber site at Waingawa, adjacent to State Highway 2. The area of the site identified for quarrying purposes is currently a flat paddock utilised for cattle grazing. There has been some small scale gravel excavation on the site which was permitted under a previous resource consent. The site is located approximately 6 km WSW of Masterton, 1.6 km SW of the Waingawa River and 1.2 km N of State Highway 2. The NZ Grid Reference for the site is 2727665E, 6023465N. The site is located entirely within Carterton District. The location of the site is shown in Figure 1. The site is legally described as Lot 3 DP 383510 and is contained within Certificate of Title 168187. The Certificate of Title is attached as Appendix C.

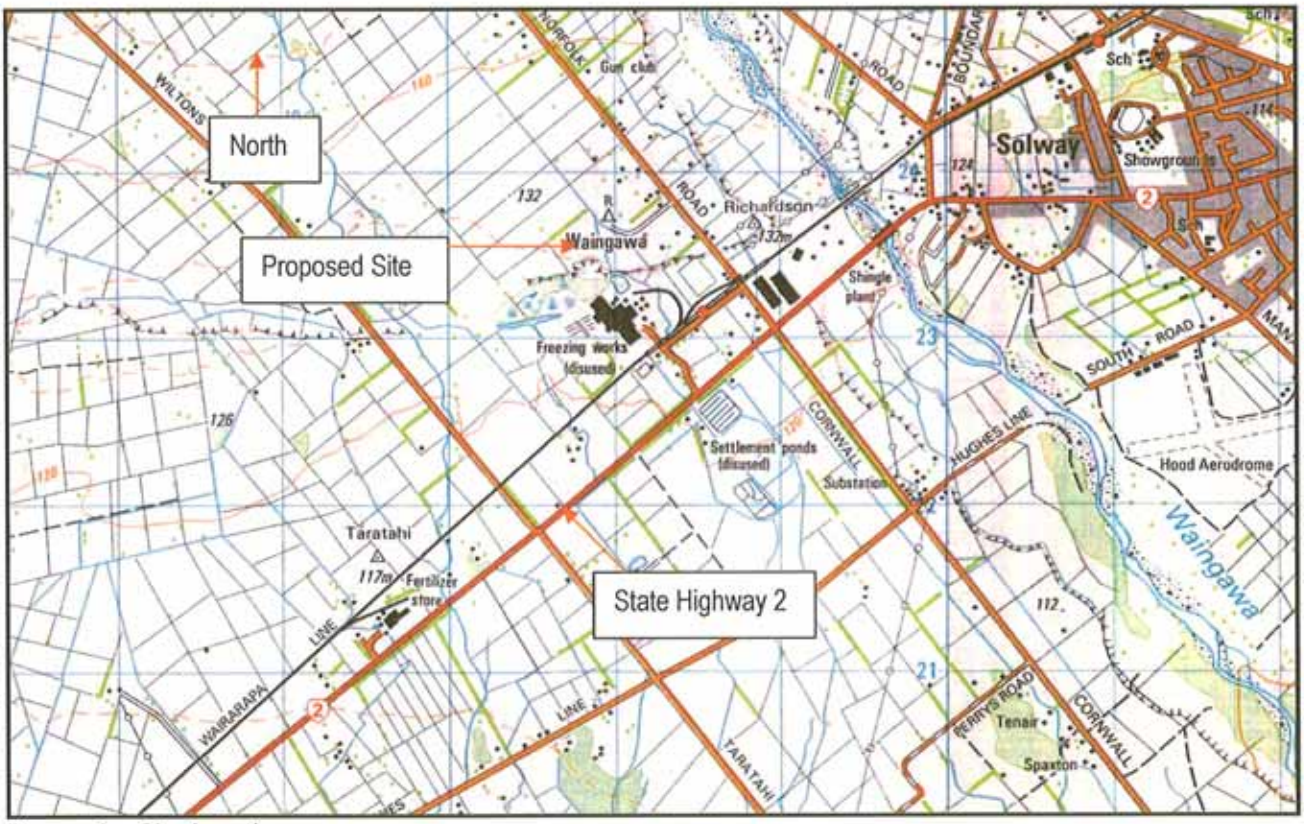

Figure 1 – Site location

The site covers an area of approximately 11.6 Hectares. The proposed extraction area is approximately 700 metres long from SW to NE, with a maximum width of 290 metres from the entrance gate in the middle of the southeastern boundary to the northwestern boundary. The majority of the natural ground slopes gently from a level of 130m above sea level in the NE to 122m in the SW. The only significant natural topographic feature is a 3m high ridge that runs approximately East-West across the western end of the site, where a splay off the Masterton Fault has lowered the ground level in this area. It should be noted that the Masterton Fault that runs across this site is identified in the New Zealand Geopreservation Inventory with a C3 rating. A C3 rating recognises the feature as a regionally important feature which is vulnerable to significant modifications by human actions. It is not anticipated that extraction into the fault feature itself, as this area contains material that is not economically viable to extract. To the South of this ridge the natural ground surface becomes very flat and develops into an oval shaped, heavily vegetated wetland, which is the Queen Elizabeth II National Trust (QE2) covenanted area.

The southwestern and northwestern boundaries of the site are marked by fences and are adjacent to similar flat pasture that covers the proposed extraction area. The northeastern boundary runs adjacent to a water race that brings water from the Tararua Hills in the NW, and there is also a radio mast along this boundary (owned and operated by Radio New Zealand), which is approximately 50m high. The stream is approximately 2.5m wide and 0.25m deep and flow is controlled further upstream. The area of the radio mast has been specifically excluded from the proposed extraction area. The southeastern boundary runs along old fill from the demolition of the freezing works for the first 150m, and then for 250m along natural ground formed by the excavation and access the ramp into the old excavation area. The most western 220m of the southeastern boundary runs adjacent to the QE2 wetland area, which is surrounded by a fence but also has a 5m wide ditch on the proposed extraction area side of the fence, as shown in Figure 4 below.

The proposed quarry site is located on land owned by Kiwi Lumber (Masterton) Limited (Kiwi Lumber). Wairarapa Aggregates has signed a Profit a Prendre agreement with Kiwi Lumber to extract and utilise the sand and gravel resources at the site for a period of seven years, with the ability to negotiate a further seven years. The area to be utilised is largely undisturbed pasture, although approximately 10% of the site is occupied by an existing disused quarry excavation. There is also a small area of apparently clean fill within this quarry excavation, which has a maximum depth of 4.0 metres. Three small topsoil mounds are located on the site from pre-stripping of the excavation.

Immediately along the southeastern boundary is the current Kiwi Lumber site. This area is predominantly used as a stocking area for timber, storage for waste wood, pallets etc. Prior to Kiwi Lumber acquiring the site it was the site of a meat freezing works. The buildings and structures associated with the meat freezing works have been demolished. Materials from the demolition works have been disposed of around the site, particularly along the eastern section of the southeastern boundary of the proposed extraction site.

3.2 Surface Water Resources

The site does not intercept any surface water courses. The extraction area will not affect the water race that runs along the eastern boundary of the site, nor the QE2 covenanted area along the southeastern boundary. There will be a 10m standoff to the crest of the excavation from both the water race and the ditch adjacent to the QE2 area, in accordance with the Carterton District Plan Rural Industrial Zone permitted activity rules.

The floor of the existing old quarry excavation is currently at or near the ground water level at the site and water discharges from the quarry into drains that exit the site immediately to the east of the entrance gate. The assumed ground water level is approximately at the 123.5 to 124m elevation. The water from the excavation and the surrounding land drains into both the QE2 covenanted area to the west and another wetland area to the east, which is within land owned by Kiwi Lumber and with some owned by Carterton District Council. The water which currently leaves the site appears to be clean and shows no obvious high sediment load, though as soon as it leaves the proposed extraction area it mixes with water from the backfilled excavation that runs along the eastern part of the southeastern boundary.

Rain that falls on the flat pasture land across the site soaks into the soil and runs off into either the old excavation or directly towards the QE2 wetland area in the southwest corner of the site.

3.3 Climate and Weather

The Wairarapa area is characterised by a climate which is generally warm and dry. During the summer months the region is characterised by a settled weather pattern of dry whether with warm temperatures being a frequent occurrence. During the winter months, Wairarapa predominately experiences a mild winter, although frosts are common. The region typically experiences long sunshine hours and is exposed to a northwesterly prevailing wind during the summer with a westerly wind prevailing during the winter months.

3.4 Land Use Patterns

The proposed site is zoned Rural Environment in the Carterton District Plan (the District Plan) and is currently undeveloped. Currently there is a small area of the site that has been subject to previous quarrying activities, however the remainder of the site is still in pastoral use, and is grazed by stock.

Located to the north of the proposal site are a small amount of rural residential lifestyle blocks, which are located approximately 100m from the proposed northern, most extent of the quarry site.

Located to the east is the remainder of the Kiwi Lumber site, which also has the disused freezing works located on it. There is still industrial type activity being carried out from the site, from the Kiwi Lumber operations. The QE2 covenanted wetland is located immediately adjacent to the proposed quarry site, which is located on the Kiwi Lumber owned land.

Land that is to the south and west of the proposed quarry site is all in open pastoral land use, which is currently grazed by stock.

3.5 Cultural Values

This application has been assessed against the relevant local authority planning documents, which do not identify this site as having any cultural value to local iwi, such as waahi tapu or other taonga.

The two iwi identified within the Wairarapa area are Kahungunu ki Wairarapa and Rangitane o Wairarapa. Both iwi have an interest in the area and as discussed in section 5 have been consulted with in regards to this application.

Representatives for both iwi did not raise any issues of concern with regard to the application.

4 Legislative and Policy Framework

This section provides a brief overview of the legislation and statutory plans that are relevant in providing guidance for the assessment of the application for consent for the proposed gravel extraction and cleanfill operation.

The site is located in the Wairarapa area and as a result is subject to both the Operative Carterton District Plan and the Proposed Wairarapa Combined District Plan. A brief analysis of the status of the proposed activities under these statutory documents is also provided.

4.1 Resource Management Act 1991

The overriding purpose of the RMA is *'to promote the sustainable management of natural and physical resources'*. Part 2 of the RMA, sections 5 to 8, outlines the broader principles that are to be considered for any resource use, development or protection. These principles are then elaborated in local authority planning documents.

Any activity can be authorised by a rule (either in a Regional Plan or District Plan), a resource consent, or through a designation.

The RMA sets out the circumstances in which resource consents for activities are required. The following sections are relevant to the application. Section 9 sets out restrictions on the use of land as follows:

(1) No person may use land in a manner that contravenes a rule in a district plan or proposed district plan unless the activity is –

(a) Expressly allowed by a resource consent granted by the territorial authority responsible for the plan; or

(b) An existing use allowed by section 10 or section 10A.

(4) In this section, the word "use" in relation to any land means –

(a) Any use, erection, reconstruction, placement, alteration, extension, removal, or demolition of any structure or part of any structure in, on, under, or over the land; or

(b) Any excavation, drilling, tunnelling, or other disturbance of the land; or

(c) Any destruction of, damage to, or disturbance of, the habitats of plants or animals in, on, or under the land; or

(d) Any deposit of any substance in, on, or under the land; or

(da) Any entry on to, or passing across, the surface of water in any lake or river; or

(e) Any other use of land –

and "may use" has a corresponding meaning.

Thus land use consent will be needed for the development unless it is allowed by a plan rule.

Resource consent applications must be prepared in accordance with section 88 of the RMA. Applications must include a full description of the activity or activities, and an assessment of any actual or potential effects on the environment, as well as outlining the ways in which significant adverse effects can be *'avoided, remedied or mitigated'*. Such assessments must be prepared in accordance with the Fourth Schedule of the RMA, which sets out the matters that should be included in the AEE and those that should be considered in its preparation.

When considering resource consent applications, the consent authority must have regard to the matters outlined in section 104(1) of the RMA. This section is subject to the overriding purpose of the RMA contained in Part 2, which also guides a consent authority in its consideration of an application.

In assessing a resource consent application a consent authority can, under the provisions of section 108 of the RMA, impose consent conditions, as considered necessary, to avoid, remedy or mitigate the adverse effects of the activity on the environment.

4.2 Operative Carterton District Plan

4.2.1 Introduction

The Carterton District Plan (the District Plan) became operative in March 2000. The District Plan identifies and develops policies and methods to manage the effects of land use activities on the environment.

The land on which the quarry and cleanfill operation is proposed (the proposed site) is zoned Rural Environment. This zoning applies only to the proposed work site, with the rest of the legal title being zoned Rural Industrial.

Issues, objectives, policies and rules contained in Chapter 2 of the District Plan are relevant to this application.

4.2.2 District Wide Issues

Chapter 1 of the District Plan identifies significant issues that apply to all activities and land uses across the district, rather than to specific zones. This chapter of the District Plan identifies the significant resource management issues of the District. The district wide issues that are considered relevant to the proposed gravel extraction and cleanfill operation are:

- *The need to manage the effects of land use and activities within the rural environment to maintain the quality of the rural resource to meet the reasonably foreseeable needs of future generation; and*
- *The need to accommodate ongoing change within the urban and rural areas while maintaining and enhancing the quality of the present environment.*

The Carterton District Plan does not contain any relevant District wide objectives or policies.

4.2.3 Planning maps

The subject site is located in the Rural Area as shown on Planning Map R.4 (Rural Environment) (Appendix D) of the Carterton District Plan (the Plan). The site itself is not subject to any specific designations or hazards register and it does not lie within any specific area of heritage value or of known value to Maori. It should be noted that the Masterton Fault runs through the south eastern part of the site.

The wider area to the north, south, east and west of the site is also zoned 'Rural Environment.'

Rural Environment Zone

Chapter 2 of the District Plan contains the objectives and policies relating to activities in the Rural Environment zone. Local issues that have been identified in relation to the Rural Environment zone and that are relevant to the proposed site include:

- *The effects of development on rural amenity; and*
- *The susceptibility of some land in the rural area to erosion.*

Objectives and policies have been developed by Carterton District Council in response to these issues. Those that are relevant to the gravel extraction and cleanfill operation are as follows:

Objectives

Objective 2.3.1 'Maintain and enhance the character and amenity of the rural area.'

The explanation for this objective notes that it is important to retain the existing open space character and amenity values of rural areas, as these are qualities that are different from urban and rural residential areas. Effects of the proposed gravel extraction and associated cleanfill operation on rural character and amenity values are discussed in Sections 5.2 and 5.3 of this application.

Objective 2.3.3 'Ensure that development does not contribute to the susceptibility of land to erosion'.

Policies

Policy 2.4.2 'Manage the adverse effects of activities to limit their impact on the quality of the rural environment'.

Policy 2.4.3 'Any activity utilising the land resource should be managed in a sustainable manner so as to avoid soil loss'.

There are a number of issues that are identified as potentially having an adverse effect on the rural environment, as a result of land use and development. With specific regard to policy 2.4.2 the quality of the surrounding rural environment will be able to be maintained, as is discussed further under Section 5 of this report. The proposed quarry and associated cleanfill operation will be managed in a manner that will ensure that the soil loss will not occur, and will ensure that the soil resource will be able to be utilised by future generations.

4.2.4 Activity Status

It is considered that the proposed quarry and cleanfill operation requires a resource consent as a **Discretionary Activity** under Rule 2.7.10 (a) (b) and (e) of the Operative Carterton District Plan.

2.7.10(a) Any activity not referred to in this zone as permitted, controlled or limited discretionary and not referred to in Part B, District Provisions.
2.7.10(b) Any industry;
2.7.10(e) Any earthworks not meeting the permitted activity standards.

Rule 2.7.11 specifies the matters the Council may have regard to when determining whether to grant consent and what conditions, if any to impose on a Discretionary Activity.

2.7.11.1 sets out the matters the Council may have regard to for activities not specifically provided for as permitted, controlled or limited discretionary activities and not referred to in Part B, District Provisions. These include:

(a) *Whether the scale of the development is generally in keeping with the character and amenity of the rural area;*

It is considered that the proposed quarry and cleanfill operation achieves the above matter as it is an activity that is anticipated to occur within the rural area. The scale of the operation is not significant in terms of the potential or actual adverse effects that may compromise the character and amenity of the rural area. This is discussed further under section 5 of this report.

(b) *The nature and scale of the effects created by the activity for example, on noise, glare, dust and smoke and the methods proposed to avoid, remedy or mitigate the effects;*

Both noise and dust are actual effects that are generated by quarrying and stockpiling of gravel and cleanfill. It is considered that the physical layout of the site, will ensure that neither dust nor noise become a nuisance. Both glare and smoke are not considered to be relevant in terms of this proposal.

(c) *Any effects on the operation of the road, access provision, provision for vehicle parking, loading and manoeuvring. Access to the State Highway will be carefully assessed;*

The proposed site does not gain access directly to State Highway 2, however the proposal will generate traffic that will need to access the state highway from the local roading networks. A traffic impact assessment has been carried out and is attached as Appendix E. A Site Plan showing the access arrangement from Waingawa Road to the site entrance is shown as Appendix F.

(d) *The proposed restoration of any quarried land. A restoration plan shall be submitted with any application.*

As part of the agreement (Profit a Pendre) with the landowner, Kiwi Lumber, the quarry site must be restored in order to allow potential future rural residential development to occur on site. The restoration will involve the use of the cleanfill to backfill the site and to ensure that there are 5 building platforms available. At this stage the landowner has not identified the areas that are intended to be used for future rural residential development.

Once building platforms have been identified, appropriate geotechnical tests will be undertaken by a suitably qualified exert to ensure building platforms are suitable for possible future residential development.

(e) *The effects on the visual amenity of the rural environment and the proposed mitigation measures in terms of screening and landscaping;*

Due to the physical location and nature of the site, it is not visible from most view points. There is little residential development within the wider area that overlooks the site. The majority of the works will be below ground level which will restrict the views from the surrounding area.

(f) *Consideration will be given to the likely cumulative effects where activities are being concentrated in one locality including effects on the rural character and amenity;*

It is not considered that there will be any cumulative effects associated with the proposal, as views of the site will be restricted from the surrounding area. Therefore it will not adversely effect the rural character and amenity of the area. It should also be noted that there is an anticipated operational lifespan of twelve years, where the site will then be rehabilitated to a rural environment setting.

It is considered that there will be no cumulative effects associated with potential adverse effects from dust or noise. It is anticipated that the permitted activity standards to both noise and dust are able to be complied with. Furthermore on site monitoring will ensure that neither dust or noise become an actual adverse effect.

(g) *The proposed means of waste disposal and other required servicing including water supply. A solid waste management plan may be required;*

The proposed quarry and cleanfill operation will not be required to be connected to any waste disposal or local authority services.

(h) *The effects of the use or storage of hazardous substances and the proposed methods for avoiding, remedying or mitigating any adverse effects;*

Fuel storage for machinery will be stored on site in an above ground storage tank which will be bunded.

(i) *Whether the methods of disposal of tailings and spoil and other waste will mitigate any adverse effects on the environment;*

Any material that is extracted and is not considered economically viable will be utilised as cleanfill on the site, being used to rehabilitate the site.

(j) *Whether any adverse effects on natural environment features and areas, the coastal environment, heritage features and areas of indigenous vegetation can be avoided or mitigated;*

Located through the site is the Masterton Fault it is registered on the New Zealand Geopreservation Index. It is not anticipated to extract between the fault line and the QE2 wetland, as the material located in this area is not economically viable to extract. Therefore the adverse effects on the fault line are anticipated to be no more than minor.

(k) *Whether any adverse effects can be remedied in terms of natural hazard areas; and*

This matter is not considered applicable in relation to the proposal.

(l) *Where there are odour effects reference will be had to the FIDOL factors in assessing the methods proposed to avoid, remedy or mitigate the adverse effects.*

This matter is not considered applicable in relation to the proposal.

2.7.11.2 sets out the matters council may have regard to for any industry in the Rural Environment. These include:

(a) Whether the visual effects of any building, structure or earthworks can be remedied or mitigated through landscape planting and screening. Existing on site planting should be retained. In particular consideration will be given to the proposed means of screen outdoor storage areas. Where a yard adjoins the State Highway Frontage the yard screening and landscaping should be appropriate to adequately screen the area;

The visual effects of the earthworks on the surrounding environment will be avoided, as the works are located below natural ground level, they are also sufficiently separated from neighbouring residences to be considered to have no more than a minor effect.

(b) The effects of the use or storage of hazardous substances and the proposed methods for avoiding, remedying or mitigating any adverse effects;

Fuel storage for machinery will be stored on site in an above ground storage tank which will be bunded. The storage of fuel is considered to be a permitted activity as it complies with Appendix 2 of the District Plan.

(c) The nature and scale of the effects on the rural amenity created by the activity for example, on noise, glare, dust, odour and smoke;

Noise and dust are actual effects that are created by gravel extraction operations. The worksite of the quarry will be located approximately 3 metres below natural ground level which will act as a natural barrier between the quarry and adjacent property owners. The prevailing wind will not carry any dust in the direction of the adjacent residents.

(d) Any effects on the operation of the road, access provision, provision for vehicle parking, loading and manoeuvring. Access to the State Highway will be carefully assessed;

The proposed site does not gain access directly to State Highway 2. However the proposal will generate traffic that will need to access the state highway from the local roading networks. A traffic impact assessment has been carried out and is attached as Appendix E.

(e) Consideration will be given to the likely cumulative effects where industry is being concentrated in one locality including effects on the rural character and amenity; and

It is not considered that there will be any cumulative effects associated with the proposal. The activity is not out of place in a rural environment and it is sufficiently separate from other activities not affect local character and amenity It should also be noted that there is an anticipated operational lifespan of twelve years, when the site will then be rehabilitated back to a rural environment setting.

(f) The proposed means of waste disposal and other requiring servicing including water supply. A solid waste management plan may be required.

This matter is not considered applicable in relation to the proposal.

4.3 Proposed Wairarapa Combined District Plan

The Proposed Wairarapa Combined District Plan was publicly notified in August 2006. It is significantly through the legal process it is considered appropriate to afford it significant weighting with regard to this proposal.

The Proposed Wairarapa Combined District Plan identifies and develops policies and methods to manage the effects of land use activities on the environment.

The site is located in the Rural Zone. The Rural zone applies only to the proposed work site. The remainder of the site is located in the Industrial Zone. This site is also identified in the Combined District Plan as being within Waingawa Future Development Area.

4.3.1 District Wide Issues

Part B of the Proposed Wairarapa Combined District Plan contains district wide issues that are relevant to the Wairarapa Region. The area wide issues considered relevant to this proposal are considered to be;

- *Appropriate ways need to be adopted to take account of Tangata Whenua values and to involve Tangata Whenua in resource management decision-making;*
- *Many remnant forests and wetlands require active protection and management in a way to ensure their ongoing long-term continued existence and enhancement;*
- *Land use and development can adversely affect the quality of the freshwater environment, particularly in the absence of reasonable buffer strips along waterbody margins;*
- *The sustainable growth and development of the Wairarapa depends on the capacity and efficiency of the transportation network to meet current and future demands; and*
- *Odour or noise can have an adverse effect on people's health and neighbourhood amenity.*

From these issues a number of objectives and policies have been developed. Those that are considered to be relevant to this application are:

Tangata Whenua

Objective TW1 – Recognition of Values & Traditional Relationships

To recognise and provide for the cultural values and relationships of Tangata Whenua in managing the natural and physical and the effects of activities, while taking into account the principles of the Treaty of Waitangi.

TW1 Policies

(a) Recognise Tangata Whenua values and provide for Tangata Whenua to maintain and enhance their traditional relationship with the natural environment;
(b) Have particular regard to the exercise of kaitiakitanga by Tangata Whenua in the management of activities and resources;
(c) Protect waahi tapu, sites of cultural importance and other taonga.

Section 5.2.4 and 7.1.2 detail the cultural and spiritual values associated with the proposed site, and the consultation that was undertaken by the applicant with local Tangata Whenua during the preparation of this application.

Indigenous Biodiversity

Objective Bio1 – Biological Diversity

To maintain and enhance the biological diversity of indigenous species and habitats within the Wairarapa.

Bio1 Policies

(h) Avoid, remedy or mitigate the adverse effects to indigenous wildlife and indigenous ecosystems that result from the use, development or subdivision of a site.

Appropriate mitigation measures have been proposed to ensure that the development of the site will not cause potential adverse effects on indigenous species and habitats.

Freshwater Environment

Objective Fwe1 – Environmental Quality

To maintain or enhance the environmental quality of the Wairarapa's rivers, lakes, wetlands and groundwater by managing the detrimental effects of development and activities.

Fwe1 Policies

(a) Manage the design, location and scale of subdivision and/or land development and use adjoining waterbodies so it retains the special qualities and natural character of waterbodies.
(c) Ensure the adverse cumulative effects of subdivision, land use and development on the fresh water environment are avoided, remedied or mitigated.
(d) Working with Regional Council to manage subdivision, land use and development to minimiser adverse effects on freshwater environments.

The Quarry Management Plan contained in Appendix A details the proposed operations of the proposed quarry, appropriate sediment control measures have been proposed which will ensure that there will be no actual or

potential adverse effects on the freshwater environment. A Sediment Control Plan is also located within Appendix H.

Transportation

Objective TT1 – Managing the Roading Network

To maintain the safe and efficient operation and development of the road network from the adverse effects of land use while maintaining the network's ability to service the current and future needs of the Wairarapa.

TT1 Policies

(a) Identify and manage a hierarchy of roads within the Wairarapa to ensure that the function of each role is recognised and protected in the management of subdivision and land use.

(b) Establish controls and standards on land use and subdivision to avoid , remedy or mitigate any effects of the land use on the safe and efficient functioning and operation of the road network, including loading, parking and manoeuvring.

(f) Ensure a coordinated approach to addressing capacity and safety issues within the road network, working with Transit New Zealand in relation to State Highways.

Section 7.1.3 discusses the consultation with Transit New Zealand. Appendix E contains the Traffic Impact Assessment that was carried out to assess the impact of the proposal on both the local roading network and State Highway 2.

Objective TT1 – Managing the Rail Corridor

To ensure development and activities in and around the rail corridor, as well as the operation of the railway itself, are managed to be mutually compatible.

TT2 Policies

(a) Protect the existing rail corridor from the adverse effects created by adjoining land use activities, particularly by the subdivision and development of land.

Section 7.1.3 discuses the consultation that was carried out with Ontrack, the network authority responsible for the rail network. Ontrack wishes to receive a copy of the application that is submitted to Carterton District Council, and will make any appropriate comments at that stage.

General Amenity Values

Objective GAV1 – General Amenity Values

To maintain and enhance those general amenity values which make the Wairarapa a pleasant place in which to live and work, or visit.

GAV1 Policies

(b) Control the levels of noise, based on existing ambient noise and accepted standards for noise generation and receipt.

(c) Ensure vibrations occurring through the use of equipment or machinery does not cause adverse effects on the comfort of occupants of adjacent properties.

(f) Manage activities with unacceptable visual effects on amenity values, in accordance with the qualities of each environmental zone. As a guide to determining if an activity has unacceptable visual effects, consideration will be given to other policies relevant to a particular activity or environmental zone.
(g) Manage the levels of odour and dust by avoiding inappropriate odours and dust from adversely effecting sensitive activities on adjoining properties.

Section 5.3.1 and 5.3.2 detail any potential or actual adverse effects of noise, dust and vibration on adjoining properties. It is considered that with the prevailing wind, distance from neighbouring properties and the siting of the physical work site, the affect on the neighbouring properties with regard to the above effects, is considered to be less than minor.

4.3.2 Planning maps

The subject site is located in the Rural Area as shown on Planning Map 14 (Rural Special) (Appendix G) of the Proposed Wairarapa Combined District Plan (the Proposed District Plan). The site itself is not subject to any specific designations or hazards register and it does not lie within any specific area of heritage value or of known value to Maori. It should be noted that the Masterton Fault runs through the south eastern corner of the site.

The wider area to the north and west of the site is also zoned 'Rural.' Located to the south and east the land is zoned 'Urban Industrial', with the Waingawa Future Development Area located to the south.

4.3.3 Rural Zone

Chapter 4 of the Proposed District Plan identifies significant issues that apply to all activities and land uses located within the Rural Zone. This chapter of the District Plan sets the overall direction intended to take in managing the natural and physical resources of the Rural Zone. The following issues are considered relevant to the gravel extraction and cleanfill operation:

(1) Safeguarding the life-supporting capacity of Wairarapa's soil resources for both current and future generations, and, in particular, ensuring the finite rural land resources may be used for a wide range of productive purposes, including uses that may not currently take place in the Wairarapa.
(2) Recognising that primary production activities generate external effects that are generally an accepted part of the rural environment while ensuring that such effects do not have excessive or cumulative adverse effects on the environment, particularly on amenity values and natural processes and systems.
(3) Unsustainable land use practices that degrade or modify the natural environment and its processes (for example, groundwater systems), the role of indigenous biodiversity in ecosystems and its capacity to support life on an ongoing basis.
(4) Making better use of opportunities for self-sufficiency in the rural area to reduce the cumulative effects on Wairarapa's servicing and infrastructure networks.

From these issues a number of objectives and policies have been developed. Those that are considered to be relevant to this application are as follows:

Objective Rur1 – Protection of Rural Character and Amenity

To maintain and enhance the amenity values of the Rural Zone, including natural character, as appropriate to the predominant land use and consequential environmental quality of different rural character areas within the Wairarapa.

Rur1 Policies

(c) Identify areas within the Rural Zone in which there are particular land use issues or environmental characteristics or constraints that require specific management approaches, including urban growth, flood hazards, surface water supply catchment protection, and the operational requirements of key infrastructural facilities and intensive primary production activities – Rural (Special Zone).

This objective and policy is relevant as quarrying activities can potentially have an adverse effect on the rural amenity character, especially when considered against the predominant land use in the area. Section 5.2 of this application discusses the potential and actual adverse effects of the proposal on the amenity character of the rural zone.

Objective Rur3 –Interzone Management

To ensure the amenity values of adjoining zones are reasonably protected from the adverse effects of the activities within the Rural Zone.

Rur3 Policies

Manage the effects of the Rural Zone activities to ensure that the environmental qualities and characteristics in the adjoining zones are not unreasonably degraded, bearing in mind their location adjacent to a functioning primary production environment.

This objective is relevant as the site is located within the Rural (Special) Zone, and located to the east of the site is the Industrial Zone. Located to the west of the site is the Rural (Primary Production) Zone. Section 5.2 of this application discusses appropriate measures to ensure that the effects of the proposal will not compromise the environmental qualities and character of the Rural Zone.

4.3.4 Activity Status

In accordance with definition of primary production within the Plan, a primary production does not include the activity of topsoil stripping, or mineral extraction and processing. As part of this proposal, extracted aggregate will be crushed on site by mobile crushing machinery. As defined in Appendix 4 of the Plan, stone and mineral crushing is considered to be *a primary industry*.

The stone crushing component of the proposed quarry and associated cleanfill operation, requires resource consent as a **Discretionary Activity** under Rule 4.5.5(a).

The topsoil stripping, gravel extraction and cleanfill operations are considered to be a **Discretionary Activity** under Rule 4.5.5(b) as any Industrial Activity id considered to be a Discretionary Activity in the Proposed Wairarapa Combined District Plan.

Overall, the proposed quarry and associated cleanfill operation is considered to be a **Discretionary Activity** under the Proposed Wairarapa Combined District Plan.

4.3.5 Assessment Criteria for Discretionary Activities

Rule 4.5.5 states that Discretionary Activities will be assessed against, but not limited to, the relevant assessment criteria set out in Section 22 of the Plan.

The Assessment Criteria as specified in Section 22 of the Plan, considered relevant to this proposal include:

22.2.11 Earthworks

(i) Noise, silt, and dust emanating from the earthworks, and effects on proximate allotments and public areas.
(ii) The time period when the soil will be exposed.
(iii) Proposed methods of timing to avoid, remedy or mitigate potential adverse effects including rehabilitation, re-contouring and re-vegetation or retention of existing vegetation.

It is not anticipated that the effects of noise, silt and dust will cause an adverse effect on neighbouring allotments or public areas. The site is relatively isolated and in an area that anticipates such activities occurring, and also is excavated in a way that offers a natural barrier between it and the neighbouring residents. At anyone time a maximum of 60% of work area will be open, which will ensure only this area will need to be managed for dust, with the rest of the site remaining vegetated with existing grass.

22.2.5 Noise

(i) The ambient sound level and the impact on any cumulative increase.
(ii) The contrasts between the predicted noise of the proposed activity and the existing noise environment in terms of level, character, duration and timing.
(iii) The level by which noise standards will be exceeded, and its duration, particularly during the hours of darkness.
(iv) The nature and location of nearby activities and the adverse effects of any increased noise upon them.
(v) Whether the noise will detract from the amenity or general environmental quality of the surrounding zone.
(vi) The site topography and any influence this may have on noise conveyance.
(vii) Proposed methods for avoiding, remedying or mitigating potential adverse effects including insulation, shielding and barriers.
(viii) Use of protocols, codes of practice and industry guidelines and any relevant New Zealand Standards for the assessment of noise.

Noise is an actual adverse effect that is often generated by quarry operations from such activities as crushing of aggregate. The site topography will ensure that noise will have a no more than minor effect on the wider environment as the noise source is located below natural ground level, which will help contain noise generated from the site.

22.2.12 Stormwater

(i) Whether there will be actual or cumulative adverse effects resulting from additional private connections on the stormwater reticulation system.
(ii) Whether the stormwater reticulation system will require upgrading if additional private connections are made
(iii) Proposed methods to avoid, remedy, or mitigate potential adverse effects of on site stormwater disposal.

There will be no upgrades or connections to the Council services in the area. The Quarry Management and Sediment and Erosion Control Plan demonstrate how the potential adverse effects of on site stormwater disposal will be avoided, remedied or mitigated.

22.2.9 Vehicle Movements

22.1.16 Roads, Intersections, Parking and Loading Areas may be more appropriate section of the Plan to include

(i) The effect on the road network's safe and efficient operation within the area, including cumulative effects and the degree to which the existing traffic flow and type will be affected by the potential traffic generated.
(ii) detraction from the adjoining allotments and the zone's amenity in such matters as odour, noise, glare and dust as a result of increased vehicle movements.
(iii) The necessity for road upgrading to accommodate the increased traffic.
(iv) The location of the unformed part of the legal road and the position of the formed carriageway.
(v) Proposed methods to avoid, remedy or mitigate potential adverse effects, and the degree to which they would be successful.
(vi) The effect on the rail network's safe and efficient operation in the area, including the cumulative effects of vehicle movements on road/rail level crossings.

The proposed quarry will contribute to an increase of traffic on both the local and state highway network. Attached as Appendix E is the traffic impact assessment which discusses the actual and potential effects. The traffic impact assessment has assessed the potential and actual effects that the proposal will have on both the local roading network and the state highway network. Whilst the report has identified that there will be an increase in the number of vehicles on the road, it considers that both the roading network and the state highway network are able to cope with the anticipated increase. The report concludes that the potential adverse traffic effects are no more than minor.

4.4 District Plan Summary

The application for a quarry and associated cleanfill operation has been assessed against both the Operative Carterton District Plan and the Proposed Wairarapa Combined District Plan. The proposal has been found to require the following resource consents:

<u>Operative Carterton District Plan</u>
It is considered that the proposed quarry and cleanfill operation requires a resource consent as a **Discretionary Activity** under Rule 2.7.10 (a) (b) and (e) of the Operative Carterton District Plan

Proposed Wairarapa Combined District Plan

The stone crushing component of the proposed quarry and associated cleanfill operation, requires resource consent as a **Discretionary Activity** under Rule 4.5.5(a).

The topsoil stripping, gravel extraction and cleanfill operations are considered to be a **Discretionary Activity** under Rule 4.5.5(b) as these activities are not specifically provided for as permitted, controlled or restricted discretionary activities in the Proposed Wairarapa Combined District Plan.

Overall, the proposed quarry and associated cleanfill operation is required to be assessed as a **Discretionary Activity.**

5 Assessment of Effects on the Environment

5.1 Introduction

The purpose of this assessment is to analyse the potential effects, both positive and negative, that the gravel extraction and associated cleanfill operation may have on the environment, particularly the extent to which the proposal results in adverse effects on the environment, including the amenity of the surrounding area.

The principal effects are considered to be:

- effects on rural amenity values and rural character (including the effects arising from the generation of dust and noise)
- effects on the district roading network and state highway network
- effects on landscape values (including restoration plan)
- effects on other values of the land (water courses)
- effects on cultural and historical values
- positive effects

5.2 Effects on Rural Character and Rural Amenity Values

The proposed quarry and cleanfill is located in a rural area, which is characterised by rural activities such as pastoral farming and also a small amount of rural residential activity. It should also be noted that the proposal site shares a common boundary with an industrial zoned site, being the Kiwi Lumber mill site to the east. The proposed quarry site and surrounding environment is generally flat in topography and is utilised to the west and south for pastoral farming. To the east is the abandoned freezing works building. Quarrying as an activity has the potential for effects such as noise on dust which may be generated from day to day activities, it therefore important that such effects are avoided, remedied or mitigated so as not to have an adverse effect on the rural character and amenity values.

5.2.1 Effects of Dust on Rural Amenity Values

Dust is an actual effect that is associated with any quarrying activity, and it is required to managed to ensure that it does not become a nuisance to neighbouring properties. Wairarapa Aggregates has taken into consideration the nuisance of dust and has set in place measures to avoid, remedy or mitigate such effects.

As part of the operations of the quarry and cleanfill activity, at any one time only 60% of the site will be exposed so as to minimise as much as possible the ability of dust to become airborne. With regard to the cleanfill that is to be stored on site, this will be used to progressively rehabilitate extraction that occurs on site. This will ensure that there are not large stockpiles of cleanfill on site, which are susceptible to creating a dust nuisance.

The topography of the site and the nature of the extraction will provide a buffer between the work site and the neighbouring residential properties. Currently there is an existing quarry site which has been excavated

approximately midway through the site. This will be the start point of any future extraction occurring on the site. The natural ground level where excavations will begin are below the surrounding ground level. This will act as a barrier between the operation site and the neighbouring residential properties. As mentioned earlier the prevailing wind direction is to the southwest, which will transport any dust that does become airborne away from the adjoining residential properties. This will result in any dust heading into open pastoral paddocks.

Wairarapa Aggregates will monitor dust on the site, ensuring that it does not become a nuisance. In the circumstance that dust does become a nuisance then a water truck will be used to dampen down the open quarry site and cleanfill.

5.2.2 Effects of Noise on Rural Amenity

Noise is an actual effect that is created by quarrying activities such as the use of machines on site, including extraction machinery and the crushing of aggregate. As there is a small amount of rural residential activity near to the proposed quarry site, it is important that the potential and actual adverse effects of noise are avoided, remedied and mitigated.

Currently the site contains an area that has been excavated under a previous consent for the private use of the landowner. The ground level of this area sits approximately three meters below the surrounding the proposal site. It is intended that the crushing machine will be located in this depression, which will act as a barrier between the noise source (the crushing plant), and the receiving environment (including nearby residents). At the northern most extraction point of the quarry, machinery will not only be below the surrounding ground level, but will also be at least 50 metres from the nearest dwelling.

The crushing activity is likely generate noise as a potential nuisance, although this activity will be carried out infrequently over the duration of the quarry The crushing is only carried out at the same time as washing, which is anticipated to only be approximately four months of the year over the operation period of the quarry. It is anticipated that crushing will occur in blocks of approximately three weeks at a time over the period of a year, which will total an approximate total washing/crushing time of four months annually. It is not yet known what times of the year the washing/crushing periods will be, as timing will be determined by demand for aggregate and stockpiling capacity. Excavation is carried out frequently, which involves the use of heavy machinery such as a front-end loader. However this creates less noise than the mobile crushing plant. Therefore the overall effect of the frequent operation of heavy machinery will be less.

It is considered that the intermittent nature and the timing of the extraction and crushing activities together with the natural barriers that are in place on the site, will ensure that the potential for noise nuisance on the surrounding rural environment will be less than minor.

5.3 Effects on the Roading Network

The proposed quarry and cleanfill operation will result in an increase traffic generation to the site, both on the local roading and state highway network. The site is anticipated to generate on average approximately 50 vehicle movements per day, which is based on the expected sales of aggregate from the site and other visitors to the site (contractors, couriers etc). It is difficult to ascertain an accurate figure in terms of aggregate being

sold from the site in a financial year, as this is reliant on the market in terms of physical works occurring in the region requiring aggregate. A traffic impact assessment has been carried out on behalf of the applicant and is attached as Appendix E.

There will be some added pressure on Waingawa Road and Norfolk Road in terms of the local roading network, as any traffic generated from the proposal will use these roads to access the site. The applicant has stated that any vehicles visiting the site will not use Norman Avenue when travelling to or from the site. Norman Avenue is not considered appropriate to be utilised by heavy vehicles. It is considered that the anticipated vehicles added to the local roading network will not have more than a minor effect.

State Highway 2 is located approximately 2km from the site via Waingawa and Norfolk Roads, and at this location is declared a Limited Access Road. The proposed quarry and cleanfill operation will increase the traffic utilising the Norfolk Road intersection with State Highway 2. However, the anticipated vehicle movements per day generated by this proposal are not considered to have a more than minor effect on the state highway or the intersection with Norfolk Avenue and State Highway 2.

The establishment of a quarry and cleanfill operation at this site will consolidate the existing gravel extraction operations in the Wairarapa region. This will have a positive effect on the wider road network as discussed in section 5.7

5.4 Effects on Cultural and Historical Values

According to relevant planning documents for the area, the site does not appear to be subject to any areas of significance in terms of waahi tapu or other taonga.

It is acknowledged that Maori have a special relationship with the land, and in particular water. The applicant has undertaken consultation with both of the local iwi within the area, and has gained feedback regarding the proposal. The outcome of the consultation with local iwi and other potentially affected parties is discussed in further detail in section 7.1.2.

According to relevant planning documents in the area, the site does not appear to be subject to any recognised historical values.

5.5 Effects on Landscape Values

The site is currently of flat topography, with the exception of a small area that has already been the subject of earlier gravel extraction, to approximately 3.0 metres below the surrounding ground level. The site has no particular landscape values the district or region.

As mentioned previously, it is proposed to place the mobile crushing plant in the area that has already been subject to gravel extraction. Extraction will then occur from this point outwards to the extraction limits as shown in Appendix H. This will reduce any day-to-day visual impact of the activity.

As mentioned earlier, there is a requirement for the applicant to rehabilitate the site after extraction, to a satisfactory state. It is proposed that the site will be rehabilitated utilising the cleanfill that is brought to the site by contractors, who will be arriving at the site to collect aggregate. Rehabilitation will be carried out progressively as extraction occurs when sufficient cleanfill is available. Contractors bringing clean fill to the site will be required to comply with Greater Wellington Regional Council guidelines. Compliance with these guidelines will be the responsibility of the contractor and the quarry site manager.

It is not possible to provide finished cross-sections of the finished ground level, as this will be determined by the availability of cleanfill.

5.6 Effects on Other Values

The proposed quarry and cleanfill may have the potential to have an adverse effect on other values in the area, such as those associated with the QE2 site which is located directly adjacent to the south eastern part of the site. Through the process of the quarry operations taking place on site, approximately 10% of the aggregate extracted is required to be washed. The sediment laden stormwater which will result from the washing of the aggregate has the potential to enter into the QE2 site, potentially resulting in adverse effects to the aquatic life and habitat. The applicant has taken necessary precautions and mitigating measures to ensure that the potential and actual adverse effects on the QE2 site have been adequately avoided, remedied or mitigated.

Sediment and erosion control measures have been proposed as part of the quarry management plan (Sediment Control Plan attached as Appendix H) to ensure that the ongoing protection of the QE2 site is maintained for the duration of the quarrying operation. The stormwater runoff from the quarry and associated cleanfill site is the subject of a resource consent application to Greater Wellington Regional Council.

Running through the south eastern side of the site is the Masterton Fault, which is identified on local planning documents. As noted earlier, the Masterton fault is identified as a feature in the New Zealand Geopreservation Index (NZGI). The NZGI specifies that the Masterton fault is of regional significance, and may vulnerable to significant modifications by human actions. Whilst the NZGI is not a statutory document, it has been considered as part of this application. It is not anticipated to extract the Masterton fault feature itself, or in the land between it and the QE2 site. This will also provide a useful buffer between the worksite and the QE2 site.

5.7 Positive Effects

The establishment of a land based quarry on the Kiwi Lumber site will have a number of actual positive effects on the environment, most notably with regard to traffic, and the consolidation of quarrying operations within the Wairarapa.

The Kiwi Lumber operation will effectively result in the decommissioning of the existing gravel extraction and processing site in Masterton (Buchannan Place). This will therefore remove the need for vehicles to access this site which is located on a sweeping right hand bend on State Highway 2 travelling into Masterton. Decreasing the amount of vehicles utilising Buchannan Place will improve road safety.

The utilisation of this site will also significantly decrease the use of the Carterton site (located adjacent to the Waiohine river), which will also decrease the number of vehicles on State Highway 2. The applicant also

anticipates that 90% of the vehicles exiting the application site will be heading north, through Masterton, to serve the northern areas of the Wairarapa region.

It is important that the Wairarapa area is able to supply aggregate to meet the districts' demands. The establishment of the proposed quarry at the Kiwi Lumber site will help ensure that over the next decade, the regions aggregate demands will be able to be met. The positive effect of being able to supply local and regional aggregate demands, will ensure that aggregate is not required to be transported into the region.

5.8 Summary

The above assessment has demonstrated that any potential effects on the surrounding rural environment will be minor or less. The rural area is an appropriate location for this quarry and associated cleanfill operation, and the activity will not have any adverse impacts on the character of the rural area or any surrounding properties. The proposed mitigation measures will ensure that the potential and actual adverse effects associated with quarrying have been adequately avoided, remedied or mitigated.

6 Notification

Under Section 93 (1) of the Act an application for resource consent need not be notified if the Council is satisfied that the adverse effects of the activity on the environment will be minor.

The assessment of effects on the environment demonstrates that the adverse effects of the proposed activity on the environment are likely to be no more than minor. The Council should therefore give consideration to the assessment of the resource consent application on a non-notified basis in accordance with Section 93 (1) of the Act. If non-notification of the application is not considered appropriate, then consideration to notifying the application on a limited notification basis should be considered.

The parties directly affected have been consulted regarding this proposal, and measures have been proposed are anticipated to mitigate, avoid and remedy any potential or actual adverse effects that may be generated by the proposed earthworks. It is also considered that the activity will not have any adverse effect on the environment which is any more than minor.

The assessment of effects on the environment demonstrates that there is likely to be insignificant or nil effects on all other persons as a result of granting this resource consent application. The applicant would appreciate the opportunity to resolve any issues outside of the formal pre-hearing and hearing process, which may be raised by any of the parties that have been formerly notified by the Council.

7 Consultation

7.1 Introduction

This section provides a broad description of the consultation undertaken by the applicant prior to lodging the application. The applicant understands that the Carterton District Council wishes to notify a number of parties whom may be interested in the proposed activity. The applicant has undertaken the following consultation to try to identify any issues that may arise as a result of the activity.

7.1.1 Landowner Consultation

Located to the north of the site are a number of residences that have been identified as potentially being affected by the proposal, they are listed below.

Peterson	65 Norfolk Rd
Hooper	61 Norfolk Rd
Lingham	55 Norfolk Rd
Root	49 Norfolk Rd
Dewis	45 Norfolk Rd
Mortinson	35 Norfolk Rd
Harvest	25 Norfolk Rd
JNL	Waingawa Rd
Waingawa Holdings	Waingawa Rd

All of the identified landowners above have been made familiar with the proposed quarry and cleanfill operation, and have been made aware of the actual and potential effects that may impact on them. Whilst written approvals have not been obtained as part of this application, the above landowners indicated they are satisfied with the proposed quarry operation. No objections to the proposal were raised during consultation with the landowners.

Attempts to consult with the Queen Elizabeth Trust have been undertaken. Attempts to contact the local liaison person have not been successful. Several messages have been left requesting a meeting.

7.1.2 Tangata Whenua Consultation

The applicant undertook consultation with both the following contact persons in the Wairarapa, as supplied by the Greater Wellington Regional Council Iwi Liasion Officer (Kiri Parata).

- H Te Whaiti as the representative of Kahungunu Wairarapa
- D Rimi as the representative of Rangitane o Wairarapa.

No issues were raised as a result of the proposed quarry activity at the Kiwi Lumber site.

7.1.3 Other Consultation

Consultation was also undertaken with the following organisations:

Greater Wellington Regional Council	Masterton
Carterton District Council	Carterton
Transit New Zealand	Wellington
Department of Conservation	Wellington
Ontrack	Wellington
Radio New Zealand	Wellington

Pre application meetings were held with both the local authorities in the area. No specific issues were raised by Carterton District Council at that time. Greater Wellington Regional Council raised issues regarding the availability, and sourcing of water which is required for quarrying activities. The applicant has now taken the necessary steps to avoid, remedy and mitigate the issues raised by Greater Wellington Regional Council.

Transit New Zealand wishes to hold further discussions with the applicant once application for the proposed land-based quarry and associated cleanfill operation has been completed, and documents relating to its interest has been finalised (such as the traffic impact assessment).

The Department of Conservation and Ontrack preferred to make comment through the formal notification process (by Carterton District Council), where all of the information is available for them to consider.

Discussions were held with Radio New Zealand who own and operate the radio antenna located on the northern end of the site. The issue of underground cables located in the area were raised, which are located within a radius of approximately 60 metres from the antenna (radius is shown in Appendix H). The extraction plan has been amended accordingly to ensure that the proposed extraction will not have any adverse effect on the identified underground cabling. Radio New Zealand did not raise any other issues regarding the proposal.

7.1.4 Consultation Summary

The applicant carried out consultation with the above parties detailing the operations side of the application and the potential and actual effects. For the most there were no issues raised from the consultation, and where there was, the applicant has responded by either amending the application accordingly, or by addressing the points directly in this application.

Although the applicant has carried out the above consultation in good faith, it is accepted that Carterton District Council is likely to limited notify this application. In accordance with Carterton District Council correspondence from the Council's planning officer identifying who is likely to be notified of the application, the applicant has endeavoured to consult with all those identified.

8 Conclusion

An application for resource consent is submitted on behalf of the Applicant, Wairarapa Aggregates, to the Carterton District Council for the establishment of a quarry and associated cleanfill operation, on the Kiwi Lumber Site, located off Waingawa Road, Carterton. The application is a Discretionary Activity in terms of both the Operative Carterton District Plan and the Proposed Combined Wairarapa District Plan.

The assessment of the application against the provisions of the RMA and the Plans have concluded that:

1. The proposed activity is consistent with the purpose and principles of the Resource Management Act, 1991;
2. The proposed activity will have no adverse effects on the environment which are any more than minor; and,
3. The proposed activity is not inconsistent with the objectives, policies, rules, or other provisions of the relevant district plans and other relevant planning documents;

Based on this assessment, it is considered that consent can therefore be granted, subject to reasonable and necessary conditions, in accordance with the relevant provisions of the RMA.

Appendix A – Quarry Management Plan

Wairarapa Aggregates Ltd.

Kiwi Lumber Proposed Quarry Site, Masterton

May 2008

Quality Assurance Statement	
MWH New Zealand Limited Level 1 123 Taranaki Street Te Aro P O Box 9624 Wellington 6141 New Zealand Phone : 64-4-381 6700 Fax : 64-4-381 6739	**Project Manager:** Sylvia Allan
	Prepared by: Richard Oldcorn
	Reviewed by: Sylvia Allan / Callum Sayers .....
	Approved for issue by: Sylvia Allan.....

Revision Schedule					
Rev No	Date	Description	Prepared By	Reviewed By	Approved By

Wairarapa Aggregates Ltd.

Kiwi Lumber Proposed Quarry Site, Masterton

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1 Introduction

1.1 General Background to the Quarry Management Plan.

MWH New Zealand Limited has developed this Quarry Management Plan (QMP) on behalf of Wairarapa Aggregates Limited for its proposed quarry at the Kiwi Lumber site in Waingawa, near Masterton. The QMP is intended to operate in conjunction with any resource consent conditions and to thus contribute to ensuring that potential environmental effects associated with quarrying at the site are appropriately managed and controlled. Wairarapa Aggregates will operate the Kiwi Lumber Quarry site in accordance with this management plan. The QMP will be reviewed every five years by Wairarapa Aggregates.

The QMP also covers the import of clean fill to the site as part of the remediation activities.

1.2 Objectives of the Quarry Management Plan.

The purpose of this QMP is to help achieve the following:

1. To ensure the efficient, effective and safe extraction of gravel and sand;
2. To ensure that the operation of the quarry is not a source of nuisance to adjoining landowners;
3. To manage and control any environmental effects resulting from the quarrying activities;
4. To ensure that the site is rehabilitated according to the agreed end-use objectives;
5. To ensure good communication between the quarry operator, the land owner and joint venture party, adjoining landowners, the Carterton District Council and the Greater Wellington Regional Council.

1.3 Site Details and Background to Proposed Quarry

1.3.1 Location.

The proposed Kiwi Lumber Quarry site is located immediately to the north of the active Kiwi Lumber site at Waingawa, which is adjacent to State Highway 2. It is approximately 6 km WSW of Masterton, 1.6 km SW of the Waingawa River and 1.2 km N of State Highway 2. The NZ Grid Reference for the site is 2727665E, 6023465N. The site is located entirely within Carterton District. The location of the site is shown in Figure 1.

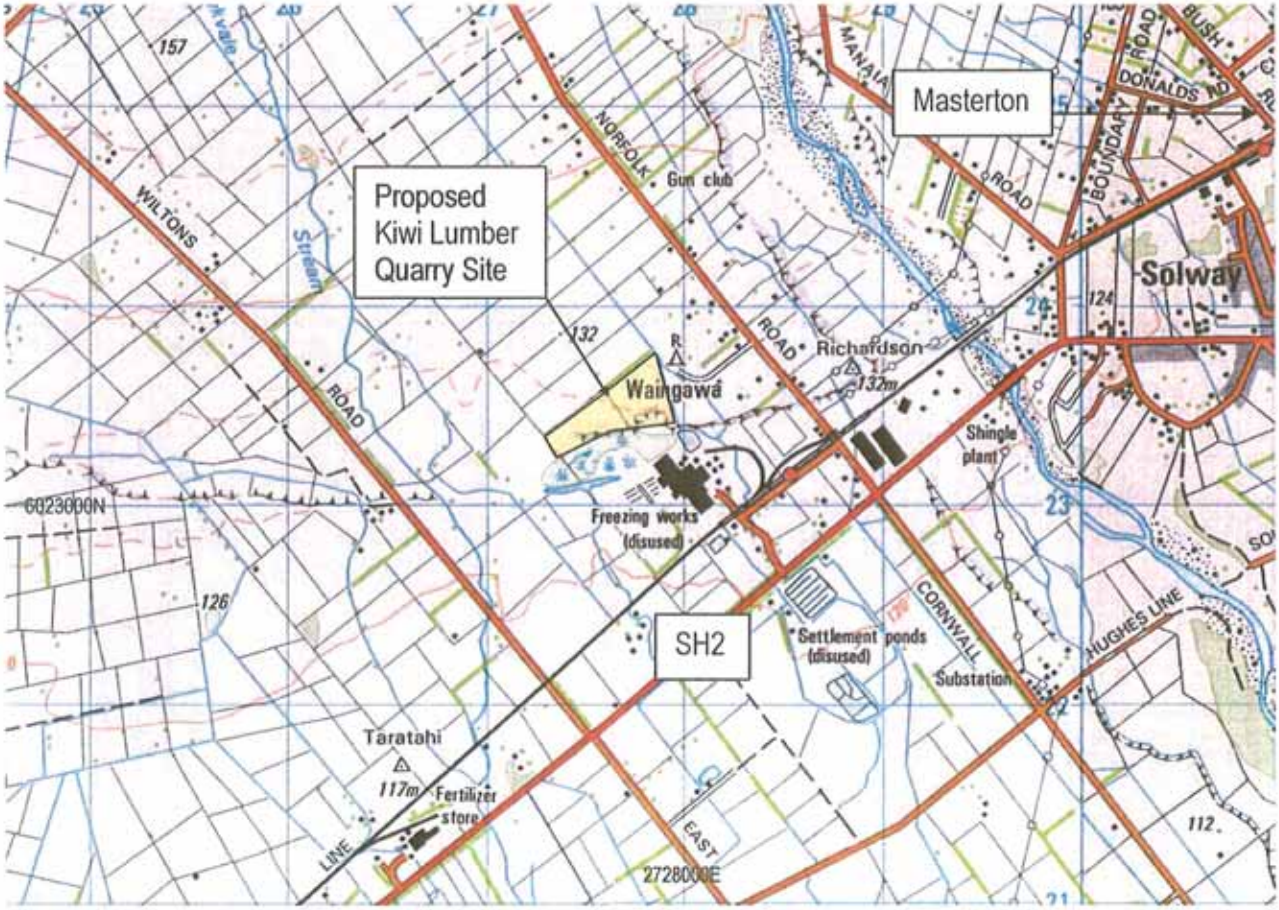


Figure 1. Location of Proposed Kiwi Lumber Quarry Site.

Note that the freezing works shown here has now been demolished.

Figure 2 shows an aerial photograph of the site.

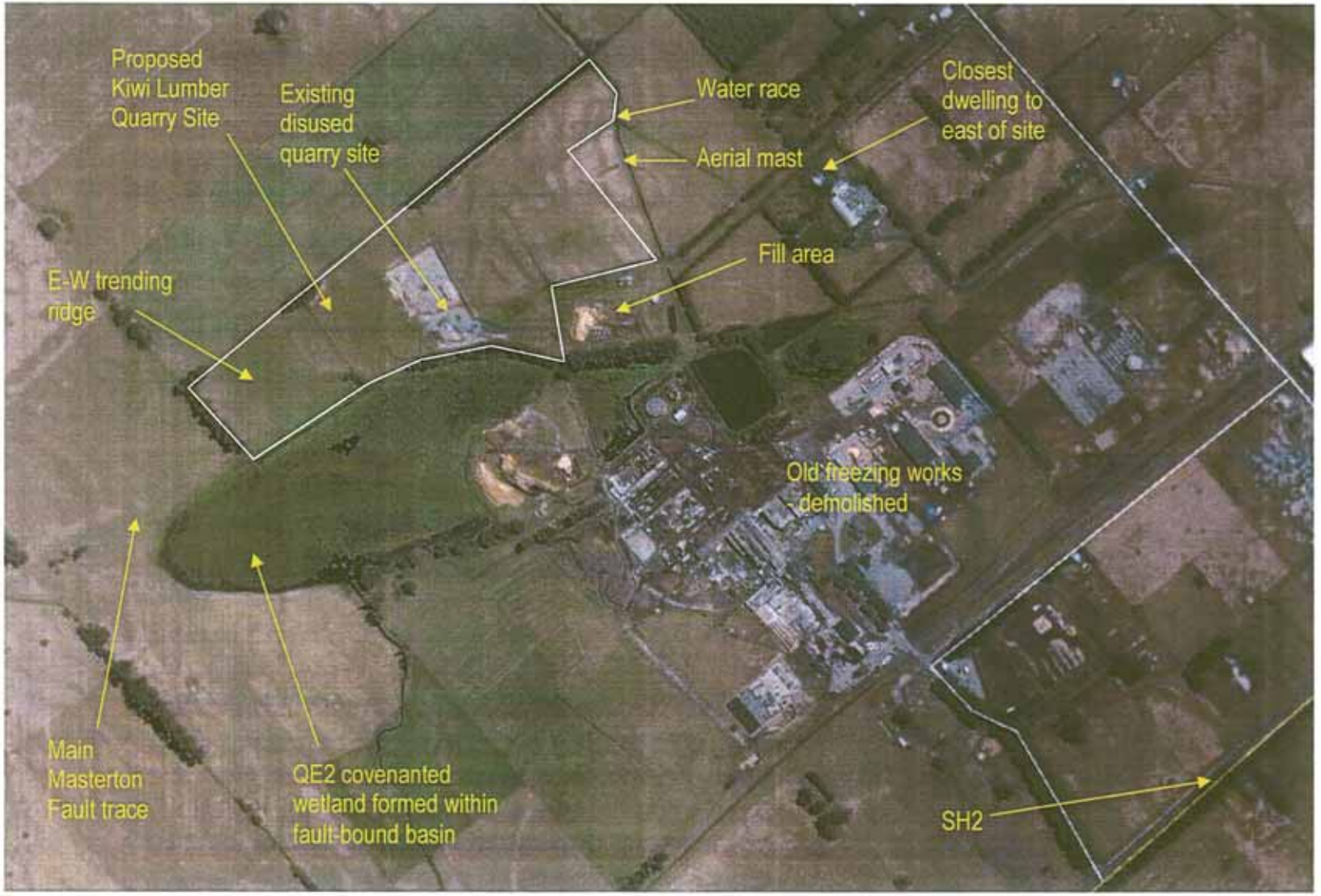


Figure 2. Aerial Photograph of Proposed Kiwi Lumber Quarry Site.

1.3.2 History and ownership

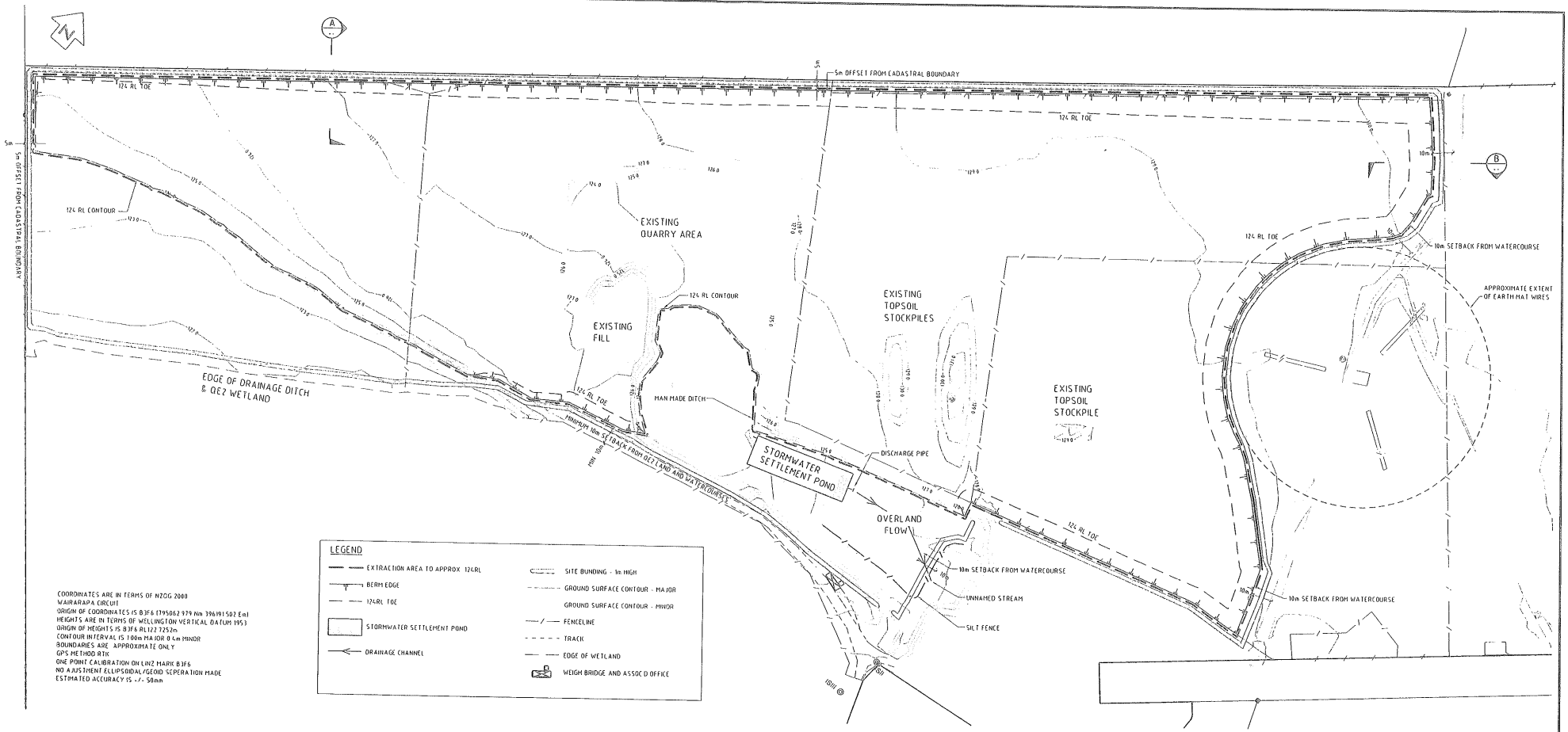
The proposed quarry site is located on land owned by Kiwi Lumber (Masterton) Limited (Kiwi Lumber). Wairarapa Aggregates has signed a Profit a Prendre with Kiwi Lumber to extract and utilise the sand and gravel resources at the site for a minimum period of 7 years. The area to be utilised is largely undisturbed pasture, though approximately 10% of the site is occupied by an existing disused quarry excavation. There is also a small area of clean fill within this quarry excavation, which has a maximum depth of 4 metres. Visual inspections of the fill indicate it is comprised of bricks, wood and gravel, and with no possible contaminants were identified therefore can be considered as 'clean'. Three small topsoil mounds are located on the site from pre-stripping of the excavation.

Immediately along the southeastern boundary is the active Kiwi Lumber site, which in this area mostly comprises a stocking area for timber and areas of fill or waste wood, pallets, etc. Prior to Kiwi Lumber obtaining this site it was the site of a meat freezing works (as shown on the NZGS map in Figure 1), which has now been demolished. Some materials from demolition of the works have been tipped around the site, in particular along the eastern section of the southeastern boundary of the proposed extraction site (see Figure 2). It is not known what is within this tip. The proposed extraction site is specifically located outside any previous areas of fill, apart from the clean fill located within the existing excavation.

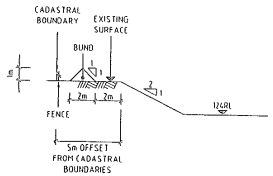
1.3.3 Site Layout.

The current layout of the site is shown on the plan in Figure 3, based on a survey carried out in November 2007 by MWH. The site covers an area of approximately 11.6 Hectares. The proposed extraction area is approximately 700 metres long from SW to NE, with a maximum width of 290 metres from the entrance gate in the middle of the southeastern boundary to the northwestern boundary. The majority of the natural ground of the site slopes gently from a level of 130m above sea level in the NE to 122m in the SW. The only significant natural topographic feature is a 3m high ridge that runs approximately East-West across the western end of the site, where a splay off the Masterton Fault has lowered the ground level in this area (see Figure 2). It should be noted that the Masterton Fault that runs across this site is identified in the New Zealand Geopreservation Inventory with a C3 rating. A C3 rating recognises the feature as a regionally important feature which is vulnerable to significant modifications by human actions. It is not anticipated to extract into the feature itself, as located from it to the QE2 covenanted site is material that is not economically viable to extract. To the South of this ridge the natural ground surface becomes very flat and develops into an oval shaped, heavily vegetated wetland, which is a Queen Elizabeth II National Trust (QE2) covenanted area (Figure 2).

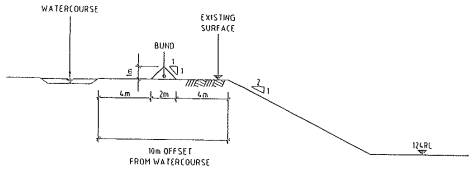
Figure 3. Site Plan showing Proposed Extraction Limits and Water Management Plan



SITE PLAN
SCALE 1:1000



TYPICAL DETAIL A - EXCAVATION SLOPES ADJACENT TO CADASTRAL BOUNDARIES
SCALE 1:200



TYPICAL DETAIL B - EXCAVATION SLOPES ADJACENT TO WATERFEATURES
SCALE 1:200

REV	REVISIONS	DRAWN	CHECKED	APPROVED	DATE
D	EXCAVATION EXTENT LIMITED TO 124RL				
C	TYPICAL DETAIL C ADDED	JSC			03/08
B	REDUCTION IN SIZE OF STORMWATER SETTLEMENT POND	JSC	RO		03/08
		JSC	RO		03/08

	Name	Date
SURVEYED	NMB	11/07
DESIGNED	R OLDCORN	01/08
DESIGN CHECK		
DRAWN	J CHANDLER	01/08
DRAWING CHECK		
APPROVED		

MWH

WAIRARAPA AGGREGATES
KIWI LUMBER SITE

PROPOSED EXCAVATION LIMITS & WATER MANAGEMENT PLAN
FIGURE 3

NOT FOR CONSTRUCTION

Status Stamp: FOR REVIEW
Date Stamp: 19/05/2008
SCALES (A1) 1:1000 (A3) 1:2000
Drawing No: Z1449801 | Sheet No: GE01 | Rev: D

XREFS X_Kiwi Lumber site survey, X_Model_Output_SurveySurface, X_Typical Detail

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ORIGINAL SIZE A1

The southwestern and northwestern boundaries of the site are marked by fences and are adjacent to similar flat pasture that covers the proposed extraction area. The northeastern boundary runs adjacent to a water race that brings water from the Tararua Hills in the NW, and there is also a radio mast along this boundary, which is approximately 50m high. The radio mast is owner and operated by Radio New Zealand, and has a radius of a copper mat surrounding it to increase efficiency. The copper mat is unable to be modified or moved, therefore has been excluded from the extraction area. The stream is approximately 2.5m wide and 0.25m deep and flow is controlled further upstream. The area of the radio mast has been deliberately left out of the proposed extraction area. The southeastern boundary runs along old fill from the demolition of the freezing works for the first 150m, and then for 250m along natural ground formed by the excavation and access ramp into the old excavation area. The most western 220m of the southeastern boundary runs adjacent to the QE2 wetland area, which is surrounded by a fence but also has a 5m wide ditch on the proposed extraction area side of the fence, as shown in Figure 4 below.

Figure 4. Western Extent of proposed extraction area, looking West.

The old excavation is approximately 4m deep and occupies the central part of the site, as shown on the plan in Figure 3. An access gate to the excavation is located in approximately the middle of the southeastern boundary, and a 4 to 5m wide road runs west from the gate down to the quarry floor. The main excavation area has dimensions of approximately 100m by 150m and comprises a flat quarry floor formed in natural ground at approximately the 124m elevation, with two 4 to 5m high gravel stockpiles situated along the eastern face. There is also a small (60m x 70m x 4m) tip in the southwest corner of the excavation, which appears to constitute "clean" fill, comprising bricks, earth and general rubble. There is no indication that the tip contains any potential contaminants, though the surface has been grassed over. The excavation slopes have been cut at approximately 70 degrees and are stable. The excavation is shown in the photographs in Figures 5 and 6.

Figure 5. View of existing disused quarry excavation, looking North.

Figure 6. Eastern extension to old quarry excavation, partially backfilled with soil and inert fill. Looking south.

To the east of the main area of the excavation there is another section of the old quarry that has been partially backfilled with earth and topsoil over the floor or the excavation, as shown in Figure 6. This section of the quarry contains the main drainage ditch that exits the excavation to the South, adjacent to the entrance gate. The easternmost part of this old excavation has been completely backfilled. The fill is likely to be a mixture of concrete, bricks, general rubble and lumber waste amongst others. This tip is not included within the extraction area or the site boundary.

Three small topsoil bunds are located to the NW of the old excavation area, the largest being 90m long, 20m wide and 3m high. They are all currently stable and grassed over.

Immediately to the west of the entrance gate there is flattish ground on either side of the access road into the excavation, up to 20m wide, partially covered in some quarry waste and soil.

1.3.4 Geology

The geology of the site comprises Quaternary alluvium formed within old river terraces of the Waingawa River. The alluvium comprises predominantly gravel and cobbles with a matrix of coarse sand, with a small amount of fine and medium sand and minor silt (estimated at approximately 5%). There are occasional lenses of laminated sands with gravel. The gravels and cobbles are well compacted and poorly sorted, the clasts being generally subrounded to subangular and flattish, with some indistinct current bedding. Most cobbles are up to a maximum diameter of 0.25m, though there are rare larger boulders up to 0.4m in diameter. The photograph in Figure 7 shows the typical materials that will be quarried on site. The site is covered with up to 0.3m of topsoil and 0.5m of subsoil and low quality, weathered gravel and sand.

The existing excavation and a number of 6m deep exploration pits across the site have confirmed the presence of similar gravel and sand materials across the site, to a reasonable degree of certainty.

Based on the proposed extraction area outlined in Figure 3, the total potential resource for the site is approximately 275,000m^3 of material, assuming a maximum extraction level of 124m, which is approximately the groundwater level. Allowing for approximately 5% fines, this would give a total resource of just over 261,000m^3 of gravel and sand. The actual reserves available for extraction, processing and sale will depend on the accessibility of the resources within these extraction limits.

The only significant structural feature on the site is the small East-West trending ridge in the western portion of the site, which appears to be formed by an offset of a splay off the Masterton Fault (see Figures 2 and 3). The Masterton Fault is an active fault and the main offset can be traced for a number of kilometres from the railway bridge at Masterton to west of the proposed quarry site. The QE2 covenanted wetland area is directly formed as a result of the movement of this fault, with the land to the south of the ridge having subsided. The land to the south of this ridge is either at or below the 124m level and hence there will be no extraction in this area (see Figure 3).

It is possible that other small faults will be encountered during excavation of the mineral resource, which should be noted and surveyed, and if necessary inspected by a suitably qualified engineering geologist or geotechnical engineer. The location of these faults will have an impact on the location of structures for quarry after use.

Figure 7. Typical in-situ profile of gravel, cobbles and sand forming cut slope in old excavation.

1.3.5 Water resources.

The site does not intercept any surface water courses. The extraction area will not affect the water race that runs along the eastern boundary of the site, nor the QE2 covenanted area along the southeastern boundary. There will be a 10m standoff to the crest of the excavation from both the water race and the ditch adjacent to the QE2 area, in accordance with the Carterton District Plan Rural Industrial Zone permitted activity rules.

The floor of the existing old quarry excavation is currently at or near the ground water level at the site and water discharges from the quarry into drains that exit the site immediately to the east of the entrance gate. The assumed ground water level is approximately at the 123.5 to 124m elevation. The water from the excavation and the surrounding land drains into both the QE2 covenanted area to the west and another wetland area to the east, which is within the Kiwi Lumber property. The water which currently leaves the site appears to be clean and shows no obvious high sediment load, though as soon as it leaves the proposed extraction area it mixes with water from the backfilled excavation that runs along the eastern part of the southeastern boundary.

Rain that falls on the flat pasture land across the site soaks into the soil and runs off into either the old excavation or directly towards the QE2 wetland in the southwest corner of the site. There is likely to be very limited run-off from land surrounding the excavation to the north into the excavation, considering that the

topography is essentially flat and that there are no physical features, such as depressions or gullies that would tend to concentrate water towards the site.

1.3.6 Vegetation.

The entire site is covered with grass with some mature exotic trees along the southwestern, northwestern and southeastern boundaries of the site. These are not expected to be removed as a result of quarrying activities and will act as additional screening for visual impact and noise. There are three native trees at the eastern end of the East-West ridge in the western part of the site, probably kanuka/manuka, which are likely to require removal as part of quarrying activities. The eastern extension to the old excavation has been partially backfilled with topsoil and has formed a small wetland area in places (see Figure 6), with tussock grass and gorse becoming established along with pasture grass. The QE2 covenanted wetland and its specific vegetation will not be impacted by the quarry, with a standoff from the excavation to the wetland boundary and water run-off controls to prevent discharge of sediment into the wetland area (see Section 2.2.7).

All topsoil will be stored on site and seeded with grass for later restoration of the quarry.

1.3.7 Archaeology.

The site for the proposed extraction area is either pasture, an existing excavation or an area of backfill/tipping from previous quarrying operations or industrial activities. There are no obvious archaeological sites associated with the excavation footprint and the Carterton District Plan does not show any sites as being registered. Considering the existing land use it is unlikely that there would be any significant sites. Occasional artefacts that may be uncovered during removal of the topsoil will be recorded and notified to the appropriate authorities (local Iwi, the District Council – see section 3.7, below).

2 Quarry Operations and Development

2.1 Overview

The purpose of the quarry operation is to extract the gravels and sands below the ground surface for use as building, construction and roading aggregates. The process of transforming the in-situ gravels and sands into aggregate products comprises firstly stripping of the vegetation, soil and low quality subsoil mixed with gravel and sand, which overlie the mineral resource. The next step is to excavate the gravels and sands with the use of heavy machinery. The extracted mineral is then either stockpiled as "run of quarry" material and later processed, or transported directly to an on-site processing plant where it is screened and crushed to produce different aggregate products of different size ranges and grades. A small proportion of the crushed product (approximately 20%) will be washed to produce concrete aggregates. The following sections provide a more detailed description of these activities.

2.2 Brief description of activities

2.2.1 Vegetation removal and site preparation

This will include removal or any trees, bushes or turf on the site. It may not be possible to separate the turf from the topsoil, which will be stockpiled separately. As discussed in Section 1.2.6, there are only three trees that are likely to need removal, with the remaining trees around the perimeter being left in place. The remainder of the site is covered with grass and occasional gorse and broom bushes. A vegetation and landscape management plan (VLMP) for the site is not considered necessary, considering the small amount of vegetation requiring removal. There are no buildings that require removal.

2.2.2 Soil and Overburden Stripping and Stockpiling

Topsoil and subsoil stripping will be carried out using an excavator and truck to transport the materials to the stockpile area. The stripping will be similar to the existing excavation, as shown in Figure 8 below.

Figure 8. Pre-stripped northern section of existing excavation, looking northeast.

Since the overburden is only a maximum of 700mm thick, there will be no issues with respect to the stability of any cut slopes formed in this material. The stripped topsoil and materials will be stored in bunds similar to those already on the site. They will be grassed over to prevent dust issues and will be constructed no more than 7m high with slopes at a maximum angle of 1 vertical to 2 horizontal (approximately 27 degrees), to maintain long-term stability. The precise position of topsoil and subsoil bunds will be determined during detailed quarry planning and operation, but will most likely be distributed around the perimeter of the site close to where they are excavated. A three metre standoff will be established between the toe of the slope of any bund and the crest of the quarry excavation. The bunds will help mitigate any visual impact and will provide a buffer against noise

from the site. They will also be important in diverting clean run-off water around the site and limiting the amount of storm water run-off from outside the site boundary.

Based on an average thickness of 0.6m, the total volume of topsoil that will need to be removed during the life of the quarry is approximately 56,000m^3. The volume of the existing topsoil bunds, which will need to be relocated at some time during the operation, is approximately 3600m^3.

Topsoil and subsoil overburden will be removed on a periodic basis in advance of the main extraction activities, in order to minimise disturbance to the site and reduce the amount of topsoil storage required at any one time. Since the excavation will be progressively restored as it is being worked, the total amount of soil to be stored will be significantly less than the total volume for the whole site.

2.2.3 Sand and gravel extraction

Gravel and sand extraction will be carried out using a backhoe excavator operating from behind the crest of the slope. The digger will load out the gravel and sand onto the quarry floor, forming a pile of excavated material. This will then be picked up by a front-end loader and taken for stockpiling as run-of-quarry material, or directly to the processing plant, depending on the production requirements at the time.

No blasting is required to excavate this material.

The slopes will be excavated at a similar angle to those currently in existence on the site, at between 60 and 70 degrees (2V:1H) as shown in Figure 9 below. These slopes are currently stable at these angles. However, when working behind the crest of the slope, the tracks of the excavator must remain perpendicular and not parallel to it, to ensure that minor degradation of the face crest does not destabilise the excavator and to allow for rapid pullback in the case of instability.

Final, long-term excavated slopes will be cut at an angle of 1V:2H (approximately 27 degrees), unless buttressed by restoration fill, in which case they will be steepened, though at present this is not considered to be required.

Figure 9. Existing quarry excavation face, up to 4m high. Looking Northeast.

Maximum slope heights in the excavation will be up to 6m in the northeast corner of the site, reducing to effectively zero in the far western part of the site, but generally ranging between 4 and 5m in height.

2.2.4 Quarry development and extraction limits

The maximum extraction limits for the excavation are shown on the plan in Figure 3. The actual extraction limits will be governed by stability requirements, proximity to water courses, soil storage bunds, operational requirements and stand-offs to vegetation, but will not exceed those shown on the plan. The excavation extraction limit represents all the material available down to just above the water table at the 124m elevation and will be taken to the site boundary where no stand-offs are required.

The precise layout of the quarry faces over the proposed life of the quarry will depend on the actual production requirements and practical excavation constraints. However, the excavation will be developed initially by advancing the existing quarry faces to either the southwest, towards the western limits of the site, or to the northeast. Because of the East-West ridge formed by the fault, the excavation in the far western portion of the site will terminate effectively along the base of the ridge and the southern limit of the excavation will have no cut slope.

There is a requirement within the Profit a Prendre to "ensure that no more than 60% of the Land constitutes the open quarry or quarries area from time to time and to lay down the balance of the Land from time to time in good quality pasture throughout the term of this Profit a Prendre." This will then limit the overall quarry working area and allow the excavation to be progressively restored.

2.2.5 Mineral processing

Minerals will be processed by means of a mobile screening and crushing unit to produce the required aggregate products. Approximately 20% of the product will be washed to produce concrete aggregates. The existing quarry floor is sufficiently large enough to accommodate this mobile plant and provide good access for mobile equipment and stocking areas. Processing is likely to be on a periodic basis, once existing stockpiles are close to depletion, but may be permanent, depending on production requirements.

The mobile screening, crushing and washing plant will always be located on the floor of the excavation, which will limit visual impact, noise and dust effects. The location of the process plant may vary within the quarry floor from time to time, depending on the proximity of the excavation to the plant area.

The washing process for the concrete aggregates will produce some silt laden water which will require settling out before it is discharged from the site. This is further discussed in Section 2.2.7 below.

2.2.6 Storage and Distribution and Access

Gravel and sand will be stored on site on the floor of the excavation, close to the process plant area. There is currently sufficient flat space to establish a stocking area for the maximum amount of gravel required at any one time, which would be approximately 8,000 to 10,000m^3, of which the majority would be roading base course aggregate (80%) and the remainder sealing chip and concrete aggregates. The maximum dimensions likely for any stockpiles on site would be between 7m and 8m in height, giving a diameter of approximately 22 to 23m, assuming an angle of repose of the processed materials of 35 degrees, which will produce stockpiles with volumes between 8000 and 10,000m^3. Depending on the actual layout of the plant area, it is likely that the stocking area would consist of a number of smaller stockpiles, between 4 and 5m high, with diameters of between 10 and 15m and volumes of 1000 and 3000m^3 respectively. There would be no operational requirement to cover the stockpiles or to place them in specific stocking bays.

Imported clean fill will also be stockpiled on site before being placed in the worked out excavation as backfill. As with the mineral products, these stockpiles would be limited to 7 or 8m in height, with diameters of 20 to 25m. Again, there will be adequate space within the floor of the excavation to accommodate clean fill stockpiles which will be present prior to backfilling activities.

Trucks will be loaded directly from the stockpiles into haul trucks, which will then exit the quarry via the main access ramp in the middle of the southeastern boundary of the site. The main quarry ramp is unlikely to change its position during the life of the quarry and the weighbridge will be located close to the gate, on a 10 to 12m wide area of natural ground above the quarry excavation (see plan in Figure 3). This area will need to be levelled and cleared of a minor amount of quarry waste, but will be suitable for temporary buildings such as the weighbridge, office and toilet, making sure that there is a standoff of at least 5m to the edge of the existing quarry excavation. A provisional location for the weighbridge and offices is shown on the site plan in Figure 3. The existing gate will be used for access to the site. From the site to the public road a dedicated road will be constructed across the Kiwi Lumber site.

2.2.7 Water Management.

Water management at the site is an integral part of the operation and is required to minimise any potential effects of the quarrying activities on watercourses and land outside the site boundary.

The site naturally drains to the south and southwest into the wetlands formed by the subsidence of ground to the south of the Masterton Fault. The existing excavation currently drains to the east via a cut ditch in the quarry floor (see Figure 5), where it meets another ditch emerging from the base of the filled part of the old excavation (see Figure 6). At this point another ditch takes run-off water south, away from the site, to a culvert under the access road immediately to the east of the site entrance gate. The drains are shown on the plan in Figure 3.

Because the site does not intersect any watercourses and because of the very shallow gradient of the natural ground surface, the amount of runoff is likely to be restricted to rainfall immediately within the quarry excavation and the immediate area surrounding the site. A minor amount of high-level ground water would also be expected to seep into the excavation from adjoining land during and after major rainfall events. As quarrying proceeds, surface water run-off will either enter the quarry excavation directly, or be directed to the low-lying area adjacent to the QE2 wetland in the southwestern corner of the site. Currently, in this area a 5m wide ditch in front of the existing boundary fence to the wetland serves to control water run-off from the site (see Figure 4). This ditch flows directly into the wetland area. As the excavation approaches the wetland area, a 10m standoff will prevent mixture of any sediment laden water within the excavation from mixing with the undisturbed water in the wetland and the boundary ditch. Grassed topsoil bunds placed around the perimeter will be sufficient to prevent any excess run-off water from outside the site entering the excavation.

The water race running along the northeastern boundary is at a level above the majority of the surface of the site and it is unlikely that any sediment laden water will enter the stream as a result of quarrying operations. A 10m standoff from the perimeter of the excavation to the edge of the water race will help mitigate disturbance of the boundary area and prevent leakage into the excavation, with the perimeter bund protecting against flooding of the workings. Flooding of the Waingawa River is not likely to affect the site, since it is at least 1.5km away from the river and raised approximately 6m above the normal river level.

Materials excavated from the extraction area will be immediately placed on the quarry floor, thereby containing within the excavation any sediment laden water that runs off these materials. At the western end of the site, where there is no retaining cut slope, it will be necessary to construct a bund to control run-off from the extracted mineral into the perimeter ditch.

Run-off water control within the quarry will be concerned with significant discharges of any sediment laden water from the quarry excavation into the wetlands to the south of the site, particularly the QE2 covenanted area, and especially during storm events. Quarry run-off water will be controlled by a sump excavated below the current quarry floor level of 124m, into the water table, which will be sized to manage the 5% AEP storm event. The location of the sump should ideally be fixed within the quarry, since it will need to be a permanent feature that may need to be used at very short notice. The best location for a sediment retention pond/sump is in the eastern extension of the existing quarry excavation, where there is presently a small area of wetland and some drains, as shown in Figure 6. Based on the Wellington Regional Council Erosion and Sediment Control Guidelines, the size of the retention pond needs to be approximately 2% of the total catchment of 11.6 Ha in order to efficiently settle out sediment. This gives a total area of approximately 2400m^2. The proposed site allows for an 80m long by 25 to 35m wide pond, running along the existing northern edge of the excavation, as shown on the site plan in Figure 3. This corresponds to a recommended length to width ratio of 3:1 for efficient settlement and mitigation of short circuiting. Whilst this pond/sump would be large enough to treat the run-off from the site, the proposed operation of the quarry will mean that only a total of 60% of the surface will be exposed at any one time. In this case a smaller pond will be adequate for the initial operation (1400m^2, with dimensions 70m x 20m), which could then be either extended or dug out as the quarry operation develops.

The only other major source of sediment will be from the washing of the run-of-quarry material as it is processed into saleable aggregate products. Again, settlement of fines will be within ponds/sumps dug into the floor of the quarry. It will be important to have separate sumps to the main run-off pond, since these will have higher volumes of sediment, but a controlled rate of discharge, and discharge into the ponds will be periodic, during operation of the plant. The main run-off pond will have lower quantities of sediment but is designed for higher rates of flow, to take account of the 5% AEP rainfall event. The location of these sumps will change depending on the location of the processing plant and whenever they fill up with sediment. The quantity of fines is not expected to be large and they will be incorporated into the backfill of the excavation as quarrying proceeds. Based on a maximum silt content of 5% and that only 20% of the mineral processed will be washed for concrete aggregates, a total of approximately 5,300m^3 of material will need to be settled out during the life of the quarry. This would require a maximum pond area of approximately 60m x 30m with a depth of 3m, but in reality will comprise a number of smaller ponds which will be backfilled or dug out progressively as they silt up.

Water that is required to be used for the washing of the aggregate on site will be extracted from the Carterton District Council administered storage pond, which is fed from the west by the water race running along the northern extent of the proposal site. An agreement between the applicant and Carterton District Council has been reached, allowing the proposed quarry operation to extract 11 litres per second from the storage pond for its proposed extraction duration (see Appendix 1 – yet to be received). The agreement will allow for ample water supply to wash the extracted material, and will negate the requirement to construct a bore to take water form the aquifer.

There is sufficient space within the existing quarry excavation to excavate the initial settlement pond and storm water control sump prior to commencement of operations. The precise location of the initial ponds will be determined based on the production requirements at commencement of operations, but will be within the existing quarry excavation. Subsequent ponds will be located depending on the development of the quarry and the location of the process plant.

2.2.8 Rehabilitation and landscaping

The Profit a Prendre document between Wairarapa Aggregates and Kiwi Lumber states that: "At the termination of this Profit a Prendre to leave the Land in a tidy condition with the open quarry and quarries area level and in a condition which complies with all the provisions of all resource consents and local body requirements and which shall be left in a state no lower than 0.5 metres above the highest level that the winter water table reaches under the Land during the term of this Profit a Prendre. In addition, the Grantee shall lay down all of the Land (excluding the accessway) in good quality pasture and shall provide 5 building sites suitable for residential construction on land in the areas designated by the Grantor."

Backfilling of the site for restoration purposes will occur periodically during the operation. Backfill will comprise clean fill imported from off-site. Backfill will be stored in stockpiles on the quarry floor before being transported to the final location within the worked out excavation. The final level of the backfill will depend on the maximum winter water table level, which will be more accurately established by observation and measurements during the life of the quarry, but is currently assumed to be at between the 123.5 and 124m elevation. In order to ensure stability and to reduce the effects of bulking, the tipped materials will be compacted by earthmoving equipment. Where houses are planned, the developer will specify the compaction requirements for the building foundations (refer to Consent Application).

Topsoil and subsoil will be placed from the stockpiles over the fill and the excavated slopes of the excavation, and the land will be given over to pasture, except along the access route and where the house construction

platforms will have been designated. The final landform will be a shallow depression, with final slopes of 1V:2H around the perimeter, generally between 4 and 7m high, but open to the southwest, where the ridge means that there will be no excavation face.

No buildings should be located within 20m of the fault trace that forms the ridge and the precise location of the fault will need to determined during development of the quarry.

3 Environmental Effects and Management Measures.

3.1 Noise

Noise levels will be governed by the guidelines within the Carterton District Plan, covering rural industrial areas. These are as follows. No activities, except temporary activities, may generate noise which exceeds the following limits measured at the boundary of any site zoned rural environment:

55 dB(A) L10 from 7am to 7pm daily
45 dB(A) L10 and 75dB(A)LMax from 7pm to 7am daily

These levels will be monitored periodically during the operation of the quarry, particularly at the start up of operations. All noise levels will be measured in accordance with NZS 6801: "Measurement of Sound - Methods of Measuring Noise: 1991", and assessed in accordance with NZS 6802:1991 " Assessment of Environmental Sound - Assessment of Noise in the Environment: 1991", or in accordance with any subsequent New Zealand Standards that concern the measurement and assessment of noise in the environment. The noise will be measured with a sound level meter complying with the International Standard IEC 651 (1979): Sound Level Meters, Type 1. The main sources of noise will be the process plant, the excavator, loader and haul trucks.

To comply with the District Plan standards and to ensure noise does not exceed acceptable levels a range of operational practices will be implemented, including the following:

a. Managing the time and location of particularly noisy operations around the site.
b. The mobile processing plant will be located on the floor of the existing quarry, which will reduce the noise level at the boundary of the quarry.
c. Machinery will be regularly maintained to ensure that noise produced from machinery is kept to a practicable minimum.
d. Bunds will be constructed where appropriate on quarry boundaries to reduce the effects of noise beyond the boundary of the quarry.

To ensure that the noise performance standards set in the District Plan are met, monitoring will be carried out on representative occasions using appropriate equipment, methods and personnel.

3.2 Traffic

Whilst the effects of traffic on public roads outside the quarry site are generally beyond the control of Wairarapa Aggregates and outside the scope of the QMP, practicable steps to reduce any effects of traffic directly related to the quarry operation will be taken, particularly related to noise and dust. These will include:

a. Generally restricting quarry dispatch times to the following hours:
   Monday to Friday 6:30am – 6:30pm
   Saturday 6:30am – 4:00pm
b. All Wairarapa Aggregates owned and operated vehicles will be regularly maintained and checked to ensure that appropriate noise and emission suppression devices are installed and operating effectively.
c. Any customer whose vehicle is noted as having excessive emissions due to lack of maintenance will be requested to rectify the problem and warned that they may be refused products on their next visit if the problem persists.
d. Loader drivers will be appropriately trained to help ensure that customers trucks are loaded securely. It is the responsibility of the individual truck drivers to make sure their load is secure before they drive on a public road.

3.3 Dust (Air quality)

Dust can be generated by many different activities that are carried out at the quarry site including: crushing, extraction, trucks and machinery. Wairarapa Aggregates will ensure that adequate measures are taken to control the emission of dust from all parts of the site. The objective of this section of the QMP is to avoid, remedy or mitigate adverse nuisance or amenity effects of dust from quarry operations beyond the boundaries of the quarry site. Of the potential discharges to air, particulate emissions of dust have the greatest potential for off-site effects. However, provided the operation site is well controlled and the activities well managed, particulate emissions can be kept at a level where any adverse health or nuisance effects, or damage to vegetation will not occur.

Measures to implement the air quality objectives will include the following:

a. Locating the mobile processing plant within the excavation and away from the quarry boundaries.
b. Maintaining large volumes of water on site, which will be available for dust suppression purposes.
c. Ensuring that areas of exposed material with dust generating potential, such as ungrassed topsoil and subsoil bunds, are kept to a practicable minimum.
d. Vegetating topsoil and subsoil bunds as soon as possible to limit dust generation potential.
e. Using a water tanker to spray water on working areas during dry and windy weather conditions.
f. Ensuring that potentially dusty activities are not carried out when weather conditions could give rise to offsite dust emissions.
g. Regularly undertaking proper maintenance and tuning of the vehicles and equipment, which also assists in avoiding any off-site effects.
h. Requiring the quarry manager or his or her nominee to record daily:
   - visual emission of dust;
   - sources of visual emission of dust;
   - measures initiated in response to visual emission of dust to prevent recurrence or mitigate effects;
   - water cart use (yes/no);
   - weather conditions (wind strength and direction, rainfall).

The operator will comply with the conditions of any discharge permit issued by the regional council, and any relevant associated land use consent conditions. This is likely to include regular monitoring, general operations to limit generation and discharge of dust (as outlined above) as well as implementing measures to reduce discharges if they are found to approach unacceptable levels.

3.4 Landscape and Visual

The effect of quarrying on the landscape will be minimal, since the site is located in a flattish area of ground, the excavation will be partially backfilled and the maximum depth of the excavation will be approximately 6m in the northeast corner (with the current ground level at 130m). The nearest dwellings are approximately 250m to the east, 350m to the northeast and 850m to the southwest, and the site is not visible from these locations.

3.5 Rehabilitation and End Use objectives

The provision in the Profit a Prendre to restore the land to good pasture is in keeping with the existing land use of the quarry site. The provision for five building sites suitable for construction will require some land to be left unrestored at the end of the quarry life, though the foundations will be on compacted cleanfill material.

It will be important to ensure that any cleanfill that is deposited on the site goes through some form of screening process to ensure that it meets the GWRC cleanfill guidelines. To achieve this the following actions are proposed:

- Ensure that any cleanfill brought to the site has been inspected/and signed off by the truck driver as being able to comply with the GWRC guidelines for cleanfill; and
- The site manager will visually inspect any cleanfill for any obvious signs of non-compliance with the GWRC guidelines.

Specific procedures will be in place on site to ensure that these activities are carried out appropriately.

3.6 Hazardous substances

This section of the management plan deals with issues relating to the release of hazardous substances from storage facilities or during their use, transport or disposal within the quarry site. The objective is to avoid, remedy or mitigate the potential for adverse effects on the environment of the storage, use, disposal and transportation of hazardous substances such as diesel and oils.

To meet this objective, the following measures will be implemented:

a. Only the quantities of material necessary for the operation of the quarry will be stored on site.
b. All transport, storage and operating conditions meet the requirements of licences under the Hazardous Substances and New Organisms legislation and the relevant standard for the transportation of hazardous substances NZS 5433.
c. Fuel, lubricant and waste oil storage, dispensing and operating facilities are designed and operated in such a way that contamination of soil and water is avoided as far as practicable.
d. Drums and smaller containers will be stored on bunded pads in a designated area.
e. Vehicles in use on site will be well maintained and operated to ensure that no accidental spillage or loss of fuel or lubricants occurs.

3.7 Tangata Whenua

Whilst the quarry area is small, does not cut any water courses and does not appear to have any sites of archaeological interest, it is still important to operate the quarry in a manner which recognises and provides for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wahi tapu and other taonga. This is especially important since the wetland to the south of the site may have cultural significance. To achieve this the following will be implemented by Wairarapa Aggregates:

Tangata whenua will be identified and consultation will be undertaken to develop a procedure to deal with any discovery of koiwi and taonga. Procedures such as the following could be followed should evidence or indications of koiwi or taonga be discovered:

- Immediately koiwi or taonga have been discovered, activity around the area of the discovery will cease and an archaeologist brought in;
- The archaeologist will immediately arrange to secure the area to ensure that the suspected koiwi or taonga remain untouched;
- Tangata whenua and the Historic Places Trust will be advised that it is suspected that koiwi or taonga have been uncovered on the site;
- A representative of tangata whenua will be asked to contact relevant kaumatua who are to guide and advise Wairarapa Aggregates as to the course of action to be followed and to immediately advise the archaeologist of the identity of the kaumatua and such other details as may be appropriate in the circumstances;
- The archaeologist will arrange staff/Carterton District Council to meet and guide kaumatua, police, DOC or Historic Places Trust representatives to the site, and assist with any requests that they may make;
- If the kaumatua are satisfied that the koiwi or taonga are of Maori origin the kaumatua will implement appropriate procedures and will communicate this to Wairarapa Aggregates, NZ Police and other relevant parties;
- Wairarapa Aggregates will ensure that the kaumatua are given the opportunity to perform karakia and other religious or cultural ceremonies and activities considered appropriate in accordance with tikanga Maori (Maori custom and protocol).
- Wairarapa Aggregates will make available on the property other suitable, secure non working areas for the reburial of koiwi or taonga if tangata whenua so wish.

Definitions

Koiwi means human remains such as skeletal material.

Taonga refers to cultural artefacts such as implements, weapons or decorations traditionally and historically utilised by tangata whenua and includes parts and remains thereof.

Appendix A Water Take Agreement

Carterton District Council

13 May 2008

Callum Sayer

P O Box 9624

Te Aro

Wellington

Dear Callum,

Subject: Wairarapa Aggregates Ltd Water Take, Taratahi Water Race, Waingawa

I am writing to you in response to your request to take up to 11l/s of water from the Taratahi Water Race at Waingawa for approximately 350 hours per annum.

The actual water take to be spread over the year as your operations demand. The water will be used during the winning and processing of gravel from a land based extraction operation.

I can confirm that the Carterton District Council gives approval for this, subject to the following conditions;

- CDC may restrict or cease supply at any time, subject to verbal notification, if it experiences difficulties with the network such as a failure of the intake structure or if its consented take is restricted under the step down procedure in its resource consent as a result of low river flows,
- That your proposed water take shall not cause a noticeable reduction in the flow downstream of the extraction point,
- That the potentially contaminated water will be treated and returned to the network after use in accordance with a resource consent that will be obtained by your Company from Greater Wellington Regional Council,
- That this approval is for Three years and may be renewed thereafter upon request subject to water availability and conditions at that time,
- That this approval cannot be transferred to another party,
- That the water take can only be used for the intended purpose.

If you have any queries, please contact me.

Yours Faithfully,

Garry Baker

Operations Manager.

Appendix B – Water Take Agreement with Carterton District Council

Carterton District Council

13 May 2008

Callum Sayer

P O Box 9624

Te Aro

Wellington

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- That this approval is for Three years and may be renewed thereafter upon request subject to water availability and conditions at that time,
- That this approval cannot be transferred to another party,
- That the water take can only be used for the intended purpose.

If you have any queries, please contact me.

Holloway Street • P.O. Box 9 Carterton 5743 New Zealand • Phone: 06-379-6626 Fax: 06-379-7832

Carterton Daffodil Capital

Yours Faithfully,

Garry Baker

Operations Manager.

Appendix C – Certificate of Title

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**333217**
Land Registration District	**Wellington**
Date Issued	01 October 2007

Prior References
168187 WN44A/163

Estate	Fee Simple
Area	46.8548 hectares more or less
Legal Description	Lot 3 Deposited Plan 383510

Proprietors
Kiwi Lumber (Masterton) Limited

Interests

K42900 Compensation Certificate pursuant to Section 17 Public Works Amendment Act 1948 - 20.6.1958 at 1.30 pm (affects part formerly CT 168187)

Appurtenant to part formerly CT 168187 are water drainage rights created by Transfer B438729.2 - 14.6.1995 at 2.48 pm

Appurtenant to part formerly CT 168187 are stormwater drainage rights created by Transfer B492190.2 - 11.12.1995 at 12.55 pm

B640792.1 Memorandum of Encumbrance to Affco New Zealand Limited - 4.12.1997 at 2.50 pm

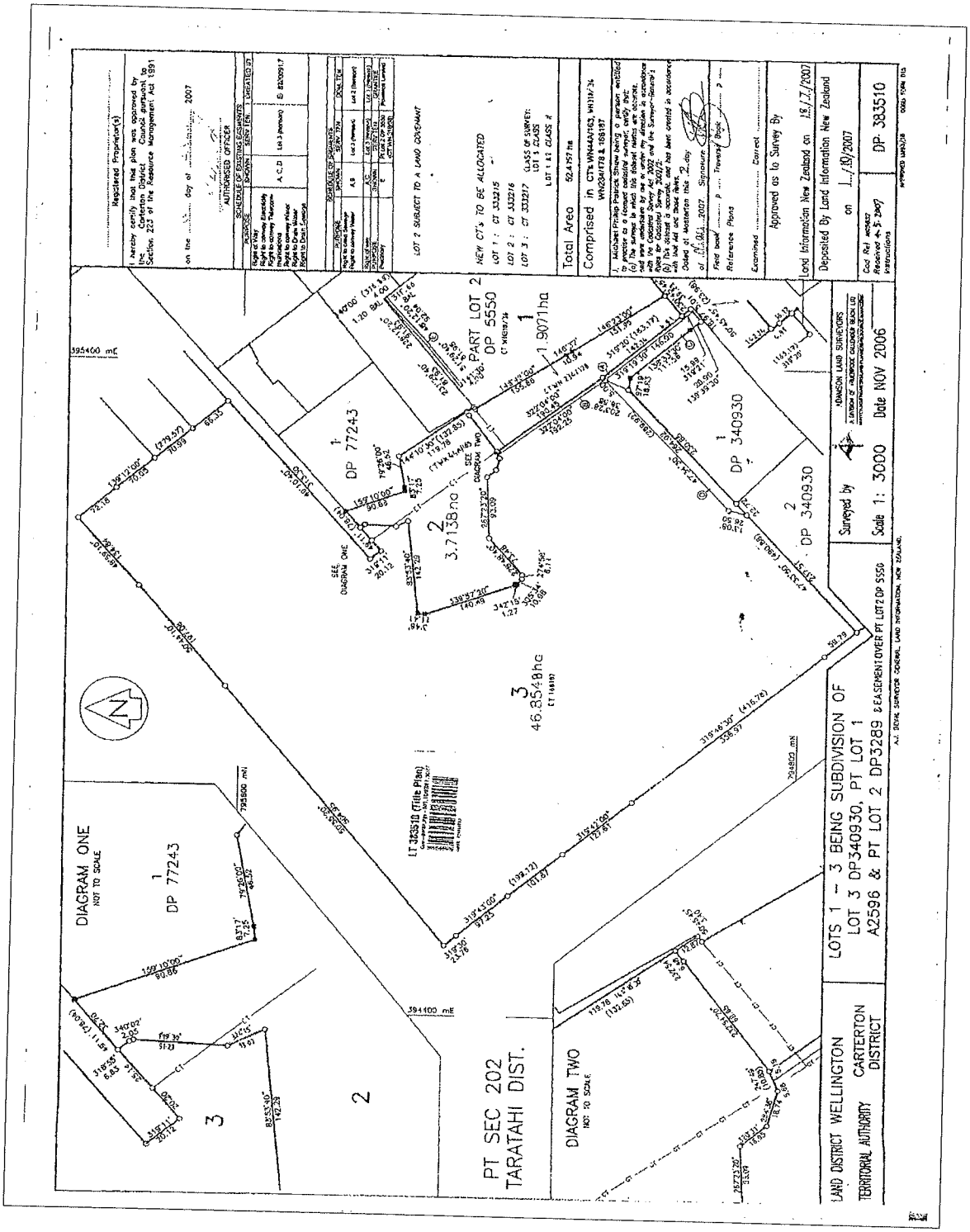
5548734.1 Open Space Covenant pursuant to Section 22 Queen Elizabeth The Second National Trust Act 1977 - 9.4.2003 at 9:00 am. (Affects part formerly CT 168187)

Subject to a right of way, right to convey electricity, telecommunications and water , right to drain water and sewage over part marked A ,C,D DP 383510 created by Easement Instrument 6200091.7 - 2.11.2004 at 9:00 am

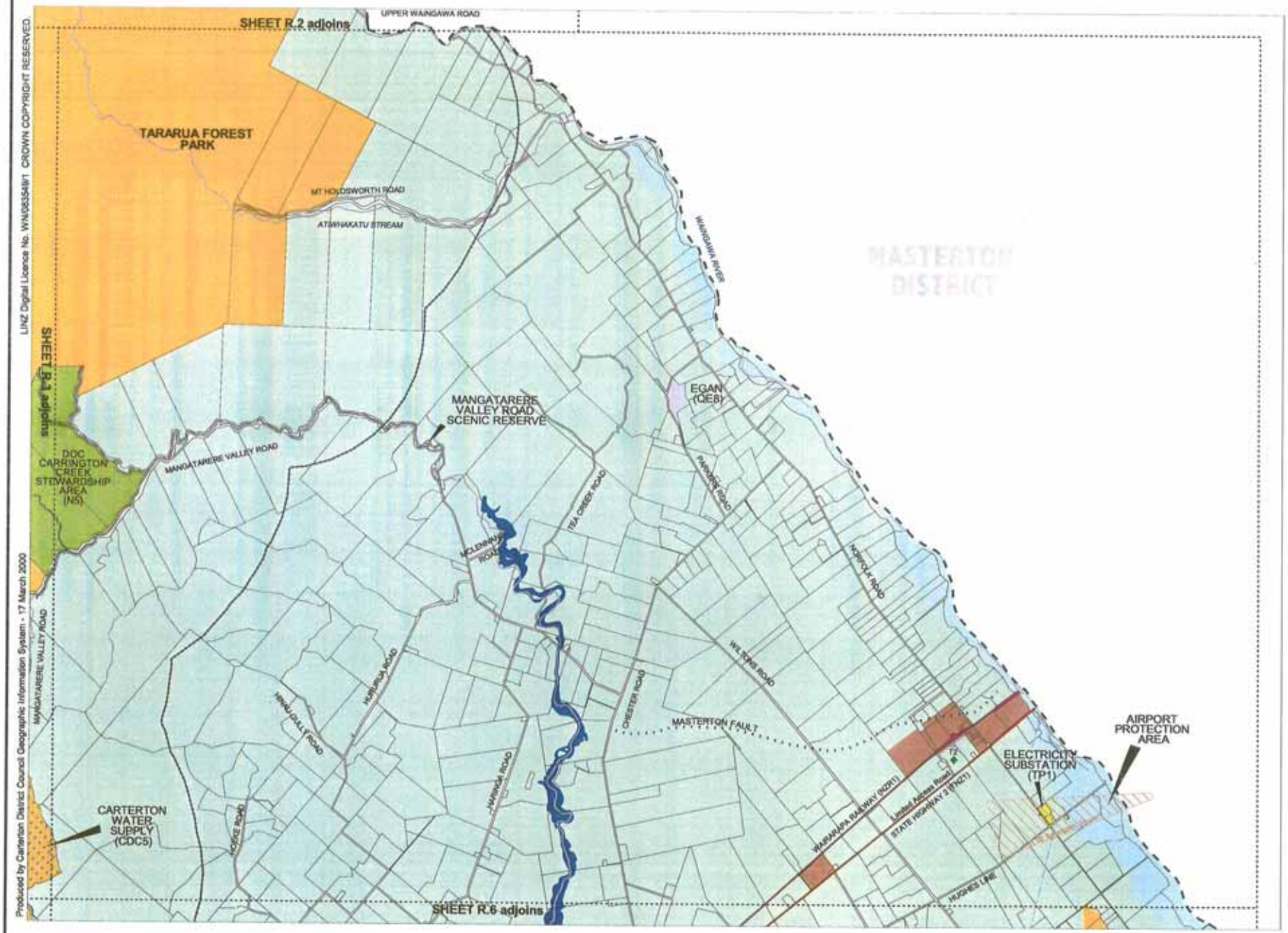
6301375.1 Mortgage to ANZ National Bank Limited - 4.2.2005 at 9:00 am (affects part formerly CT WN44A/163)

7559382.3 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 1.10.2007 at 9:00 am

Subject to a right to drain sewage & convey water over part marked A,B DP 383510 and a right of way over part marked A,C DP 383510 created by Easement Instrument 7559382.5 - 1.10.2007 at 9:00 am


LOTS 1 – 3 BEING SUBDIVISION OF
LOT 3 DP340930, PT LOT 1
A2596 & PT LOT 2 DP3289 & EASEMENT OVER PT LOT 2 DP 5550
LAND DISTRICT WELLINGTON
TERRITORIAL AUTHORITY CARTERTON DISTRICT
Surveyed by
Scale 1: 3000
Date NOV 2006
DP 383510
Deposited By Land Information New Zealand on 18/7/2007
Approved as to Survey By
Land Information New Zealand on 18/7/2007
Registered Proprietor(s)
I hereby certify that this plan was approved by the Carterton District Council pursuant to Section 223 of the Resource Management Act 1991 on the day of 2007
AUTHORISED OFFICER
SCHEDULE OF EXISTING EASEMENTS
SCHEDULE OF EASEMENTS
LOT 2 SUBJECT TO A LAND COVENANT
NEW CT's TO BE ALLOCATED
LOT 1 : CT 333215
LOT 2 : CT 333216
LOT 3 : CT 333217
CLASS OF SURVEY: LOTS CLASS A
LOT 1 A1 CLASS A
Total Area 52.4197 ha
Comprised in CTs WN44A/163, WN31F/34 WN23A/178 & 168187
Reference Plans
Examined
Lodged
Cad Ref wcdc
Reserve 4.5.2007
Instructions
PART LOT 2 DP 5550 CT WN31F/34 1.9071ha
2 3.7138ha
3 46.8548ha (T 168187)
1 DP 77243
1 DP 340930
2 DP 340930
DIAGRAM ONE NOT TO SCALE
DIAGRAM TWO NOT TO SCALE
PT SEC 202 TARATAHI DIST.
LT 383510 (Title Plan)
395400 mE
394400 mE
794800 mN
795500 mN

Appendix D – Carterton District Council Planning Map



LEGEND

- RURAL ENVIRONMENT
- RURAL INDUSTRIAL
- COASTAL MANAGEMENT
- AIRPORT PROTECTION AREA
- DESIGNATED SITES
- CDC Carterton Water Supply Designation
- STATE HIGHWAY 2 (TNZ)
- RAILWAY (NZR1)
- DOC STEWARDSHIP
- NATURAL HERITAGE
- QEII COVENANTS
- CONSERVATION COVENANTS
- PUBLICLAND OR PRIVATE RECREATION USE
- HISTORIC BUILDINGS
- SIGNIFICANT TREES
- DISTRICT BOUNDARY
- Goat Farming requires resource consent within 2 kilometres of both Tararua Forest Park (N1) and Rocky Hills Sanctuary Reserve(NF3)
- HIGH VOLTAGE POWER LINES
- RIVERS/STREAMS
- Flood Zones
  - 50 YEAR RETURN PERIOD
  - 100 YEAR RETURN PERIOD

WELLINGTON REGIONAL COUNCIL

LIABILITY DISCLAIMER FOR FLOOD HAZARD INFORMATION

Although this Flood Hazard Information has been prepared using the best information available at the time of publishing, (October 1999) the Wellington Regional Council accepts no responsibility for actions taken by any individual or agency based upon the information presented within this map.

NOTE: Decision D0157 on Submission S0020 from the Wellington Regional Council was to show the Wairarapa Fault on planning maps R4, R5 and R6. This information is available in a digitised format from the Wellington Regional Council however, the scale is sufficiently different from the Carterton District Planning Maps that the Wairarapa Fault is unable to be shown with any accuracy. Council has included the location of the Wairarapa Fault on a separate Planning Map at a scale of 1:250,000.

NOTE: DCD6 supplied as at September 1999

CARTERTON DISTRICT COUNCIL - District Plan

SCALE 1:50 000

SHEET R.4

Appendix E – Traffic Impact Assessment

GRAVEL QUARRY AT NORMAN AVENUE, WAINGAWA

Traffic impact assessment for Wairarapa Aggregates Limited

Barclay Traffic Planning
P O Box 31531 Lower Hutt 5040
Phone: 04-939 0823 Fax: 04-939 3546

May 2008

GRAVEL QUARRY AT NORMAN AVENUE, WAINGAWA

Traffic impact assessment for Wairarapa Aggregates Limited

Barclay Traffic Planning
P O Box 31531 Lower Hutt 5040
Phone: 04-939 0823 Fax: 04-939 3546

May 2008

This report has been prepared for Wairarapa Aggregates Limited in accordance with a particular brief. It may not be used for other purposes without our prior review and agreement.

Cover: view of Norman Avenue, showing heritage Bartram oaks.

GRAVEL QUARRY AT NORMAN AVENUE, WAINGAWA

Contents

1. INTRODUCTION

1.1 Background

Wairarapa Aggregates Limited is a well-established supplier of aggregate gravels and other construction materials. It wishes to establish a quarry operation on a site at Waingawa, southwest of Masterton, as shown in Figures 1 and 2.

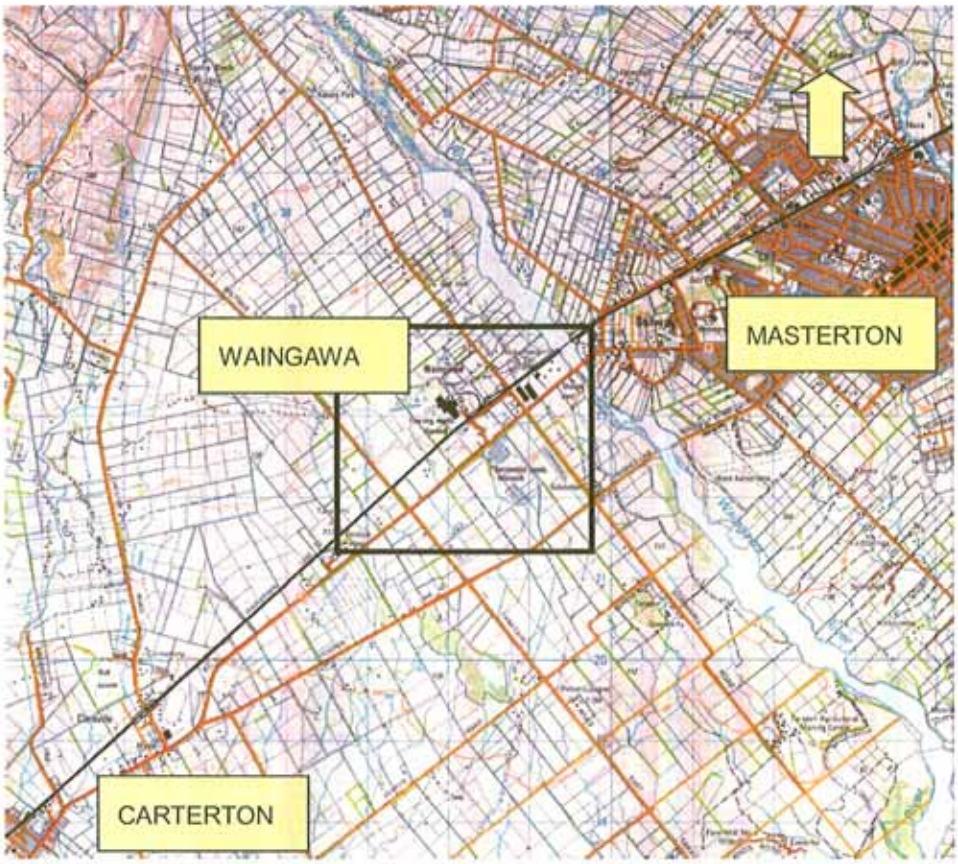


FIGURE 1: Site location *(refer to Figure 2 for inset)*

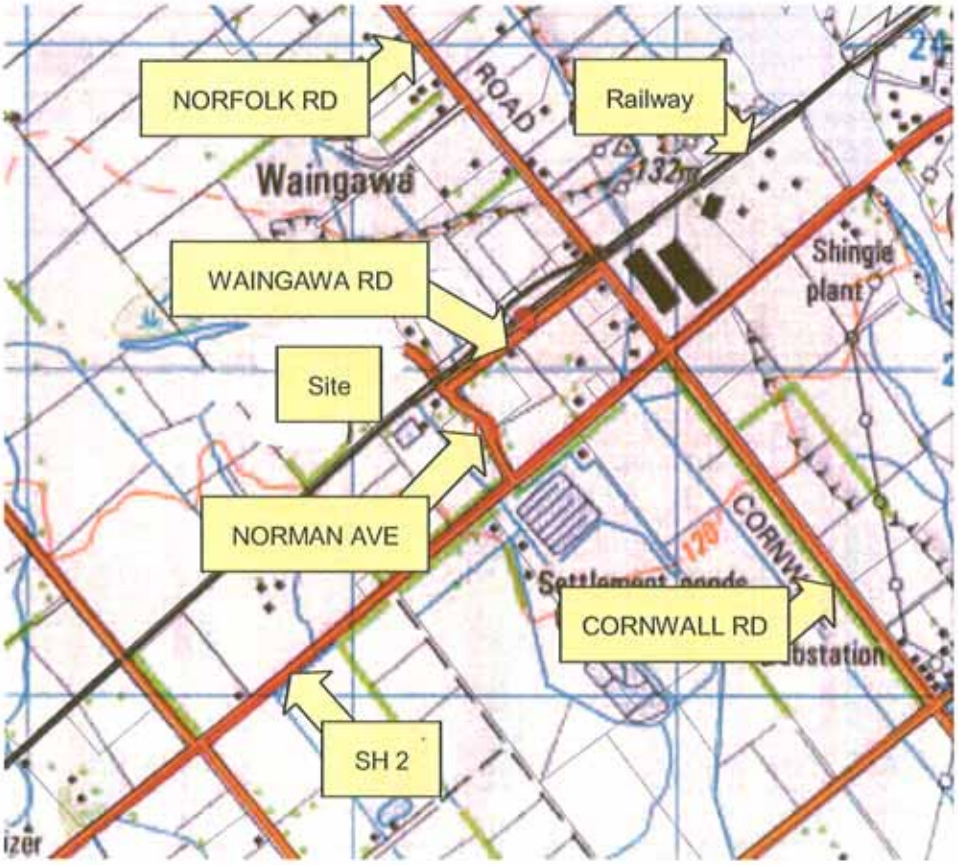


FIGURE 2: Local roading network *(inset to Figure 1)*

The site is at the northwestern end of Norman Avenue, on land previously occupied by the Waingawa freezing works. Although Norman Avenue does intersect with State Highway 2, the preferred route for access is along Waingawa and Norfolk Roads.

1.2 Scope

This report considers traffic issues arising from the proposal, and forms part of a resource consent application prepared by MWH (New Zealand) Limited on behalf of Wairarapa Aggregates.

2. DESCRIPTION

2.1 Existing

The site is approximately seven kilometres from Masterton and eight kilometres from Carterton.

Local roads in the vicinity of the site are as shown in Figure 2.

The site is flat, with little vegetation and no structures. It has an area of 11.6 hectares.

Access to the site is along a newly formed right of way, 180 metres southwest of the northwestern end of Norman Avenue. The access point is 150 metres northwest of the railway crossing.

Although it is possible to use Norman Avenue for access to and from State Highway 2, the highway intersection is poorly developed with no turning bays or deceleration lanes. The preferred route particularly for heavy vehicles will be along Waingawa Road and Norfolk Road to the Cornwall Road intersection. This intersection has a more complex four-leg configuration, but has excellent sight lines and is equipped with turn bays, traffic islands and deceleration lanes.

Land uses in the vicinity are predominantly industrial in nature, with a number of sites yet to be developed.

2.2 Traffic environment

Features of roads in the vicinity are shown in Table 1.

Road	Roadway width (m)	Features
Accessway to site	5.5	Kerb S side only
Norman Ave N of rail crossing	9.7	Mountable kerbs
Norman Ave S of rail crossing	6.0	No kerbs
Waingawa Rd	6.6	No kerbs
Norfolk Rd S of rail crossing	Varies 11.0-14.0	Kerbs both sides
Cornwall Rd	6.1	No kerbs
State Highway 2	10.0 (midblock positions)	Lighting at intersections

TABLE 1: Road features

All roads have a speed limit of 100 km/h.

Traffic volumes for selected roads are shown in Table 2.

Road	Traffic flow (veh/day)
Norfolk Rd N of rail crossing	1,100
Norfolk Rd S of rail crossing (est.)	3,000
Waingawa Rd (est.)	2,000
Cornwall Rd *(1)*	388
State Highway 2 *(2)*	10,085

TABLE 2: Traffic volumes

The site is part of a significant industrial centre where many sites have substantial traffic generation. The industrial traffic is served primarily by Waingawa Road and the section Norfolk Road southeast of the railway crossing. Norfolk Road to the northwest and Cornwall Road to the southeast serve rural areas, with correspondingly lower traffic levels.

State Highway 2 at Waingawa carries in excess of 10,000 veh/day, reflecting its role as the principal arterial route connecting urban and rural centres in the Wairarapa.

2.3 Proposed activity

The proposal is for the establishment of a quarry at the site, to produce aggregates and other materials for use at construction sites around the Wairarapa. It will supplement an existing operation near Carterton and replace one at Buchanan Place, Masterton. The new site is expected to yield some 300,000 cubic metres of aggregate over a seven-year period.

As extraction proceeds, part of the excavated area will be backfilled with approximately 60,000 cubic metres of clean fill material brought into the site.

The proposed site location and access route are shown on MWH Drawing Z1449801 dated 20 May 2008. Although there is only limited detail of features within the site, it will be clear that there is a generous amount of space available for parking, manoeuvring, loading and unloading. The access route is also shown, from Norman Avenue, along a right of way, and through the former freezing works site.

The quarry operation on the Kiwi Lumber site will include activities such as gravel extraction, aggregate crushing (when required), washing (when required), and the stockpiling of aggregate.

The cleanfill operation will operate by stockpiling cleanfill being transported onto the site, and then being utilised as rehabilitation of the site. Rehabilitation will occur in stages so stockpiles do not become too large.

A weighbridge with a small site office for the site manager will be located just inside the entrance to the site. It is anticipated that the site manager will be the only permanent employee on site. Car parking will be provided adjacent to the site office for both staff and visitors to the site. The site is generously proportioned, and there will be ample room for vehicles to stand and manoeuvre.

No concrete batching will occur on the site. Nor is a truck washing facility considered necessary, since the extraction site is a significant distance from the legally formed road. It is not anticipated that any earth material caught in truck tyres will be transported out and deposited on the legal road.

All sales will be to commercial or trade customers, who will make only infrequent visits to the site. There will be no casual sales to private or Do-It-Yourself customers.

The transport operation will be substantial in scale, with in the order of 80,000 vehicle movements required over the seven-year extraction period, either to or from the site. In general, aggregates and clean fill will be transported by either single-unit trucks, or truck and trailer combinations.

Although the pattern of movements will vary according to the season and the nature of customer demand at any particular time, it is expected that on average there will be around 50 movements per day, of which around two thirds will be heavy vehicles. At busy times this will increase, up to around 150 vehicle movements per day. The volume and composition of the traffic generated will be comparable to the traffic generated by other industrial activities in the vicinity.

It is expected that the operation will primarily service Masterton and the area to the north, with some 90 per cent of truck movements travelling to or from the north.

The site manager will use private or company vehicles for travel to and from the site.

Access to the site will be from a single gate on the southern edge of the site.

When extraction eventually ends, it is proposed that the site is rehabilitated.

3. COMPLIANCE WITH PLANNING DOCUMENTS

3.1 General

The site is in Carterton District, and subject to the operative Carterton District Plan *(3)*. In addition to this a combined district plan *(4)* for Masterton, Carterton and South Wairarapa District Councils has been publicly notified and must be taken into account.

Compliance with transport provisions of the two plans is analysed in Sections 3.2 and 3.3 respectively.

3.2 Carterton District Plan (Operative)

In the Carterton District Plan the site is located in the Rural Environment Zone. Roads in the district are classified in a roading hierarchy. The roads shown in Figure 2 are all classified as Local Roads, except for State Highway 2 which is a Strategic Route.

Compliance with relevant District Plan rules as set out in Chapter 15, Appendix 15A of the Plan is analysed in Table 3.

Rule (summarised)		Compliance
1.	Vehicle access to site	
1.1	Access from public road	**Complies** (Norman Ave)
	Gradient < 1:8	**Complies**
	Accessways (Table 15.1)	
	Legal width > 6.0 m	**Complies**
	Formed width > 5.0 m	**Complies** (5.5 m)
	Length < 150 m	**Does not comply** (180 m)
	Figure 15.1 (access to certain roads)	**Not applicable**
	Figure 15.2 (access to sealed roads)	**Not applicable** (access at end of road)
	Figure 15.3 (major access)	**Not applicable** (access at end of road)
	Figure 15.4 (access to SH2)	**Not applicable**

TABLE 3: Compliance with rules

2.	New roads	**Not applicable** (no new roads formed)
3.	Vehicle parking standards	
3.1	Requirement from Table 15.4	
	Industrial activity 1/50 m^2 GFA; 1/100 m^2 storage area	**To comply**
3.2	Parking for disabled	**To comply**
3.3	Alternative provision	**Not applicable**
3.4	Access from public road	**Complies**
	On-site turning required	**Complies**
3.5	Parking space to be kept clear	**To comply**
3.6	Design of parking spaces: Figures 15.6, 15.7.	**To comply**
3.7	Construction standards	**Complies**
3.8	Number of spaces required	**Complies**
4.	Loading	
4.1	Off-street loading and unloading	**Complies**
4.2	Access from public road	**Complies**
	On-site turning required	**Complies**
4.3	Loading spaces to remain clear	**To comply**
4.4	Design of loading spaces	**Complies** ample on-site space available
4.5	Construction standards	**To comply**

TABLE 3: Compliance with rules *(continued)*

From this it can seen that the proposal can comply with all rules except for Rule 1.1 in relation to the distance along an accessway. Implications of this non-compliance are discussed in Section 4 below.

3.3 Proposed Wairarapa Combined District Plan

In the Proposed Wairarapa Combined District Plan the site is located in the Industrial area Rural (Special) Zone. In the district roading hierarchy, roads shown in Figure 2 are all classified as Local Roads, except for State Highway 2 which is a Strategic Arterial.

Compliance with relevant rules as set out in Chapter 32, Appendix 5 of the Plan is analysed in Table 4.

Rule (summarised)		Compliance
32.1.1	Specifications	
	Road and footpaths	**Not applicable** (no new roads)
	Privateways	**Not applicable** (no new privateways)
	Sight lines to RTS 6	**Complies** (approx. 200 m sight line at access point. Refer also to discussion in Section 4.)
	Vehicle crossings	**Not applicable** (no kerb crossing required)
	Stormwater	**To comply**
	Parking: design to AS/NZS 2890.1:2004	**To comply**
	Turning paths	**Complies**
	Lighting	**Not applicable**
32.1.2	Roading hierarchy	**Not applicable**
32.1.3	New roads	**Not applicable**
32.1.4	Intersections and accessways: sufficient visibility needed	**Complies**
32.1.5	rail crossings	**Not applicable**
32.1.6	new roads in subdivision	**Not applicable** (no new roads)
32.1.7	construction of new roads	**Not applicable** (no new roads)
32.1.8	lighting of roads	**Not applicable**
32.1.9	pedestrian facilities to comply with NZS 4121:2001	**Not applicable** (footpaths not required)
32.1.10	sites to have access	**Complies**

TABLE 4: Compliance with rules

The proposal complies with the rules.

4. ASSESSMENT OF ENVIRONMENTAL EFFECTS

4.1 Access to site

A single access point to the site is proposed, using an existing 9.0 metre-wide gate. The site is surrounded by a high fence and the gate will be kept closed whenever the site is unattended. During the hours of operation, visitors will be required to report to the site office on arrival.

A bell-mouth entrance will be formed at the property access point, to ease entry and exit movements.

Access is along a right of way from Norman Avenue. The access point is 180 metres from Norman Avenue, more than the 150 metres permitted in the Carterton District Plan, however the right of way is straight and the additional 30 metres is considered to have little effect on traffic operation.

The expected number of movements by heavy trucks means that from time to time trucks will need to pass each other within the right of way. The sealed width of 5.5 metres will be insufficient for two trucks to pass comfortably, and there will be a need for one of the trucks to move onto the unsealed shoulder on the northwestern side of the carriageway. This could result in fretting of the seal edge, and to avoid this it is proposed that the seal be widened to a minimum of 6.5 metres. There is ample space for this to be done. The widening would only apply to the section between Norman Avenue and the site access.

Within the right of way, there are clear lines of sight along the full length of approximately 250 metres. The blind end at the southwestern end and the tight corner at the northeast mean that vehicles will not be travelling at more than about 50 km/h as they pass the entrance. The available sight lines are well in excess of the 40 metres recommended by *RTS 6 Guidelines for Visibility at Driveways (5)* as cited in the Proposed District Plan.

Traffic from the site will enter the public network at the end of Norman Avenue, adjacent to the access to the Kiwi Lumber site. Both these accesses are at the end of the avenue, where all vehicles can be expected to either stop or slow to a low speed. There is good visibility as far as the railway and beyond, with little risk of collision.

The access itself is 7.6 metres wide, enough for comfortable two-way movement.

It is considered that access arrangements for the activity will be satisfactory.

4.2 Parking

It is intended that car parks within the site will comply with the district plans in both number and design. The main requirement will be for staff parking during the working day, with an occasional additional demand by visitors and subcontractors.

The applicant expects little difficulty in maintaining full self-sufficiency in parking. A specific layout is not shown on the site plan, but there is plenty of room available for the small number of spaces required. The layout of parking areas will comply with District Plan requirements.

4.3 Loading and unloading

Most loading and unloading activity at the site will relate to the gravel extraction and cleanfill operations. In both cases it is expected that most material will be transported in either single-unit trucks, or truck and trailer combinations.

Trucks will be loaded using front-end loaders and a truck and trailer typically will take approximately five minutes to load. There is ample space on the site for the trucks to load, plus space for two or three to stand while waiting for service.

Unloading of cleanfill will be by tipping, with the material being placed and spread by front-end loaders. It is expected that the fill will be compacted by the loaders and diggers at the site rather than by specialised compaction plant.

From time to time there will be a need for other deliveries, of items such as fuel, equipment and maintenance material. Some of these materials will be in large trucks. Mechanical or manual goods handling methods will be used as appropriate.

4.4 Local roading network

With traffic generation of up to approximately 150 veh/day, the quarry operation will result in a significant increase in the volume of traffic on local roads. The increase will be most noticeable on the section of Norman Avenue between its northwestern end and Waingawa Road, but there will also be appreciable increases on Waingawa Road (approximately ten per cent) and Norfolk Road (approximately seven per cent).

Heavy vehicles will be required to access State Highway 2 along Waingawa and Norfolk Roads. The route between the site and the highway will all be of a two-lane standard, with good visibility and an adequate cross section. Similarly, intersections at either end of Waingawa Road are generously proportioned with excellent sight lines, and are well capable of handling the

additional traffic. Intersections and sections of roadway along the route will be operating well within their capacity.

One undesirable feature of the intersection between Norman Avenue and Waingawa Road is the presence of a railway crossing on the Norman Avenue northwest approach. The separation between the edge of Waingawa Road and the track is 16 metres, enough for a vehicle no longer than 13 metres. There is however excellent visibility and vehicles are able to clear both the crossing and the intersection in one movement.

Some light vehicles may use the section of Norman Avenue between Waingawa Road and State Highway 2 when travelling to or from the south. Because most of the customer base is located toward the north, usage of this section of the avenue is expected to be low.

Away from the highway, only one crash is recorded in the Land Transport New Zealand crash database *(6)* for the years 2003-2007. This occurred on Norfolk Road 50 metres east of the Waingawa Road intersection, and did not result in injury. To date no accidents have been recorded for 2008.

4.5 State Highway operation

As noted earlier in Table 2, at Waingawa State Highway 2 is carrying in excess of 10,000 veh/day. This is a substantial volume for a two-lane highway, and at a level where if safety is to be maintained the road and intersections must be generously proportioned and carefully detailed.

Most traffic to and from the proposed quarry will access the highway at the Norfolk Road intersection. Side road flows are already in the order of 3,400 veh/day, and the quarry will add some 50 veh/day on average, and up to 150 veh/day during busy periods. Total additional flow will therefore be no more than around five per cent of the present side road flow even at busy times. This is equivalent to only a few years of normal traffic growth. Some additional growth can be expected as further development occurs on Waingawa industrial land, unrelated to the quarry operation.

Development of the quarry will allow an existing operation at Buchanan Place to be closed, with a reduction in trucks accessing the highway at that point.

At this point the highway is flat and straight, with sight distances in excess of 500 metres in either direction. The side roads also have excellent visibility. The intersection itself is well equipped for safe operation at high traffic levels, with lighting, right turn lanes, deceleration lanes and channelisation of the side road approaches.

Figures 3 and 4 show through-road approaches in northeast and southwest directions respectively.

FIGURE 3: Northeast highway approach at Norfolk Road

FIGURE 4: Southwest highway approach at Norfolk Road

During the five-year period 2003-2007, nine crashes were reported at the intersection. Of these, two resulted in serious injuries, one in minor injuries, and the other six no injuries. Six of the collisions related to turning conflicts, one a crossing conflict, one queuing and the remaining accident a loss of control.

The frequency and severity of these accidents are a matter of concern, although to place the record into perspective it compares with six for the East Taratahi Road intersection and four at the Hughes Line intersection further south on State Highway 2. In view of the very high exposure to turning conflicts, the Norfolk Road record is in keeping with the experience of other significant intersections in the highway corridor.

It would appear that there is limited scope for significant safety mitigation. The intersection is already well equipped with safety features, and it is difficult to suggest low-cost improvements which would be effective in moderating speed or improving gap acceptance behaviour.

It is not proposed to promote use of the Norman Avenue intersection as an alternative to Norfolk Road. Although only one crash is recorded within 50 metres of the Norman Avenue intersection, the number would undoubtedly increase if significant volumes of industrial traffic were to access the highway at this point. In comparison to the Norfolk Road intersection, Norman Avenue has only rudimentary safety features, with no turn bays, deceleration lanes or channelisation. Operation is further complicated by a southbound passing lane which begins immediately to the south.

Access through the Norfolk Road intersection thus remains the preferred option. Here the proposed quarry on average will add only around two per cent to the volume of side road traffic, making little difference to the exposure to collisions.

At busy times, a larger volume of quarry vehicles can be expected, but even a flow of 150 movements per day accounts for only around five per cent of side road volumes. At this level it can be shown that the intersection still has ample absorption capacity for side-road traffic, with average side-road delays of only a few seconds.

Within the seven-year life of the quarry, such an impact is likely to be less than that of other industrial development and of background traffic growth. Nor is it of a magnitude likely to affect the need for or timing of any improvements to the intersection which might be planned, even assuming that improvements could be in place early enough to provide useful mitigation.

5. CONCLUSIONS

5.1 Summary

A gravel extraction operation is planned for industrial land located off Norman Avenue, Waingawa. It is expected that some 300,000 cubic metres of aggregate will be produced over a seven year period.

The quarry will allow the closure of an existing site at Buchanan Place, Masterton.

The quarry will generate around 50 veh/day on average, with peak flows of up to 150 veh/day at busy times. A large proportion of the traffic stream will be heavy vehicles. The traffic will travel along Norman Avenue and Norfolk Road to access State Highway 2 at the Norfolk Road intersection. The route is well-equipped to handle the additional traffic, with local roads and intersections having adequate cross sections and good visibility. The state highway intersection also has excellent visibility and is equipped with turn bays, deceleration lanes and channelisation.

Only one crash is recorded for local roads at Waingawa during the period 2003-2007. Nine crashes are recorded for the Norfolk Road / State Highway 2 intersection, although in view of the large side road traffic volume the record is in keeping with that of similar intersections in the highway corridor. Heavy vehicles accessing the highway will be required to use the Norfolk Road intersection in preference to Norman Avenue.

Quarry traffic will add only a few per cent to volumes passing through the intersection, and can be expected to have little effect on either the safety record or the traffic level of service.

5.2 Assessment

The proposal is able to comply with all transport provisions of the Carterton District Plan except in respect of the distance along an accessway. It will be fully compliant with the Proposed Wairarapa Combined District Plan.

It is considered that transport activity associated with the quarry can be managed to adequately maintain the safety and efficiency of the roading network, with no more than minor adverse effects.

It is concluded that there are no traffic grounds for refusing consent.

REFERENCES

(1) Traffic counts

Carterton District Council

(2003)

(2) *State Highway Traffic Data Booklet 2002-2006*

Transit New Zealand

(2007)

(3) *Carterton District Plan*

Carterton District Council

(2000)

(4) *Proposed Wairarapa Combined District Plan*

Masterton District Council, Carterton District Council and South Wairarapa District Council

(26 August 2006)

(5) *RTS 6 Guidelines for Visibility at Driveways*

Land Transport Safety Authority

(May 1993)

(6) *Crash Analysis System*

Computerised on-line accident database maintained by Land Transport New Zealand

c:\data\jobs\j378\j378006.doc

Appendix F – Site Plan of Access Arrangement

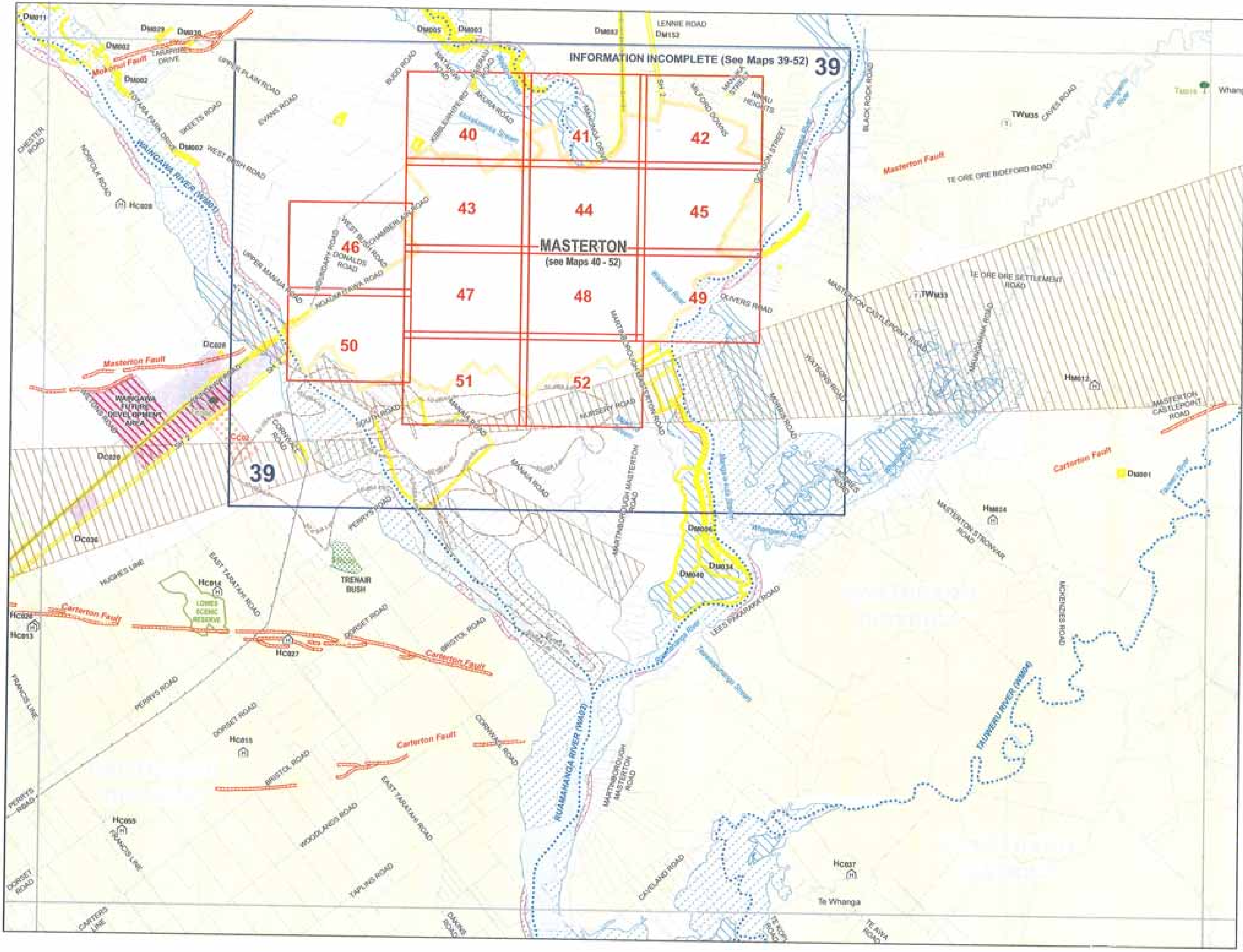

Stormwater Settlement Pond
Weigh Bridge and Site Office
Legend
Track
Study Area
Railway
Gate
Fence
Site Access
Right of Way
WAIRARAPA AGGREGATES
KIWI LUMBER SITE SURVEY
Site Access
60 0 60 120 180
Metres
Scale: 1:5,000
21 May 2008 Original map size: A3
MWH Ref: Z1449801
MWH
Prepared by:
MWH New Zealand Ltd
Level 1, 123 Taranaki Street
PO Box 9624, Te Aro
WELLINGTON

Appendix G – Proposed Wairarapa Combined District Planning Map

Proposed Wairai
Combined District

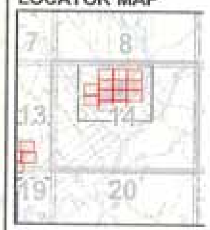
Carterton &
Masterton

14



4
3
2
1
0
Kilometers
SCALE 1:50 000

LOCATOR MAP

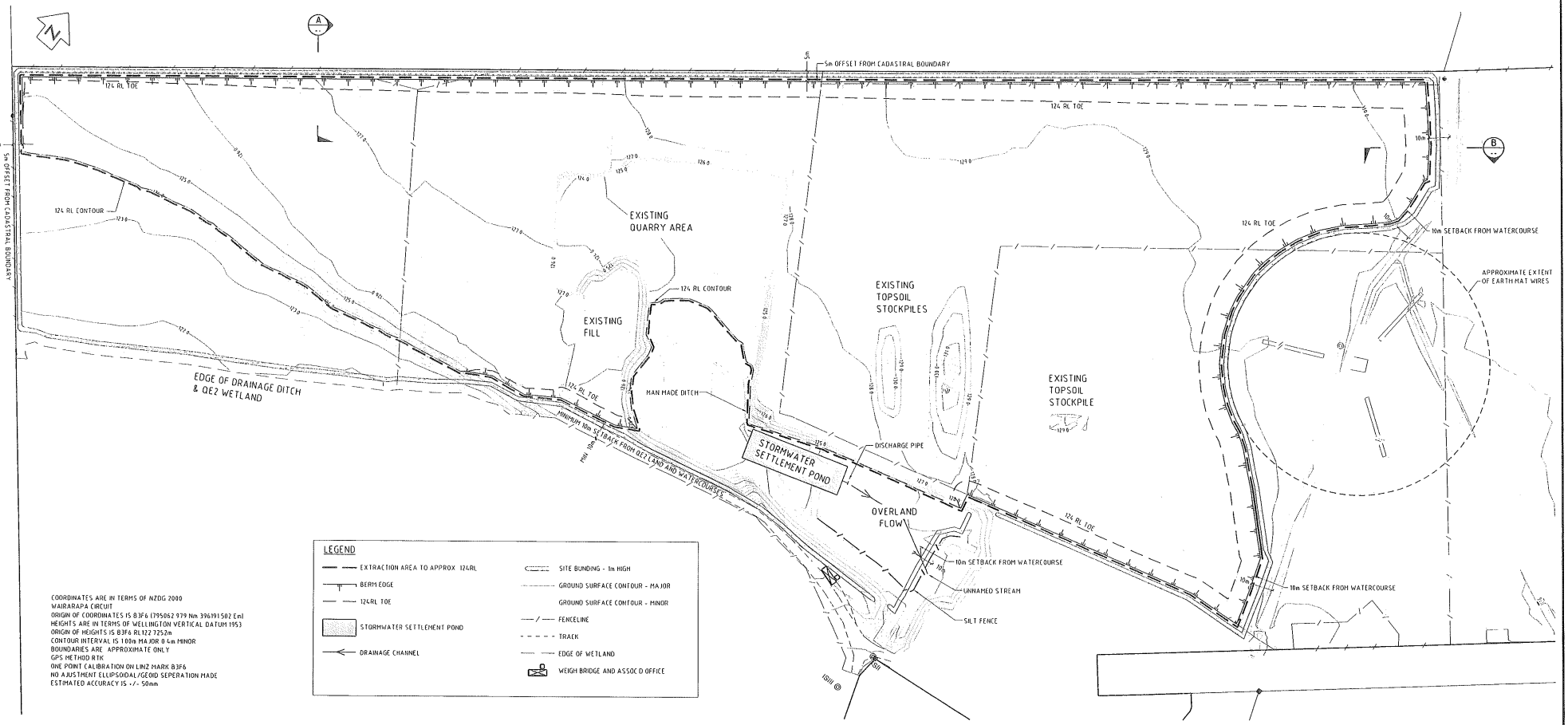


CARTERTON DISTRICT COUNCIL

MASTERTON DISTRICT COUNCIL

SOUTH WAIRARAPA DISTRICT COUNCIL

Appendix H – Sediment Control Plan



SITE PLAN
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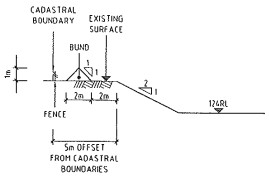
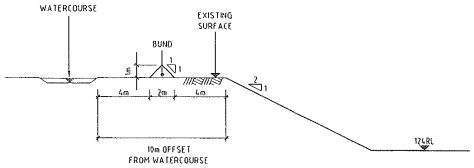


TYPICAL DETAIL A - EXCAVATION SLOPES ADJACENT TO CADASTRAL BOUNDARIES
SCALE 1 : 200



TYPICAL DETAIL B - EXCAVATION SLOPES ADJACENT TO WATERFEATURES
SCALE 1 : 200

NOT FOR CONSTRUCTION

REV	REVISIONS	DRAWN	CHECKED	APPROVED	DATE
D	EXCAVATION EXTENT LIMITED TO 124RL	JSC			03/08
C	TYPICAL DETAIL C ADDED	JSC	RO		02/08
B	REDUCTION IN SIZE OF STORMWATER SETTLEMENT POND	JSC	RO		02/08

	Name	Date
SURVEYED	NMB	11/07
DESIGNED	R OLDCORN	01/08
DESIGN CHECK		
DRAWN	J CHANDLER	01/08
DRAWING CHECK		
APPROVED		

MWH

WAIRARAPA AGGREGATES
KIWI LUMBER SITE

PROPOSED EXCAVATION LIMITS & WATER MANAGEMENT PLAN
FIGURE 3

Status Stamp: FOR REVIEW
Date Stamp: 19/05/2008
SCALES (A1) 1:1000 (A3) 1:2000
Drawing No.: Z1449801 | Sheet No: GE01 | Rev: D

XREFS X_Kiwi Lumber site survey, X_Model_Output_SurveySurface, X_Typical Detail

\\Nzchc2s01\Projects\0 E1 PROJECTS\Z14000+\Z1449801 Wairarapa Aggregates\CAD\Z1449801_GE01.dwg

ORIGINAL SIZE A1
DO NOT SCALE - IF IN DOUBT, ASK