

Green Waste Processing Facility, Keepa Road, Whakatane


Application for Resource Consent and
Assessment of Environmental Effects
Prepared for Whakatane District Council
June 2014



Boffa Miskell

Document Quality Assurance

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1.0 Applicant

Whakatane District Council (WDC) seeks resource consents to establish and operate a green waste processing facility on a rural site next to the existing wastewater oxidation ponds at Keepa Road, Whakatane.

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2.0 Proposal

2.1 Overview

The proposal is to establish and operate a green waste processing facility at a rural site adjacent to the Whakatane wastewater oxidation ponds.

The facility will process and store green waste and its processed products (compost). No individual load of green waste or compost will remain on site for more than two years. The compost end product will be used as a soil conditioner for local agriculture and horticulture.

Currently Whakatane District generates approximately 4,300 tonnes per year of green waste. The resource consents being sought seek to process up to 10,000 tonnes of green waste per year at the proposed facility.¹

A Composting Contractor will be responsible for implementing the Operational Management Plan for the site and ensuring that the compost processing and end product meets regulatory requirements, including meeting the standards in NZS 4454:2005 (New Zealand Standard for Composts, Soil Conditioners and Mulches).

2.2 Whakatane District Waste Management and Minimisation Plan

Establishment of an organic green waste processing facility is an important element for the implementation of the WDC Waste Management and Minimisation Plan 2010.

The WDC Waste Management and Minimisation Plan 2010 identifies that the largest feasibly divertible fraction remaining in the kerbside collected waste is garden waste.

Disposal of organic waste to a landfill results in waste breaking down in an anaerobic environment, producing methane. This is a significant waste management issue for the Whakatane District in terms of potential environmental impact.

Conversion of green waste into a soil conditioner for agricultural and horticultural use is a logical approach to reduce greenhouse gases, reduce the use of inorganic fertiliser, and enhance soil quality and agricultural productivity.

Existing facilities for green waste management have limited capacity and are identified in the Waste Management and Minimisation Plan as a gap. Capacity is limited in both the Bay of Plenty and Waikato.

Green waste is currently transported to the Kawerau green waste composting facility. However, transportation of green waste to Kawerau results in a 66km round trip from the Te Tahī Street Transfer Station incurring substantial haulage costs. The Keepa Road green waste processing facility is located 6km from the Te Tahī Street Transfer Station, which will accrue significant cost savings to ratepayers as well as reducing WDC's carbon footprint.

¹ The site does not meet the definition of a 'Large composting facility' accepting >36,000 tonnes per year of green waste as set out in the EPA Victoria Guidelines for Large Composting Facilities (2012).

2.3 Green Waste Processing

2.3.1 Waste Streams

Green waste is collected from kerb-side mobile garbage bins by a collections contractor and transported to the Te Tahī Street Transfer Station. Green waste collection trucks go through the Te Tahī Street Transfer Station to be weighed and inspected before travelling on to the green waste processing facility.

The general public and contractors also dispose of green waste at the Te Tahī Street and Murupara Transfer Stations. Green waste collected at transfer stations is transported by a collections contractor to the green waste processing facility.

The current volume (based on 2012 volumes) of Whakatane District green waste transported for the Kawerau site for processing is approximately 4,300 tonnes per annum. This waste stream will be diverted to the Keepa Road facility as soon as site infrastructure is complete and it becomes operational.

2.3.2 Processing Method

The Keepa Road facility will process green waste into a soil conditioning product via a composting process. New Zealand Standard 4454:2005 - Composts, Soil Conditioners and Mulches (hereafter referred to as NZS 4454 and attached as Appendix 6) will be applied.

The composting process will be as follows:

1. The collections contractor's trucks will unload the green waste either onto the hardstand area or at the end of existing windrows.
2. A loader/excavator/windrow turner will be brought by truck to the site to form the windrows into compact rows of no more than 3m high.
3. The unprocessed green waste will be allowed to compost aerobically for 2 – 4 weeks.
4. The green waste will be shredded to a finer particle size by a shredder/hogger every 3 – 4 weeks.
5. A loader/excavator/windrow turner will place the shredded green waste into compact windrows for composting.
6. The compost will mature over a period of 4 – 6 months. During this time it will be turned once a month by a loader/excavator/windrow turner to ensure all materials maintain the temperatures required to achieve pasteurisation. The finished volume of compost will be less than 50% of the original green waste feedstock volume.
7. Once the compost has matured sufficiently, it will be passed through a screen/sieve. The screen/sieve separates waste products (plastic, flax, etc.) and larger material from the compost.
8. Waste products will be placed in a skip bin for removal to the Transfer Station (see Contamination Control below). Large material will be returned to the greenwaste windrows for further processing.

2.3.3 Green Waste Contamination Control

The following processes will be followed to ensure that unsuitable materials within the green waste are identified and removed for appropriate disposal.

2.3.3.1 At Source: Kerbside

1. When kerbside green waste wheelie bins are emptied, each bin will be inspected by the collections contractor via an on-board camera.
2. If green waste is contaminated with unsuitable materials, the wheelie bin will not be emptied and will be returned to the kerb.
3. A sticker will be placed on the bin to advise the customer. Approximately 10 to 20 wheelie bin loads are stickered each week using this methodology.

2.3.3.2 At Source: Transfer Station

1. Green waste delivered directly to the transfer station by customers will be inspected by Transfer Station staff at the weighbridge.
2. If green waste is contaminated with unsuitable materials, the customer will be advised to remove the contaminants. If it is not possible to remove contaminants, the green waste will be placed in the refuse bin.
3. Transfer station staff will regularly (several times a day) visually inspect the open top green waste bins at the transfer station.
4. If any contamination of feedstock is identified in bins, where possible it will be removed, otherwise the contents of the bin will be blended with the refuse and sent to landfill.

2.3.3.3 Green Waste Processing Facility: Incoming Materials

1. After delivery to the site, green waste will be visually inspected prior to and during the creation of windrows.
2. Retrievable contaminants will be removed and placed in the skip bin on site for removal to the Transfer Station.
3. If it is not possible to remove contaminants, the green waste will be treated as refuse and returned to the Transfer Station for dispatch to landfill.

2.3.3.4 Green Waste Processing Facility: Processing

1. Prior to shredding, prior to sieving and following sieving, the green waste will be visually inspected by the composting contractor.
2. Retrievable contaminants will be removed and placed in the skip bin on site for removal to the Transfer Station.

2.3.3.5 Green Waste Processing Facility: Site Maintenance

1. Whenever the composting contractor staff are present at the site, the site will be inspected.
2. Loose refuse and obvious contaminants will be retrieved and placed in the skip bin for removal to the Transfer Station.

2.4 Traffic Movements

Site access will be from Keepa Road via the existing sealed access road as shown on the proposed plans attached as Appendix 4. The seal ends at the green waste processing facility site entrance. This site access was selected from three options as the most appropriate for long term safe access (see Road Safety Audit attached as Appendix 11).

Part of the road is shared with users of the Naturally Native Plant Nursery, Whakatane District Council Operational Business Unit (OBU) storage area, and the Whakatane Town Branch Pony Club. Beyond the Pony Club, the road is not shared with other users.

The section from the Pony Club to the hard stand area at the northern end of the site will be developed as a single lane metalled road with passing bays every 100m. Outgoing traffic from the site will give way to incoming traffic.

A 30km/hr internal road speed restriction will apply to all traffic using this road.

The following traffic movements are expected:

- Green waste delivery trucks, 1 - 3 per day
- Non organic waste removal (skip bin), every 2 weeks
- Compost collection trucks, 1 - 4 per day
- Site operational staff vehicles, 1 - 4 per day
- Equipment transport trucks:
 - Excavator/loader/windrow turner: every 6 to 7 weeks, removed 2 - 3 days later
 - Shredder/hogger: every 3 – 4 weeks, removed 2 - 3 days later
- Small buses for site visits and educational purposes.

Vehicle movements on Saturday and Sunday are restricted to feedstock drop-off and this also is seasonal with 1 to 2 truck movements per weekend during the summer months.

It is estimated that the activity will result in a maximum of 8 truck movements per day, but typically only 3 truck movements per day on a regular basis, mainly comprising trucks bringing green waste material to the site. There will also be seasonal variability in the amount of green waste received and product (compost) transported off site. Approximately 1 - 4 small vehicles (utility size) are expected to access the site every day.

2.5 Noise

Noise will be generated as a result of the green waste processing operation. It is anticipated that the processing will operate not more than 1-2 days per week for a maximum of 8 hours per day during the peak spring season.

The level of noise generated will depend on the particular machine used. Noise will be generated as a result of trucks delivering green waste and removing the processed material.

The nearest residences are as follows:

- To the east there are a number of dwellings along Keepa Road (e.g. 53, 57, 73, 77, 79, 81 and 83 Keepa Road). These dwellings are approximately 650 – 700m from the centre of the site.
- To the north-east (119C and 119B Keepa Road). These dwellings are approximately 600m from the centre of the site.
- To the north there are a number of dwellings along Ferguson Road. 61 Ferguson Road is approximately 690m from the centre of the site.
- To the north-west there a number of rural dwellings at 110 Shaw Road. These dwellings are approximately 750m from the centre of the site.
- To the south-east there is a rural dwelling at 45 Keepa Road and the Hokowhitu-A-Tu Marae is located behind this dwelling. This rural dwelling and Marae is approximately 520m from the centre of the site.

2.6 Management of Dust and Bio-aerosols

Dust and bio-aerosols² may be generated during the movement or agitation (turning, hogging, sieving) of materials at any stage of the operation³. The Environmental Protection Authority (EPA) Guidelines consider that the generation and dispersion of bio-aerosols should be minimised by appropriate handling and dust control procedures.

The appropriate handling suggested in the EPA Guidelines includes having an odour control strategy (see Section 2.7), minimise accumulation of contaminated run-off (see Section 2.9), maintain aerobic conditions for outdoor processes (see Section 2.3.2) and controlling dust.

The methods suggested for the control of dust are outlined below.

1. The OMP proposes a maximum speed on the access track of 30km/hr. If dust emissions from the entry track are regularly causing a nuisance beyond the boundary of the site, WDC shall consider the following measures:
 - a. Reducing the maximum speed on the access track to 15km/hr.
 - b. Using a water cart or alternative dust suppressant as necessary will be used to control dust on the access road and main entry track to the site.
 - c. Implementation of permanent dust suppression measures (for example, a sprinkler system or application of a dust suppression polymer).
1. If dust emissions from the main body of the site are regularly causing a nuisance beyond the boundary of the site, WDC shall install a sprinkler system to control dust as required at rates that wet the surface of the ground or compost but do not generate ponding or accelerate infiltration of leachate.
2. If dust suppression methods within the site prove ineffective, WDC may erect windbreak fences and shelterbelt trees at appropriate locations around the working area to inhibit the movement of dust.

2.7 Management of Odour

Although it is considered unlikely given the green waste feedstock, odour may be generated at the site³. The EPA Guidelines consider that the generation and dispersion of odour should be minimised by appropriate feedstock control and handling procedures.

Feedstock control is described in Section 2.3.3. The processing and handling methods are described in Section 2.3.2. Specific odour control methods are provided below.

1. Windrows of unprocessed green waste will be no higher than 3m to discourage anaerobic conditions within the windrows.
2. If monitoring determines that odour is generated from a specific discrete source at the site, the material will be covered with non-odorous green waste or mature compost to a sufficient depth to prevent odour emissions.
3. If stormwater ponding occurs, green waste and compost will be removed from the ponding area and the area will be re-contoured to avoid recurrence.
4. If monitoring determines that odour emissions are generating a nuisance beyond the boundary of the site on a regular basis (i.e. not related to specific loads), WDC will consider

² Bio-aerosols are air-borne particulates that may contain bacteria, fungi spores, pathogens or other microorganisms.

³ Environmental Protection Authority, 1996. Environmental Guidelines for Composting and other Organic Recycling Facilities. Publication 508. State Government of Victoria.

erecting windbreak fences and a shelterbelt of pine trees⁴ in appropriate locations around the working area to inhibit the movement of odour.

2.8 Management of Vermin

Nuisance levels of vermin are unlikely at a site of this type. The most likely vermin are rats and possibly seagulls.

As described in the OMP, if monitoring determines that gulls are generating a nuisance beyond the boundary of the site, the following site management methods will be implemented:

1. Habitat modification including covering the unprocessed green waste stockpiles with previously processed material.
2. Harassment measures such as gull distress calls and visual scare devices.

If monitoring determines that rats or mice are generating a nuisance beyond the boundary of the site, the following site management methods will be implemented:

1. A qualified practitioner will establish a programme of vermin control using methods considered appropriate to the site.
2. Traps will be checked at a frequency sufficient to avoid inhumane treatment of affected vermin.

2.9 Management of Stormwater and Leachate

2.9.1 Stormwater

A flood protection bund will be constructed around the site perimeter to contain internal runoff whilst excluding external flooding. The bund will cut off the existing open drain that runs through the middle of the site. A new drain will be constructed around the eastern boundary (as shown in the proposed plans, which are attached as Appendix 4) to ensure external drainage is maintained. This will connect the existing drains on the northern and southern side of the site at the toe of the proposed bund and will replace the drainage function of the drain inside the bund.

A culvert will be required under the access track where it crosses over the proposed flood bund to accommodate the drain. The existing drain dimensions will be maintained, and the culvert size confirmed as part of detailed design. The existing open drain within the site will be capped at each end and used to convey overland runoff into the proposed sediment retention pond (SRP).

It is expected that site stormwater will contain sediment and gross pollutants (vehicle movements and compost waste) akin to a bulk earthworks operation. SRP sizing has been undertaken in accordance with the BOPRC Erosion and Sediment Control Guidelines for Land Disturbing Activities 2010/01. The attached calculation sheet confirms a total storage volume of 1256 m³ is required for a site area of 4.19ha (Appendix 9). Final pond sizing will depend on the operation area and detailed SRP design will be completed as part of the detailed design.

Groundwater has been recorded at a depth of around 1200mm below ground level (b.g.l) (approx. RL -0.20) during July 2013 (Appendix 8). A review of SKM's Kopeopeo Canal Remediation

⁴ Pine has been used specifically in shelterbelts for its ability to absorb, mask and disrupt odours.

Report Oct 2013 indicates that that groundwater varied from 0.97 to 1.4m b.g.l in the monitoring well located close to our sites southern boundary (MW201). This equates to around RL 0.47 to RL 0.04, and a dead storage depth of approximately 30% of pond volume as required by the BOPRC guidelines.

Discussions with BOPRC confirmed that groundwater may rise to ground level at times so that there will be occasions when the sediment pond is 100% dead storage volume and ponding will occur above pond level during some storms. At these times live storage will occur above the top of the pond and begin to spread into the site. The height of the bunds around the site will ensure that all stormwater storage remains within the site. Preliminary calculations using the BOPRC 24 hour nested storm pattern indicate a site runoff volume of around 12,000m³ in the 1% AEP 72-hour nested storm. This is significantly less than the storage volume of 73,000m³ provided by the bunds (top of bund spillway at RL 2.90). The preliminary design includes provision of emergency relief outlets (culvert with manual gate and spillway). The need for these outlets will be reviewed as part of the detailed design.

Stormwater from the SRP will be pumped via a rising main from the pond decant to the WDC wastewater oxidation ponds for treatment and disposal. This will completely avoid the discharge of stormwater to surface water and will ensure that no sediment or leachate enters open drains. The discharge pump will require control equipment to minimise the discharge of clean groundwater during periods of high groundwater. It is likely that pump on/off will be controlled via a piezometer located close to the pond.

2.9.2 Leachate

Leachate may be generated as a result of rainwater infiltrating through windrows of green waste and compost. This leachate may infiltrate into the ground. Apart from the metal access track and hard stand area (see Appendix 4), the site is not proposed to be sealed.

2.9.3 Infrastructure Maintenance

WDC will ensure that the following system monitoring and maintenance is carried out:

1. The stormwater system will be inspected by an appropriately qualified person following every rainfall event exceeding 10% AEP. In particular, the outlet structures, pond bunds and perimeter drains will be inspected to determine whether there is any damage or blockage to be repaired. Any repairs required will be implemented within 4 weeks of the inspection.
2. All perimeter and internal drains, and all stormwater infrastructure, will be inspected by an appropriately qualified person at least annually. In particular, will be inspected for erosion, short circuiting, damage, and blockages. Any repairs required will be implemented within 4 weeks of the inspection.
3. The depth of the sediment detention pond will be measured at least annually to determine the amount of sediment deposited. If the amount of sediment equates to 50% or more of the total volume of the pond, then WDC will arrange for the removal of the sediment within 4 weeks of the inspection.
4. The removed sediment may have an elevated loading of organic material and nutrients but few other contaminants are considered likely. Therefore, the excavated material will be spread on the site or incorporated into the compost windrows.
5. All stormwater system monitoring and maintenance activities will be recorded by WDC.

2.10 Site Closure

In the event that the site is no longer used for the processing of green waste, all green waste and compost material will be removed from the site. The surface of the site will be left in a clean and tidy condition. All equipment, bins, and litter will be removed to an appropriate facility.

Following site decommissioning, the stormwater ponds will remain in situ to continue treatment of site runoff until a vegetation cover is re-established. Once vegetation cover is established, the bund will be opened to allow the pond to discharge directly to the perimeter drain.

2.11 Permitted Baseline

Section 104(2) of the RMA states that when forming an opinion for the purposes of Section 104(1)(a), a consent authority may disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect. This provision has the effect of 'codifying' the permitted baseline test which had, prior to the Resource Management Amendment Act 2003, been developed through case law, and make the application of the permitted baseline discretionary rather than mandatory.

Given that a significant proportion of the site is designated for sewerage treatment and plant purposes the permitted baseline associated with environmental effects that would result from such an activity are a relevant consideration. This would include the following:

- The landscape and visual effects associated with an expansion of the existing wastewater oxidation ponds over the area of land associated with this application;
- The odour effects associated with an expansion of the existing wastewater oxidation ponds over the area of land associated with this application;
- The water quality and indigenous flora and fauna effects associated with an expansion of the existing wastewater oxidation ponds over the area of land associated with this application; and
- The noise effects associated with an expansion of the existing wastewater oxidation ponds over the area of land associated with this application; and
- The temporary construction effects associated with the establishment of an expansion of the existing wastewater oxidation ponds over the area of land associated with this application.

3.0 Site

3.1 Legal Description/Ownership

The subject site is located at 65 Keepa Road, Whakatane and is legally described as Lots 3 and 4 DP 431244. The site is owned by WDC.

3.2 Physical Description

3.2.1 Terrestrial Vegetation and Fauna

Vegetation

Vegetation at the site currently consists of pasture with no hedges or shelterbelts. There is no indigenous vegetation of note at the site.

Herpetofauna

The most likely location providing habitat and cover for lizards is the existing shed and associated debris which may provide copper skink habitat. The site is unlikely to provide habitat for other native lizard species. A brief survey of likely lizard habitat was undertaken around the shed, including pieces of corrugated iron, plastic and timber, and moving aside overgrown vegetation beside likely basking areas. No lizards were observed but rat droppings and rat holes were observed. If lizards are present, it is likely their population is small and limited by rat predation.

Avifauna

Based on our observations, it is likely that the area is dominated by introduced and common native species that can occupy open farmland. The area is unsuitable for native forest or wetland birds due to the lack of native vegetation and bush/wetland areas.

3.2.2 Waterways

The drains at the site are artificial waterways, straight with uniform depth and width, and no natural riparian vegetation. The drain banks are vegetated with grass, herbaceous weeds and isolated individuals of *Carex virgata*. The channel is vegetated predominantly with willow weed with small areas of *Ludwegia palustris*. The drain network discharges to the Kope Canal east of the wastewater oxidation ponds.

In the drains, water flow is limited and may dry up in summer. Dissolved oxygen concentrations measured in the drain are low (45%). It is likely that summer temperatures exceed the thresholds of many fish at times despite the bank shade, riparian cover and emergent macrophytes.

The NIWA Freshwater Fish Database has no records for the area, but the drains may provide habitat for eels if the drains retain water during summer.

The drains facilitate the removal of shallow groundwater from the area. Therefore, water quality in the drain is likely to be representative of shallow groundwater quality. To assess the state of the groundwater and surface water receiving environment, samples were taken from the perimeter drain and from the Kope Canal on 17 December 2013. Dissolved oxygen readings were also taken. The results are reported in Table 1 below and Appendix 7.

Table 1: Surface Water Quality Analysis	Units	Kope Canal	Perimeter Drain
pH	pH units	7.5	6.6
Suspended sediment	g/m ³	9	55
Carbonaceous biochemical oxygen demand	gO ₂ /m ³	<2	21
E. coli	Cfu/100ml	250	2,500
Ammoniacal nitrogen	g/m ³	<0.010	<0.010
Nitrite nitrogen	g/m ³	<0.002	<0.002
Nitrate nitrogen	g/m ³	0.038	<0.002
NNN	g/m ³	0.040	0.002
Dissolved reactive phosphorus	g/m ³	0.023	0.25

On the basis of the above results, water in the perimeter drains is slightly acidic as expected given the baseflow contributed by shallow groundwater.

The perimeter drains also have elevated concentrations of suspended sediment, faecal pathogens and phosphorus.

The low concentration of nitrogen species indicates the dense bank and channel vegetation is absorbing a high proportion of the nutrient load.

3.2.3 Groundwater quality

Groundwater quality records are available for the site immediately to the south. The closest borehole to the green waste processing site is MW201.

Table 2: Ground Water Quality Analysis	Units	MW201 13/3973
pH	pH units	5.0
Ammoniacal nitrogen	g/m ³	0.017
Nitrite nitrogen	g/m ³	0.014
Nitrate nitrogen	g/m ³	0.139
NNN	g/m ³	0.153
Dissolved Iron	g/m ³	3.9
Dissolved Manganese	g/m ³	0.191

The results show that groundwater is acidic with elevated concentrations of iron and nitrogen. Given that the concentrations of nitrogen species (particularly ammonia) in the Kope Canal and perimeter drain are lower than that measured in groundwater, it appears that groundwater quality with respect to nitrogen may be influenced by local grazing activities.

Groundwater at MW201 was recorded as 1.68m below the bore casing in July 2013. Borelogs from hand augers taken at the site in July 2013 measured groundwater at 1.3m bgl. This matches our observations of water level in the drains.

3.2.4 Sediment & Soil Quality

Sediment quality was not assessed at this site because the proposed activities will not introduce persistent soil contaminants to the drain sediment or soil. The processing of green waste to a composted product is likely to progressively improve the fertility and structure of soil at the site over time, provided that excessive compaction by heavy vehicles does not occur.

3.3 Locality

The site is bordered by cropping and grazing land to the north and south-east. The proposed BOPRC Kope Canal remediation site is located directly to the south. Further to the south is an industrial zone. Four operating wastewater oxidation ponds are situated to the west. To the east of the site is a pony club (on WDC land) with a plant nursery and Church building further to the east.

3.4 Existing Resource Consents

[to be completed]

4.0 Resource Consent Requirements

4.1 Whakatane District Plan

Operative Whakatane District Plan

- Rural 1 Zone (Planning Map 18)
- D34 – Sewerage treatment and plant (Planning Map 18)
- Discretionary Activity (Rule 4.6.1(27))

Proposed Whakatane District Plan

- Rural Plains Zone (Planning Maps 104 and 105)
- D34 – Sewerage treatment and plant (Planning Maps 104 and 105)
- Discretionary Activity (Rule 20.2.1(34))

Bay of Plenty Regional Water and Land Plan

The following resource consents are required:

- Earthworks - Discretionary Activity (Rule 1C)
- Discharge Stormwater to Water – Discretionary Activity (Rule 30A)
- Discharge Leachate from a Composting Operation to Land – Discretionary Activity (Rule 37)
- Discharge Dust Suppressants to Land – Discretionary Activity (Rule 37)

4.2 Bay of Plenty Regional Air Plan

The following resource consent is required:

- Discharge Contaminants to Air from Commercial Composting – Discretionary Activity (Rule 19(w)(ii))

The overall status of the application is a discretionary activity.

5.0 Assessment of Environmental Effects

5.1 Relevant Effects

Having regard to the proposal and the resource management plan requirements, actual or potential environmental effects relevant to the application are considered to be:

- Rural Character and Amenity Effects
- Traffic Effects
- Noise Effects
- Dust Effects
- Odour Effects
- Litter Effects
- Vermin Effects
- Indigenous Flora and Fauna Effects
- Water Quality Effects
- Natural Hazard Effects
- Cultural Heritage Effects
- Cumulative Effects
- Positive Effects

5.2 Rural Character and Amenity Effects

A key resource management issue to consider in making a decision on this application is whether or not the proposal will have an adverse effect on rural character and amenity values, including as a consequence any traffic and/or noise related effects.

Section 2 of the RMA defines amenity values to mean:

“those natural and physical qualities and characteristics of an area that contribute to people’s appreciation of it’s pleasantness, aesthetic coherence, and cultural and recreational attributes”.

The character and amenity values associated with the land subject to this application exhibit limited “rural” characteristics. This is due to the presence of the existing wastewater oxidation ponds to the west, industrial land use activities to the south and other non-rural land use activities to the east.

5.3 Traffic Effects

Traffic Effects associated with the proposed activity will be acceptable and will have a no more than minor effect on the local transportation environment.

The level of traffic generation that will result from the proposed activity will be low.

A 30km/hour speed restriction will apply to vehicle movements within the site.

Vehicles will be able to access and exit from the site onto Keepa Road in a safe and efficient manner.

5.4 Noise Effects

As set out in Sections 2.4 and 2.5, noise will be generated as a result of traffic and waste processing activities. An assessment of the potential for noise generation and its effects on neighbouring properties has been prepared (see Appendix 10) indicating that the provisions of the District Plan will be met.

Compliance with the conclusions of the Noise Assessment will be achieved under the proposed operational management of the site in relation to traffic volumes, equipment use, and facility operating times.

As described in the OMP, if complaints are received regarding noise and monitoring determines that noise is generating a nuisance beyond the boundary of the site, WDC engage an appropriately qualified and experienced practitioner to develop options for noise management.

By implementing this management approach, the actual or potential effects of noise on the surrounding environment and sensitive receivers as a result of the proposed activity will be no more than minor.

5.5 Dust Effects

As described in the OMP, if complaints are received regarding dust emissions and monitoring determines that dust is generating a nuisance beyond the boundary of the site, the site management methods outlined in Section 2.6 can be implemented.

By implementing this management approach, the actual or potential effects of dust on the surrounding environment and sensitive receivers as a result of the proposed activity will be no more than minor.

5.6 Odour Effects

As described in the OMP, if complaints are received regarding odour emissions and monitoring determines that odour is generating a nuisance beyond the boundary of the site, the site management methods outlined in Section 2.7 can be implemented.

By implementing this management approach, the actual or potential effects of odour on the surrounding environment and sensitive receivers as a result of the proposed activity will be no more than minor.

5.7 Vermin Effects

As described in the OMP, if complaints are received regarding vermin and monitoring determines that vermin are generating a nuisance beyond the boundary of the site, the site management methods outlined in Section 2.8 can be implemented.

By implementing this management approach, the actual or potential effects of vermin on the surrounding environment as a result of the proposed activity will be no more than minor.

5.8 Litter Effects

In spite of at-source identification and removal of unsuitables, there is potential for litter to be present at the site as a result of the contamination of green waste with unsuitable materials. As described in the OMP, the site management methods outlined in Section 2.3.3 can be implemented.

By implementing this management approach, the actual or potential effects of litter on the surrounding environment as a result of the proposed activity will be no more than minor.

5.9 Indigenous Flora and Fauna Effects

The site is not a significant habitat of indigenous fauna or flora.

It is possible that the drain through the middle of the site is habitat for eels. The Freshwater Fisheries Regulations 1983 Part 10 Section 70 state that killing indigenous fish is illegal and native fish are also protected under part 3 of the Wildlife Act 1953. Since the excavation and/or filling of drain during development will result in fish mortality, native fish will be removed and translocated to the perimeter drain after the drain has been bunded at either end to prevent fish ingress/egress and prior to works commencing. A permit will be obtained from the Ministry of Primary Industries to authorise this translocation. This will avoid effects on native fish.

All native lizards are protected under the Wildlife Act and it is an offence to cause harm to them. The most likely habitat for lizards at the site is the shed and its surrounding debris (wood, baleage wrap, and corrugated iron), which is being retained for use by leaseholder of the adjacent grazing land and will not be affected by the proposal.

5.10 Water Quality Effects

As described in Section 2.9, stormwater from rainfall events will discharge via the central drain to sediment retention ponds within the perimeter bunds. Treated water from the ponds will be pumped to the adjacent wastewater oxidation ponds. This will avoid effects of stormwater on the perimeter drains and the Kope Canal.

As described in Section 2.9, leachate from the green waste and compost piles will be discharged to land and infiltrate to the shallow groundwater table. The shallow groundwater will subsequently discharge as baseflow to the perimeter drain around the site and, potentially, to the Kope Canal.

Leachate generated at the base of the compost/green waste piles are likely to include:

- E. coli,
- Carbonaceous biochemical oxygen demand
- Nutrients
- Sediment

Sediment and the organic material associated with CBOD will remain within the soil profile and is unlikely to infiltrate to groundwater.

Likewise, E. coli is known to attenuate rapidly through the soil profile, and numbers of E. coli are unlikely to change from ambient conditions in surface water or groundwater given the existing contributions from agricultural and wastewater land uses. Further, the shallow groundwater is not used for potable use, livestock drinking water or irrigation.

The proportion of nitrogen and phosphorus in leachate infiltrating to shallow groundwater will be reduced as a result of denitrification and adsorption. On the basis of the water quality results for groundwater and the perimeter drain which show existing elevated concentrations of nutrients, the effect of inputs of nutrients will be less than minor.

WDC proposes the following monitoring for contaminants and environmental parameters to confirm that leachate is having effects on the water quality of shallow groundwater discharging into the perimeter drain.

1. Water samples will be collected every 3 months for the first year (when water levels in the drain allow) following the completion of commencement of green waste processing operations at the site, and then annually thereafter, from the following locations:
 - a. In the Southern canal 10m east of the site/s South Eastern border corner;
 - b. In the Southern canal 10m west of the site's South Western border corner;
 - c. In the Northern Canal on the property boundary directly to the north of the site.
2. At the time of sampling, measurements of temperature, dissolved oxygen and pH will also be taken at each of the above locations.
3. The water samples will be sent to an accredited laboratory and analysed for pH, water clarity, total suspended sediment, *E. coli*, total nitrogen, ammoniacal nitrogen, total phosphorus, dissolved reactive phosphorus, and CBOD.

The results will be evaluated by a suitably qualified and experienced professional for comparison against relevant national guidelines and the background concentrations measured previously to determine whether additional treatment is required. The results will be forwarded to BOPRC.

Should the results indicate that the discharge after reasonable mixing is having effects on shallow groundwater and surface water that are more than minor, the Council will engage an appropriately qualified professional to review the system design and recommend appropriate remedial measures.

5.11 Natural Hazard Effects

[to be completed]

5.12 Cultural Heritage Effects

[to be completed]

5.13 Cumulative Effects

Section 3 of the RMA defines effect to include "any cumulative effect, which arises over time or in combination with other effects".

The assessment of the proposal against the relevant resource management objectives and policies determines that the potential effect of the proposed activity on the surrounding environment is acceptable.

A further consideration when referring "cumulative effect" is reflected in the case *Water Care Services Limited v Minihinnick (1998 NZRMA)/Dye v Rodney District Council [2001] NZRMA 513* where it was determined that the concept of cumulative and precedent effects can only be applied in the case that the activity is a non-complying activity. This is no such case as the proposed activity is classified as a discretionary activity.

5.14 Positive Effects

Section 3 of the RMA specifies that the term 'effect' means the following ...

- (a) *Any positive or adverse effect; and*
- (b) *Any temporary or permanent effect; and*
- (c) *Any past, present or future effect; and*
- (d) *Any cumulative effect which arises over time or in combination with other effects ... regardless of the scale, intensity, duration or frequency of the effect, and also includes –*
- (e) *Any potential effect of high probability; and*
- (f) *Any potential effect of low probability, which has high potential impact”.*

The proposal will have positive environmental, social and economic effects.

5.15 Conclusion of Assessment of Environmental Effects

The assessment of environmental effects determines that any actual or potential effects on the surrounding environment as a result of the proposed activity will be no more than minor.

6.0 Statutory Assessment

6.1 Part II of the RMA

Of the provisions contained in the RMA Part II is the most significant. In this respect it defines the purpose and principles around which the RMA is centred.

Section 5, which documents the RMA's purpose, promotes the sustainable management of natural and physical resources. In defining the phrase 'natural and physical', Section 5 states that resources may be used in a manner that enables people and communities to provide for their social, economic and cultural well-being, and for their health and safety while:

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The proposed activity promotes the concept of sustainable management, providing for the social, economic and cultural well-being of the community, without giving rise to any adverse environmental effects that cannot be avoided, remedied or mitigated.

Section 6 relates to matters of national importance. In achieving the purpose of the RMA all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the matters listed. There are no matters of national importance relevant to this application.

Section 7 lists other matters to which consent authorities shall have 'particular regard to' when considering resource consent applications. Of those matters listed the following are relevant to a consideration of this application:

- (b) *The efficient use and development of natural and physical resources.*
- (c) *The maintenance and enhancement of amenity values; and*
- (f) *Maintenance and enhancement of the quality of the environment.*

The proposed activity is an example of an efficient use and development of the land resource. Amenity values associated with the environment will be maintained as will the quality of the environment.

6.2 Section 104B

Section 104B states that, where considering an application for a discretionary or non-complying activity, the consent authority may grant or refuse the application. If the activity is granted, the consent authority may impose conditions pursuant to Section 108.

6.3 National Policy Statements

There are no national policy statements relevant to this application.

6.4 Bay of Plenty Regional Policy Statement

The provisions of the Bay of Plenty Regional Policy Statement promote the integrated management of waste, hazardous substances, hazardous waste and contaminated sites at a regional level. The Bay of Plenty Regional Policy Statement also outlines methods of implementation such as promoting regional waste management facilities and developing a waste reduction strategy as a means of achieving its objectives.

[to be completed]

6.5 Bay of Plenty Regional Water and Land Plan

[to be completed]

6.6 Bay of Plenty Regional Air Plan

[to be completed]

6.7 Whakatane District Plan

[to be completed]

6.8 Conclusion on Statutory Considerations

The proposed activity is consistent with the relevant resource management objectives and policies and Part II of the RMA.

7.0 Other Matters

7.1 Waste Minimisation Act 2008

The Waste Minimisation Act 2008 encourages a reduction in the amount of waste generated and disposed of in New Zealand and aims to lessen the environmental harm of waste.

This Act also aims to benefit the economy by encouraging better use of materials throughout the product life cycle, promoting domestic reprocessing of recovered materials and provided more employment.

With the enactment of the Waste Minimisation Act 2008, territorial authority roles and responsibilities for promoting effective and efficient waste management and minimisation within their districts have become more clearly defined.

7.2 New Zealand Waste Strategy

The New Zealand Waste Strategy sets out the Government's long-term priorities for waste management and minimisation in New Zealand.

The strategy's two goals provide direction to local government, businesses (including the waste industry), and communities on where to focus their efforts in order to deliver environmental, social and economic benefits to all New Zealanders. The goals are:

- To reduce the harmful effects of waste; and
- To improve the efficiency of resource use.

7.3 Regional Waste Strategy

The Regional Waste Strategy extends the waste provisions in the Bay of Plenty Regional Policy Statement by providing guidance on issues that benefit from co-ordination on a region-wide basis and in some cases co-ordination across regional boundaries.

The Regional Waste Strategy vision incorporates the concept of waste minimisation. It is aimed at encouraging people to use all resources more efficiently and at a sustainable rate by identifying and practicing innovative methods for reducing waste in the local context and across the region.

Targets in the Regional Waste Strategy include:

- Access to community recycling facilities;
- Procedures for waste minimisation
- Diversion for garden wastes from landfill to beneficial use
- Identifying existing construction and demolition waste quantities and local targets for diversion from landfills
- Diversion of commercial organic wastes from landfill to beneficial use

Territorial authority roles include developing and maintaining a waste management plan for the collection, reduction, reuse, recycling treatment and disposal of waste.

The proposed activity is consistent with the Regional Waste Strategy.

DRAFT

8.0 Consultation

[to be completed following consultation]

DRAFT

9.0 Notification

[to be completed following consultation]

DRAFT

10.0 Conclusion

The application to establish and operate a green waste processing facility on the subject site requires resource consent for a discretionary activity and as such the consent authorities need to make a decision pursuant to Section 104B of the RMA.

In considering the application against the relevant assessment matters under Section 104 of the RMA it is concluded that the actual or potential adverse effects on the surrounding environment will be no more than minor and the proposed activity is in accordance with the relevant resource management objectives and policies.

On this basis resource consent can be granted subject to appropriate conditions.

Appendix 1: Completed Application Forms

DRAFT

Appendix 2: Site Location Plan

This graphic has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



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Data Sources: Aerial photography sourced from Boplass Ltd.
Cadastral data sourced from Land Information New Zealand, Crown Copyright Reserved.
Projection: NZGD 2000 New Zealand Transverse Mercator

Legend



Site

PROPOSED GREEN WASTE PROCESSING FACILITY
Site Location Plan

Date: 12 March 2014 | Revision: A

Plan prepared for Whakatane District Council by Boffa Miskell Limited
Author: john.watt@boffamiskell.co.nz | Checked: MAL

Appendix 3: Certificates of Title



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy


R. W. Muir
Registrar-General
of Land

Identifier **520756**
Land Registration District **South Auckland**
Date Issued 12 June 2012

Prior References

SA44D/285 SA44D/329 SA44D/345

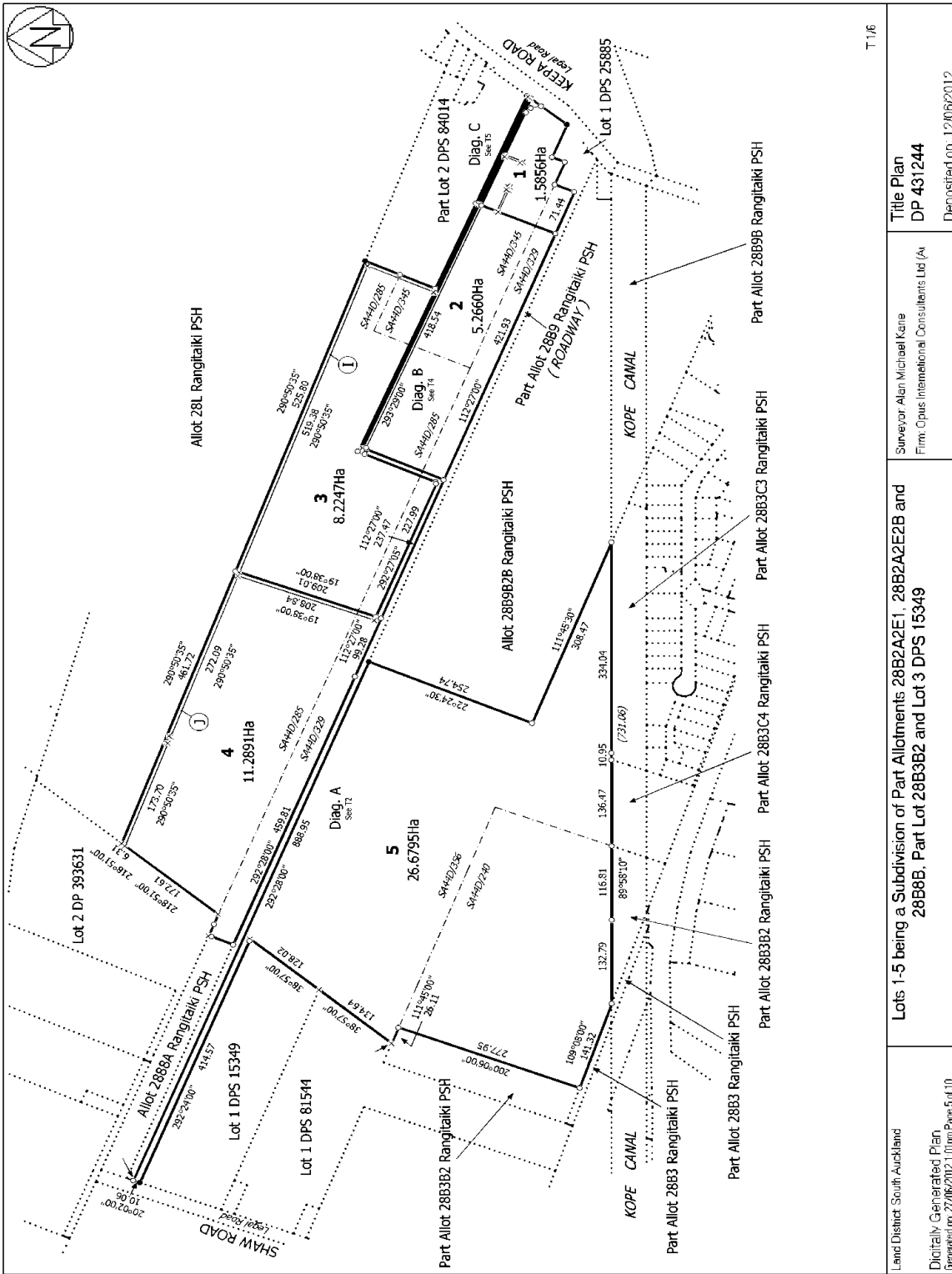
Estate Fee Simple
Area 8.2247 hectares more or less
Legal Description Lot 3 Deposited Plan 431244

Proprietors

The Whakatane District Council

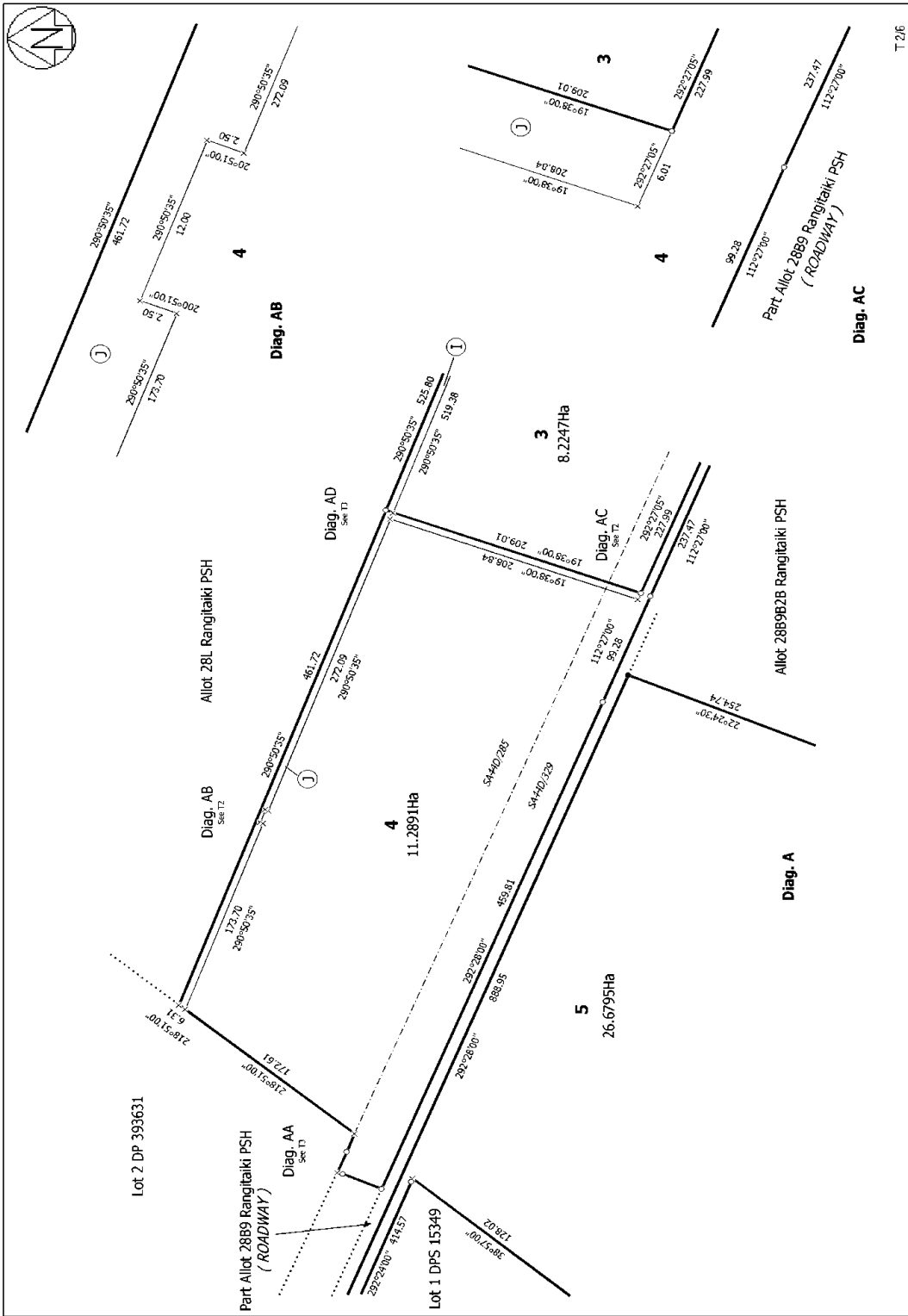
Interests

9091258.1 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.6.2012 at 2:03 pm
Subject to a right of way over parts marked D, E and F, right to convey water over parts marked D, E and I, right to convey electricity, telecommunications and computer media and a right to drain sewage over parts marked D and E on DP 431244 created by Easement Instrument 9091258.3 - 12.6.2012 at 2:03 pm
Appurtenant hereto are rights of way, rights to convey water, electricity, telecommunications and computer media, right to drain water and rights to drain sewage created by Easement Instrument 9091258.3 - 12.6.2012 at 2:03 pm
The easements created by Easement Instrument 9091258.3 are subject to Section 243 (a) Resource Management Act 1991



T.1/6

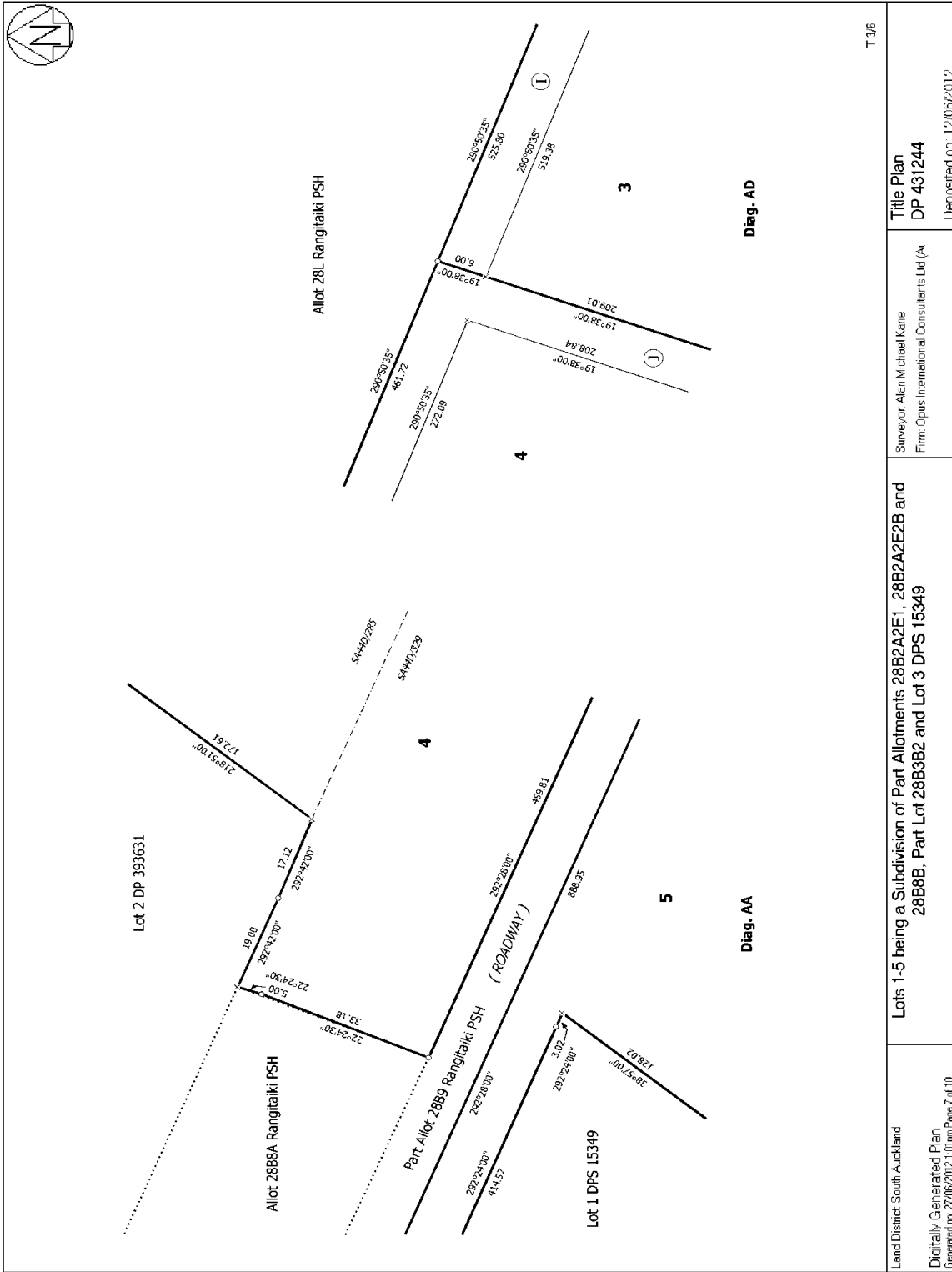
<p>Land District: South Auckland</p> <p>Digitally Generated Plan Generated on: 27/05/2012 1:01pm Page 5 of 10</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 2882A2E1, 2882A2E2B and 2888B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>	<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244</p>
		<p>Deposited on: 12/06/2012</p>	



<p>Land District: South Auckland</p> <p>Digitally Generated Plan Generated on: 27/08/2012 1:01pm Page 6 of 10</p>	<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>
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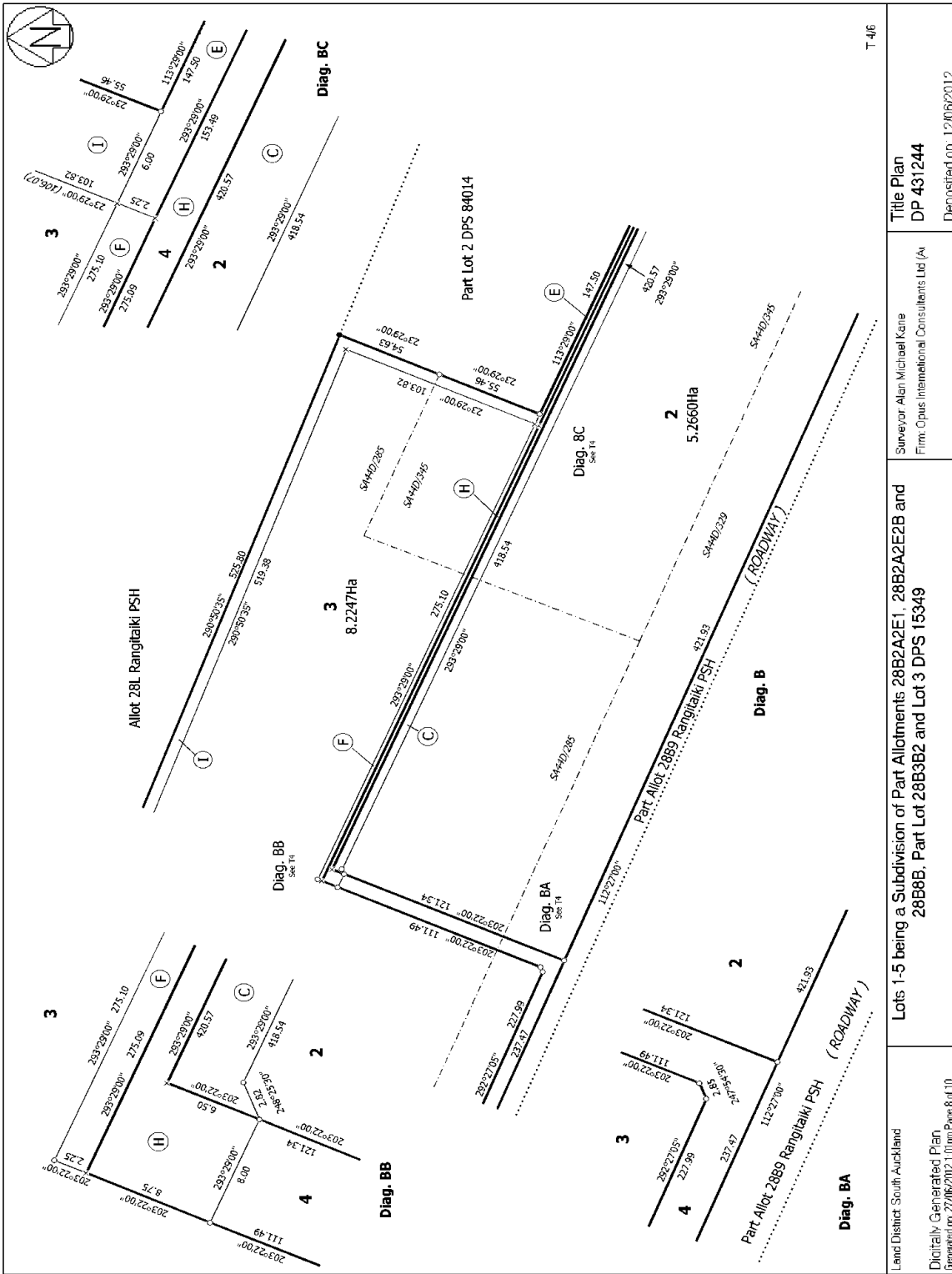
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Deposited on: 12/06/2012



T 3/6

<p>Land District: South Auckland Digitally Generated Plan (Generated on: 27/05/2012 1:01pm) Page 7 of 10</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>	<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244 Deposited on: 12/06/2012</p>
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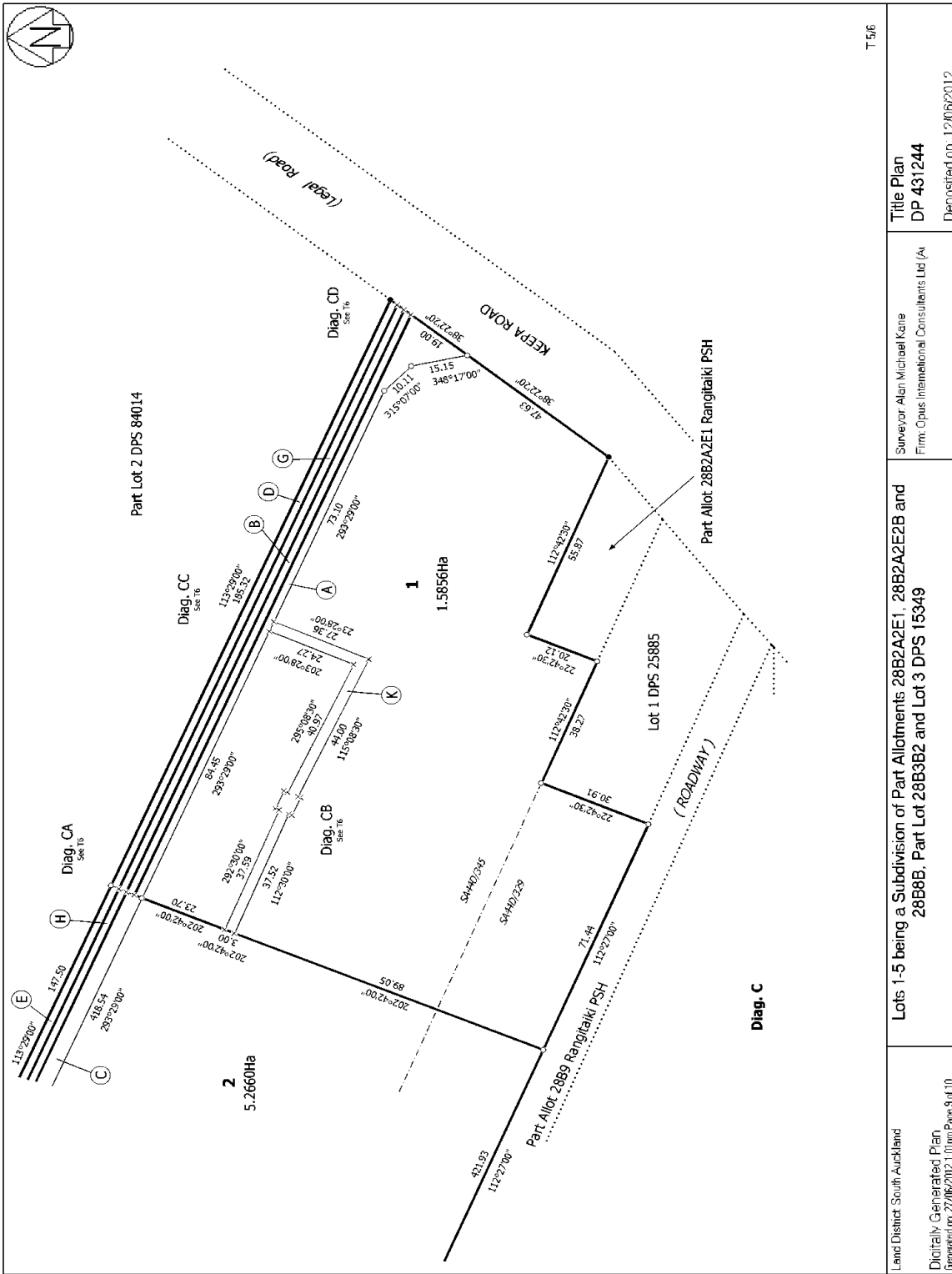


T 4/6
 Title Plan
 DP 431244
 Deposited on: 12/06/2012

Surveyor Alan Michael Kane
 Firm Opus International Consultants Ltd (A

Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349

Land District South Auckland
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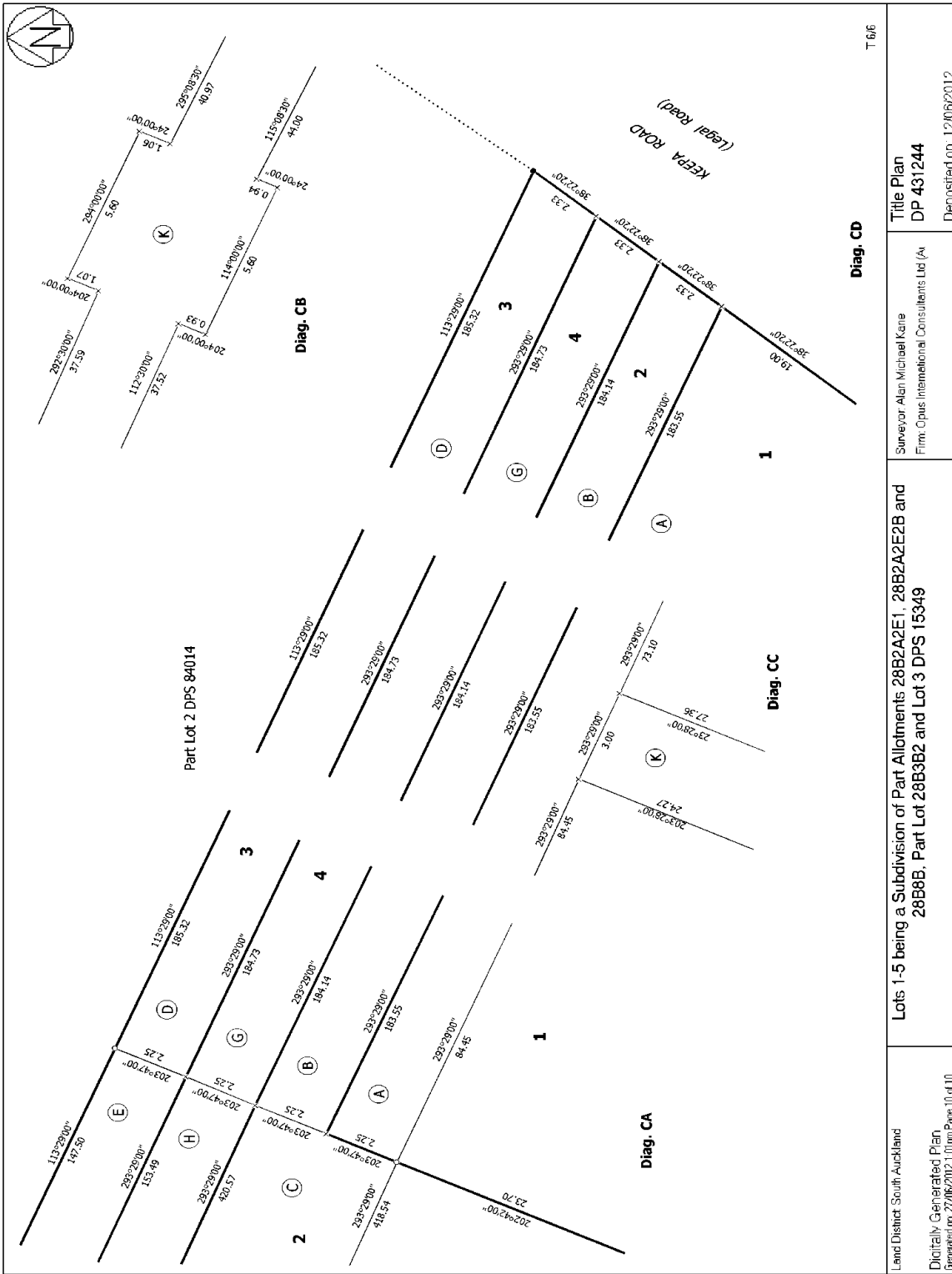
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Title Plan
DP 431244
Deposited on: 12/06/2012

Surveyor Alan Michael Kane
Firm: Opus International Consultants Ltd (A

Lots 1-5 being a Subdivision of Part Allotments 2882A2E1, 2882A2E2B and 2888B, Part Lot 2883B2 and Lot 3 DPS 15349

Land District: South Auckland
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Generated on: 27/05/2012 1:01pm Page 6 of 10



T 66	Diag. CD	Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349	Title Plan DP 431244
Surveyor Alan Michael Kane	Firm Opus International Consultants Ltd (A)	Land District South Auckland	Digitally Generated Plan (Generated on: 27/05/2012 11:01pm; Page 10 of 10)
Deposited on: 12/06/2012			



COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952



Search Copy


R. W. Muir
Registrar-General
of Land

Identifier **520757**
Land Registration District **South Auckland**
Date Issued 12 June 2012

Prior References

SA44D/285 SA44D/329 SA44D/345

Estate Fee Simple
Area 11.2891 hectares more or less
Legal Description Lot 4 Deposited Plan 431244

Proprietors

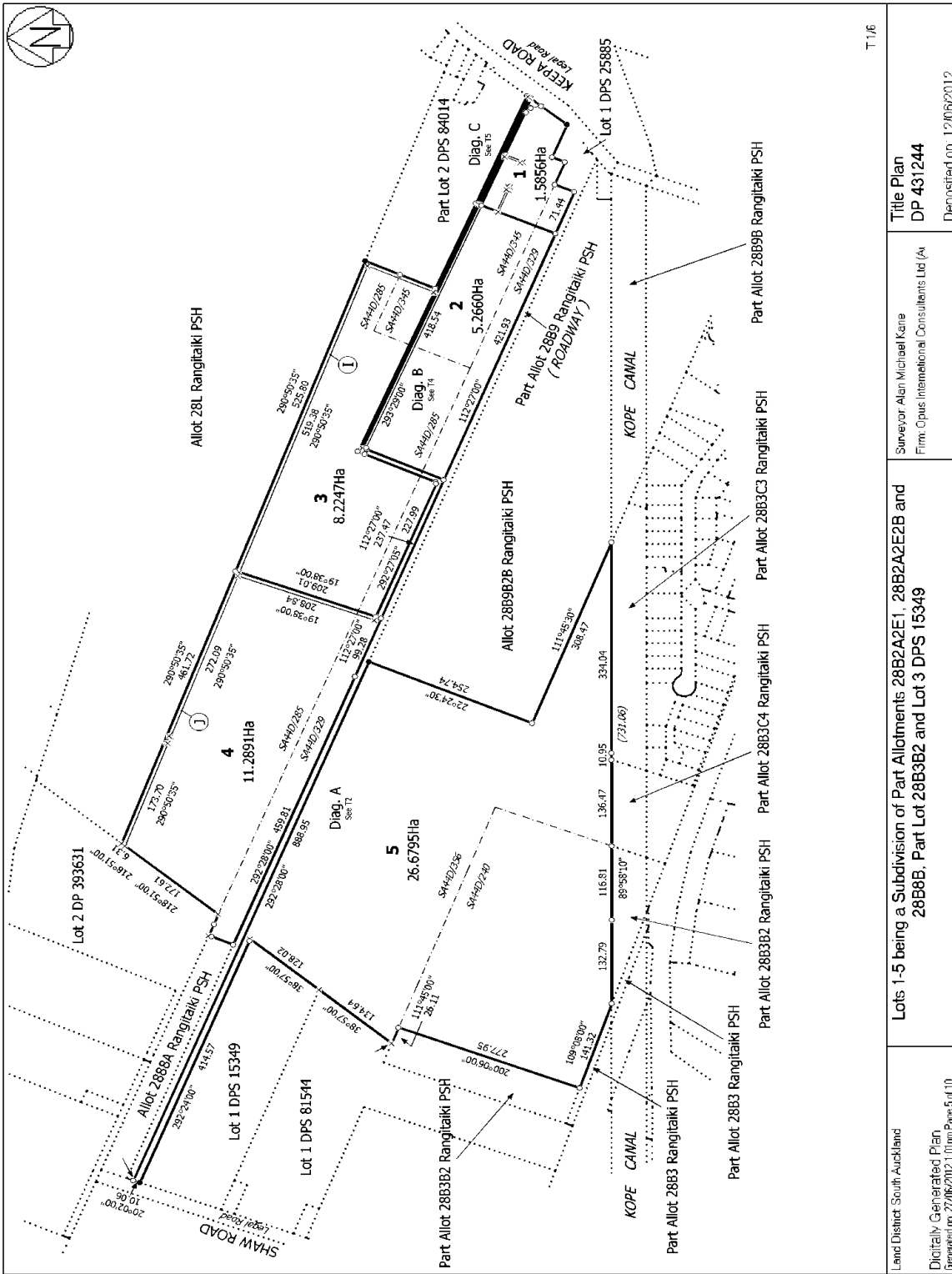
The Whakatane District Council

Interests

Subject to a right of way, right to convey water, electricity, telecommunications and computer media and a right to drain sewage over parts marked G and H and a right to drain water over part marked J on DP 431244 created by Easement Instrument 9091258.3 - 12.6.2012 at 2:03 pm

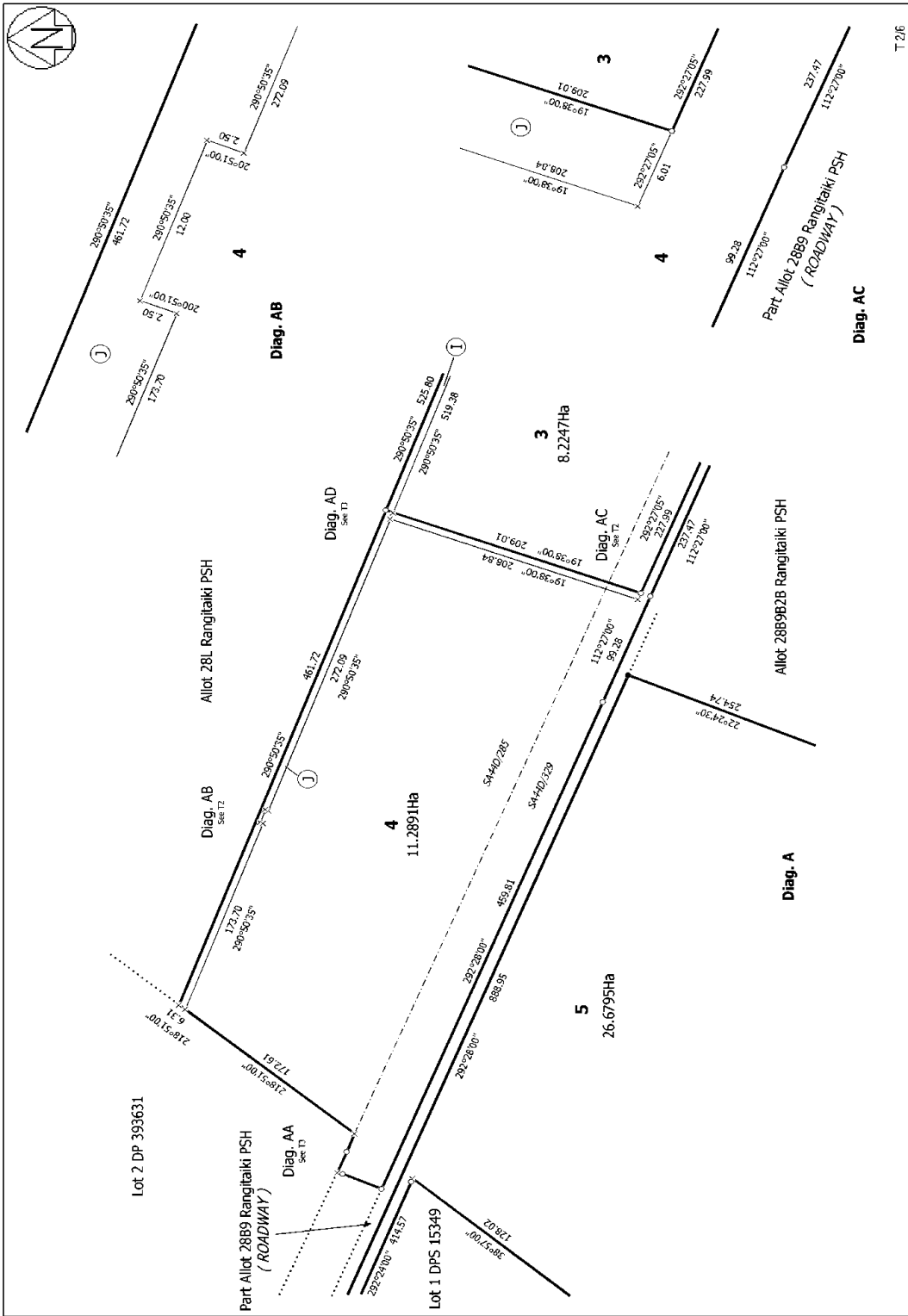
Appurtenant hereto are rights of way and rights to convey water, electricity, telecommunications and computer media created by Easement Instrument 9091258.3 - 12.6.2012 at 2:03 pm

The easements created by Easement Instrument 9091258.3 are subject to Section 243 (a) Resource Management Act 1991



T.1/6

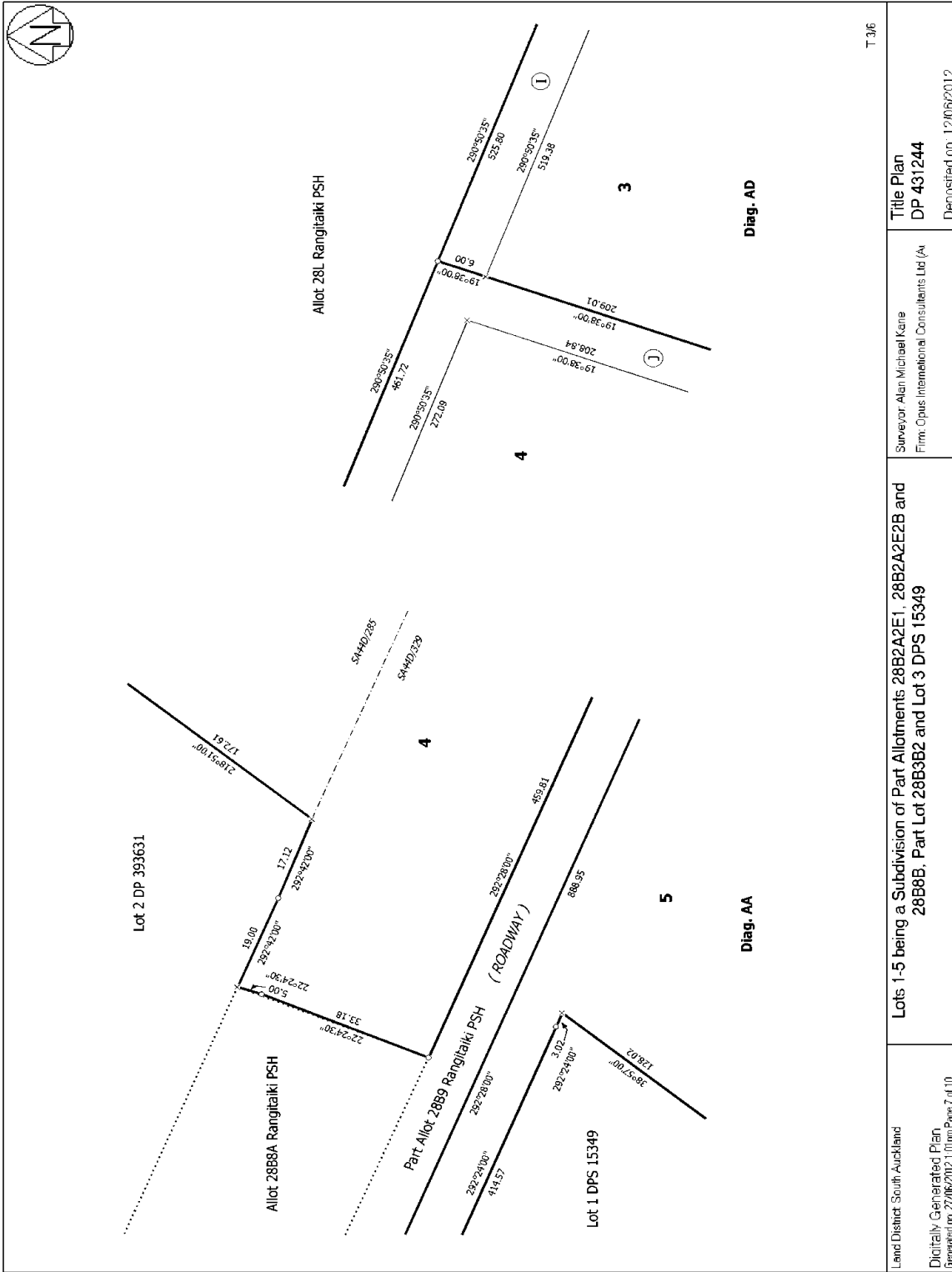
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<p>Land District: South Auckland</p> <p>Digitally Generated Plan Generated on: 27/08/2012 1:01pm Page 6 of 10</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>	<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244</p>
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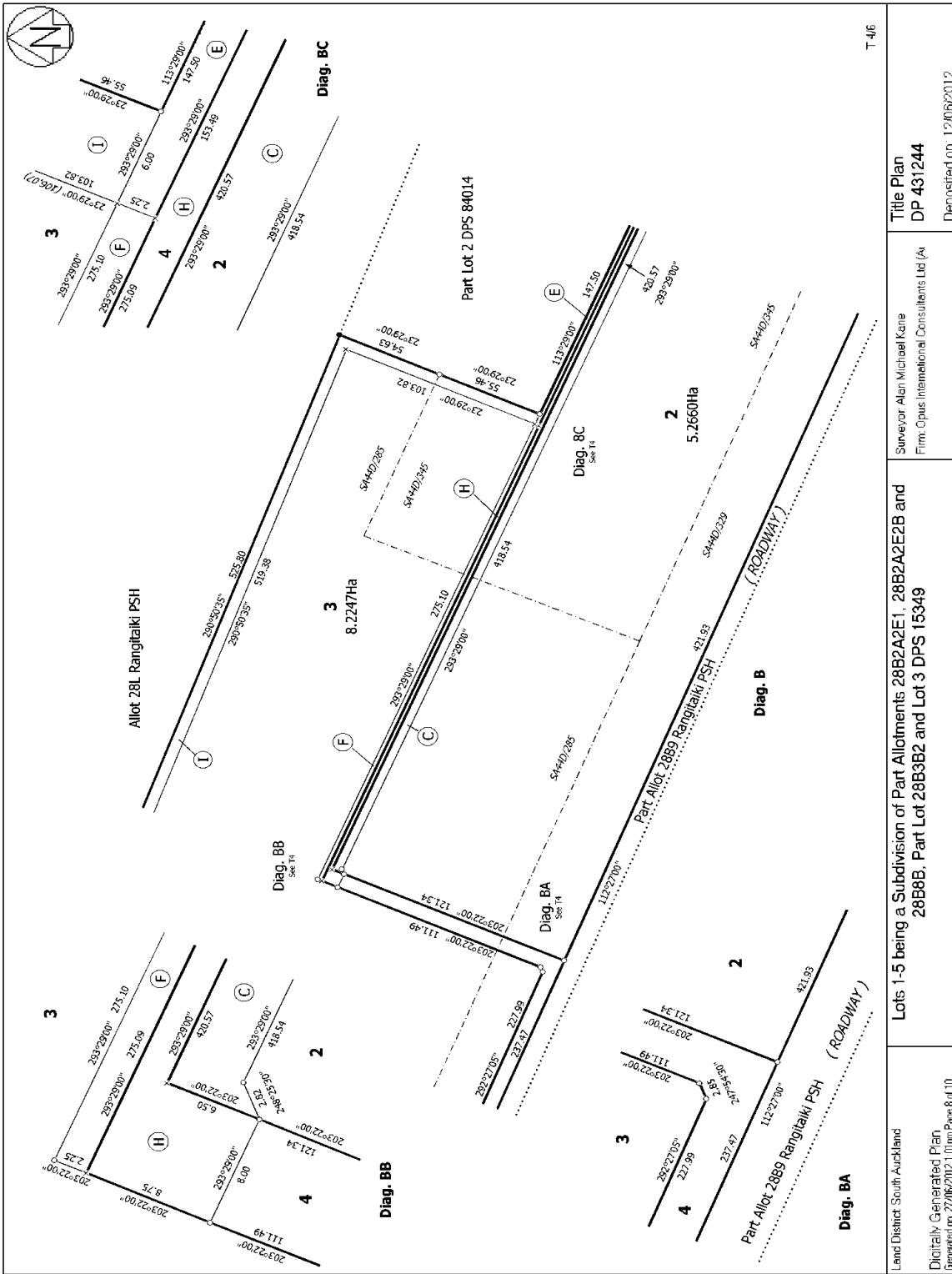
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<p>Land District: South Auckland Digitally Generated Plan (Generated on: 27/05/2012 1:01pm; Page: 7 of 10)</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>	<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244 Deposited on: 12/06/2012</p>
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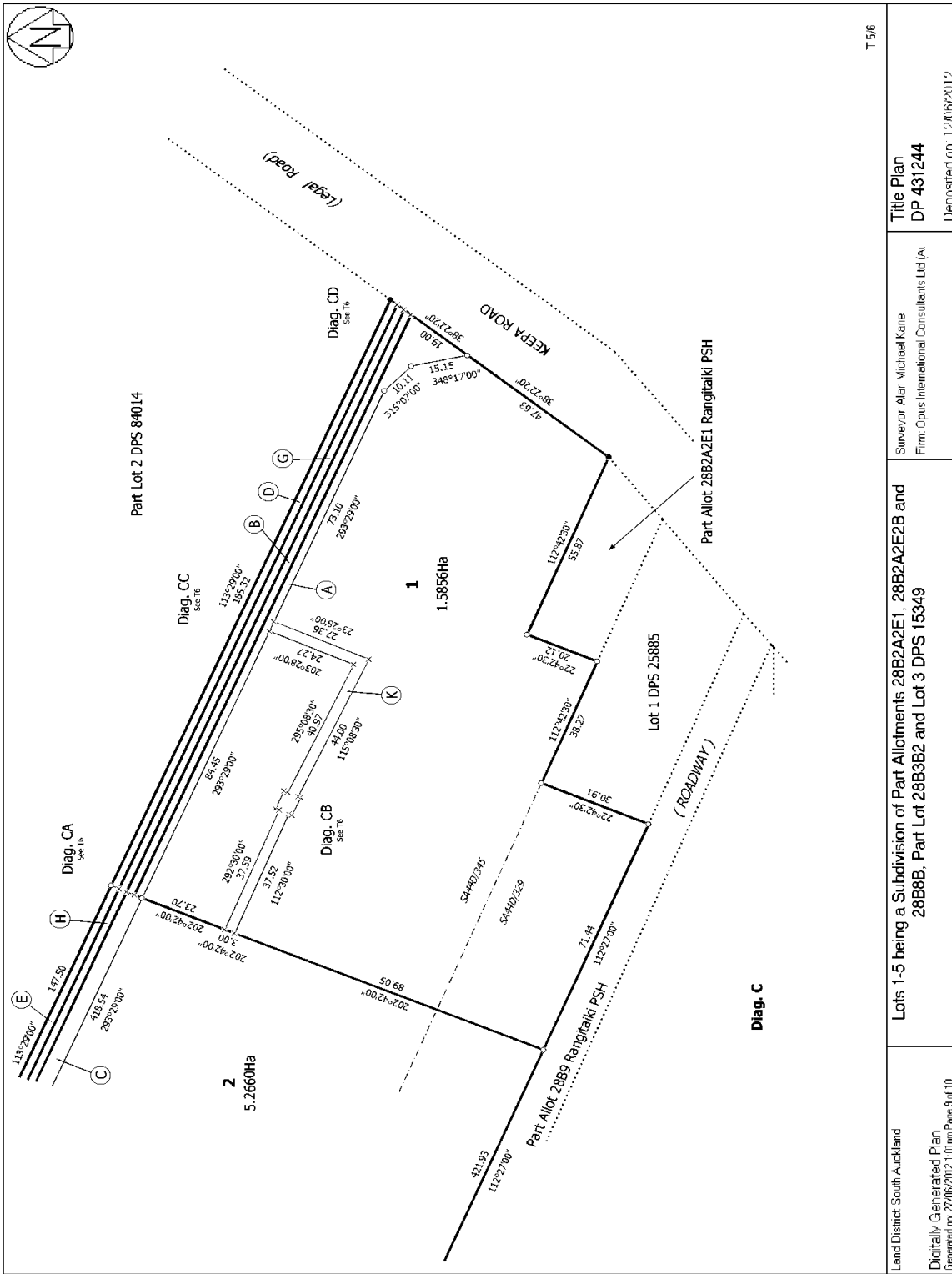
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DP 431244

Surveyor Alan Michael Kane
Firm Opus International Consultants Ltd (A

Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349

Land District South Auckland
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Deposited on: 12/06/2012



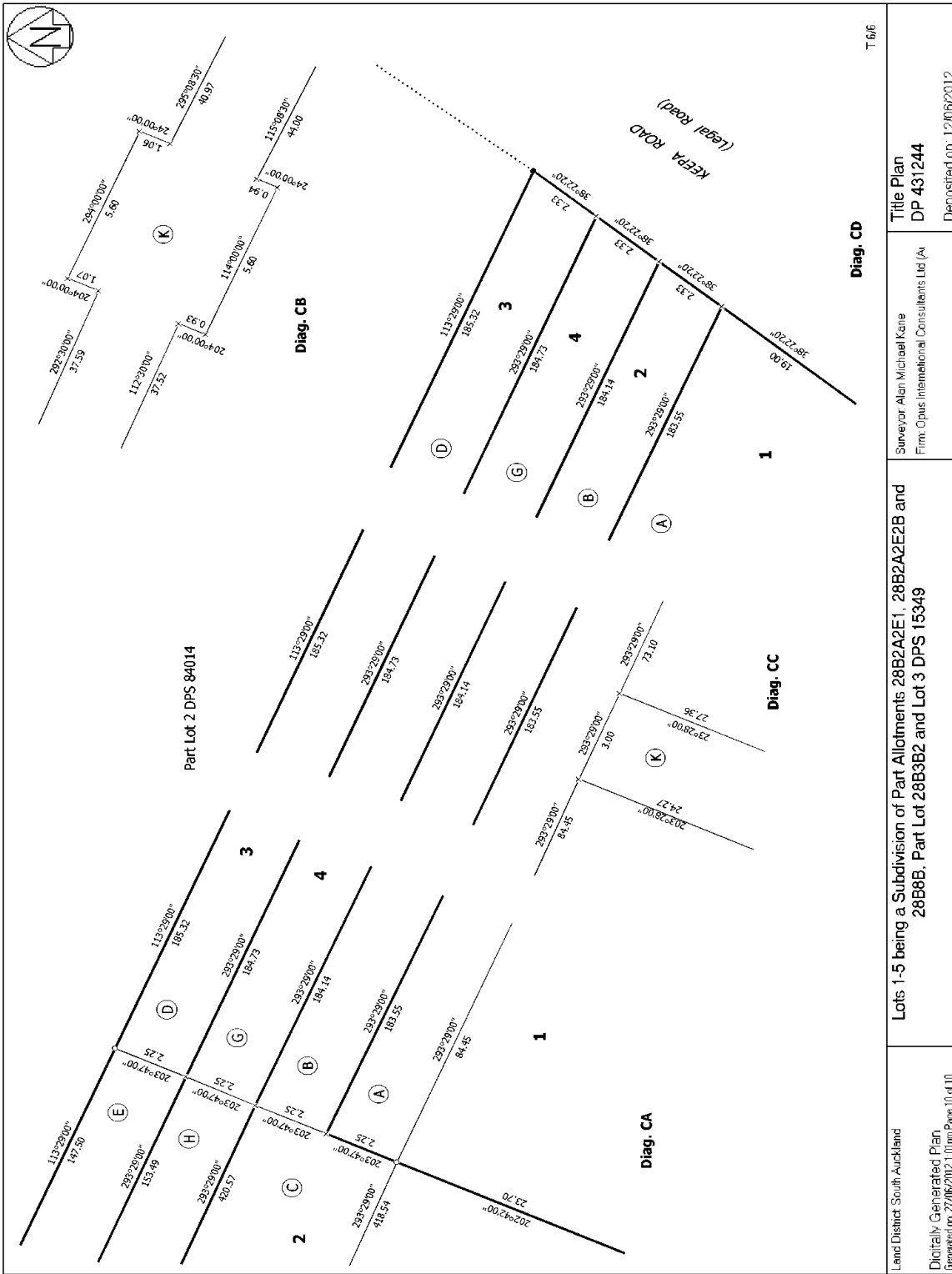
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Title Plan
DP 431244
Deposited on: 12/06/2012

Surveyor Alan Michael Kane
Firm Opus International Consultants Ltd (A

Lots 1-5 being a Subdivision of Part Allotments 2882A2E1, 2882A2E2B and 2888B, Part Lot 2883B2 and Lot 3 DPS 15349

Land District South Auckland
Digitally Generated Plan
Generated on: 27/05/2012 1:01pm Page 6 of 10



<p>Land District: South Auckland</p>	<p>Lots 1-5 being a Subdivision of Part Allotments 28B2A2E1, 28B2A2E2B and 28B8B, Part Lot 28B3B2 and Lot 3 DPS 15349</p>	<p>Digitally Generated Plan Generated on: 27/06/2012 1:01pm Page 10 of 10</p>
<p>Surveyor: Alan Michael Kane Firm: Opus International Consultants Ltd (A)</p>	<p>Title Plan DP 431244</p>	<p>Deposited on: 12/06/2012</p>



View Instrument Details

Instrument No. 9091258.1
Status Registered
Date & Time Lodged 12 Jun 2012 14:03
Lodged By Timmins, Dawn Rosalie
Instrument Type Consent Notice under s221(4)(a) Resource Management Act 1991



Affected Computer Registers	Land District
SA44D/240	South Auckland
SA44D/285	South Auckland
SA44D/329	South Auckland
SA44D/345	South Auckland
SA44D/356	South Auckland

Annexure Schedule: Contains 4 Pages.

Signature

Signed by Georgina Margaret Murley as Territorial Authority Representative on 12/06/2012 12:40 PM

***** End of Report *****

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of a subdivision of
land in the South Auckland Land
Registration District

CONSENT NOTICE

(Pursuant to Section 221 of the Act)

THE WHAKATANE DISTRICT COUNCIL (“the Council”) being the territorial authority for the district within which the Land described in the First Schedule of this Notice is situated has, pursuant to Part X of the Act, granted its consent to the subdivision shown on Land Transfer Plan 431244 subject to certain conditions, including the requirement in respect of the Land that the Owner (as defined in the Act) complies on a continuing basis with the conditions set out in the Second Schedule of this Notice.

FIRST SCHEDULE

(“the Land”)

- FIRST 1.5856 hectares more or less being Lot 1 on Land Transfer Plan 431244 and being part of the land comprised in Certificates of Title SA44D/240, SA44D/285, SA44D/329, SA44D/345 and SA44D/356 (South Auckland Registry)
- SECOND 5.2660 hectares more or less being Lot 2 on Land Transfer Plan 431244 and being part of the land comprised in Certificates of Title SA44D/240, SA44D/285, SA44D/329, SA44D/345 and SA44D/356 (South Auckland Registry)
- THIRD 8.2247 hectares more or less being Lot 3 on Land Transfer Plan 431244 and being part of the land comprised in Certificates of Title SA44D/240, SA44D/285, SA44D/329, SA44D/345 and SA44D/356 (South Auckland Registry)

SECOND SCHEDULE

("the Conditions")

The Owner(s) of Lots 1, 2 and 3 referred to in the First Schedule shall, on a continuing basis:

- 1.0 Be aware that the property is located in a rural area where the predominant use of land is typically rural production and other rural based activities. The property is also in close proximity to the oxidation ponds operated by the Whakatane District Council. The effects of lawful activities may result in the occupier experiencing effects such as odour, dust, noise, lighting, or increased traffic volumes and variety of vehicles. The owners of the land acknowledge that these effects are typical of the environment they live within and that Council will not consider complaints regarding effects of lawful activities.
- 2.0 Pay the Council's legal costs and disbursements directly or indirectly attributable to the enforcement of this Notice and the Council's conditions set out in this Notice and any variation or cancellation of such conditions.

The Owner(s) of Lots 1 and 2 referred to in the First Schedule shall, on a continuing basis:

- 3.0 Be aware that the lots may be subject to soil contamination as a result of previous and current activities.
- 3.1 Ensure that prior to any change in the use of any of the lots or prior to the transfer of ownership of any of the lots the subject lot be tested for possible contamination arising from previous activities. The testing is to be carried out by a suitably qualified expert. All costs of testing are to be met by the owner.
- 3.2 Ensure that if rehabilitation of the lot is deemed necessary as a result of the soil testing, that this is undertaken prior to sale and that all costs of any necessary site rehabilitation are to be met by the owner.
- 3.3 Ensure that all remediation works be validated by independent testing upon its completion. The owner is to provide Council's Environmental Health Officer a copy of results which shall also determine the existing background levels of contaminant present in the area.
- 4.0 Permit Council officers or contractors entry upon the land at reasonable times so as to ascertain compliance with these conditions.
- 5.0 Pay the Council's legal costs and disbursements directly or indirectly attributable to the enforcement of this Notice and the Council's conditions set out in this Notice and any variation or cancellation of such conditions.

The Owner(s) of Lot 1 referred to in the First Schedule shall, on a continuing basis:

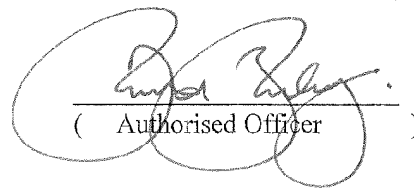
- 6.0 Be responsible for the maintenance and eventual replacement of the waste water gravity main.
- 7.0 Permit Council officers or contractors entry upon the land at reasonable times so as to ascertain compliance with these conditions.
- 8.0 Pay the Council's legal costs and disbursements directly or indirectly attributable to the enforcement of this Notice and the Council's conditions set out in this Notice and any variation or cancellation of such conditions.

The Owner(s) of Lot 2 referred to in the First Schedule shall, on a continuing basis:

- 9.0 Be responsible for the maintenance and eventual replacement of the waste water pump and rising main which is contained within easement 'K' on Lot 1 identified on Land Transfer Plan 431244.
- 10.0 Permit Council officers or contractors entry upon the land at reasonable times so as to ascertain compliance with these conditions.
- 11.0 Pay the Council's legal costs and disbursements directly or indirectly attributable to the enforcement of this Notice and the Council's conditions set out in this Notice and any variation or cancellation of such conditions.

DATED at Whakatane this 30th day of May 2012

SIGNED by DAVID BEWLEY)
the Principal Administration Officer)
of the Council)


(Authorised Officer)

CONSENT NOTICE

(Pursuant to Section 221 of the
Resource Management Act 1991)

GIVEN by: The Whakatane District Council

IN FAVOUR of: THE WHAKATANE DISTRICT COUNCIL

DATED: 30 day of May 2012

PROPERTY: Lots 1, 2 and 3
 Deposited Plan 431244

SUBJECT: Consent Conditions

COUNCIL REFERENCE: SS-2010-7694-00

**HAMERTONS
LAWYERS LIMITED**
(B N Carter)
Telephone No. 07 307 0680
Fax No. 07 307 0225
PO Box 601
DX JA31519
WHAKATANE
954372/160



View Instrument Details

Instrument No. 9091258.3
Status Registered
Date & Time Lodged 12 Jun 2012 14:03
Lodged By Timmins, Dawn Rosalie
Instrument Type Easement Instrument



Affected Computer Registers	Land District
520754	South Auckland
520755	South Auckland
520756	South Auckland
520757	South Auckland

Annexure Schedule: Contains 6 Pages.

Grantor Certifications

- I certify that I have the authority to act for the Grantor and that the party has the legal capacity to authorise me to lodge this instrument
- I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument
- I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply
- I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period

Signature

Signed by Georgina Margaret Murley as Grantor Representative on 12/06/2012 12:43 PM

Grantee Certifications

- I certify that I have the authority to act for the Grantee and that the party has the legal capacity to authorise me to lodge this instrument
- I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument
- I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply
- I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period

Signature

Signed by Georgina Margaret Murley as Grantee Representative on 12/06/2012 12:44 PM

*** End of Report ***

Form B

Easement instrument to grant easement or *profit à prendre*, or create land covenant

(Sections 90A and 90F Land Transfer Act 1952)

Grantor

The Whakatane District Council

Grantee

The Whakatane District Council

Grant of Easement or *Profit à prendre* or Creation of Covenant

The Grantor being the registered proprietor of the servient tenement(s) set out in Schedule A grants to the Grantee (and, if so stated, in gross) the easement(s) or *profit(s) à prendre* set out in Schedule A, or creates the covenant(s) set out in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s)

Schedule A

Continue in additional Annexure Schedule, if required

Purpose (Nature and extent) of easement; <i>profit</i> or covenant	Shown (plan reference)	Servient Tenement (Computer Register)	Dominant Tenement (Computer Register) or in gross
Right of Way	A on DP431244	Lot 1 DP431244 (520754)	Lots 2, 3 and 4 DP431244 (520755, 520756 and 520757)
	B on DP431244	Lot 2 DP431244 (520755)	Lots 1, 3 and 4 DP431244 (520754, 520756 and 520757)
	C on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 and 520757)
	D on DP431244	Lot 3 DP431244 (520756)	Lots 1, 2 and 4 DP431244 (520754, 520755 and 520757)
	E on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 and 520757)

Form L

Annexure Schedule

Page 2 of 5 Pages

Insert instrument type

Easement Instrument

Schedule A

Continue in additional Annexure Schedule, if required

Purpose (Nature and extent) of easement; <i>profit</i> or covenant	Shown (plan reference)	Servient Tenement (Computer Register)	Dominant Tenement (Computer Register) or in gross
Right of Way	F on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	G on DP431244	Lot 4 DP431244 (520757)	Lots 1, 2 and 3 DP431244 (520754, 520755 & 520756)
	H on DP431244	Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756)
Right to Convey Water	A on DP431244	Lot 1 DP431244 (520754)	Lots 2, 3 and 4 DP431244 (520755, 520756 & 520757)
	B on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	C on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	D on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	E on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	G on DP431244	Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756)
	H on DP431244	Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756)
	I on DP431244	Lot 3 DP431244 (520756)	Lot 4 on DP431244 (520757)

Form L

Annexure Schedule

Page 3 of 5 Pages

Insert instrument type

Easement Instrument

Schedule A

Continue in additional Annexure Schedule, if required

Purpose (Nature and extent) of easement; <i>profit</i> or covenant	Shown (plan reference)	Servient Tenement (Computer Register)	Dominant Tenement (Computer Register) or in gross
Right to Convey Electricity	A on DP431244	Lot 1 DP431244 (520754)	Lots 2, 3 and 4 DP431244 (520755, 520,756 & 520757)
	B on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	C on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	D on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	E on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	G on DP431244	Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756)
	H on DP431244	Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756)
Right to Convey Telecommunications and Computer Media	A on DP431244	Lot 1 DP431244 (520754)	Lots 2, 3 and 4 DP431244 (520755, 520756 & 520757)
	B on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	C on DP431244	Lot 2 DP431244 (520755)	Lots 3 and 4 DP431244 (520756 & 520757)
	D on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)
	E on DP431244	Lot 3 DP431244 (520756)	Lots 2 and 4 DP431244 (520755 & 520757)

Form L

Annexure Schedule

Page 4 of 5 Pages

insert instrument type

Easement Instrument

Schedule A

Continue in additional Annexure Schedule, if required

Purpose (Nature and extent) of easement; <i>profit</i> or covenant	Shown (plan reference)	Servient Tenement (Computer Register)	Dominant Tenement (Computer Register) or in gross
	G on DP431244 H on DP431244	Lot 4 DP431244 (520757) Lot 4 DP431244 (520757)	Lots 2 and 3 DP431244 (520755 & 520756) Lots 2 and 3 DP431244 (520755 & 520756)
Right to Drain Water	J on DP431244	Lot 4 DP431244 (520757)	Lot 3 DP431244 (520756)
Right to Drain Sewage	A on DP431244 B on DP431244 C on DP431244 D on DP431244 E on DP431244 G on DP431244 H on DP431244 K on DP431244	Lot 1 DP431244 (520754) Lot 2 DP431244 (520755) Lot 2 DP431244 (520755) Lot 3 DP431244 (520756) Lot 3 DP431244 (520756) Lot 4 DP431244 (520757) Lot 4 DP431244 (520757) Lot 1 DP431244 (520754)	Lots 2 and 3 DP431244 (520755 & 520756) Lots 1 and 3 DP431244 (520754 & 520756) Lot 3 DP431244 (520756) Lots 1 and 2 DP431244 (520754 & 520755) Lots 1 and 2 DP431244 (520754 & 520755) Lots 1, 2 and 3 DP431244 (520754, 520755 & 520756) Lots 2 and 3 DP431244 (520755 & 520756) Lot 2 DP431244 (520755)

Form B - continued

Easements or profits à prendre rights and powers (including terms, covenants and conditions)

Delete phrases in [] and insert memorandum number as required; continue in additional Annexure Schedule, if required

Unless otherwise provided below, the rights and powers implied in specified classes of easement are those prescribed by the Land Transfer Regulations 2002 and/or Schedule Five of the Property Law Act 2007

The implied rights and powers are hereby [varied] [negatived] [added to] or [substituted] by:

[Memorandum number _____, registered under section 155A of the Land Transfer Act 1952]

[the provisions set out in Annexure Schedule 2]

Covenant provisions

Delete phrases in [] and insert Memorandum number as require; continue in additional Annexure Schedule, if required

The provisions applying to the specified covenants are those set out in:

[Memorandum number _____, registered under section 155A of the Land Transfer Act 1952]

[Annexure Schedule 2]

Form L

Annexure Schedule 2

Page 1 of 1 Pages

Insert instrument type

Easement Instrument

Continue in additional Annexure Schedule, if required

The rights and powers provided in the Fourth Schedule to the Land Transfer Regulations 2002 shall be implied herein with the following amendments:

RIGHTS OF WAY

The same rights and powers as set out in paragraph 6 of the Fourth Schedule to the Land Transfer Regulations 2002 and Fifth Schedule to the Property Law Act 2007.

RIGHT TO CONVEY WATER

The same rights and powers as set out in paragraph 3 of the Fourth Schedule to the Land Transfer Regulations 2002.

RIGHT TO CONVEY ELECTRICITY

The same rights and powers as set out in paragraph 7 of the Fourth Schedule to the Land Transfer Regulations 2002.

RIGHT TO CONVEY TELECOMMUNICATIONS AND COMPUTER MEDIA

The same rights and powers as set out in paragraph 8 of the Fourth Schedule to the Land Transfer Regulations 2002.

RIGHT TO DRAIN WATER

The same rights and powers as set out in paragraph 4 of the Fourth Schedule to the Land Transfer Regulations 2002.

RIGHT TO DRAIN SEWAGE

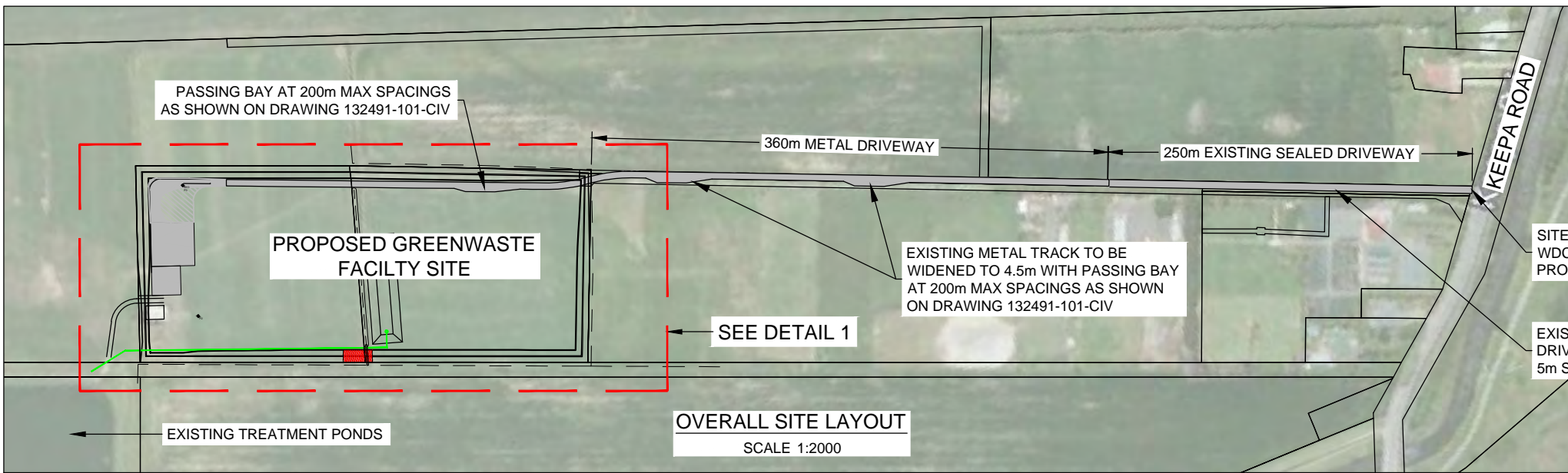
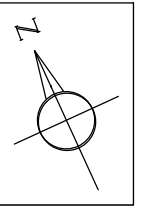
The same rights and powers as set out in paragraph 5 of the Fourth Schedule to the Land Transfer Regulations 2002.

TOGETHER WITH, IN RESPECT OF ALL THE SAID EASEMENTS, the rights and powers as set out in paragraphs 10, 11, 12, 13 and 14 of the Fourth Schedule to the Land Transfer Regulations 2002 SAVE THAT:

Where there is a conflict between the provisions of the Fourth Schedule to the Land Transfer Regulations 2002 and the Fifth Schedule to the Property Law Act 2007, the provisions of the Fifth Schedule must prevail.

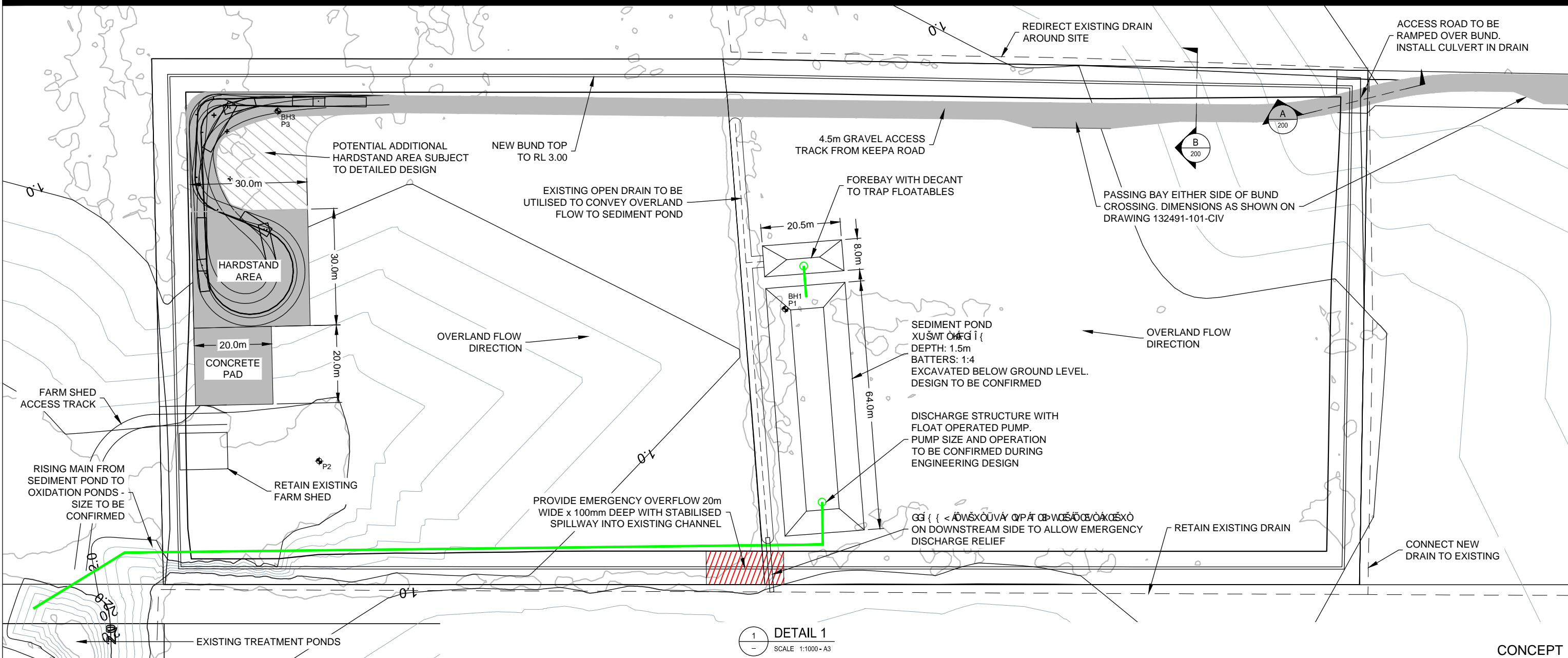
Where there is a conflict between the provisions of the Fourth Schedule to the Land Transfer Regulations 2002 and/or the Fifth Schedule to the Property Law Act 2007 and the modifications in this Easement Instrument, the modifications shall prevail.

Appendix 4: Proposed Plans



GENERAL NOTES

1. EARTH BUND BATTERS PROVISIONALLY AT 1:2 SLOPE. TO BE CONFIRMED.
2. CONTOURS PROVIDED BY BOFFA MISKELL
3. DRAWINGS ARE CONCEPTUAL ONLY AND SUBJECT TO DETAILED DESIGN.
4. DRAWINGS ARE NOT TO BE SCALED.



CONCEPT

No.	Date	Revision Details	By	Ver.	App.
G	05/05/14	REVISED RISING MAIN AND PUMP NOTES	PM		
F	02/04/14	ADDITIONAL HARDSTAND AREA AND NOTES ADDED	JC		
E	04/03/14	ADDITIONAL PASSING BAYS ADDED	JC		
D	21/02/14	UPDATED PASSING BAY AND ROAD WIDTHS	PM		
C	14/01/14	TURNING BAY RELOCATED	JC		
B	11/12/13	CONCEPT DESIGN CHANGES	JC		
A	07/10/13	CONCEPT	JC		

Drawn: JC, Signed: JC, Date: 07/10/13

Designed: JC, Signed: JC, Date: 07/10/13

Verified: JC, Signed: JC, Date: 07/10/13

Approved: JC, Signed: JC, Date: 07/10/13

THIS DRAWING REMAINS THE PROPERTY OF LYSAGHT CONSULTANTS LTD. NO LIABILITY SHALL BE ACCEPTED FOR THE UNAUTHORISED USE OF THIS DRAWING.

SURVEYING, ENGINEERING & LAND DEVELOPMENT
Cnr Spring/Selwyn Streets, Tauranga Ph 07 578 8798 www.lysaght.net.nz

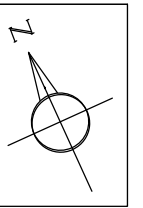
Project: WHAKATANE DISTRICT COUNCIL
GREEN WASTE FACILITY
KEEPA ROAD
WHAKATANE

Drawing Title: CONCEPT SITE LAYOUT PLAN

Project No.	132491
Scale (A3)	AS SHOWN
Drawing No.	132491-100-CIV
Rev.	G

GENERAL NOTES

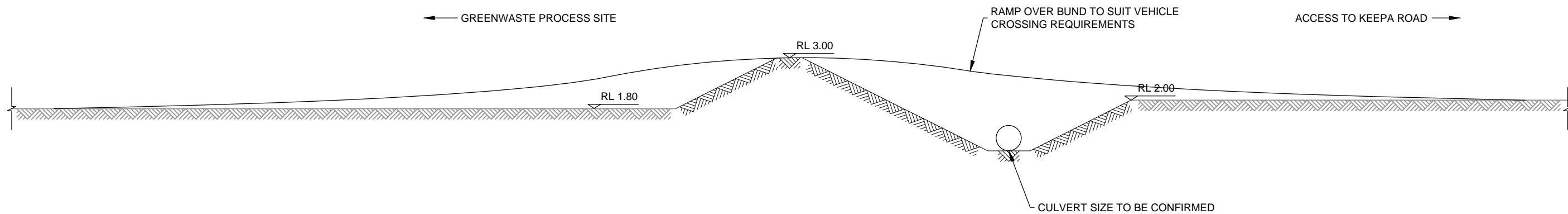
1. FINAL PASSING BAY LOCATIONS AND DIMENSIONS TO BE DETERMINED AT DETAILED DESIGN



PROVIDE PASSING BAY AT 200m
MAX CRS ALONG GRAVEL ROAD.
BAY TO BE SIZED FOR ENTRY AND
EXIT OF 18m SEMI-TRAILER

CONCEPT

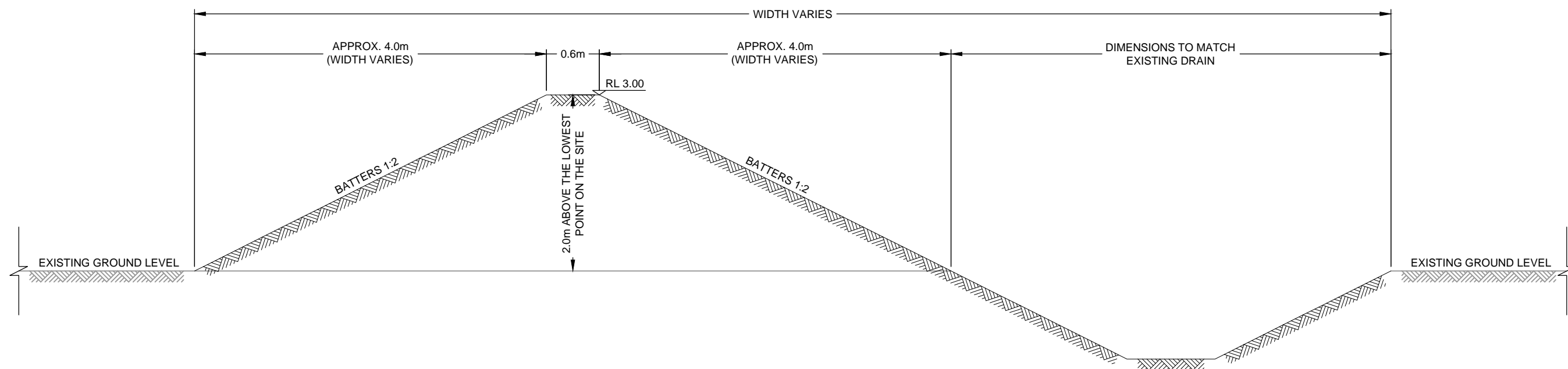
		Drawn	Signed	Date	 <p>THIS DRAWING REMAINS THE PROPERTY OF LYSAGHT CONSULTANTS LTD. NO LIABILITY SHALL BE ACCEPTED FOR THE UNAUTHORISED USE OF THIS DRAWING.</p>	Project: WHAKATANE DISTRICT COUNCIL GREEN WASTE FACILITY KEEP A ROAD WHAKATANE	Drawing Title:		Project No.	
		Designed	Signed	Date			PASSING BAY DETAIL		132491	
		Verified	Signed	Date					Scale (A3)	
		Approved	Signed	Date					APPROX 1:200	
A	07/10/13	CONCEPT	JC		SURVEYING, ENGINEERING & LAND DEVELOPMENT Cnr Spring/Selwyn Streets, Tauranga Ph 07 578 8798 www.lysaght.net.nz		Drawing No.		Rev.	
No.	Date	Revision Details	By	Ver.	App.			132491-101-CIV		A



SECTION A
ACCESS ROAD BUND CROSSING SECTION
 SCALE H=1:1000, V=1:100

GENERAL NOTES

1. EARTH BUND BATTERS PROVISIONALLY AT 1:2 SLOPE. TO BE CONFIRMED.
2. CONTOURS PROVIDED BY BOFFA MISKELL
3. DRAWINGS ARE CONCEPTUAL ONLY AND SUBJECT TO DETAILED DESIGN.
4. DRAWINGS ARE NOT TO BE SCALED.



SECTION B
TYPICAL EARTH BUND/DRAIN SECTION
 SCALE NOT TO SCALE

CONCEPT

Drawn		JC	Signed	Date	07/10/13	 <p>THIS DRAWING REMAINS THE PROPERTY OF LYSAGHT CONSULTANTS LTD. NO LIABILITY SHALL BE ACCEPTED FOR THE UNAUTHORISED USE OF THIS DRAWING.</p>	Project: WHAKATANE DISTRICT COUNCIL GREEN WASTE FACILITY KEEPA ROAD WHAKATANE	Drawing Title:		ACCESS ROAD LONGITUDINAL SECTION AND EARTH BUND TYPICAL SECTION		Project No.		132491			
Designed		JC	Signed	Date	07/10/13			Scale (A3)		1:1000, 1:50							
Verified			Signed	Date				Drawing No.		132491-200-CIV		Rev.		B			
Approved			Signed	Date				No.		Date		Revision Details		By		Ver.	
SURVEYING, ENGINEERING & LAND DEVELOPMENT Cnr Spring/Selwyn Streets, Tauranga Ph 07 578 8798 www.lysaght.net.nz																	

Appendix 5: Operational Management Plan



Tukanga Wairākau

*Green Waste Processing Facility
Keepa Road, Whakatāne*

Operational Management Plan

Prepared by

Nigel Clarke

Manager Solid Waste

Whakatāne District Council

May 2014

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1.0 Introduction

1.1 Purpose and Objectives

Whakatāne District Council (WDC) *propose to* operate a green waste composting operation on WDC owned land adjacent to the current wastewater oxidation ponds off Keepa Road, Whakatāne, the site location and access way is shown in Fig 1.



Fig 1: Location of WDC green waste processing site

This document serves as the Operational Management Plan (OMP) for the site and **will be amended to be complementary to and comply with, any related resource consents**. This document includes details of operational practices, health and safety and environmental management, quality control and consent compliance. This document also forms part of any contractual agreement to operate the site.

The format of this document is based upon the Waste Management Institute of New Zealand and Ministry for the Environment's 'Outline of a Composting Operation Site Management Plan'.

1.2 Resource Consents and Assessment of Environmental Effects

The operation of this site is subject to the following resource consents and conditions therein (see Appendix A):

An Assessment of Environmental Effects (AEE) was undertaken as part of the resource consent application process for this site and a copy of this is included in Appendix B.

1.3 Risk Assessment

A number of potential health and safety and environmental hazards have been identified as part of these operations. These include; incident and accident reporting, training, traffic management, leachate and stormwater contamination, odour, dust and noise. Each of these are addressed in later sections of this document.

1.4 Definitions

Aerobic	In the presence of, or requiring oxygen
Anaerobic	In the absence of, or not requiring oxygen.
Ammonia	A gaseous compound comprised of nitrogen and hydrogen which has a pungent odour.
Bund	A containment wall to prevent the loss of liquids from a specified area.
Compost	Organic matter that has undergone controlled aerobic composting to achieve pasteurisation, stability and maturity. Compost has at least 95% by mass of material that has passed a 20mm sieve.
Feedstock	Organic material used for composting, including those generated by domestic and commercial gardening and landscaping sources. Includes leaves, plants, branches, tree trunks and stumps.
Green waste	See Feedstock
Moisture Content	The fraction or percentage of a material comprised of water. Moisture content equals the weight of the water portion divided by the total weight (water plus dry material).
Mulch	Any pasteurised or composted organic product that is suitable for placing on soil surfaces. Mulch has at least 20% by mass of material that has passed through a 20mm sieve.
Organic	Substances of animal or vegetable origin consisting of hydrocarbons and their derivatives. (This site will only receive organic matter of vegetable origin).
Pasteurisation:	The process whereby organic materials are treated to kill plant and animal pathogens and weed propagates.
Pathogen:	Microorganisms capable of producing disease or infection in plants or animals. Pathogens can be killed by heat produced during composting.
pH	A measure of the hydrogen ions in a solution. The lower the pH the more acidic a substance is. The higher the pH the more alkaline a substance is. A pH of 7 is considered neutral.

Thermophilic	Temperatures above 45°C. The stage of composting in which high temperatures are sustained resulting in high rates of decomposition and pasteurisation of organic material.
Turning	An operation which mixes and agitates material in the windrow pile. Its effect is to increase porosity of the windrow to enhance aeration. It can be achieved with a front end loader or specially designed machinery.
Soil Conditioner	Any pasteurised or composted organic product, that is suitable for adding to soils. Soil conditioner has at least 95% by mass of material that has passed through a 20mm sieve.
Windrow	System of composting involving horizontally extended piles formed by a front end loader or specially designed machinery. The extended piles are 1.5 to 3m in height and the length is limited by the operation pad. Aeration of the pile is achieved through turning.

2.0 Description of Operation

2.1 Site Owner and Operator

The site and composting operation are both owned by WDC. Following an initial 'establishment' period (time to be determined), the allocation of a contract for the operation and management of the site will follow WDC procurement and tender procedures. The tender process will determine the level of composting experience and other attributes required.

2.2 Contractual Arrangements

The appointed contractor reports to the Solid Waste Manager at WDC and is responsible for determining their internal staff structure, responsibilities, duties, induction and training.

As part of the procurement process any contractor is required to provide details of how they will manage any health and safety, and environmental hazards. This OMP forms part of any contractual agreement and they are required to comply with any consents or permits related to the operation.

2.3 Customer Service and Quality Management Procedures

There is no public 'drop-off' at the site which reduces health and safety risks and customer interactions. The contractor is required to maintain high levels of customer service with all parties that they interact with as part of these operations. They are also required to report any customer service concerns to the Solid Waste Manager (WDC) on an as-need basis.

The Composting Contractor is responsible for ensuring that the compost meets regulatory requirements including meeting the standards in NZS 4454:2005 (New Zealand Standard for Composts, Soil Conditioners and Mulches). The contractor is responsible for undertaking the appropriate testing and analysis of the composting and final products, and for ensuring that results are communicated to any interested parties as required.

The contractor is responsible for marketing and selling the final products.

2.4 Site Layout and Activities Undertaken

Except for the provision of a portaloo there are no buildings on the site related to the composting operations. There is no weighbridge as truck loads are weighed at the Whakatāne Refuse Transfer Station. (Note: An existing farm shed is located to the south of the concrete pad at the western end of the site; however this farm shed does not form part of the operations). A barn exists adjacent to one corner of the site but this does not form part of these operations and is not considered as part of the site.)

Site access is from Keepa Rd as shown in Fig 1. A 30km/hr speed limit applies to the access road and passing bays are provided. Engineering drawings are included as Appendix C and this shows the main features of the site including the access road, surrounding bund which

provides for stormwater and leachate control, drainage features, concrete pad, hardstand and operational areas.

The main activities on site are:

- Drop off and storage of incoming materials (feedstock)
- Shredding and materials preparation
- Composting and processing
- Screening
- Product storage

Each of these are discussed in further detail later in this document.

It is expected that these activities will result in the following traffic movements:

- Green waste delivery trucks, 1 - 3 per day
- Non organic waste removal (skip bin), every 2 weeks
- Compost collection trucks, 1 - 4 per day
- Site operational staff vehicles, 1 - 4 per day
- Equipment transport trucks:
 - Excavator/loader/windrow turner: (if not held permanently on site) every 6 to 7 weeks, removed 2 - 3 days later
 - Shredder/hogger: every 3 – 4 weeks, removed 2 - 3 days later
- Small buses for site visits and educational purposes.

It is estimated that the operation will result in a maximum of 8 but typically only 3 truck movements per day on a regular basis, mainly comprising trucks bringing feedstock material to the site. There will also be seasonal variability in the amount of green waste received and product (compost) transported off site. Approximately 1 - 4 small vehicles (utility size) are expected to access the site every day.

Vehicle movements on Saturday and Sunday are restricted to feedstock drop-off and this also is seasonal with 1 to 2 trucks per weekend during the summer months.

2.5 Surrounding Land Uses

The site is bordered by cropping and grazing land to the north and south-east. The proposed BOPRC Kope Canal remediation site is situated directly to the south. Further to the south is an industrial zone. Four operating wastewater oxidation ponds are situated to the west. To the east the site is bordered by a pony club (on WDC owned land) with a plant nursery and a Church building further to the east.

2.6 Material Flows

Green waste brought to site originates from two sources; kerb-side domestic collections and drop-offs at council refuse transfer stations.

Green waste collected from kerbside collections remains in the collection trucks and go via the Whakatane Refuse Transfer Station to be weighed. The trucks then drive directly to the composting facility where they off-load. Kerb-side collected green waste is not transferred or processed at the transfer station.

The general public and contractors can dispose of green waste at the Whakatane and Murupara refuse transfer stations. Green waste collected at the transfer stations is transported by the transfer station operator to the composting facility.

The green waste (feedstock) then passes through the processing stages outlined in the next section. The resulting products (compost) are stored on site and sold by the operations contractor.

A refuse skip bin will be stored on site for the reception of any feedstock contaminants. The bin will be sent to the refuse transfer station for emptying on an as-need basis (i.e. when full).

3.0 Processing Methodologies and Standard Operating Procedures

This facility processes green waste into a soil conditioning product via a composting process. The methodologies and operating procedures applied to achieve this goal comply with New Zealand Standard 4454:2005 - Composts, Soil Conditioners and Mulches. The site contractor is required to familiarise themselves with this standard and apply it to all relevant aspects of the site operations.

3.1 Incoming Materials Reception and Storage

Contamination of the feedstock is a major concern for both the composting process and environmental effects (such as litter). The following contamination control steps are to be followed by the kerbside collection contractor, refuse transfer station and composting facility staff:

3.1.1 At Source: Kerbside

1. When kerbside green waste wheelie bins are emptied, each bin will be inspected by the collections contractor via an on-board camera.
2. If green waste is contaminated with materials that are not suitable for the composting feedstock, the wheelie bin will not be emptied and will be returned to the kerb.
3. A sticker will be placed on the bin to advise the customer. Approximately 10 to 20 wheelie bin loads are stickered each week using this methodology.

3.1.2 At Source: Transfer Station

1. Green waste delivered directly to the transfer station by customers will be inspected by at the weighbridge.
2. If green waste is identified at the weighbridge to be contaminated with materials that are not suitable for the composting feedstock, the customer will be advised to remove the contaminants. If it is not possible to remove any contaminants, the green waste will be placed in the refuse bin.
3. Transfer station staff will regularly (several times a day) visually inspect the open top green waste bins at the transfer station.
4. If any contamination of feedstock is identified in the bins, where possible it will be removed, otherwise the contents of the bin will be blended with the refuse and sent to landfill.

3.1.3 Green Waste Processing Facility: Incoming Materials

1. If contractor staff are on site at the time green waste is dropped off, it will be visually inspected prior to and during the creation of windrows.
2. Retrievable contaminants will be removed and placed in the skip bin on site for removal to the transfer station.

3. If it is not possible to remove contaminants, the green waste will be treated as refuse and returned to the transfer station for dispatch to landfill.

3.1.4 Green Waste Processing Facility: Processing

1. Prior to shredding, prior to sieving and following sieving, the green waste will be visually inspected by the composting contractor.
2. Retrievable contaminants will be removed and placed in the skip bin on site for removal to the Transfer Station.

3.1.5 Green Waste Processing Facility: Site Maintenance

1. Whenever composting contractor staff are on site, the site and feedstock will be inspected.
2. Loose refuse, litter and feedstock contaminants will be retrieved and placed in the skip bin for removal to the Transfer Station.

3.2 Batch Recording

Each load of green waste taken to the facility is weighed at the transfer station prior to delivery. Each load is therefore recorded in the weighbridge data, this includes, date, time, weight and source (kerbside or transfer station drop-off).

3.3 Equipment

Apart from staff vehicles and trucks, equipment that will be held on site or brought to site includes an excavator/loader/windrow turner, a shredder/hogger and a screen.

3.4 Materials Preparation and Shredding

The collections contractor's trucks will unload the green waste either onto the hardstand area or at the end of existing windrows. A loader/excavator/windrow turner will form the feedstock into windrows no more than 3m high. The unprocessed green waste will be allowed to compost aerobically for 2 – 4 weeks.

The green waste will then be shredded to a finer particle size by a shredder/hogger every 3 – 4 weeks. Shredding is necessary for woody branches and larger materials that cannot be composted effectively without size reduction. Shredding will also increase surface area of raw materials exposed to microbes, increase bulk density and air space, which promotes optimum thermophilic composting conditions (rapid microbial activity, appropriate temperature build-up and moisture content).

A loader/excavator/windrow turner will place the shredded green waste into windrows for composting. Turning the feedstock into windrows aids the mixing process which further aids management of the particle size and moisture content.

3.5 Composting and Processing

The compost will mature over a period of 4 – 6 months. During this time it will be turned once a month to ensure all materials maintain the temperatures and other characteristics required to achieve pasteurisation.

The contractor will aim to apply the commonly quoted optimum parameters for aerobic decomposition which are:

- C:N ration 25-30 to 1
- Moisture content 50-60%
- Oxygen concentrations 12-14% (never less than 5%)
- Average wet bulk density 200-300kg/m³, increasing to 500-700kg/m³ during composting
- pH 6.5-8
- temperature 45-65°C, including 3-4 days at greater than 55°C to achieve pasteurisation

The composting process can be split into two major stages:

1. an initial high rate phase with high temperatures, high oxygen uptake, rapid biological solid reduction and pasteurisation
2. a secondary low rate phase with reduced oxygen uptake, lowering temperatures and a product moving towards stabilisation

The temperature of the composting pile is a good indicator of the process and should be monitored regularly. Temperature will fall if oxygen becomes scarce resulting in decreased microbial activity. Conversely if oxygen content and microbial activity increases the temperature can rise above 70°C. To achieve pasteurisation the temperature must exceed 55°C for more than 3 days. The temperature of the pile can be controlled by turning, extending the composting period or insulating the outer layers (these methodologies also help to control odour).

While aeration (turning) may be used to cool the temperature it may also remove moisture content. Temperature, aeration and moisture content should be managed together to maximise aerobic microbial activity and the composting process.

During the secondary stage, microbial activity continues and the pile must still be kept hydrated and aerobic for the compost to mature. Feedstock contamination and pathogen regrowth of the maturing compost must be avoided.

3.6 Screening

Once the compost has matured sufficiently, it will be passed through a screen/sieve. The screen/sieve separates waste products (plastic, flax, etc.) and larger material from the compost.

Waste products will be placed in a skip bin for removal to the Transfer Station. Large green waste material will be returned to the windrows for further processing.

3.7 Product Storage and Sale

The finished volume of compost will be less than 50% of the original green waste feedstock volume.

The final product will be stored on site until marketed and sold by the operations contractor. The final product will be sold 'in bulk' and not packaged in any form.

4.0 Complaint Procedures

The contractor and WDC will maintain a complaints register in relation to these issues which will record the following details:

- date, time,
- location of the complaint
- nature of the complaint
- complainants details (name, address, telephone number)
- weather information (including wind direction)
- investigation undertaken and findings
- operating parameters at the time of the complaint
- action undertaken to resolve the complaint if necessary
- feedback given to complainant

5.0 Contingency Planning

As part of the contract, the operations contractor will be expected to manage any equipment failures and internal staffing issues while continuously providing the required service.

In the event that the site is temporarily unable to operate (e.g. flood) an alternative temporary site or composting service will be acquired, or the green waste will be sent to landfill.

6.0 Health and Safety

Responsibility for hazard identification and control at the site lies with WDC, the contractor and all users of the site. Anyone visiting the site is required to adhere to all health and safety requirements.

The contractor is required to implement a health and safety management system which includes hazard identification and control, recording of incidents (including near-misses) and resulting actions taken. Hazards which have been identified and require control include, but are not limited to; traffic, heavy machinery, noise, dust, fire, water bodies, lone working, emergency management and evacuation.

All operational staff shall be made aware of all hazards on site and will be trained in the use of all hazardous equipment. Records of such training will also be maintained. The contractor is required to notify WDC of any health and safety related incidents (including near-misses).

7.0 Environmental Management

This site has the potential to generate environmental effects. Operations at the site are subject to resource consent (Appendix A) and all users of the site are required to adhere to the conditions of this resource consent.

A number of specific environmental risks have been identified and these are discussed below with control measures.

7.1 Feedstock Contamination and Litter

A series of feedstock contamination and litter control steps have been put in place and these are described in 'Incoming Materials Reception and Storage' section above.

7.2 Odour Control

Composting processes generate significant amounts of gasses including carbon dioxide (under aerobic conditions), methane (under anaerobic conditions) and hydrogen sulphide. Therefore, they have the potential to produce odours if they are not operated correctly. Causes of odour include:

- oxygen levels less than 5% during the initial 21 days of composting
- low porosity, inhibiting air-flow
- high moisture levels, eliminating free airspace
- low carbon to nitrogen ratio (C:N), promoting ammonia volatilisation
- high pH, also promoting ammonia volatilisation

All these factors can be addressed through material preparation, composting and processing practices as described earlier in this document. Therefore, these processes are important in ensuring aerobic conditions are maintained and controlling odour.

If complaints are received or staff notice that an odour is being generated that is, or could be, creating a nuisance beyond the boundary of the site, the following site management methods can be implemented:

1. If an odour complaint is received, the complaints procedure (and register) will be initiated.
2. To manage the generation of odours, windrows of unprocessed green waste will be no higher than 3m to discourage anaerobic conditions within the windrows.
3. As described above, regular processing (turning etc) of materials will address odour issues.
4. If monitoring determines that odour is generated from a specific discrete source at the site, the amount of time the material spends in the turned windrows can be increased.
5. Odorous materials may be covered with non-odorous green waste or mature compost to a sufficient depth to prevent odour emissions. The cover materials will act as a bio-filter for odorous gasses.

6. Windrows may be turned at times that are least likely to cause offence to nearby land users and neighbours. Consideration will be taken into account to wind speed and direction or the occurrence of local 'public events'.
7. As described above high moisture content can cause odours. If ponding is found to occur, green waste and compost will be removed from the ponding area and the area will be re-contoured to avoid recurrence.
8. If monitoring determines that odour emissions are generating a nuisance beyond the boundary of the site on a regular basis (i.e. not related to specific loads), WDC could erect windbreak fences and a shelterbelt of pine trees in appropriate locations around the working area to inhibit the movement of odour.
9. If an odour persists that is causing a nuisance beyond the boundary of the site the council may decrease the amount of feedstock arriving on site.
10. Following any odour complaint, the cause will be investigated and if required, the operational management of the site will be reviewed, with the aim of implementing changes to address the problem. This procedure also forms part of complaints process.

7.3 Dust Control

If complaints are received or staff notice that dust is being generated that is, or could be, creating a nuisance beyond the boundary of the site, the following site management methods can be implemented:

1. If a dust complaint is received, the complaints procedure (and register) will be initiated.
2. A water cart or alternative dust suppressant as necessary may be used to control dust on the access road and main entry track to the site.
3. A sprinkler system may be used to control dust as necessary within the main body of the site at rates that wet the surface of the ground or compost but do not generate ponding or accelerate infiltration of leachate.
4. If dust emissions from the entry track are regularly causing a nuisance beyond the boundary of the site, WDC shall consider the implementation of permanent dust suppression measures (for example, a sprinkler system or application of a dust suppression polymer).
5. If dust emissions occur as a result of vehicle traffic, the access and on-site speed limit (30km/hr) can be lowered.
6. If dust suppression methods within the site prove ineffective, WDC may erect windbreak fences and shelterbelt trees at appropriate locations around the working area to inhibit the movement of dust.
7. Following any dust complaint, the cause will be investigated and if required, the operational management of the site will be reviewed, with the aim of implementing changes to address the problem. This procedure also forms part of complaints process.

7.4 Leachate and Stormwater Management

Leachate from composting facilities has the potential to pollute groundwater and surface water. It can be high in nutrients making it a favourable media for bacteria and other micro-organisms, which generate a high biological oxygen demand (BOD). Stormwater can also infiltrate the composting material and dilute the leachate. It can also transport the leachate, organic matter, pathogens and sediment off-site. This site has therefore been designed with an active leachate and stormwater management system.

The main contaminants in leachate and stormwater will be:

- Suspended sediment
- Nutrients: phosphorus and nitrogen, particularly ammoniacal nitrogen;
- Carbonaceous biochemical oxygen demand (CBOD);
- Bacterial/microbial loads;
- Colour/scums.

A flood protection/stormwater containment bund surrounds the site to contain internal runoff whilst excluding external flooding.

The existing open drain within the site will convey run-off to a stormwater pond located within the bund. The stormwater pond is located at the low-point within the site. Stormwater from the pond will be pumped to the wastewater oxidation ponds for treatment and disposal. Therefore no stormwater or leachate created on the site will discharge to natural water. To maintain the effectiveness of the stormwater treatment system regular maintenance and monitoring is required.

7.5 System Monitoring and Maintenance

WDC will ensure that the following system monitoring and maintenance is carried out:

1. If a stormwater or leachate related complaint is received, the complaints procedure (and register) will be initiated.
2. If ponding is identified on site the topography will be graded to aid free-flow of run-off to the pond.
3. The stormwater system will be inspected by an appropriately qualified person following every rainfall event exceeding 10% AEP. In particular, the outlet structures, pond bunds and perimeter drains will be inspected to determine whether there is any damage or blockage to be repaired. Any repairs required will be implemented within 4 weeks of the inspection or earlier if required.
4. All perimeter and internal drains, and all stormwater infrastructure, will be inspected by an appropriately qualified person at least annually. In particular, will be inspected for erosion, short circuiting, damage, and blockages. Any repairs required will be implemented within 4 weeks of the inspection or earlier if required.
5. The depth of the sediment detention pond will be measured at least annually to determine the amount of sediment deposited. If the amount of sediment equates to

50% or more of the total volume of the pond, the sediment will be removed within 4 weeks of the inspection.

6. The removed sediment may have an elevated loading of organic material and nutrients but few other contaminants are considered likely. Therefore, the excavated material will be spread on the site or incorporated into the compost windrows.
7. All stormwater system monitoring and maintenance activities will be recorded by WDC.
8. Following any stormwater or leachate related complaint, the cause will be investigated and if required, the operational management of the site will be reviewed, with the aim of implementing changes to address the problem. This procedure also forms part of complaints process.

7.6 Environmental Monitoring

WDC will undertake monitoring required by BOPRC under the conditions of resource consent for the site. Such monitoring is expected to include sampling and measurement of water from drains around the site for contaminants and environmental parameters. Results will be reported to BOPRC as required. Should the results indicate that the treatment system is not performing as expected, WDC will engage an appropriately qualified professional to review the system design and recommend appropriate remedial measures.

7.7 Noise

WDC have employed a suitably qualified engineer to undertake a Noise Assessment in relation to the construction and operation of this site. Conclusions from this assessment are:

“We consider that noise from the day to day operation will comply with the District Plan noise limits which apply at rural dwellings and the Gateway industrial area. Noise from construction activities, such as the earth bund around the site, will also comply with the Construction Noise limits at the nearest rural dwellings, or industrial properties in the Gateway industrial area.”

Compliance with the conclusions of the Noise Assessment will be achieved under the proposed operational management of the site in relation to traffic volumes, equipment use, and facility operating times.

If complaints are received regarding noise the complaints procedure (and register) will be implemented. The cause will be investigated and if required, the operational management of the site will be reviewed, with the aim of implementing changes to address the problem. If required, WDC engage an appropriately qualified and experienced practitioner to develop options for noise management.

7.8 Vermin

Nuisance levels of vermin are unlikely at this type of composting operation. If they are present they are most likely to be rats or seagulls.

If monitoring determines that vermin are generating a nuisance beyond the boundary of the site, the following site management methods will be implemented:

1. If complaints are received regarding noise the complaints procedure (and register) will be implemented.
2. Habitat modification including covering the unprocessed green waste stockpiles with previously processed material.
3. Harassment measures such as gull distress calls and visual scare devices.
4. A qualified practitioner may establish a programme of vermin control using methods considered appropriate to the site.
5. Any traps will be checked at a frequency sufficient to avoid inhumane treatment of affected vermin.
6. Following any vermin related complaint, the cause will be investigated and if required, the operational management of the site will be reviewed, with the aim of implementing changes to address the problem. This procedure also forms part of complaints process.

8.0 Management Plan Review

This site management plan will be reviewed:

- following the issue of any related consent or consent change
- at the request of any relevant authority
- annually on the anniversary of any contract awarded
- following any valid complaint
- following any health and safety or environmental incident
- at the discretion of the site operator and WDC

Appendix A – Resource Consent

**Appendix B – Application for Resource Consent including
Assessment of Environmental Effects**

Appendix C – Engineering Drawings

Appendix 6: NZS 4454

Appendix 7: Hill Laboratories Analysis Report



ANALYSIS REPORT

Client:	Boffa Miskell Limited	Lab No:	1217172	SPv1
Contact:	L Clark	Date Registered:	18-Dec-2013	
	C/- Boffa Miskell Limited	Date Reported:	23-Dec-2013	
	PO Box 13373	Quote No:	58726	
	TAURANGA 3141	Order No:		
		Client Reference:		
		Submitted By:	L Clark	

Sample Type: **Aqueous**

Sample Name:		Kopeopeo Canal	Perimeter Drain		
		17-Dec-2013 9:51 am	17-Dec-2013 10:10 am		
Lab Number:		1217172.1	1217172.2		
Individual Tests					
pH	pH Units	7.5	6.6	-	-
Total Suspended Solids	g/m ³	9	55	-	-
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	g O ₂ /m ³	< 2	21	-	-
Escherichia coli	cfu / 100mL	250	2,500	-	-
Nutrient Profile					
Total Ammoniacal-N	g/m ³	< 0.010	< 0.010	-	-
Nitrite-N	g/m ³	< 0.002	< 0.002	-	-
Nitrate-N	g/m ³	0.038	< 0.002	-	-
Nitrate-N + Nitrite-N	g/m ³	0.040	0.002	-	-
Dissolved Reactive Phosphorus	g/m ³	0.023	0.25	-	-

SUMMARY OF METHODS

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

Sample Type: **Aqueous**

Test	Method Description	Default Detection Limit	Sample No
Nutrient Profile		-	1-2
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1-2
pH	pH meter. APHA 4500-H ⁺ B 22 nd ed. 2012.	0.1 pH Units	1-2
Total Suspended Solids	Filtration using Whatman 934 AH, Advantec GC-50 or equivalent filters (nominal pore size 1.2 - 1.5µm), gravimetric determination. APHA 2540 D 22 nd ed. 2012.	3 g/m ³	1-2
Total Ammoniacal-N	Filtered sample. Phenol/hypochlorite colorimetry. Discrete Analyser. (NH ₄ -N = NH ₄ ⁺ -N + NH ₃ -N). APHA 4500-NH ₃ F (modified from manual analysis) 22 nd ed. 2012.	0.010 g/m ³	1-2
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₂ -I 22 nd ed. 2012.	0.002 g/m ³	1-2
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO ₂ N. In-House.	0.0010 g/m ³	1-2
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO ₃ -I 22 nd ed. 2012.	0.002 g/m ³	1-2
Dissolved Reactive Phosphorus	Filtered sample. Molybdenum blue colorimetry. Discrete Analyser. APHA 4500-P E (modified from manual analysis) 22 nd ed. 2012.	0.004 g/m ³	1-2
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	Incubation 5 days, DO meter, nitrification inhibitor added, dilutions, seeded. Analysed at Hill Laboratories - Microbiology; 1 Clow Place, Hamilton. APHA 5210 B (modified) 22 nd ed. 2012.	2 g O ₂ /m ³	1-2
Escherichia coli	Membrane filtration, Count on mFC agar, Incubated at 44.5°C for 22 hours, MUG Confirmation. Analysed at Hill Laboratories - Microbiology; 1 Clow Place, Hamilton. APHA 9222 G, 22 nd ed. 2012.	1 cfu / 100mL	1-2



This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.

The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked *, which are not accredited.

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

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

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

A handwritten signature in black ink, appearing to read 'Peter Robinson', with a long horizontal flourish extending to the right.

Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental Division

Appendix 8: Borelog Report

PROJECT: 132491
BOREHOLE & PENETROMETER LOCATIONS 31.7.13



Appendix 9: Stormwater Retention Pond Sizing Calculations

Sediment Pond Sizing

Design Date: 11/12/2013
 Project No. 132491
 Location: WDC Keepa Rd

All Stages

Total Contributing Catchment Area	Total Contributing Catchment Area	Sediment Pond Volume	Forebay 5% Volume	Dead Storage 30% Volume	Live Storage 70% Volume
m^2	ha	m^3	m^3	m^3	m^3
41877	4.2	1256	63	377	879

Batters 1 IN 4

	Pond Depth	Pond Area Mtd	Pond Width	Pond Length
	m	m^2	m	m
Top	1.5	1308	20.5	63.9
Mid		838	14.5	57.9
Base		439	8.5	51.9

Forebay Pond Depth	Forebay Pond Area	Forebay Pond Width	Forebay Pond Length
m	m^2	m	m
1	158	8.0	19.9
	63	4.0	15.9
	0	0.0	11.9

Appendix 10: Noise Assessment



8 May 2014

Whakatane District Council
c/- Boffa Miskell Ltd
PO Box 13 373
Tauranga 3141

Attention: Matt Allott

Dear Sir

**Re: Proposed Green-waste Facility, Keepa Road, Whakatane
Noise Assessment**

As requested, we have carried out a noise assessment in relation to the proposed green-waste facility on Keepa Road in Whakatane.

The proposal is fully described in the application and consists of the establishment and operation of a green-waste facility on a site adjacent to the Whakatane Oxidation Ponds at Keepa Road. Activities on site include truck movements, and the processing and storage of green waste. The processing activities include operation of a mulcher on the subject site.

1.0 Noise Performance Standards

Once the operation is established then noise from the day-to-day operation of the facility should comply with the noise limits specified in the Operative Whakatane District Plan. The subject site and adjoining sites are zoned Rural 1 in the District Plan and the Plan specifies noise limits for dwellings on the neighbouring Rural zoned land.

There are also properties zoned 'Business 3' to the south of the site (Gateway Industrial Area) for which a different set of limits apply.

1.1 Noise Received at Rural Dwellings

Rule 4.2.15 (a) (i) sets out the relevant noise limits for neighbouring rural properties:

Zone	Corrected Noise Level (dBA)			
	Day		Night	
	L10	L95	L10	L95
Rural 1 (Plains)	50	45	40	35

*Note 1: Day = Monday to Friday 7.00am - 10.00pm
Saturday 7.00am - 12.00 noon
Night = At all other times including Sundays and Public Holidays*

The facility will typically operate on weekdays, Monday to Friday between 7.00am to 5.00pm when noise limits of 50 dBA L10/45 dBA L95 apply. There will be no activities on site in the evening or during night time but we note that the 'Night' period specified in the above table includes Saturday afternoons, Sundays, and Public Holidays. During these times, there may be occasional movements of trucks so that this activity should comply with the stringent 40 dBA L10/35 dBA L95 noise limits.

We note that it is very unusual for District Plan noise limits to include an L95 limit. The relevant NZ standards recommend L10 (or Leq in the latest versions) to place controls on 'average maximum' levels of noise.

Noise is to be measured and assessed in accordance with New Zealand Standards NZS6801:1991 and NZS6802:1991. The noise limits do not apply at the site boundary or boundaries of other sites. In the Rural zone, the noise limits apply at the 'notional boundary' which is defined as on a line 20 metres from the facade of any rural dwelling. If the dwelling is closer than 20m to the site boundary, then the noise limit applies at the boundary.

There is a good separation distance between the subject site and the nearest rural dwellings, as shown on the attached Figure 1:

- To the east, there are a number of dwellings along Keepa Road eg. 53, 57, 73, 77, 79, 81 and 83 Keepa Road. These dwellings are approximately 650-700m from the centre of the subject site.
- To the north-east (119C and 119B Keepa Road). These dwellings are approximately 600m from the centre of the subject site.
- To the north there are a number of dwellings along Ferguson Road. No 61 is approximately 690m from the centre of the subject site.
- To the north-west, there are a number of rural dwellings at 110 Shaw Road. These dwellings are approximately 750m from the centre of the subject site.
- To the south-east, there is a rural dwelling at 45 Keepa Road and the Hokowhitu-A-Tu Marae is behind this dwelling. Compliance at the dwelling

will also ensure compliance is achieved at the Marae, and the Marae will be protected by compliance with the rural zone noise limits.

We also note the provisions of Rule 4.2.15.1 (a) (vii) which applies to noise from portable machinery such as mulchers and chippers:

(vii) Portable sawmills, de-barker and chippers – Rural 1 and 2 Zones

Where the performance standard in Rule 4.2.15(a)(i) cannot be met, then the following standards shall apply:

- a. The use of portable sawmills, debarkers and chippers, singly or concurrently in any one location shall be carried out for a maximum period of 30 days in any 12-month period.*
- b. The activity shall be carried out only between the daytime hours of 7.00am and 10.00pm Monday to Friday, and 7.00am and 12.00 noon Saturday.*
- c. A day-time Lmax standard of 70 shall apply, to be measured from the notional boundary as defined in NZS6801: 1991 Measurement of Sound as a line 20 metres from the facade of any rural dwelling, or the legal boundary where this is closer to the dwelling.*
- d. The activity shall not be located in a riparian margin*

While this could apply to mulching activities on the site, permitting levels up to 70 dBA Lmax at nearest dwellings, our assessment shows that noise from the facility will comply with the more stringent Rural zone noise limits specified in Rule 4.2.15 (a)(i) and so the above rule is unlikely to apply to this project.

1.2 Noise Received at Business Zoned Properties

Land to the south, across the Kopeopeo canal, is part of the Gateway Industrial Area and this land is zoned Business 3 in the Operative District Plan.

Although there is no rule in the District Plan which applies to noise generated on a Rural-zoned site, which is received at Business-zoned land, in order to assess the effects of the green-waste facility on this land we have adopted the limits of Rule 4.2.15 (b) (i). This Rule sets out the noise limits to control noise between industrial properties:

(i) Noise levels measured within business zones

The following performance standards for noise shall be complied with:

Zone	Noise Levels (dBA)					
	Day			Night		
	<i>L95</i>	<i>L10</i>	<i>Lmax</i>	<i>L95</i>	<i>L10</i>	<i>Lmax</i>
<i>Business 3 and 4 zones</i>	55	60	N/A	50	55	70

*Note 1: Day = Monday to Friday 7.00am -10.00pm
Saturday 7.00am -12.00 noon
Night= At all other times including Sundays and Public Holidays*

For the typical weekday operation, the 'day' limits of the above rule will apply. However, since there may be occasional movements of trucks on Saturday afternoons and Sundays/Public Holidays, this activity would also need to comply with the stricter 55 dBA L10/50 dBA L95 noise limits. Compliance with the limits of the above table will ensure that noise from the green-waste facility is no greater than noise levels permitted 'as of right' between sites in the Business 3 zone.

2.0 Noise Sources and Predicted Noise Levels

The land in the vicinity of the subject site is relatively flat and the topography is unlikely to provide any significant acoustic screening of plant or equipment. While an earth bund is proposed around the subject site, this is relatively low and will provide minimal acoustic screening of activities on the site.

Due to the large separation distance, there will be significant attenuation of sound over the distance to the nearest dwellings and this includes attenuation of sound over 'soft' ground cover (ie. grassland) and absorption by air. Wind conditions during the day will affect noise levels received at dwellings, however, our predictions are for 'zero-met' conditions which are under relatively calm conditions.

The main noise source on the subject site is the mulcher. This activity will only occur on weekdays during the 'day' period – the mulcher will not be used on weekends or public holidays and there is no issue in relation to compliance with the stricter 'night' noise limits.

To assist our assessment we carried out measurements on the actual unit to be used ('Woodweta' mulcher) located at Ecocast's site in Kawerau. Most of the noise from this unit is from a diesel engine/exhaust running at speed under normal operating conditions. There will be some minor items of plant operating within the site (screen and a loader) however noise from these items will be at much lower levels than the mulcher and will not contribute to overall levels.

There will be movements of trucks in and out of the site on the sealed access road from Keepa Road. Noise from truck movements on this accessway will only affect dwellings near to the access road, eg. dwellings at 73 -77 Keepa Road. However the number of truck movements will be small – a maximum of 8 trucks per day (4 in/4 out) with typically only 3-4 movements per day and hence any noise will be of short duration. Our assessment shows that contributions from this aspect will be very small. The noise environment at dwellings near to Keepa Road will continue to be dominated by noise from vehicles on Keepa Road, which is not controlled by the District Plan noise limits.

In relation to the Pony Club and nursery to the south-east of the site, there are no dwellings on this land and this land is owned by the Council. These operations are unlikely to be affected by the green-waste facility.

The Whakatane Baptist Church is located to the east of the subject site, on the northern side of the access road. The noise limits of the District Plan do not apply at this property since the noise limits for the rural zone only apply at the notional boundary of rural dwellings, not at churches or other community facilities. However, if the noise limits are complied with at the nearest dwellings in this area such as 73-77 Keepa Road, then the noise will be at similar levels at the church, and will not exceed reasonable levels.

2.1 Noise Received at Rural Dwellings

The following table sets out the predicted noise levels during weekdays at the nearest rural dwellings. The levels are predominantly from the mulcher operation.

Dwelling	Predicted Noise Levels		Complies with Day noise limits; 45 dBA L95 and 50 dBA L10
	L95	L10	
To east along Keepa Road eg 53-57 Keepa Road, 73-83 Keepa Road.	Less than 35 dBA	37-38 dBA	Yes
To northeast along Keepa Road eg. 119 B and C Keepa Road	Approximately 35 dBA	39-40 dBA	Yes
To north eg 61 Ferguson Road	Less than 35 dBA	37 dBA	Yes
To west eg. 110 Shaw Road	Less than 35 dBA	36 dBA	Yes
To south eg. dwelling at 45 Keepa Road and Hokowhitu Marae.	Approximately 35 dBA	41 dBA	Yes

At other dwellings further away then the noise level will be lower than the above and safely comply with the District Plan limit.

The mulcher is the dominant noise source on the site and the above predicted levels include noise from this item although this will only be on the site 1-2 times per month. Noise levels will be at least 10 dBA lower than the above when the mulcher is not on the site, from all other activities. As such, noise from vehicle movements will safely comply with the stricter 40 dBA L10/35 dBA L95 noise limits on weekends and public holidays arising from the occasional truck movement to and from the site.

2.2 Noise Received at Business Zoned Properties

At the boundary of the Gateway Industrial area to the south, noise from the mulcher and other activities on the site will be up to 41 dBA L95/46 dBA L10. This is mostly due to noise from the mulcher operation and this will safely comply with 'day' noise limits of 55 dBA L95 /60 dBA L10.

Noise levels will be at least 10 dBA lower than the above when the mulcher is not on the site, from all other activities. As such, noise from vehicle movements will safely comply with the stricter 50 dBA L95/ 55 dBA L10 noise limits on weekends and public holidays arising from the occasional truck movement to and from the site.

As noted above, these noise limits do not apply at this land zoned Business 3, but we have adopted these as a guide for assessing the noise effects. As such, no noise issue is expected at the industrial area to the south.

3.0 Noise from Construction

At the beginning of the project there will be some earthworks associated with construction of an earth bund around the perimeter of the site. The bund will be approximately 1m above the existing ground level. Construction will be carried out by a tracked excavator. Topsoil from the site will be used but some material may be brought to the site if required. There is a good separation distance to the nearest dwellings and the Business zoned land which will mitigate sound (attenuation from distance, ground cover and air absorption).

As construction of the bund is a temporary construction activity, noise from this aspect should comply with Rule 4.2.15.1(a)(iii) of the Operative Whakatane District Plan. This Rule specifies compliance with the NZ Construction Noise Standard NZS6803:1999 'Acoustics – Construction Noise'.

We have based our assessment on noise from our own measurements of earthworks plant and equipment, as well as noise data contained in the Construction Noise Standard NZS6803:1999.

3.1 Construction Noise at Rural Dwellings

Table 1 of the Standard specifies the following noise limits in relation to noise received at dwellings within the Rural Zone. These are as follows:

Recommended Upper Limits for Construction Noise Received in Residential Zones and Dwellings in Rural Areas

Time Period	Weekdays (dBA)		Saturdays (dBA)		Sundays and Public Holidays (dBA)	
	Leq	Lmax	Leq	Lmax	Leq	Lmax
0630-0730	60	75	45	75	45	75
0730-1800	75	90	75	90	55	85
1800-2000	70	85	45	75	45	75
2000-0630	45	75	45	75	45	75

The above noise limits apply for 'typical' duration of construction work. This is defined as work which is carried out at any one location for more than 14 calendar days but less than 20 weeks.

Activities on the site involving noisy construction equipment would only occur Monday to Friday between 7.30 am and 6.00 pm, and possibly on Saturdays when noise limits of 75 dBA Leq and 90 dBA Lmax apply.

We predict that at nearest dwellings to the south-east, east, north and west, noise from construction of the bund will be in the range 40-45 dBA Leq and 50-55 dBA Lmax and this will safely comply with the 75 dBA Leq and 90 dBA Lmax noise limits of the construction standard.

3.2 Noise Received at Industrial or Commercial Properties

The Construction Noise Standard also provides noise limits to control noise received at Commercial or Industrial properties. The nearest industrial or commercial zoned properties are the Business 3 zoned properties to the south (Gateway development) and the following noise limits apply to 'typical duration' of construction work:

Recommended upper limits for construction noise received in Industrial or Commercial areas for all days of the year.

Time Period	Leq (dBA)
0730-1800	75
1800-0730	80

As such, a noise limit of 75 dBA Leq applies during the 'daytime' period between 7.30am and 6.00pm. There are no Lmax noise limits which apply at commercial or industrial properties at any time of the day.

At the Gateway industrial area to the south, we predict that noise from construction of the bund will be in the range 45-50 dBA Leq and 55-60 dBA Lmax and this will safely comply with the 75 dBA Leq noise limit of the construction standard.

4.0 Note on Cumulative Effects

We note that the proposed Kopeopeo canal remediation site CS2 is located on adjoining land to the south of the subject site (north of the canal opposite the Gateway industrial area). We assisted with a noise assessment for the canal remediation. Activities on the containment site will initially consist of truck movements, which will comply with the construction noise standard. Once the soil has been deposited on the site, there will only be minimal noise associated with bioremediation - the occasional turning and movement of sediment, addition of lime, wood chips etc.

We do not consider that there will be any 'cumulative effect' of noise which may cause an issue. As our assessment shows, noise from the green-waste facility will be at low levels even when the mulcher is used (only 1-2 times per month). Noise from all activities on both sites, even if they occur simultaneously, will not cause the relevant rural or business noise limits to be exceeded.

5.0 Conclusions and Recommendations

We have carried out a noise assessment in relation to the proposed green-waste facility in Keepa Road. We consider that noise from the day to day operation will comply with the District Plan noise limits which apply at rural dwellings and the Gateway industrial area.

Noise from construction activities, such as the earth bund around the site, will also comply with the Construction Noise limits at the nearest rural dwellings, or industrial properties in the Gateway industrial area

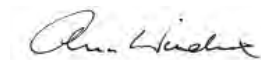
We recommend the following (or similar wording) in a Resource Consent granted for the development:

- *At rural dwellings, noise from the operation of the green-waste facility shall comply with Rule 4.2.15.1 (a) (i) of the Operative Whakatane District Plan.*
- *At Properties zoned Business 3, noise from the operation of the green-waste facility shall comply with Rule 4.2.15.1 (a) (iv) of the Operative Whakatane District Plan.*
- *Noise associated with construction activity shall comply with the limits recommended in, and shall be measured in accordance with, NZS6803: 1999 'Acoustics – Construction Noise'.*

In conclusion, we consider that noise from the construction and operation of the green-waste facility will comply with the noise limits specified in the Operative Whakatane District Plan and that any noise effects will be negligible/less than minor for the neighbours.

We trust this information is satisfactory. If you have any queries or require any further information, please do not hesitate to contact us.

Yours faithfully,
Design Acoustics Ltd

A handwritten signature in black ink, appearing to read 'Tony Windner', is written over a light blue rectangular background.

Tony Windner
Director

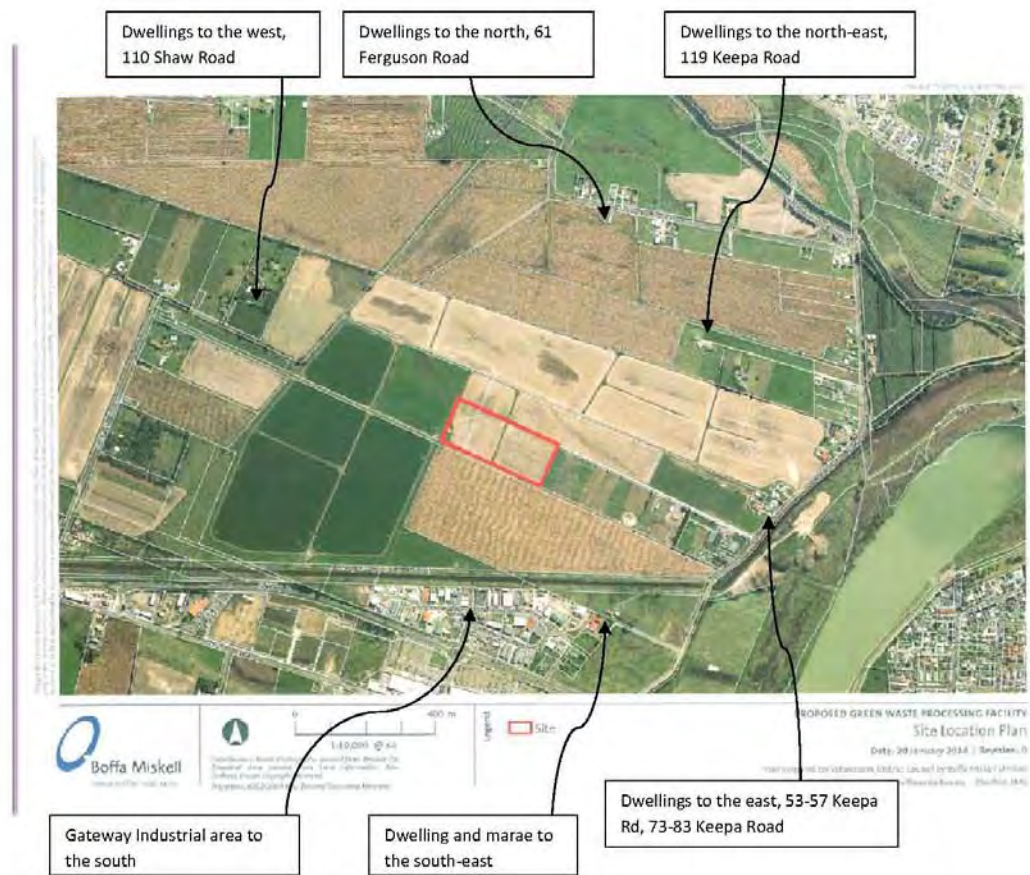


Figure 1: Subject site and neighbouring properties

Glossary of Terms

- dB deciBel – the level of sound pressure expressed as a logarithmic ratio relative to a reference level of 2×10^{-5} Pascals.
- dBA A measurement of sound pressure level which has its frequency characteristics modified by a filter so as to more closely approximate the frequency bias of the human ear.
- L₁₀ The noise level which is equalled or exceeded for 10% of the measurement period. L₁₀ has been an indicator of the 'average maximum' noise level and was used in New Zealand as the descriptor for intrusive noise (in dBA). The latest NZ Standards recommend the use of Leq instead of L₁₀.
- L₉₅ The noise level which is equalled or exceeded for 95% of the measurement period. L₉₅ has been an indicator of the 'average minimum' noise level and was used in New Zealand as the descriptor for background noise (in dBA).
- L_{max} The maximum sound pressure level measured during the sampling period.
- L_{eq} The time-averaged noise level (on a log/energy basis) over the sampling period. For time-varying noise sources, Leq is typically 3 dBA lower than the L₁₀ sound level. The latest Standards adopt Leq as the descriptor for noise in the environment, to be compared with the specified Leq noise limit.

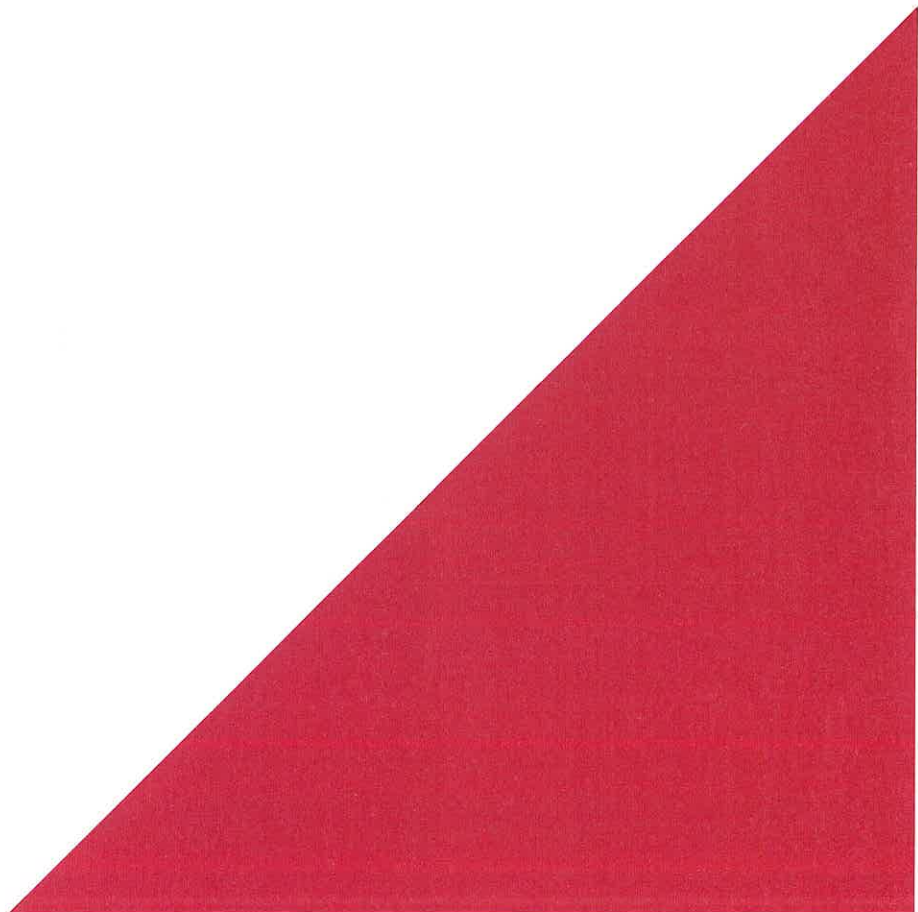
Appendix 11: Road Safety Audit



Whakatane District Council

**WDC Green Waste Facility – Keepa
Road Entrance**

Road Safety Audit

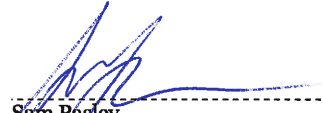


Whakatane District Council

WDC Green Waste Facility – Keepa Road Entrance

Road Safety Audit


Prepared By



Sam Pasley
Safety Engineer

Opus International Consultants Ltd
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Reviewed By



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Roading Engineer

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Approved for
Release By



Grant Cox
Business Manager - Whakatane

Date: 1 May 2014
Reference: WK 14/006
Status: Revision 2

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Background

1 Scope

This report presents the findings of a **Feasibility / Concept Stage** Safety Audit of the Keepa Road Green Waste Entrance. The Audit has been undertaken at the request of the Whakatane District Council, and has been carried out in accordance with the interim Road Safety Audit Procedures for Projects Guidelines (May 2013).

2 Site information

This project is for the construction and operation of a green waste facility adjacent to the existing Whakatane District Council oxidation ponds. The point of entry for the green waste facility is from an existing right of way. The right of way also services Coastlands Nursery, Whakatane District Council Operations Buisness Unit and Whakatane Pony Club.

The Green Waste facility is expected to generate an additional typical 3 trucks using the access per day (maximum 8 trucks per day) and 4 light vehicles per day (Source Boffa Miskell draft Resource Consent Application).

The existing facilities (Plant Nursery, Whakatane Operations Buisness Unit and Whakatane Pony Club) have an esitimated traffic generation of 50 car trips per day with 8 trucks per day (trips are the sum of entry plus the sum of exiting vehicles).



Figure 1: Location

3 Safety Audit Procedure

A road safety audit is a term used internationally to describe an independent review of a future road project to identify any safety concerns that may affect the safety performance. The audit team considers the safety of all road users and qualitatively reports on road safety issues or opportunities for safety improvement.

A road safety audit is therefore a formal examination of a road project, or any type of project which affects road users (including cyclists, pedestrians, mobility impaired etc), carried out by an independent competent team who identify and document road safety concerns.

A road safety audit is intended to help deliver a safe road system and is not a review of compliance with standards.

The primary objective of a road safety audit is to deliver a project that achieves an outcome consistent with Safer Journeys and the Safe System approach, that is, minimisation of death and serious injury. The road safety audit is a safety review used to identify all areas of a project that are inconsistent with a safe system and bring those concerns to the attention of the client in order that the client can make a value judgement as to appropriate action(s) based on the risk guidance provided by the safety audit team.

The key objective of a road safety audit is summarised as:

To deliver completed projects that contribute towards a safe road system that is increasingly free of death and serious injury by identifying and ranking potential safety concerns for all road users and others affected by a road project.

A road safety audit should desirably be undertaken at project milestones such as:

- Concept Stage (part of Business Case);
- Scheme or Preliminary Design Stage (part of Pre-Implementation);
- Detailed Design Stage (Pre-implementation / Implementation); and
- Pre-Opening / Post-Construction Stage (Implementation / Post-Implementation).

A road safety audit is not intended as a technical or financial audit and does not substitute for a design check on standards or guidelines. Any recommended treatment of an identified safety concern is intended to be indicative only, and to focus the designer on the type of improvements that might be appropriate. It is not intended to be prescriptive and other ways of improving the road safety or operational problems identified should also be considered.

In accordance with the procedures set down in the “NZTA Road Safety Audit Procedures for Projects Guidelines - Interim release May 2013” the audit report should be submitted to the client who will instruct the designer to respond. The designer should consider the report and comment to the client on each of any concerns identified, including their cost implications where appropriate, and make a recommendation to either accept or reject the audit report recommendation.

For each audit team recommendation that is accepted, the client shall make the final decision and brief the designer to make the necessary changes and/or additions. As a result of this instruction the designer shall action the approved amendments. The client may involve a safety engineer to provide commentary to aid with the decision.

Decision tracking is an important part of the road safety audit process. A decision tracking table is embedded into the report format at the end of each set of recommendations to be completed by the designer, safety engineer and client for each issue documenting the designer response, client decision (and asset manager’s comments in the case where the client and asset manager are not one and the same) and action taken.

A copy of the report including the designer’s response to the client and the client’s decision on each recommendation shall be given to the road safety audit team leader as part of the important feedback loop. The road safety audit team leader will disseminate this to team members.

4 The Safety Audit Team

The road safety audit was carried out in accordance with the “NZTA Road Safety Audit Procedure for Projects Guidelines - Interim release May 2013”, by:

- Sam Pasley, Safety Engineer, Opus International Consultants
- Kurt Graham, Graduate Engineer, Opus International Consultants

Kurt Graham of the Safety Audit Team (SAT) visited the site entrance on Thursday 14 March 2014 to determine the existing sight and widening restrictions. Further site inspection was subsequently undertaken on the 25th March 2014.

4.1 Report Format

The potential road safety problems identified have been ranked as follows:

The draft Road Safety Audit guide defines expected crash frequency as being qualitatively assessed on the basis of expected exposure (how many road users will be exposed to a safety issue) and the likelihood of a crash resulting from the presence of the issue. The severity of a crash outcome is qualitatively assessed on the basis of factors such as expected speeds, type of collision, and type of vehicle involved.

However, there is no guidance given on exactly how this should be calculated and it is difficult to extract the frequency of crashes that are caused by individual hazards accurately. For this Road Safety Audit, the historic crash rate and professional judgement have been used to determine how many crashes of each mechanism are expected each year. This is appropriate because, fundamentally, the alignment has not changed, although the seal widening and increased turning movements may affect how the road is utilised.

The frequency and severity ratings are used together to develop a combined qualitative risk ranking for each safety issue using the Concern Assessment Rating Matrix in Table 1 below. The qualitative assessment requires professional judgement and a wide range of experience in projects of all sizes and locations.

Severity (likelihood of death or serious injury)	Frequency (probability of a crash)			
	Frequent	Common	Occasional	Infrequent
Very likely	Serious	Serious	Significant	Moderate
Likely	Serious	Significant	Moderate	Moderate
Unlikely	Significant	Moderate	Minor	Minor
Very unlikely	Moderate	Minor	Minor	Minor

Table: Concern Assessment Rating Matrix

While all safety concerns should be considered for action, the client or nominated project manager will make the decision as to what course of action will be adopted based on the guidance given in this ranking process with consideration to factors other than safety alone. As a guide a suggested action for each concern category is given in Table 2 below.

RISK	Suggested Action
Serious	A major safety concern that must be addressed and requires changes to avoid serious safety consequences.
Significant	Significant concern that should be addressed and requires changes to avoid serious safety consequences.
Moderate	Moderate concern that should be addressed to improve safety
Minor	Minor concern that should be addressed where practical to improve safety.

Table 1: Concern Categories

In addition to the ranked safety issues it is appropriate for the safety audit team to provide additional comments with respect to items that may have a safety implication but lie outside the scope of the safety audit. A comment may include items where the safety implications are not yet clear due to insufficient detail for the stage of project, items outside the scope of the audit such as existing issues not impacted by the project or an opportunity for improved safety but not necessarily linked to the project itself. While typically comments do not require a specific recommendation, in some instances suggestions may be given by the auditors.

4.2 Scope of Audit

This audit is a Concept stage audit of the proposed greenwaste entrance, Keepa Road.

4.3 Documents Provided

The Safety Audit Team (SAT) has been provided with the following documents for this audit:

1. Boffa Miskell, Green Waste Processing Facility, Keepa Road Whakatane – Application for Resource Consent and Assessment of Environmental Effects – Draft Application

4.4 Disclaimer

The findings and recommendations in this report are based on an examination of available relevant plans, the specified road and its environs, and the opinions of the SAT. However, it must be recognised that eliminating safety concerns cannot be guaranteed since no road can be regarded as absolutely safe and no warranty is implied that all safety issues have been identified in this report. Safety audits do not constitute a design review nor an assessment of standards with respect to engineering or planning documents.

Readers are urged to seek specific technical advice on matters raised and not rely solely on the report.

While every effort has been made to ensure the accuracy of the report, it is made available on the basis that anyone relying on it does so at their own risk without any liability to the safety audit team or their organisations.

4.5 Project Description

The project works include the construction of a greenwaste facility adjacent to the Whakatane District Council Oxidation Ponds. The entrance will cater for greenwaste traffic as well as current useage utilising the access.

5 Safety Audit Findings

5.1 Intersection Visibility from Greenwaste Exit Minor

The existing exit is located so that intersection sight distance is restricted by vegetation on private land. An intersection visibility gap is created by private vegetation and property walls between 125m and 160m south of the entrance. This gap hides northbound vehicles approaching the proposed entrance. The intersection visibility is sight distance to enable a car to safely observe a gap, judge speed, make a decision to go and make the movement. The approach vehicle operating speed is estimated at 80km/h in the northbound direction; therefore the required intersection sight distance is 181m. The stopping sight distance criteria (114m) is met and therefore it is unlikely that a crash will result in serious injury.



Figure 2: View in southern direction



Figure 3: View in northbound direction to entrance

Recommendation:

It is recommended that an agreement is reached with the property owners to remove vegetation blocking sight distance.

Frequency Rating: <i>Crashes are likely to be Occasional</i>	Severity Rating: <i>Death or serious injury is Unlikely</i>
Designer Response:	Click here to enter text.
Safety Engineer:	Click here to enter text.
Client Decision:	Click here to enter text.
Action Taken:	Click here to enter text.

5.2 Accessway Entrance Geometry

Minor

The existing access widening (created for the Baptist Church) has insufficient length and radius at the entrance to allow for the safe entry/exit for the Greenwaste intersection. Parked cars on the existing widening restricts sight visibility from the access and limits the room available for turning vehicles to utilise the existing widening. The proposed road to serve the greenwaste facility is for a single laned sealed road (currently 5.5m) with passing bays every 100m. The Whakatane District Council standard (from the Engineering Code of Practice) for a rural private access is for 9m wide access with a minimum of 5.0m carriageway. There is vegetation encroaching on the roadway 200m from Keepa Road which restricts the width available.



Figure 4: Widening and no-stopping lines to the south of entrance

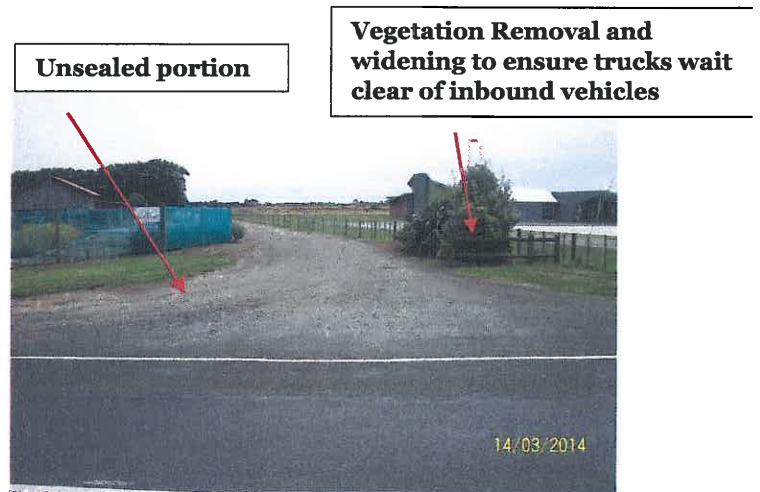


Figure 5: Entrance widening and stop markings

Recommendation:

It is recommended that this access entrance be formed to diagram R29 from the Whakatane District Council Code of Practice. The entrance radius is required to be formed to 15m radius to accommodate the trucks entering. Some widening at the entrance with stop control is recommended to ensure trucks waiting to exit the access wait clear of entering vehicles. The widening should also be installed with no stopping lines, especially to the south to prevent parking outside the properties restricting sight visibility.

Frequency Rating: Crashes are likely to be Occasional	Severity Rating: Death or serious injury is Unlikely
Designer Response:	Click here to enter text.
Safety Engineer:	Click here to enter text.
Client Decision:	Click here to enter text.
Action Taken:	Click here to enter text.

5.3 Drainage of Entrance

Comment

Water ponds along the entrance and will seep into the pavement causing damage. The collection point is to the south of the entrance.



Figure 6: Drainage along access



Figure 7: Drainage Inlet

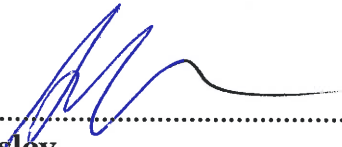
Recommendation:

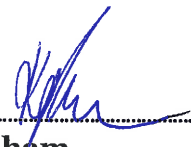
Incorporate drainage design into accessway works to prevent ponding and pavement damage. Additional collection points may be required.

Frequency Rating: <i>Crashes are likely to be</i> Infrequent	Severity Rating: <i>Death or serious injury is</i> Unlikely
Designer Response:	Click here to enter text.
Safety Engineer:	Click here to enter text.
Client Decision:	Click here to enter text.
Action Taken:	Click here to enter text.

6 Audit Statement

We certify that we have used the available plans, and have examined the specified roads and their environment, to identify features of the project we have been asked to look at that could be changed, removed or modified in order to improve safety. The problems identified have been noted in this report.

Signed:  Date: 1 May 2014
Sam Pasley
Safety Engineer
Opus International Consultants

Signed:  Date: 1 May 2014
Kurt Graham
Graduate Engineer
Opus International Consultants

Designer: Name..... Position.....

Signature..... Date.....

Safety Engineer: Name..... Position.....

Signature..... Date.....

Project Manager: Name..... Position.....

Signature..... Date.....

Action Completed: Name..... Position.....

Signature..... Date.....

Project Manager to distribute audit report incorporating decision to designer, Safety Audit Team Leader, Safety Engineer and project file.

Date:

Appendix 12: Site Photos



Photo 1: View looking north from the vehicle access road to the subject site.



Photo 2: View looking west along the existing vehicle access road to the subject site off Keepa Road.



Photo 3: View looking east along the existing vehicle access road from the subject site.



Photo 4: View of the existing vehicle access road entrance point off Keepa Road.



Photo 5: View looking to the south along Keepa Road from the vehicle access road entrance point.



Photo 6: View looking north along Keepa Road from the vehicle access road entrance point.



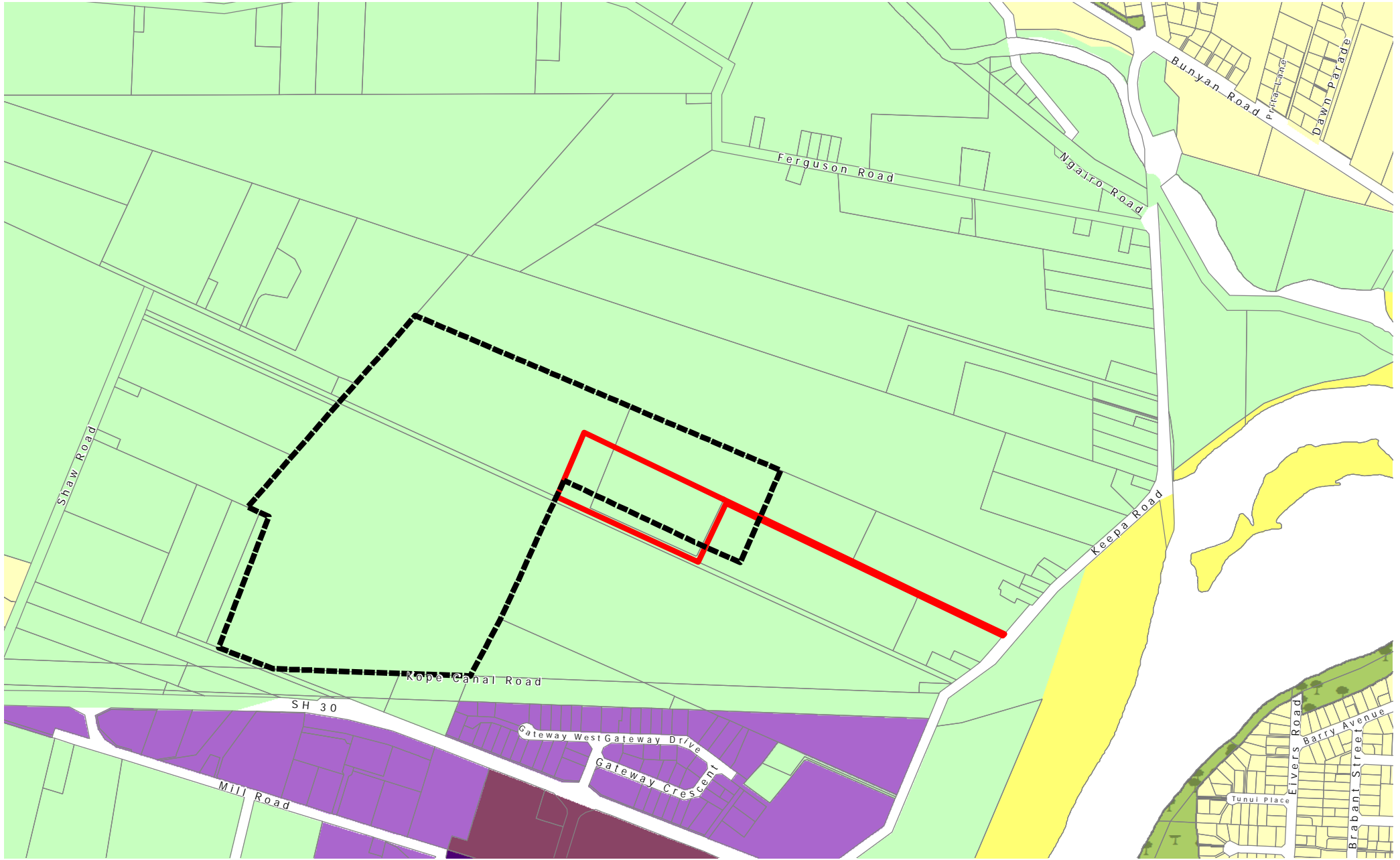
Photo 7: View looking northeast towards the subject site. The existing farm shed is shown in the foreground.



Photo 8: View of the existing oxidation ponds located to the west of the subject site.

Appendix 13: District Plan Analysis

This graphic has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Clients use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



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1:10,000 @ A4

Data Sources: District Plan data sourced from Whakatane District Council. Cadastral data sourced from Land Information New Zealand, Crown Copyright Reserved.
Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

- Site
- Designation D34
- Large Format Retail
- Light Industrial
- Active Reserve
- Residential
- CPZ
- Rural Plains
- Industrial

PROPOSED GREEN WASTE PROCESSING FACILITY
District Plan Analysis

Date: 12 March 2014 | Revision: A

Plan prepared for Whakatane District Council by Boffa Miskell Limited
Author: john.watt@boffamiskell.co.nz | Checked: MAL