

Minutes

Redvale Landfill Community Liaison Committee Meeting Held at the Redvale Landfill Office - Monday 11/05/2015 at 7.00pm

Present:

Committee Members - M Kunzli (Chairman), J McLean, M Drury, N Donovan, R Croker, K Storie, D Hardy, D Marshall, C Wills, R Sorenson, A Vosper, S Walker, M Kennedy

Local Residents: Pat Bank, Jennie Hutchinson, Andrew McNeil, Reagan Wu, Cherie & Peter Chou, Deborah deWitte.

Apologies: B Gibbs, R Leinwand, M Bradshaw, B Earwaker, R Bailey.

Absent: F McKenzie (Manuhiri Kaitaki Charitable Trust),

Minutes of previous meeting: Circulated.

Matters arising:

- Dairy Flat Pony Club now has an area available to them on the Northern landform for equestrian activities. This area has been made available to the equestrian community by WM. There is still some work to be done for roading etc. to make it safer for usage. The club will have a working bee on the area in the next few weeks.

Correspondence:

Deborah de Witte – Landfill operating on ANZAC day morning is insulting. A Vosper replied WM opened at customers request on Saturday normal Saturday opening hours, and that for the statutory day (Monday) the site closed completely. Committee agreed that it would be appropriate for a letter to be sent to AC from M Kunzli as Chairman of the Committee. A Vosper confirmed that WM will review opening times for Anzac Day going forward.

Andrew Nieuwelaar – (see attached)

- 1) AC Air Quality on sulphur dioxide levels to be re-tested. N Donovan has provided information received from Jared, AC Air Quality Officer (see attached).
- 2) Two types of odour suppression have been used at Redvale. A Vosper has provided MSDS report (attached), and confirmed these two products are not mixed together. The fragrance has been used in the fence line on HSB Rd, and the odour neutraliser is used at the active tipping face in the fogging unit, and the tee bar systems.
- 3) N Donovan has provided details from Jared, AC Air Quality Officer (see attached).

Operations report: Presented by A Vosper.

- **Disposal:** We are continuing to fill down in the old Haul Road bringing the top up to RL 98 and currently forming a small section of new Haul Road from existing, to allow filling up to RL 106 for winter months.
PH19 is complete, and filling is expected to start around October.

An additional thickness of soil for planting has been completed on the eastern batter with the northern slopes almost finished. The aim is to complete these areas before winter.

- **Managed Fill:** Current stripping of gorse and top soil plus installation of sub soil drains to open up another area for filling.

- **Site Development:** Internal batters have already been seeded ready for erosion control over winter.

Concrete lined drains have been laid along the Main Haul Road. Some additional drains will be lined in the next few weeks

Foundation works are in progress for the second wheel wash. Equipment has been ordered. The work is scheduled for completion by mid June.

First section of road paving work has been laid on the top portion of the western access from the current wheel wash up towards the Managed Fill. Second portion will be laid when second wheel wash area is complete near the end of June.

- **Energy Compound:** Gas Management Systems – Testing took place on the day of the 6th May for the installation of the fire suppression system . The Landfill Gas extraction system had to be turned off for a limited period of time in the morning. Council were informed and no Community complaints were received for this period.

Repair work carried out to leachate evaporator with insulation completed early April. Testing of fire hydrant system completed.

Pin wells project – Shallow wells driven in by sheet piler attachment to excavator. 37 wells installed and are now being monitored. The system is expected to contribute to odour and gas control, particularly fugitive gas arising through dessication cracks in intermediate cover after extended dry periods.

FID results will be circulated at next CLC meeting in August.

- **Complaints:** see attached. A total of 6 received since the last CLC meeting; 4 odour, 1 litter on highway and 1 noise on Richards Rd. D deWitte reported that they are not able to report complaints to WM at the time of odour as they are usually out in the field with no cell phone coverage.

R Sorenson had not listed his recent complaint of noise to council as he does not get the response that is needed.

J Hutchinson reported on behalf of B Gibbs and herself that generally communication goes to AC and they then report to WM but every time a no odour is detected at the time of investigation and they believe the reporting is in accurate as no odour due to staff being de-sensitised to odour as they are working in it all the time plus the odour

dissipates or the wind fluctuates. They ask that Council do a better audit at the time.. A Vosper has taken all concerns /complaints on board and will proceed to take to Council and Peer Review.

P Bank requests that noise monitoring be included in minutes. (See attached).

Question was raised by M Kunzli on common theme of litter on roads from offending trucks. A Vosper reports they are from various customers but as long as a rego and a time of incident is given, also a colour or name from the side of the truck is sometimes useful so that it can be reported to the offending business and they can potentially be stopped from disposing at the landfill should this be a reoccurring event. Litter patrols are also done regularly by staff. NZTA contractors carry out regular cleaning.

- **Regulatory Issues:** N Donovan reported Compliance visit in February. Quarterly report good and grass issue sorted today. The Rangitapuni stream is relatively empty. PRP cell regular updates being received. He also asked if noise is reported to Council and will advise correct person to report to once known.

Current Issues:

- **Generation noise update:** Plan showing location of barrier wall south of generators attached.
Currently designing the noise wall and building consent to be submitted.
- **Time extension consent renewal update:**
Council are continuing to prepare their submission. gather evidence.
WM have offered the withdrawal of proximity overlay to A Nieuwelaar/Nick de Witte and RESP. WM will continue to be available for a negotiated discussions on settlement.

General business:

Website is planned for completion by end of June.

No Further Questions/Comments.

Next meeting date: Monday 17th August, 7pm – No site tour.

Meeting closed at 8.30pm

Written responses to questions raised by Nick de Witte

1) Plans for Redvale over next 25 years :

- Waste filling will continue to utilise the available airspace. At this stage we expect that 25 yrs will be sufficient for this. If filled sooner, we will close and move into an aftercare period. Aftercare will require a separate consent. Latest on the consent renewal process from the Environment Court is that a hearing is expected in the week commencing 6 July or 13 July. A detailed schedule has been provided and is attached to the minutes.
- Energy Generation: Generation is expected to increase as the waste volume increases. Worth noting that if the tonnes reduce (should we require the full 25 years) and if the waste composition changes eg with organics reduction, the number of generators that can be installed will be less than what we currently envisage.
- Plan for a total of 20 generators to be installed by the time the site is full. We currently have 12 installed, and no plans to install any additional units in the next 2 years. Replacement units will be installed as the old generators reach the end of their useful life.
- Anaerobic Digestion: no further news update on this since the special meeting held in November. For completeness, as already indicated BCG have announced that they have plans to develop an ADT plant at Redvale.
 - IK has previously explained that one must secure a waste source prior to designing / establishing an ADT plant.
 - WM have previously provided information on the project. It is provided below for completeness.
 - CONFIDENTIAL
 - The info below has previously been shared with community but is to be treated confidentially please as it has the potential to influence the outcome of the AC tender process.
 - Auckland Council have released a RFP for the provision of Organic Waste Processing facilities.
 - WM are considering this source of organics to meet the BCG obligations.
 - AC are currently assessing the responses received.
 - If AC wish WM to develop an ADT facility at Redvale, it will be subject to successfully obtaining consents for the facility.
 - If consents are not successful, it would not be developed at Redvale.
 - Other options are:
 - ADT technology is not accepted by AC. BCG will need to reassess the situation, presumably in consultation with the OIO.

2) What are the current projections for incoming waste over the next 5 years?

- As already stated in our consent application, tonnes received at Redvale depend on the waste produced in Auckland and on WM “market share”.
- Auckland Council tonnes have the potential to impact on incoming waste volumes within the next 5 years, but little is known about this at this stage.

- AC RFP process for organic and refuse collections are likely to be released during 2015. In Sept 2014, AC advised of a RFP schedule that indicated these RFP's would close in March 2015. They are yet to be released, so are behind on schedule.
 - We understand that AC Organic waste (foodwaste) contracts are to commence in July 2017 and this could potentially reduce the AC tonnes into Redvale by around 45k tpa.
 - WM has other large customers and receives significant amounts of contaminated soils for secure disposal. We are unable to share this commercially sensitive information.
- 3) What is the remaining capacity in tonnes and m³.
- We will continue to provide data on capacity based on airspace m³, not tonnes. As of July 2013 the landfill airspace remaining was 9.06M m³, which includes refuse, daily and intermediate cover.
- 4) What is the current estimated completion of tipping at Redvale?
- WM have appealed the recent consent decision, seeking a 25 year term. Given the uncertainty around Auckland tonnes and WM market share in a fiercely competitive environment, the 25 years is the term that we currently believe we will need to fill the landfill. If tonnes do not drop as Auckland Council envisages and if we retain our market share, it is likely we will fill sooner than this.
- 5) Why are some members of the CLC unaware of the LMP? Can you make several copies available for members to peruse?
- There is no reason why they should be unaware of it. The document is prepared for approval by PRP and AC. All very transparent and is a live document, with ongoing improvements being made and at PRP and AC request. There is a copy held on site and individual members are welcome to peruse, but not take away or copy.
- 6) Under current circumstances with the consent renewal and PAUP, more meetings are required – 6-8 weeks.
- We would be agreeable to a fourth committee meeting held in the year, a total of 5 when including the Christmas gathering.
 - The PAUP is a very long and drawn out process with nothing changing, other than submitters getting limited opportunity to present what they have submitted to the Hearing Panel. Progress is slow and we will happily communicate something to the CLC as it arises.
 - Auckland Council are still deciding which area our submission should be heard under: either “Infrastructure”(hearings in June/July 2015) or “Precincts”(hearings in Q4 2015/Q1 2016)
 - WM will provide an update as it comes available.



Michelle Kennedy

From: Andrew Nieuwelaar <wheels.ajn@gmail.com>
Sent: Saturday, 9 May 2015 3:04 p.m.
To: Mike.treve@xtra.co.nz; Michelle Kennedy
Cc: Andy Vosper; Bill Earwaker (William.earwaker@farmside.co.nz); Bob Gibbs (bobgibbs@xtra.co.nz); Chris Wills; David Hardy (hardyboy@windowslive.com); DF School - D Marshall; Fiona McKenzie - Manuhiri Kaitiaki Charitable Trust; Kirk Storie (kjstorie@xtra.co.nz); Mark Drury (mark.drury@urs.com); Martin Bradshaw (School BOT) (martin@intra-opmedical.co.nz); Mike Kunzli; Nigel Donovan (Nigel.donovan@aucklandcouncil.govt.nz); Richard Croker (Ricann@xtra.co.nz); Rob Leinwand; Robert Bailey; Rodney Board & Auckland Council - John McLean; Roger Sorensen (rgandrsorensen@xtra.co.nz); Stephen Walker (highpoint.pharmacy@xtra.co.nz); Vicki Shanley - Auckland Council Local Board
Subject: Agenda items CLC 11th May 2015

Dear Michelle and Mike

I request the following two agenda items be put for CLC meeting planned for 11th May 2015.

- As per minutes from 20th October 2014 meeting, Nigel Donovan was to check with Jared Osman in AC Air Quality on whether sulphur dioxide levels should be re-tested. This query was made since testing indicated a surprising result with levels 'below detectable levels'. John McLean also indicated in "General Business" that more testing and reporting required. Request results of that further investigation to be disclosed.
- Two methods of odour suppression at the Landfill appear to be utilised. A 'Floral Fragrance' product supplied by biOx International dispersed from T-bar sprayers, and a canon used at the tip face. I request confirmation from WMNZ that Chlorine Dioxide is the product used in the odour neutraliser canon at the tip face for odour suppression. If this is the case, and given that ClO₂ is a powerful oxidising agent, I request the CLC be provided with the results of the study to show mixing of these two products is not injurious to human health and safety. I note that biOx International advises in its MSDS that **contact be avoided with oxidising agents**.

Since I am unable to attend this meeting I request that all information pertaining to these items be fully discussed and noted in the minutes. I would appreciate a copy of these published minutes please Michelle.

Kind Regards

Andrew Nieuwelaar
68 Tender Rd resident

SUMMARY OF COMPLAINTS
23rd March to 11th May 2015

Date	Complaint	Complaint Location	Day	Time of Incident	Wind	Comments	
1	7/04/2015	Odour	99 Tender Rd	Tue	12:50 & 15:30	NE	Odour at house from 12:50-13:00hrs & again at 15:30 at paddock. Received complaint the following morning but could report that all T-bars operating and filling with fresh waste at the time of incidents
2	10/04/2015	Odour	1153 DF Hwy	Fri	10:15	NW	Rubbish odour at house. No odour detected on immediate visit. Resident agreed odour had disappeared. T-bars & cannon operational.
3	20/04/2015	Odour	118 Kahikatea Flat Rd	Mon	6:00-06:45	S	L/fill odour at house for approx 45min. On investigation no odour detected from road. Again visited property at 07:40 with no odour detected. T-bars and cannon operational. Filling with fresh rubbish.
4	24/04/2015	Odour	Tender Rd/HB Rd area	Fri	14:30	NE	AC reported odour complaint from resident. Investigated HB Rd & Tender Rd at approx. 14:55 with no odour detected. Wind strong and changeable. T-bars & both Cannons running.
5	29/04/2015	Litter	DF Hwy	Wed	9:50		Witnessed rubbish coming from back of truck while travelling behind. Driver notified.
6	4-10/05/15	Noise	87 Richards Rd	Mon-Sun	06:00 & 19:00-20:00		Generation noise obvious every day last week at 6am and also at approx 7-8pm. Investigation found no difference to any other weeks other than cooler mornings & evenings with very still conditions.



Hi Nigel,

My comments below:

Sulphur dioxide

This matter was raised in submissions to the land use consent hearing and was addressed through that process.

The 2013 testing of the landfill generators showed no detectable sulphur dioxide. I would have expected that there was sulphur dioxide present in the emissions, however it was not picked up by the equipment which was apparently operating correctly according to the Watercare laboratory staff involved (the same equipment detected sulphur dioxide at another site the next time it was used). The emissions must be retested before early April 2016, and I see no benefit in requiring a re-test before then.

The discharge to air consent application estimated potential off-site sulphur dioxide concentrations on the basis that the average concentration of hydrogen sulphide in the landfill gas would be 565mg/m³ and that up to 20 generators would be operating. Measured hydrogen sulphide in the landfill gas ranged from approximately 30 – 330mg/m³, with an average of 194mg/m³, between June 2012 and June 2013 (the year within which the emission testing was undertaken). The concentration of hydrogen sulphide in the landfill gas would need to be a lot higher, with more generators operating, before sulphur dioxide concentrations in an area along Richards Road possibly become elevated. The discharge to air consent requires that an ambient air quality monitor be installed to monitor sulphur dioxide concentrations in the Richards Road area prior to installing a 16th generator.

Chlorine Dioxide and Fragrance sprays

Chlorine dioxide is not mixed with the fragrance sprays. The landfill uses chlorine dioxide as an odour neutraliser at the tipping face – through both 'T' bars and the odour canon. A masking fragrance has been used in the lines of misters located near the managed fill, and near Horseshoe Bush Road (though I understand fragrance is not currently being used near Horseshoe Bush Road following community feedback).

The material safety data sheet (MSDS) is for the concentrated product and is a guide for those handling / storing bulk quantities. The site have advised that fragrance used in the Horseshoe Bush Road misting line was diluted 1:2600, and that approximately 2,514 litres of diluted fragrance was used per day (i.e just under 1 litre of concentrate).

The MSDS for the concentrate lists the ingredients as; Fragrance - 7.5%, Polysorbate – 5.0%, Water - 87.5%. I have followed up with the supplier of the 'fragrance' that comprises 7.5% of the concentrate. The fragrance is called Farnil 4842, and is manufactured in Auckland by Flairoma Ltd. In a response to questions, Flairoma state that:

"Farnil 4842 is suitable for skin care products as well as other domestic applications and is considered non-hazardous under normal use, i.e. diluted in product. It does not contain any corrosive materials (HSNO classes 8.2B, 8.2C & 8.3A) or carcinogenic toxicants (classes 6.6B, 6.7B, 6.8B, 6.8C & 6.9B). The MSDS is for the concentrated perfume and not the end use product. Normally the perfume is less than 5% of the product, often less than 1%."

Polysorbate (5% of the concentrated product) appears to have a number of uses, including in food and cosmetics. The US FDA sets out some of the different types and uses here:

<http://www.fda.gov/Food/IngredientsPackagingLabeling/FoodAdditivesIngredients/ucm091048.htm#ftnP>

Therefore for every 2600 litres of water through the misters (i.e approximately the same amount that was discharged over the course of a day from the misters on Horseshoe Bush Road) there is a discharge of 75ml of a fragrance (suitable for used in skin care products), and 50ml of polysorbate (a product suitable for use in cosmetics and food products).

The MSDS for the Chlorine Dioxide product used at the site shows that up to 2% of the concentrate is sodium chlorite. This is further diluted before use, and is used near the active tipping area.

Section 11.5 (Odour mitigation) of the discharge to air consent application AEE mentions odour neutralising sprays and masking agents, therefore these activities form part of their application which was granted consent.

“Odour neutralising sprays and masking agents are an effective odour management tool. These systems are not used continually but rather when the location of the work face, wind direction or nature of operation is such that there is potential for offensive or objectionable odours to migrate off the Landfill site. The methods of application and use of odour neutralising sprays have become increasingly efficient, both in terms of the volume of spray used, efficiency of spray systems, and selection of chemical agents. Application of odour sprays close to the odour source is more effective than attempting to manage the odour some distance from the source once it has expanded into a larger odour “plume”. Notwithstanding this, perimeter fence mounted sprays have also proven effective to counter the swirling effects of winds.”

Aside from the fact neutralising and masking sprays were mentioned in the application, there is no specific rule in the regional plan that would require the use of sprays to require a consent. So they could still be used without consent.

I have not seen any study or research relating to the effect of combing the fragrance sprays with the chlorine dioxide neutraliser – in the first instance I suggest approaching the landfills supplier (who provides both products) for comment. That said, I am not concerned given the products are used following dilution, and are not used in the same parts of the landfill.

Regards,

Jared

Jared Osman | Senior Consents & Compliance Advisor - Air Quality
Natural Resources & Specialist Input Unit
DDI (09) 352 2696 | Ext (40) 5696 | Mob (027) 267 8412 | Email: jared.osman@aucklandcouncil.govt.nz
Auckland Council, Level 2 (East), 35 Graham Street, Private Bag 92 300, Auckland 1142

24hr Pollution Hotline - 09 377 3107

Visit our website: www.aucklandcouncil.govt.nz

1. PRODUCT AND COMPANY INFORMATION

- 1.1 **Product Name** : Floral Fragrance
- 1.2 **Company Name** : biOx International Pty Ltd
- 1.3 **Company Address** : PO BOX 302-540
North Harbour Mail Centre
Auckland 0751
- 1.4 **ABN** : 31 141 121 253
- 1.5 **Phone Numbers** : Product Information +61 (0) 2800 695 36
Medical Emergency +61 (0) 4065 135 73

2. HAZARDS IDENTIFICATION

This product is NOT classified as a hazardous substance

- 2.1 **General** : Concentrated perfume compound
- 2.2 **HSNO Classification** : 3.1D, 6.1D, 6.3B, 6.4A, 9.1D, 9.3C
- 2.3 **Hazard Symbol** :
- 2.4 **Hazard Statement** : Flammable liquid. May be harmful if swallowed. May cause skin and eye irritation. May be slightly harmful to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 **Chemical Identification** : Fragrance Composition: Multicomponent mixture of natural and/or synthetic raw materials.

Ingredients	CAS Number	Wt %
Fragrance	Mixture	7.5
Polysorbate	Mixture	5.0
Water	7732-18-5	87.5

4. FIRST-AID MEASURES

- 4.1 **Inhalation** : Upon excessive inhalation, remove from exposure site to fresh air, keep at rest, and obtain medical attention.
- 4.2 **Eye Exposure** : Flush immediately with water for at least 15 minutes. Contact physician if symptoms persist. Removal of contact lenses after an eye injury should only be done by skilled personnel.
- 4.3 **Skin Exposure** : Remove contaminated clothes. Wash thoroughly with soap and water. Contact physician if irritation persists.

4.4 Ingestion : Rinse mouth with water and obtain medical attention. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Method : Carbon dioxide, dry chemical foam. Do not use a direct water-jet on burning material.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions : Avoid excessive inhalation and contact with skin and eyes. A self-contained breathing apparatus is recommended in case of major spill.
- 6.2 Spillage : Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Gross spillage should be contained immediately by use of sand or inert powder and disposed of according to local regulations.
- 6.3 Environmental Precautions : Keep away from drains, surface and ground water, and soil.

7. HANDLING AND STORAGE

- 7.1 Handling : Apply according to good manufacturing and industrial hygiene practices with proper ventilation. Do not drink, eat or smoke while handling. Respect good personal hygiene.
- 7.2 Storage : Store in a cool, dry and ventilated area away from heat sources and protected from light in tightly closed original containers. Avoid uncoated metal containers. Keep air contact to minimum.
- 7.3 Fire Protection : Keep away from ignition sources and naked flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Respiratory Protection : Avoid excessive inhalation of concentrated vapours.
- 8.2 Eye Protection : Wear safety glasses.
- 8.3 Skin Protection : Avoid skin contact. Use chemically resistant gloves as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 Appearance : Clear waterwhite liquid
- 9.2 Odour : Clean fresh fruity green
- 9.3 Melting Point : N/A
- 9.4 Boiling Point : N/A
- 9.2 Flash Point : >61 °C closed cup

10. STABILITY AND REACTIVITY

- 10.1 Reactivity : Presents no significant reactivity hazard, by itself or in contact with water. Avoid contact with strong acids, alkali or oxidising agents.
- 10.2 Decomposition : Carbon monoxide and unidentified organic compounds may be formed during combustion.

11. TOXICOLOGICAL INFORMATION

Based on the ingredients in this composition and their concentrations, this product is safe when used as directed.

12. ECOLOGICAL INFORMATION

General : This material is unlikely to accumulate in the environment and environmental problems under normal use conditions are unexpected.

13. DISPOSAL CONSIDERATIONS

Dispose of according to local regulations. Do not dispose of into drainage systems or into the environment.

14. TRANSPORT INFORMATION

14.1 Road : Not Classified as Dangerous Goods

14.2 Air : Not Classified as Dangerous Goods

14.3 Sea : Not Classified as Dangerous Goods

15. REGULATORY INFORMATION

15.1 Hazard symbol : -

15.2 Labelling : Labels must conform with the Hazardous Substance and New Organisms Act 1996 and its regulations.

16. OTHER INFORMATION

The information in this leaflet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

The information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of biOx International Pty Ltd. The data on this sheet related only to the specific material designed herein. biOx international assumes no legal responsibility for the use or reliance of this data.

Date of Issue: 1 March 2010
Date of Previous Issue n/a
Version" 1.0



MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY INFORMATION

- 1.1 Product Name : FARNIL 4842
1.2 Company Name : Flairoma Ltd
1.3 Company Address : 1 Cortina Place
Pakuranga
Auckland 2010
1.4 Emergency Phone : +64 9 576 5215

2. HAZARDS IDENTIFICATION

- 2.1 General : Concentrated perfume compound
2.2 HSNO Classification : 3.1D, 6.1D, 6.3B, 6.4A, 9.1D, 9.3C
2.3 Hazard Symbol :
2.4 Hazard Statement : Flammable liquid. May be harmful if swallowed. May cause skin and eye irritation. May be slightly harmful to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Chemical Identification : Composition:-multicomponent mixture of natural and/or synthetic raw materials.
3.2 CAS Number : Not applicable, product is a mixture.
3.3 EINECS Number : Not applicable, product is a mixture.

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15. REGULATORY INFORMATION

- 15.1 Hazard symbol : -
- 15.2 Labelling : Labels must conform with the Hazardous Substance and New Organisms Act 1996 and its regulations.

16. OTHER INFORMATION

The information in this leaflet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

In addition to the concentration limits applicable to the Dangerous Substance and Dangerous Preparations Directives any IFRA limits provided are general and non skin product considerations. For limits against specific product categories please contact Flairoma Ltd.

Since the actual use of this product is beyond the control of Flairoma Ltd, we make no warranty, expressed or implied, concerning the use of this product. It is the responsibility of users to ascertain that the product is suitable for intended applications.



SAFETY DATA SHEET

Section 1.	Identification of the material and the supplier
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Product:	Odour Neutraliser PLUS
Product Code:	SCD1100
Product Use:	Deodourising Agent
New Zealand Supplier:	biOx International Limited
Address:	PO Box 302 540, NHMC Auckland 0751 New Zealand
Telephone:	021415536
Fax Number:	N/A
Emergency Telephone:	021415536
Date of MSDS Preparation:	05/10/2012 version 2

Section 2.	Hazards Identification
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This substance is not classified as a dangerous good according to: New Zealand Standard NZS5433.

This substance is hazardous according to the New Zealand *HSNO (Minimum Degrees of Hazard) Regulations 2001*

New Zealand (HSNO/GHS)

EPA Approval Code: HSR002530 Cleaning Products (Subsidiary Hazard) Group Standard

HSNO Classification: 6.3A, 6.4A, 6.8A, 6.9B, 9.1C, 9.2C

Hazard Code	Hazard Statement
H315	Causes skin irritation.
H320	Causes eye irritation.
H360	May damage fertility or the unborn child.
H373	May cause damage to blood system through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H423	Harmful to the soil environment.

Prevention Code	Prevention Statement
P103	Read label before use.
P104	Read safety data sheet before use
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist or spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing and eye protection.
P281	Use personal protective equipment as required.

Response code	Response Statement
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see first aid instruction on product label).
P362	Take off contaminated clothing and wash before re-use.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
Storage Code	Storage Statement
P405	Store locked up in original container in a cool well-ventilated area out of direct sunlight and away from strong acids oxidisers and reducing agents.
Disposal Code	Disposal Statement
P501	Triple rinse container and add rinsing's to mixing vessel. Puncture empty container before disposal to landfill. Unwanted material should be disposed of as a hazardous waste via a licensed waste disposal company.

Section 3.	Composition / Information on Ingredients
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Ingredients	Wt%	CAS NUMBER.
Sodium Chlorite	1-2%	7758-19-2
Potassium Persulphate	<0.1%	7727-21-1
Surfactant	<1.0%	1643-20-5
Other Non-Hazardous Components	Balance	N/A

Section 4.	First Aid Measures
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Recommended on site emergency facilities: Eye Wash, Emergency Shower

Routes of Exposure:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Call a POISON CENTER or doctor/physician if you feel unwell (0800 764 766).

Specific Treatment:
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash affected areas with soap and water. If skin irritation or rash occurs get medical advice/attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention.

Specific Measures:
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult or if experiencing respiratory symptoms, remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER (0800 764 766) or doctor/physician.

IF EXPOSED
CONCERNED: Get medical advice/attention.

Section 5. Fire Fighting Measures
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Hazard Type	Eye and skin irritant, ecotoxic liquid.
Hazards from decomposition products	Chlorine and oxides of sodium.
Suitable Extinguishing media	All
Precautions for firefighters and special protective clothing	Evacuate unnecessary personnel. Wear chemically resistant clothing. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Dilute with water spray to avoid oxidative decomposition. Intensifies fires and releases heat on decomposition. Reaction with strong acids liberates toxic gas (chlorine dioxide). Contain run off. Toxic to the aquatic environment. Contact with combustible materials may cause fire after impregnation and drying out.
HAZCHEM CODE	NA

Section 6. Accidental Release Measures

Land Spill or Leaks

Large spills should only be handled by appropriately trained personnel or the emergency services. Wear suitable PPE (see section 8 of this SDS. Avoid contact with skin or eyes. If possible and safe to do so, stop/cut off the source of the leak. Contain any released substance with suitable inert spill media (e.g. zeolite, kitty litter, sand. Recover if possible by pumping into suitable containers (HDPE). Transfer all solid spill residues into labeled hazardous waste containers. Do not allow spill residues to dry out. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. Dispose of spill residues using a licensed hazardous waste company.

Section 7. Handling and Storage
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Safe handling and storage of this substance must comply with the requirements of the site and storage conditions for ecotoxic substances (copies available from the NZ EPA website www.epa.govt.nz).

See section 15 of this SDS for all HSNO Trigger quantities.

An Approved Handler **is not required** for this substance for this substance when managed under the conditions of the group standard.

Precautions for safe handling:

- Handle in accordance with good industrial hygiene and safety procedures.
- Reduce/avoid exposure and/or contact.
- Remove contaminated clothing immediately.
- Clean contaminated clothing.
- Keep container tightly closed.
- Keep away from: Heat sources, acids, food and feedstuffs.
- Collect spillages

Conditions for safe storage:

- Store in a cool well ventilated place out of direct sunlight.
- Avoid storing with acids, chlorine, hypochlorite and organic solvents.
- Keep containers closed when not in use.

Section 8	Exposure Controls / Personal Protection
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WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	CAS # (a)	TWA ppm(b) mg/m ³ (c)	STEL ppm(b) mg/m ³ (c)
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No components of this product are listed in the NZ WES tables.

Engineering Controls:

- Work under local exhaust/ventilation.

Personal Protective Equipment:

- Where exposure through inhalation may occur the use of approved respiratory protection equipment is recommended
- Use chemically resistant goggles or face shield with safety glasses.
- Protective gloves apron, boots, head and face protection should be worn.
- Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
- Avoid all unnecessary exposure.
- Ensure prompt removal from eyes, skin and clothing.

General:

Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. Avoid all personal contact, including inhalation. Wear protective clothing.

Section 9	Physical and Chemical Properties
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Physical State:	liquid
Colour:	light yellow
Odour:	characteristic mild chlorine-like odour
pH:	8-9
Decomposition temperature	>170°C
Solubility:	completely soluble in water.
SG	1.05 g/cm ³

Section 10.	Stability and Reactivity
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Stability and reactivity:	This product is stable when stored under recommended normal temperature and pressures.
Conditions to avoid:	Keep away from strong acids.
Hazardous decomposition products:	On heating may release toxic and corrosive gases/vapours:
Incompatibility:	Acids, chlorine, hypochlorite, organic solvents and organic compounds. Will react with strong acids to liberate toxic gas (chlorine dioxide).

Packaging materials and containers

Recommended	Polyester, polyethylene, stainless steel, (small quantities: glass).
Not recommended:	Steel, Copper, Copper and its alloys, Aluminium and its alloys, rubber.

Section 11	Toxicological Information
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Acute toxicity (calculated)

Oral	>5000mg/kg bw (Rat)
Dermal	>5000 mg/kg bw
Inhalation	>5 mg/l (mist)

This substance is not considered acutely toxic by oral, dermal or inhalation routes however contact with strong acids liberates a toxic gas (chlorine dioxide).

Section 12.	Ecotoxicological Information
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HSNO Ecotoxicity Classifications: 9.1C, 9.2C

Environmental hazards

This substance in its undiluted form is harmful to fish and harmful in the soil environment. Do not discharge effluent containing this product into lakes, streams, rivers, ponds, oceans or other natural waters unless in accordance with local bylaws or unless you have a permit to do so. Do not discharge effluent containing this product into sewer systems unless you have a permit to do so. For guidance contact your local authority.

Environmental Precautions: Avoid release to the environment.

Individual component toxicity data.**Sodium chlorite solution:**

SPECIES: Daphnia magna (Water flea)
TYPE OF EXPOSURE: Static
DURATION: 48 hr
ENDPOINT: EC50 (Intoxication)
VALUE: 0.0146, 0.012 - 0.018 PPM (= 0.0146 mg/l)
Biocumulative: ND
Rapidly Degradable: Yes

SPECIES: Selenastrum capricornutum (Green algae)
TYPE OF EXPOSURE: Static
DURATION: 96 hr
ENDPOINT: EC50 (Intoxication)
VALUE: 1.32, 1.18 - 1.47 ppm (= 1.32 mg/l)
Biocumulative: ND
Rapidly Degradable: Yes

SPECIES: Cyprinodon variegatus (Sheepshead minnow)
TYPE OF EXPOSURE: Flow-through
DURATION: 96 hr
ENDPOINT: LC50 (Mortality)
VALUE: 75 PPM (= 75 mg/l)
Biocumulative: ND
Rapidly Degradable: Yes

SPECIES: Activated sludge, domestic
ENDPOINT: EC50
VALUE: 2.2 mg/l
Soil DT 50 > 30 days: ND

Disclaimer

This document has been compiled by TCC on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to TCC by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While TCC has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, TCC accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS. The information herein is given in good faith, but no warranty, express or implied is made. Please contact the New Zealand proprietor, if further information is required.

Issue Date: 09/07/2012

Review Date: 09/07/2017



**Redvale Landfill
Noise Testing (last 5 years)**

3/06/2015

Date	Tested by	Reason for Test	Outcome
20/4/2008	Hegley Acoustics	Compliant monitoring for additional 3MW power for generators	Compliant
18/8/2011	Hegley Acoustics	Compliant monitoring for additional 3MW power for generators	Compliant
16/7/2013	Marshall Day Acoustics	Noise Assessment Report – consent application (daytime noise measurements)	Data collection for assessment
28/8/2013	Marshall Day Acoustics	Noise Assessment Report – consent application (daytime noise measurements)	Data collection for assessment
2/9/2013	Marshall Day Acoustics	Noise Assessment Report – consent application (night time noise measurements)	Data collection for assessment
6/6/2014	Marshall Day Acoustics	Early Morning (05h30 – 07h00) measurement of noise from the landfill operations taken at 73 Tender Rd.	Compliant
22/6/2014	Marshall Day Acoustics	Late evening (22h00 – 23h00) measurement of noise from generator taken at 3 localities along Richards Rd.	Compliant
4–16/7/2014	Marshall Day Acoustics	Continuous recording of background noise taken from Selman Rd – part of consent application.	Measurements confirmed data used in the noise model.
4/3/2015	Marshall Day Acoustics	Noise level taken 10m to the south of the blowers <u>before</u> the barrier walls and sound absorption measures had been installed as part of BPO for the blowers.	82dB LAeq
20/5/2015	Marshall Day Acoustics	Noise level taken 10m to the south of the blowers <u>after</u> the noise barrier walls and sound absorption measures had been installed at part of BPO for the blowers.	68dB LAeq
June/July 2015	Marshall Day Acoustics (MDA)	MDA have been instructed by WM to undertake a late evening (22h00 – 23h00) sound level measurements at 3 localities along Richard Road on a random date when weather conditions are still.	To be advised



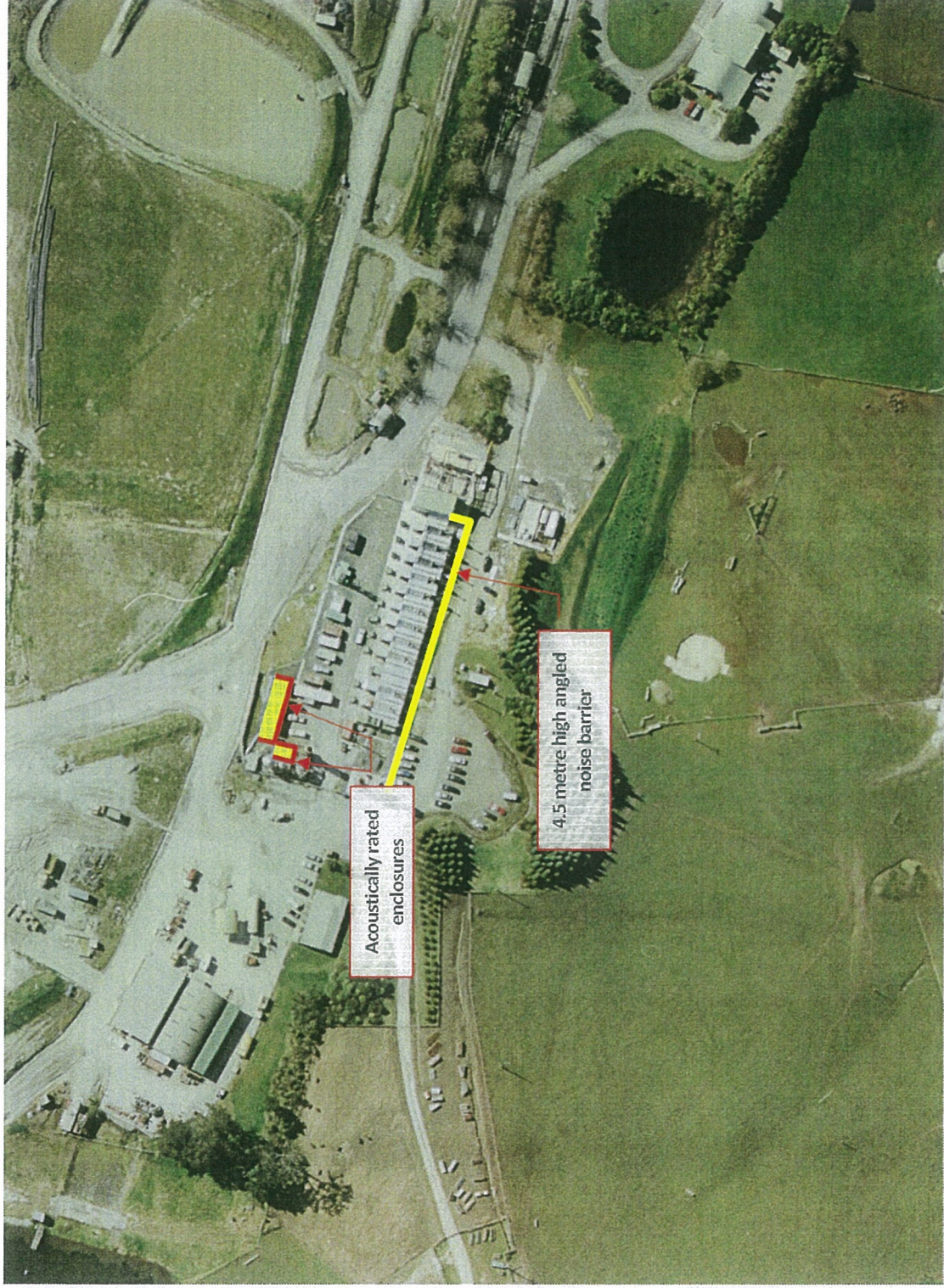


Figure G3: Plan view showing recommended noise barrier and acoustic enclosures





Enclosed on three sides (and roof)
with a 10% allowance per enclosed
side for open area (for health &
safety reasons)

Figure G2: Concept elevation of recommended enclosures



APPENDIX G ENERGY PARK NOISE BARRIER AND ENCLOSURES

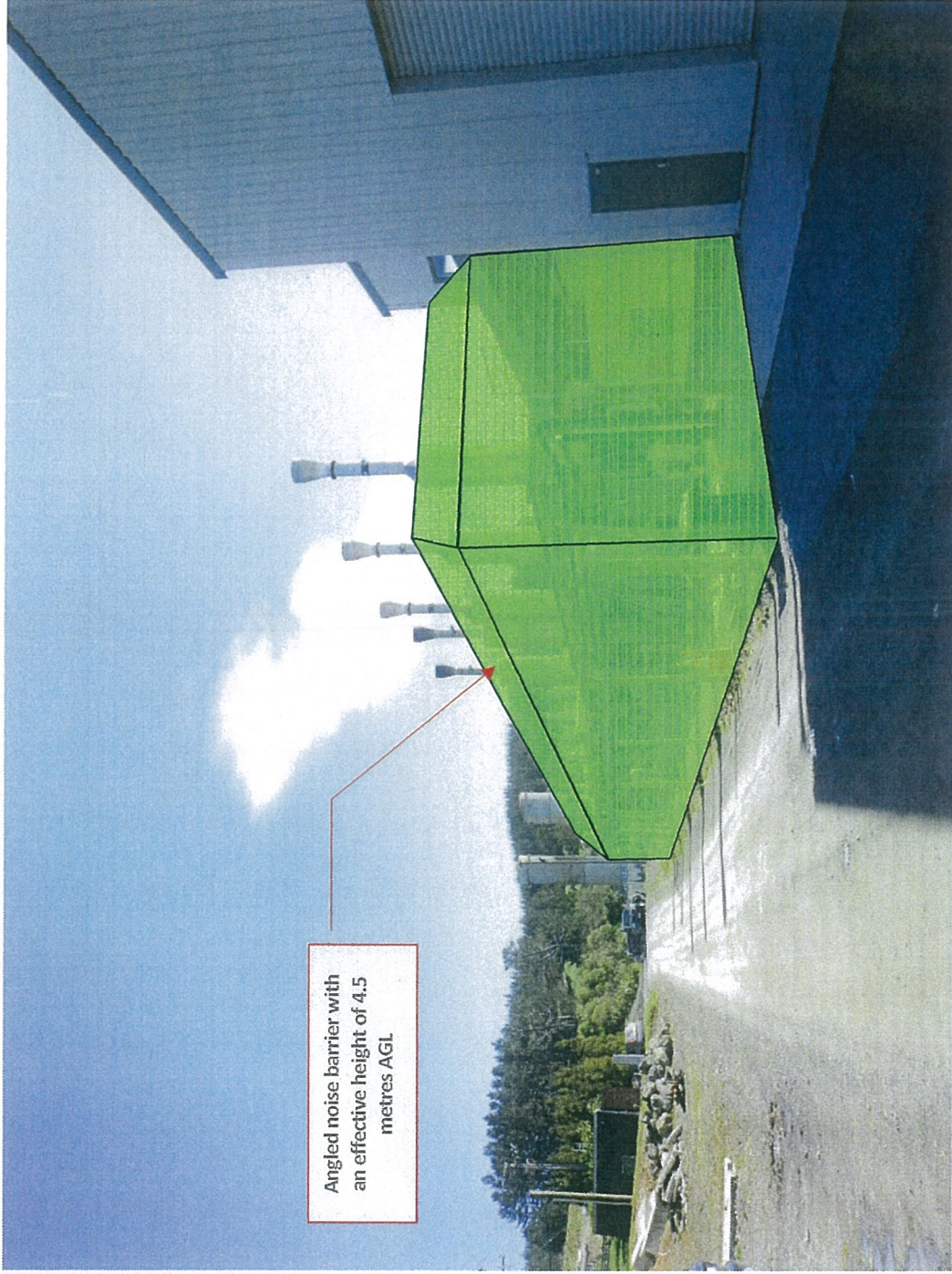


Figure G1: Concept elevation showing recommended noise barrier

