

South Taranaki District Council  
Central Landfill Baseline Monitoring  
Programme  
Annual Report

Technical Report 2014–114

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## Executive summary

In 1996 the South Taranaki District Council (STDC) instigated plans to establish a large landfill in the Eltham area. The purpose of this site was to ultimately accept waste from the South Taranaki and Stratford Districts. The plan was changed to allow for a regionalised approach to waste disposal and the site is now currently a proposed option as the replacement regional landfill once the facility at Colson Rd, New Plymouth has reached capacity. The final decision is subject to review of all alternatives to be undertaken by the district councils of the region. The (proposed) Eltham Central landfill site is situated in the Waingongoro catchment on Rotokare Rd approximately two kilometres south of Eltham. This report sets out the results of the baseline monitoring activities undertaken in the 2013-2014 period.

The STDC holds a total of five consents which contain 77 special conditions. These consents cover all aspects of the construction and operation of the landfill. At present none of the consents held by STDC in relation to landfill construction and operation have been exercised. The consents have extended lapse periods to allow for an interim period prior to exercise.

Consent conditions specify that baseline monitoring of the ground and surface receiving waters are to be undertaken to obtain data for comparison to that gathered from compliance monitoring surveys when the landfill has commenced operations.

The monitoring showed that surface water quality was comparable to that found over the previous monitoring period and indicative of good water quality comparable to that expected in similar streams in the area. Groundwater results were comparable to the historical data, and within the normal ranges for groundwater in the area.

During the 2013-2014 monitoring period, Council took nine groundwater level readings, three groundwater samples, and six surface water samples.

This report outlines all of the consents held by the STDC, reports on the baseline monitoring activities carried out in the 2013-2014 period, and discusses the results.

STDC demonstrated a high level of administrative compliance with its resource consents. No rating is given for environmental effects as no discharges or in-stream works have yet to occur.

No incidents were recorded by Council in regards to this site during the period under review.

For reference, in the 2013-2014 year, 60% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 29% demonstrated a good level of environmental performance and compliance with their consents.

This report includes recommendation for the 2014-2015 year.



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# **1. Introduction**

## **1.1 Compliance monitoring programme reports and the Resource Management Act 1991**

### **1.1.1 Introduction**

This report is the Annual Report for the period July 2013-June 2014 by the Taranaki Regional Council (The Council) on the monitoring programme associated with resource consents held by the South Taranaki District Council (STDC). STDC has consents to establish and operate a landfill situated on Rotokare Road two kilometre south of Eltham in the Waingongoro catchment. None of the consents associated with the landfill have yet been exercised.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the resource consents held by STDC to establish and operate a landfill situated on Rotokare Road at Eltham in the Waingongoro catchment. None of the consents associated with the landfill have yet been exercised. This report is for baseline environmental monitoring at the site for the period 2013-2014.

One of the intents of the *Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the Eltham Central landfill's use of water, land and air, and is the seventh combined report by the Council for the consent holder. .

### **1.1.2 Structure of this report**

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the RMA and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by the STDC for the Eltham Central landfill the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted in the Waingongoro catchment.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretations, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2014-2015 monitoring year.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

### 1.1.3 The Resource Management Act 1991 and monitoring

The *Resource Management Act 1991* (RMA) primarily addresses environmental ‘effects’ which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

- (a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
- (b) physical effects on the locality, including landscape, amenity and visual effects;
- (c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
- (d) natural and physical resources having special significance (eg, recreational, cultural, or aesthetic);
- (e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of ‘effects’ inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region’s resources.

### 1.1.4 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holder/s during the period under review, this report also assigns a rating as to each Company’s environmental and administrative performance.

**Environmental performance** is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company’s approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (i.e. a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:



## Environmental Performance

- **High** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.
- **Good** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.
- **Improvement required** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.
- **Poor** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

## Administrative compliance

- **High** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.
- **Good** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was

provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.
- **Poor** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2013-2014 year, 60% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 29% demonstrated a good level of environmental performance and compliance with their consents.

## 1.2 Process description

STDC has established a proposed landfill site in Eltham at Rotokare Road, on the east side of State Highway 3 and approximately two kilometres south of Eltham Township. The site of the proposed landfill is a 92 ha farm that is owned by STDC and will continue to be farmed until the construction of the landfill commences. The landfilling operation will utilise approximately 5 ha of the site at any one time and the site has a capacity of 2,200,000 m<sup>3</sup>. Access to the site is proposed to be from Rotokare Road. The proposed landfill will be a fully engineered facility with a 1.5 mm High Density Poly Ethylene liner laid over a 600mm layer of compacted clay. Leachate will be collected by leachate lines and transferred to the sewer pipeline that runs between the Eltham Oxidation Ponds and the Hawera WWTP.

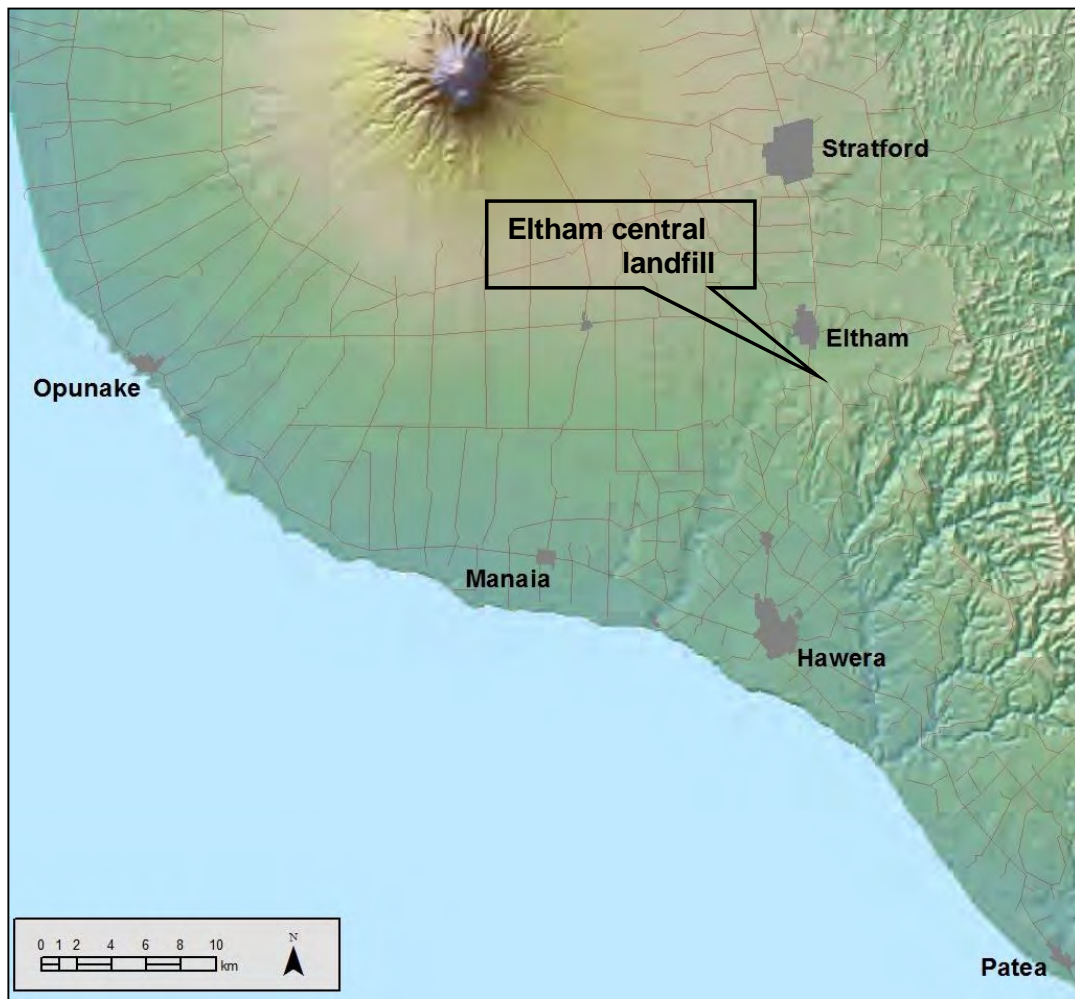
Consents 5347, 5348, 5349, 5350, and 5351 were granted on 15 March 2000 with the expectation that within three years landfill space available to STDC at other landfill sites in the district would be full and that the Eltham site would commence operation [exercise of consent] within the five year lapse period set in the consents for the site.

However, during this intervening period a plan was developed and agreed on by the three district councils in the region which see a regionalised approach to waste management by the district councils. Part of this plan is to route all municipal waste in the region to Colson Road landfill in New Plymouth, with the eventual closure of all other municipal landfills in the region. When the Colson Rd landfill approaches its projected capacity, the plan calls for Eltham Central landfill to be commissioned and take over as the regional landfill for Taranaki.

This plan, whilst presenting the region with the best option for future waste disposal, is subject to a final review of other alternative sites (whether within or outside the region).

In July 2005 the STDC was granted changes to consent conditions to increase the consent lapse periods from 5 years to 20 years. These changes allow for the extended timeframes resulting from the change of designation from proposed district to proposed regional landfill.

The site consists of a large bowl shape valley which makes it well suited as a landfill site. The proposed land fill foot print contains the headwaters of an unnamed tributary which eventually feeds into the Waingongoro River approximately two kilometres to the northwest. Several groundwater bores and freshwater sampling sites have been established for the purposes of baseline monitoring.



**Figure 1** Regional map of the site showing the position of the location landfill site



**Photo 1** Eltham Central landfill site (north westerly view from east side of site)



**Photo 2** Eltham Central landfill site (westerly view from east side of site)





**Photo 3** Eltham Central landfill site (south westerly view from east side of site)

## 1.3 Resource consents

**Table 1** Summary of resource consents held by the STDC for the Eltham Central landfill

Consent	Description	Review dates	Expiry
5347-1	To discharge contaminants onto and into land	June 2017 June 2023 June 2029	June 2034
5348-1	To discharge emissions into the air		
5349-1	To discharge stormwater		
5350-1	To dam and divert water		
5351-1	To erect, place and maintain structures in the beds of unnamed tributaries		

The permits are discussed further in sections 1.3.1 to 1.3.5 below, with copies attached in Appendix 1.

### 1.3.1 Water abstraction permit

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

Maintaining sufficient volumes of water within streams and rivers to protect aquatic habitat is a primary concern of the Council with respect to water abstraction permits.

The STDC holds consent **5350-1** to dam and divert water around the Central landfill and into the headwaters of the Waingongoro River.

This permit was issued by the Council on 15 March 2000 under Section 87(d) of the RMA. It is due to expire on 1 June 2034.

Condition 1 requires the submission of, and adherence to, a Landfill Management Plan.

Conditions 2 and 3 relate to stormwater control and diversion.

Condition 4 requires the rehabilitation of land destabilised or eroded via earthworks and construction.

Condition 5 relates to site monitoring requirements.

Condition 6 stipulates that all structures and earthworks are to be certified by a registered engineer.

Condition 7 sets out the requirements for a Neighbourhood Liaison Committee.

Condition 8 specifies that the consent will lapse after a 20 year period if the consent is not exercised.

Condition 9 deals with limits to variations on consent conditions.

Condition 10 is an optional review condition.

### **1.3.2 Water discharge permit**

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

The STDC holds consent **5349-1** to discharge up to 15,000 cubic metres/day of uncontaminated stormwater and 4,000 cubic metres/day of treated stormwater onto and into land and into an unnamed tributary of the Waingongoro River. This permit was issued by the Taranaki Regional Council on 15 March 2000 under Section 87(e) of the Resource Management Act. It is due to expire on 1 June 2034.

Condition 1 requires the submission of and adherence to, a Landfill Management Plan.

Condition 2 prohibits the discharge of any leachate.

Conditions 3, 4, 5, 6 and 15 deal with stormwater management and discharge.

Conditions 7 and 8 specify the level of acceptable change to the receiving waters as a result of the landfill operation.

Conditions 9, 10 and 11 relate to the minimisation of the disturbance of vegetation and erosion of land due to construction and stormwater runoff.

Conditions 13 and 14 relate to site monitoring.

Condition 16 sets out the requirements for a Neighbourhood Liaison Committee.

Condition 17 specifies that the consent will lapse after a 20 year period if the consent is not exercised.

Condition 18 deals with limits to variations on consent conditions.

Condition 19 is an optional review condition.

### **1.3.3 Air discharge permit**

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The STDC holds consent **5348-1** to discharge emissions into the air from landfilling activities. This permit was issued by the Taranaki Regional Council on 15 March 2000 under Section 87(e) of the Resource Management Act. It is due to expire on 1 June 2034.

Condition 1 requires the submission of, and adherence to, a Landfill Management Plan.

Condition 2 requires STDC to adopt the best practicable option.

Conditions 3, 4 and 5 specify the nature of prohibited discharges to air.

Conditions 6 and 7 prohibit burning and composting on the site.

Condition 8 relates to gas venting and extraction.

Condition 9 relates to exposure and compaction of waste.

Conditions 10, 11, 12, 14 and 15 relate to monitoring and record keeping.

Conditions 13 and 16 relate to the handling of complaints and the formation of a Neighbourhood Liaison Committee.

Condition 17 specifies a lapse period of 20 years if the consent is not exercised.

Condition 18 deals with limits to variations on consent conditions.

Condition 19 is a review condition.

### **1.3.4 Discharges of wastes to land**

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The STDC holds consent **5347-1** to discharge contaminants onto and into land. This permit was issued by the Taranaki Regional Council on 20 July 2000 under Section 87(e) of the Resource Management Act. It is due to expire on 1 June 2034.

Conditions 1 and 2 require the submission of, and adherence to, a Landfill Management Plan.

Condition 3 requires that STDC meet the costs of a technical advice to the Council.

Conditions 4 and 5 relate to landfill construction.

Conditions 7, 8, 9, 10, 11, 12 and 13 specify the types of waste that may and may not be accepted.

Conditions 14, 15 and 16 relate to the manner in which the waste is to be applied to the land.

Conditions 17 and 18 specify monitoring requirements.

Conditions 19, 20, and 21 deal with stormwater runoff and leachate containment.

Conditions 22 and 23 relate to record keeping and notification.

Condition 24 sets out the requirements for the set up of a Neighbourhood Liaison Committee.

Condition 25 specifies that the consent will lapse after a 20 year period if the consent is not exercised.

Condition 26 deals with limits to variations on consent conditions.

Condition 27 is an optional review condition.

### **1.3.5 Land use permits**

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The STDC holds consent **5351-1** to erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River for construction and maintenance. This permit was issued by the Taranaki Regional Council on 20 July 2005 under Section 87(e) of the Resource Management Act. It is due to expire on 1 June 2034.

Conditions 1 and 6 require the submission of, and adherence to, a Landfill Management Plan.

Condition 2 sets out the environmental effects that the exercise of this consent shall not give rise to.



Conditions 3, 4 and 5 deal with the minimisation of erosion, and rehabilitation of the site.

Condition 8 specifies that works be certified by a registered engineer.

Condition 9 sets out the requirements for the set up of a Neighbourhood Liaison Committee.

Condition 10 specifies a lapse period of 20 years if the consent is not exercised.

Condition 11 deals with limits to variations on consent conditions.

Condition 12 is a review condition.

## **1.4 Monitoring programme**

### **1.4.1 Introduction**

Section 35 of the RMA sets out obligations upon the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the Eltham site currently consists of sampling of the surface and groundwaters.

### **1.4.2 Programme liaison and management**

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans and;
- consultation on associated matters.

### **1.4.3 Site inspections**

The Eltham Landfill site was visited four times during the monitoring period. Site inspections were only scheduled to be carried out to monitor landfill construction and operation. As these have been delayed, all site visits during the monitoring period were to undertake sampling for baseline monitoring.

#### 1.4.4 Chemical sampling

The Council undertook baseline monitoring of both the groundwater and receiving waters.

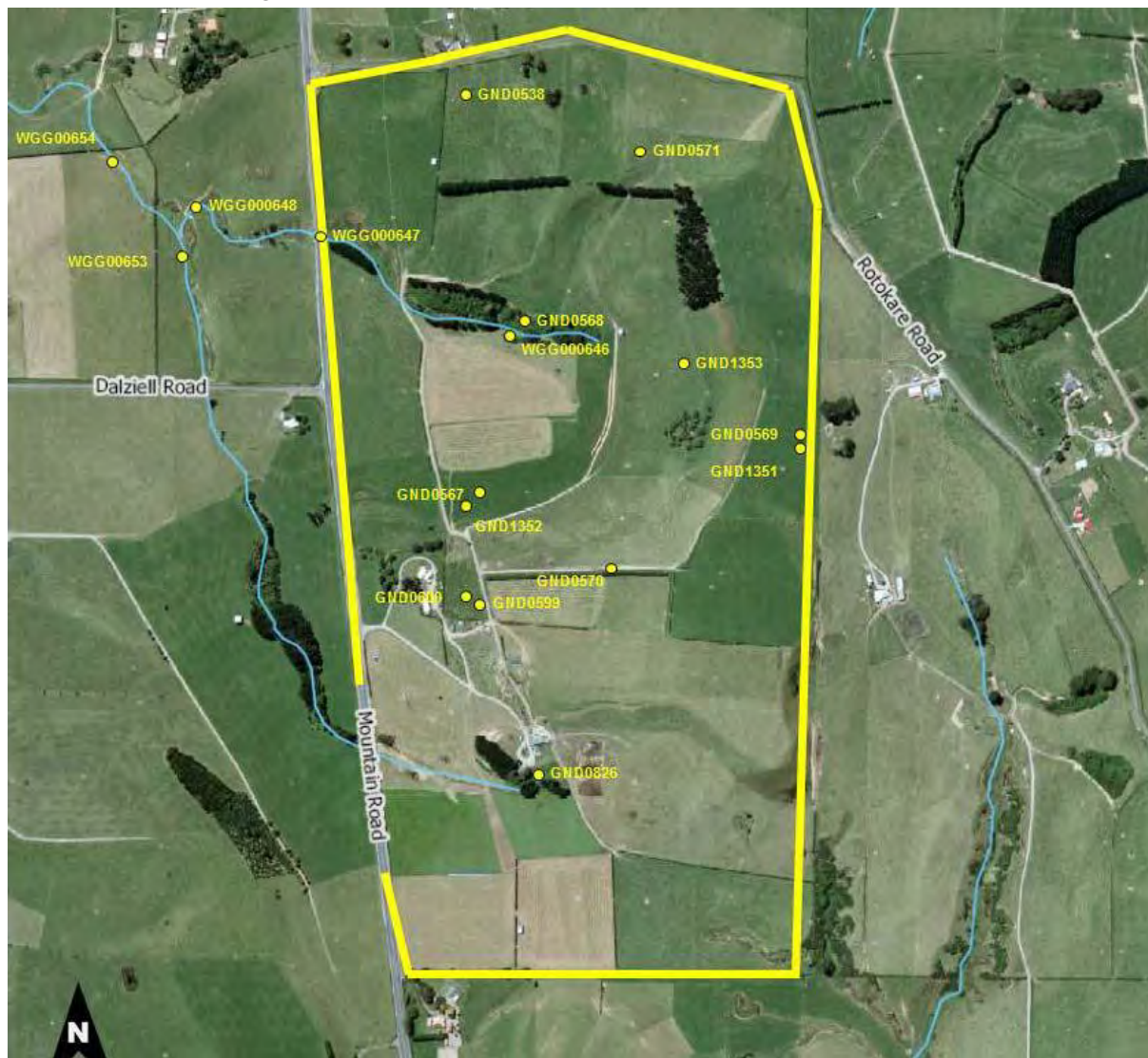
Three surface water sites were sampled on two occasions, and three groundwater sites were sampled on one occasion as described in Table 2 below. Groundwater depth was assessed twice at three sites and on one occasion at another three sites.

**Table 2** Summary of chemical sampling for 2013-2014

Medium	Samples taken
Surface water physicochemical	6
Groundwater physicochemical	3
Groundwater depth	9

#### 1.4.5 Biomonitoring surveys

Biomonitoring will next be undertaken prior to construction of the landfill.



**Figure 2** Aerial view of Eltham Central landfill site and sampling points

## 2. Results

### 2.1 Water

#### 2.1.1 Inspections

No formal inspections were undertaken during the monitoring period as the consents have not been exercised. However, the site was visited on numerous occasions in order to undertake baseline sampling of surface waters and groundwater, and no significant issues were noted during these visits.

#### 2.1.2 Results of surface water monitoring

Sampling of three sites was undertaken on two occasions (30 August 2013 and 13 May 2014). The results of the analyses are shown in Table 3.

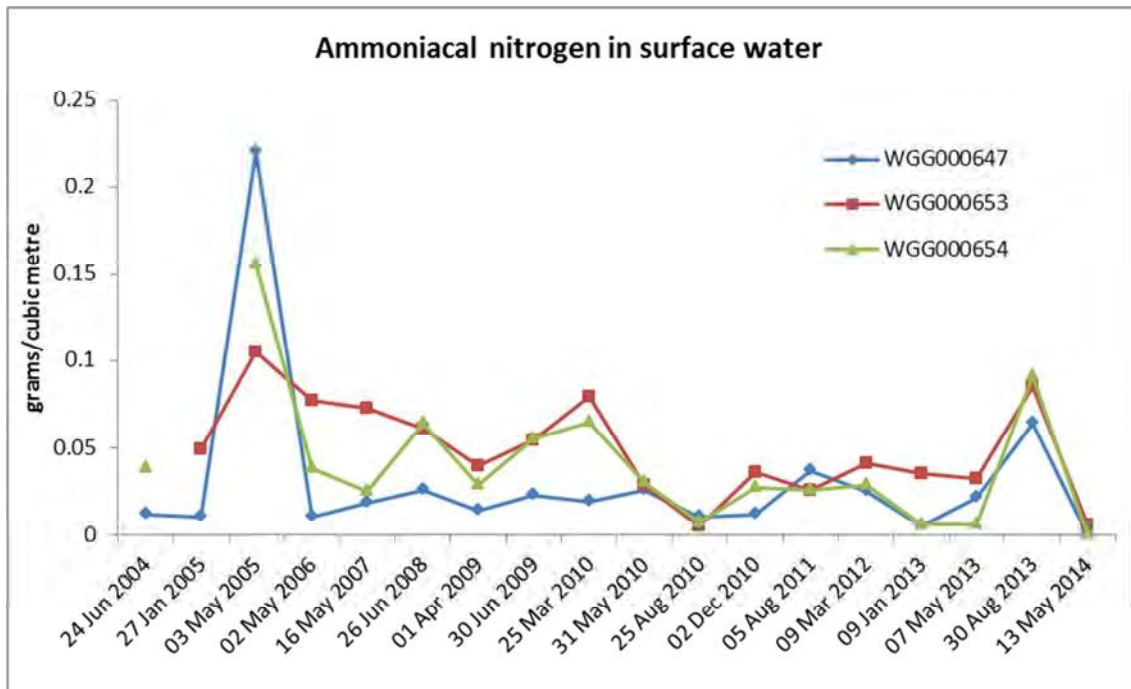
The results for most parameters of the surface water are as expected for the site in its current use (dairy farming). The levels of zinc, alkalinity and conductivity are low and stable. The results from this monitoring period are comparable to those found over the previous monitoring period and indicate good water quality.

As the site contains the whole catchment for the headwaters of the unnamed tributary, monitoring the effects of future landfill operations on the surface waters will be relatively straightforward.

**Table 3** Results of surface water sampling at Eltham Central Landfill

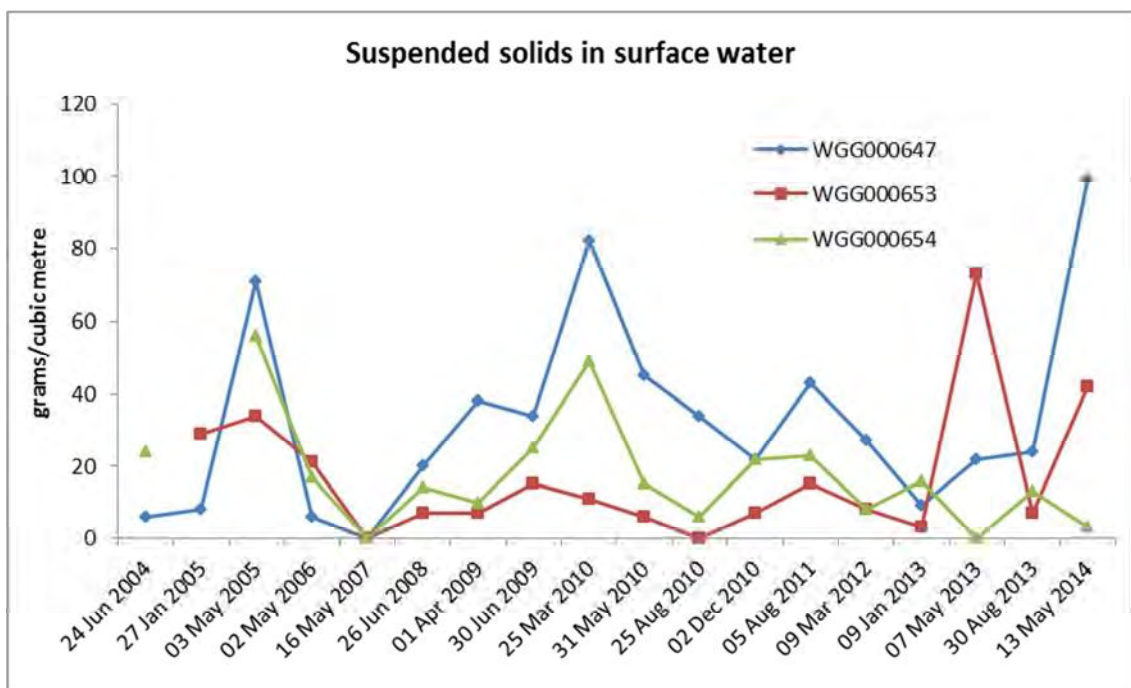
Parameter	Unit	30 August 2013			13 May 2014		
		WGG000647 landfill trib d/s of site	WGG000653 u/s landfill trib	WGG000654 d/s landfill trib	WGG000647 landfill trib d/s of site	WGG000653 u/s landfill trib	WGG000654 d/s landfill trib
Alkalinity	g/m <sup>3</sup>	52	62	54	58	66	59
Calcium	g/m <sup>3</sup>	14.2	19	16.4	14.8	16	14.5
Conductivity	mS/m	22.8	26	23.3	22.1	21.9	21.6
Hardness	gm <sup>3</sup> . CaCO <sub>3</sub>	65.1	82	71.8	65	68	63
Magnesium		7.2	8.4	7.5	7.3	7.5	7.3
Unionised ammonia	gm <sup>3</sup> -N	0.00021	0.00038	0.00041	0.00001	0.00002	0.00001
Ammoniacal nitrogen	gm <sup>3</sup> -N	0.064	0.085	0.091	<0.003	0.006	<0.003
pH	pH	7.1	7.2	7.2	7.1	7	7.1
Suspended solids	gm <sup>3</sup>	24	7	13	99	42	3
Temperature	Deg C	11.7	13	13	11.3	12.1	11.8
Acid soluble zinc	g/m <sup>3</sup>	<0.005	<0.005	<0.005	0.01	0.009	0.009
Dissolved zinc	g/m <sup>3</sup>	<0.005	<0.005	<0.005	<0.005	0.006	0.008

Historical surface water data for the proposed landfill site for selected parameters is shown in Figures 3-6.

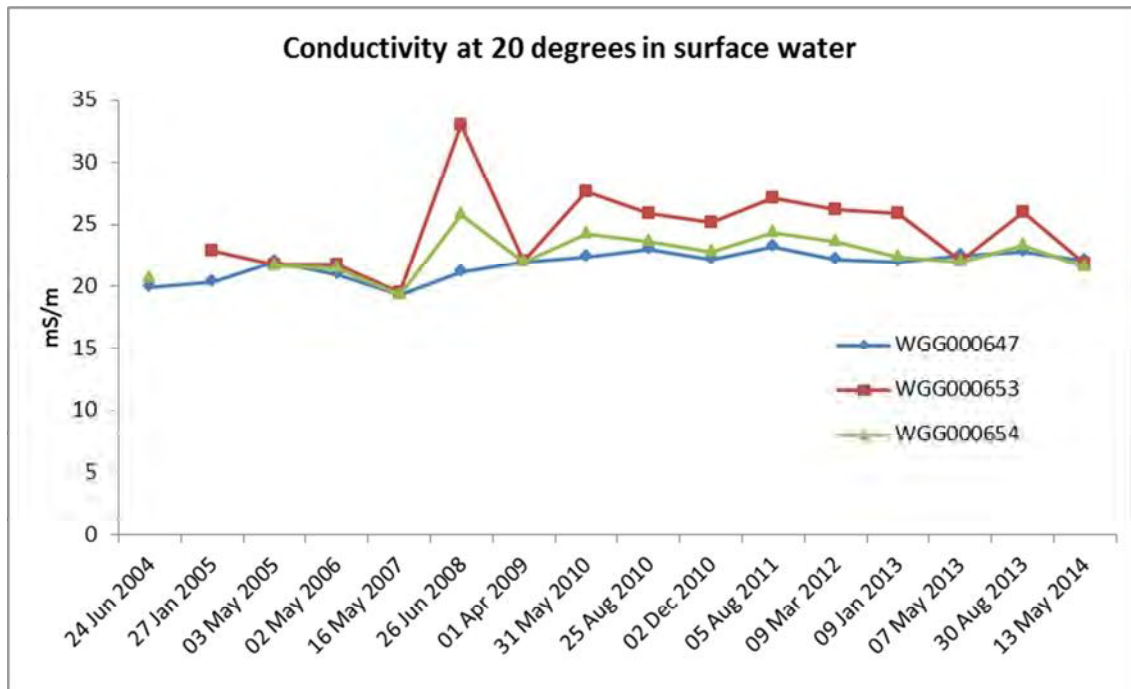


**Figure 3** Ammoniacal nitrogen levels found in surface water at the Central landfill site, 2004-2014

As the graph shows, all of the sites exhibit comparative fluctuations in the levels of ammoniacal nitrogen. All the results are for surface waters in pastoral areas, and when taken in conjunction with pH and temperature readings, the level of free ammonia has never exceeded  $0.001 \text{ g/m}^3$  at any of the sites, which is well within the  $0.025 \text{ g/m}^3$  guideline for aquatic ecosystem protection.



**Figure 4** Suspended solids levels found in surface water at the Central landfill site, 2004-2014



**Figure 5** Conductivity levels found in surface water at the Central landfill site, 2004-2014

The level of suspended solids also fluctuate over time with a range of <2 to 99 g/m<sup>3</sup> recorded over all the sites. The unnamed tributaries on this site are generally small, clear running, low energy brooks with silty beds, however with increased rainfall the suspended solids level can rise quite quickly as silt is stirred up from the beds and edges of the streams and is entrained in the flow. Overall the level of suspended solids indicates good water quality in the stream system.

Apart from a slight comparative spike in conductivity levels in the results for June 2008 in the downstream sites, the overall levels are quite stable. All but three results are in the 18-25 mS/m range which indicates that there are only moderate to low levels of dissolved metals in this stream system.

Overall water quality downstream of the proposed landfill site is quite good and comparable to that expected in similar streams in the area.

### 2.1.3 Groundwater monitoring

Groundwater monitoring consists of sampling of three shallow groundwater bores on one occasion and groundwater levels in these three bores on two occasions. The groundwater levels in three other bores were measured on one occasion. The bore locations are shown in Figure 2.

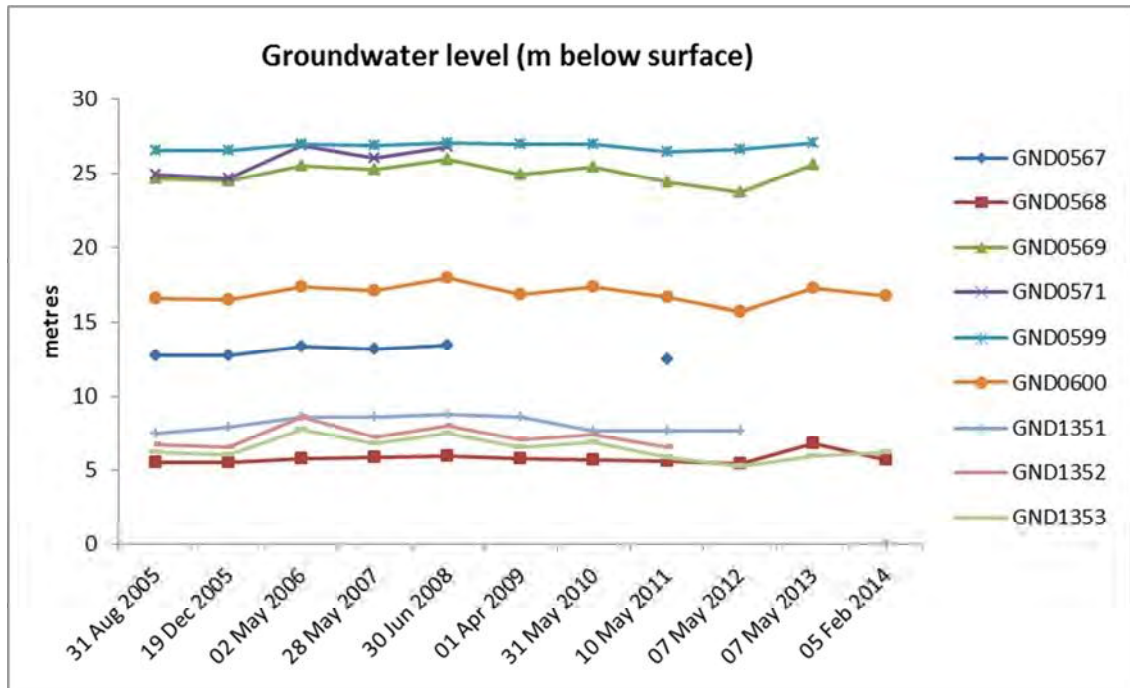
#### 2.1.3.1 Groundwater level and flow

Nine groundwater level readings were taken across the six bores during the 2013-2014 period and 151 readings have been taken since 2005. As time goes on some the bores have fallen into disrepair and cannot be sampled. The groundwater level results for this period are shown in Table 4.



**Table 4** Water levels of groundwater bores at Eltham Central landfill (m below surface)

Date	GND0568	GND0569	GND0599	GND0600	GND1351	GND1353
3 June 2014	6.20	26.67	27.05	17.49	8.60	7.32
5 February 2014	5.71	-	-	16.75	-	6.20

**Figure 6** Groundwater levels found at Eltham Central landfill, 2005-2014

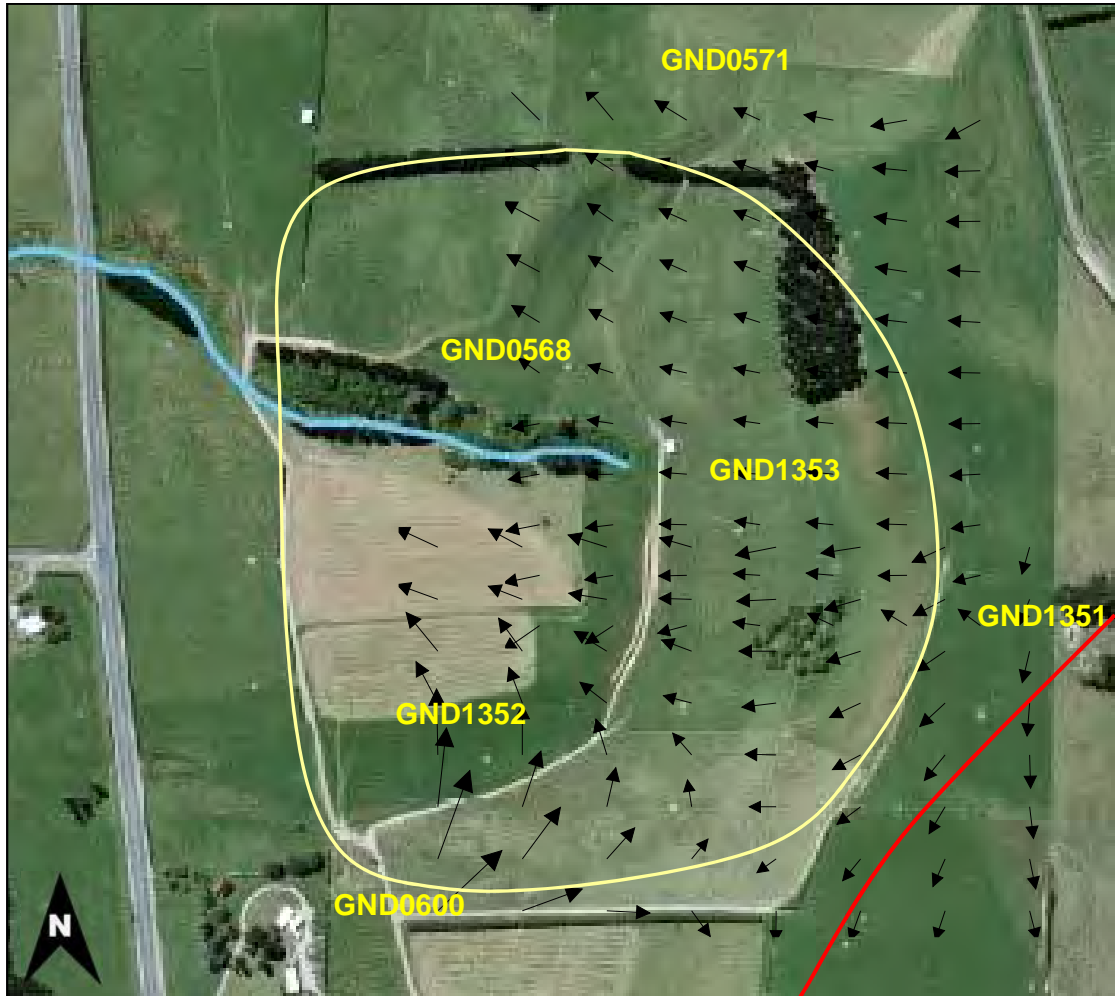
As Figure 6 shows, the levels of groundwater for each bore appear to be relatively stable through out all the seasons. In Figure 7 is a vector model using two surfaces generated from the average water levels of two bore sets selected from the shallower bores on the site. The vector model only gives a simplified indication of shallow groundwater flow direction from the limited data available. The two sets of bores used to generate the vector surfaces are shown in Table 5.

**Table 5** Data sets used to generate groundwater flow vector model

Northern Surface			Southern Surface		
Bore	Bore elevation(m)	Average water level above Datum (m)	Bore	Bore elevation (m)	Average water level above Datum (m)
GND0571	92	66.166	GND1351	91.9	83.54
GND0568	69.7	63.95833	GND0600	125	107.9767
GND1353	80	73.18	GND1352	71.5	64.10667
GND1351	91.9	83.54			

This simple model agrees with the information supplied with the original application that the shallow ground water flow within the landfill is largely affected by topography and generally drains toward the headwater of the unnamed tributary of the Waingongoro shown in blue. Bore GND1351 is very close to the boundary of the

Tangahoe Catchment, and groundwater at this location may tend to drain south east to the nearby headwaters of the Tawhiti Stream. Overall it would appear that most of the shallower groundwater flow from within the landfill basin area will tend to flow west toward State Highway 3 (Mountain Rd) feeding the tributary system and the shallow aquifer immediately west of the highway.



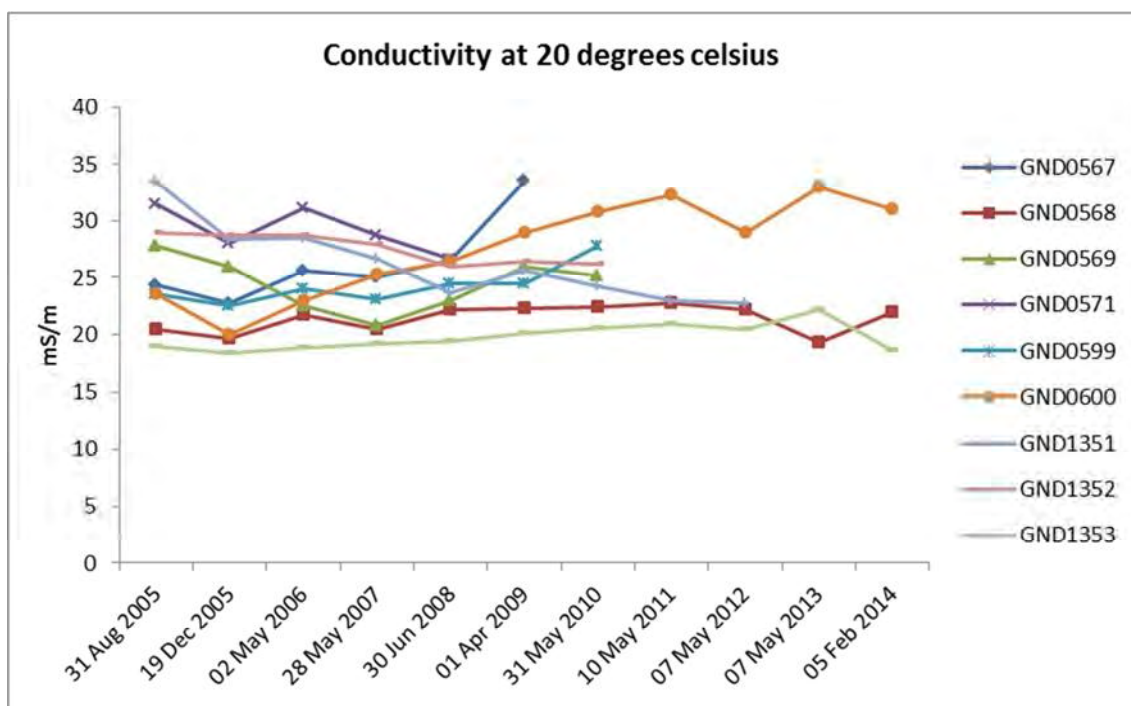
**Figure 7** Simplified groundwater flow direction models and the Eltham Central Landfill site

### 2.1.3.2 Chemical parameters

Table 6 shows the results from the three groundwater samples taken in the 2013-2014 period. All of the results are comparable to the historical data and within the normal ranges for groundwater in the area. Graphs in Figures 8-13 illustrate the trends over time for a number of selected parameters. The data collected so far should be understood as baseline data pre-activity and the variations in groundwater quality can be considered as natural, or at most the results of subtle pressures exerted on groundwater quality by grazing and dairying activities currently undertaken at the site. However, further evaluation of the effect of recharge flow from the surrounding hills and of the vertical component of groundwater maybe needed in order to enhance the understanding of the distribution of groundwater quality prior to the exercise of the activity (landfill).

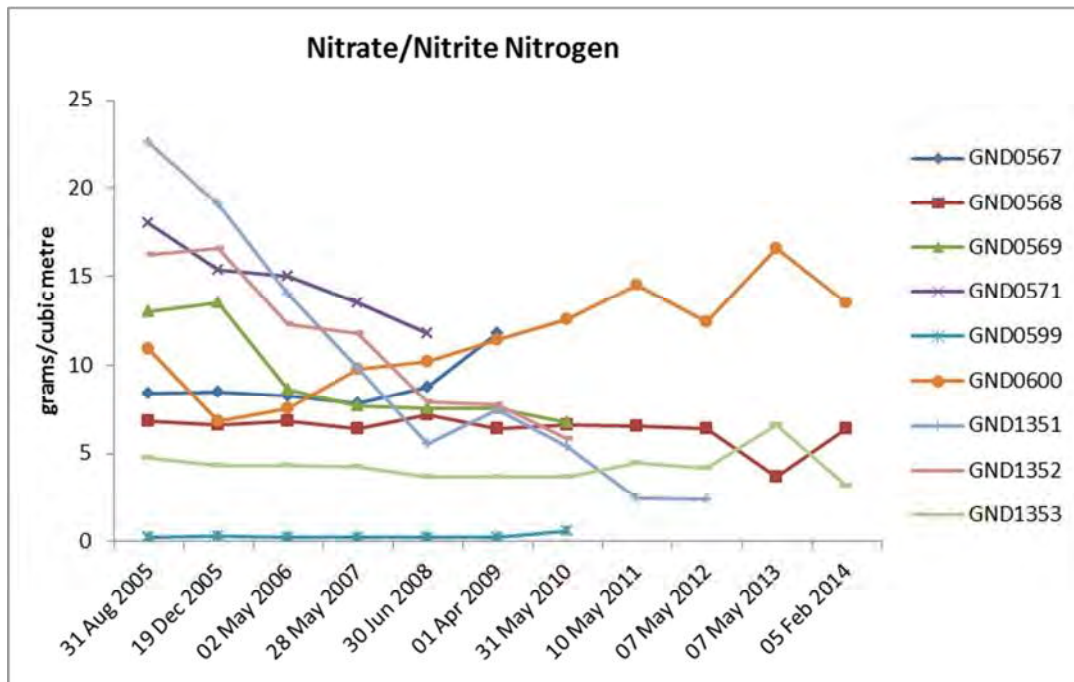
**Table 6** Results of groundwater analysis for 5 February 2014

Site	Unit	GND0600	GND1353	GND0568
Alkalinity	g/m <sup>3</sup>	38	55	50
Boron	g/m <sup>3</sup>	0.05	0.04	0.04
Calcium	g/m <sup>3</sup>	21.2	12.3	15.2
Chloride	g/m <sup>3</sup>	46	19.2	26.9
CODF	g/m <sup>3</sup>	<5	<5	<5
Conductivity	mS/m	31	18.6	22
Acid soluble iron	g/m <sup>3</sup>	1	0.29	0.75
Dissolved Iron	g/m <sup>3</sup>	<0.03	<0.03	<0.03
Hardness	g/m <sup>3</sup>	84	53	63
Level	m	16.75	6.2	5.713
Magnesium	g/m <sup>3</sup>	9.7	6.1	6.9
Acid soluble manganese	g/m <sup>3</sup>	0.11	0.01	0.09
Unionised ammonia	g/m <sup>3</sup> -N	0.00049	0.00055	0.00024
Ammoniacal nitrogen	g/m <sup>3</sup> -N	0.076	0.046	0.033
Nitrate/nitrite	g/m <sup>3</sup> -N	13.5	3.17	6.42
Nitrite	g/m <sup>3</sup>	0.004	0.001	0.001
pH	pH	7.3	7.6	7.4
Temperature	Deg C	14.7	13.9	13.4

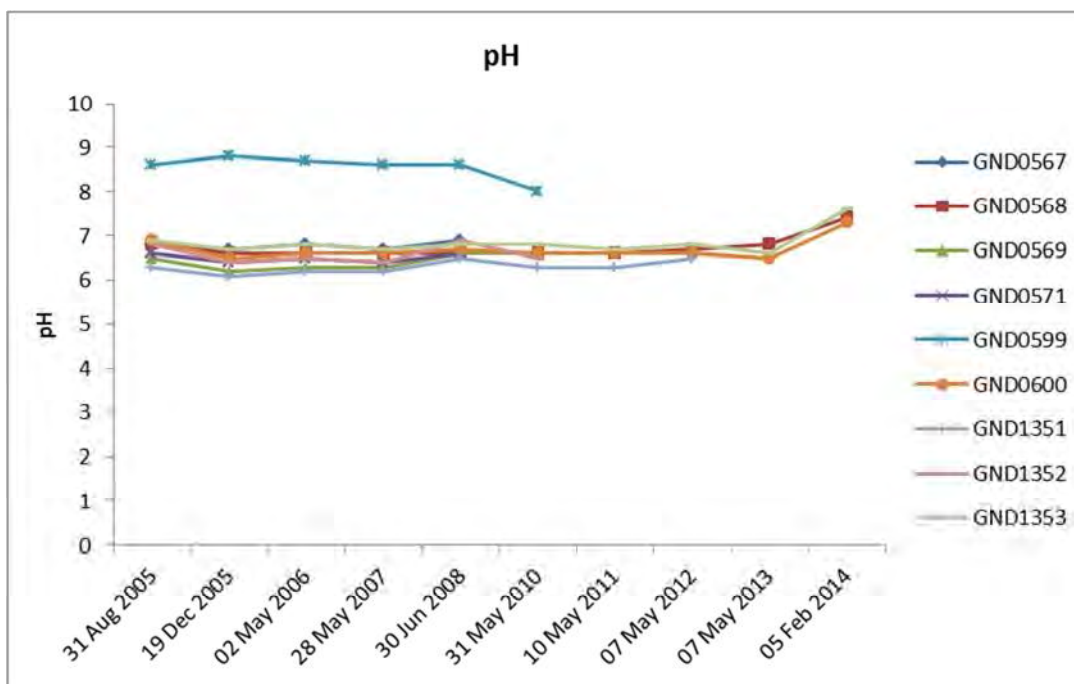
**Figure 8** Conductivity found in the groundwater at Eltham Central landfill



Conductivity levels over the whole site range between 15 and 35 mS/m. This indicates that the groundwater has relatively low levels of dissolved solids and that groundwater quality is quite good in this regard. Over the period that the groundwater has been monitored, the conductivity level for each bore also appears to be quite stable. The only exceptions to this are bores GND0600 and GND0567 which have exhibited a tendency to increase over time. Bore GND0567 is no longer sampled due to the deteriorated physical condition of the bore so it is not known if this rise has continued.



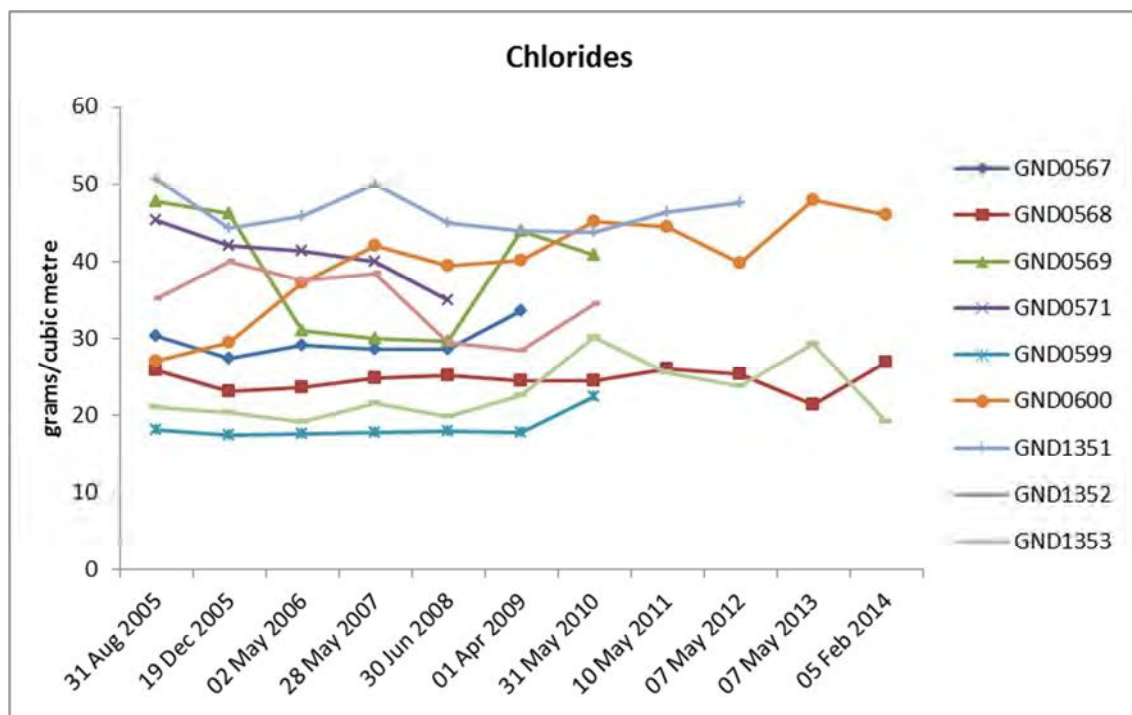
**Figure 9** Nitrate/nitrite levels found in the groundwater at Eltham Central landfill



**Figure 10** pH found in the groundwater at Eltham Central landfill

Nitrite and nitrate levels show some variability with some sites showing slight increases and other showing decreases in concentration (Figure 9). Bore GND0599 is the exception and has very low and stable levels of nitrite/nitrate (and a higher pH) when compared to the other sites. However this bore is far deeper than the others (83 m) and reaches into the Tangahoe formation, which may explain these differences in nitrite/nitrate levels. All the other bores are between 9 and 36 metres deep and draw water from an aquifer in the shallower volcanic layers, and are therefore more likely to be affected by current surface activities such as the application of fertiliser and grazing.

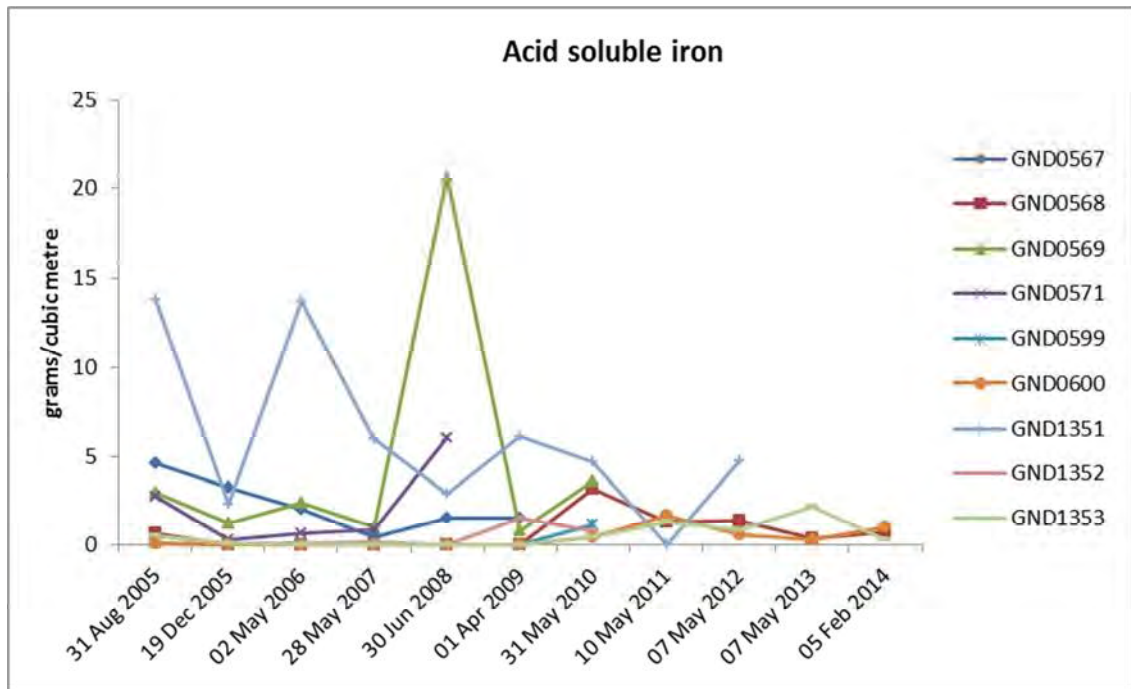
As the graph in Figure 10 shows, the pH level of the shallow aquifer appears stable over time. Also noted is that across all bores the pH level is very similar with an overall average across all sites over the 2005-2014 period being 6.8. The deeper Tangahoe formation bore (GND0599) exhibits a significantly higher pH with an average of 8.6. The pH for this bore also appears to be stable over time.



**Figure 11** Chloride levels found in the groundwater at Eltham Central landfill

Chlorides and hardness are in the normal ranges for Taranaki groundwater (Figure 11). As with other parameters, the deeper Tangahoe formation bore (GND0599) exhibits slightly more stability than the shallower bores.

The fluctuations in acid soluble iron are quite pronounced in bores GND0569, 571 and 1351 (Figure 12). However this analytical method is sensitive to contamination from any suspended solids included in the sample which would otherwise be immobile in the groundwater. By including analyses for dissolved iron, as well as acid soluble iron, this may level out such spikes in concentration in the future.



**Figure 12** Acid soluble iron levels found in the groundwater at Eltham Central landfill, 2005-2014

### 2.1.3.3 Ongoing groundwater monitoring requirements

An issue that needs to be addressed is the fact that many of the bores will soon require maintenance and in some cases may need to be relined or re-drilled. However, many of the current bores are likely to be sitting within the footprint of the landfill construction area and therefore may have to be abandoned during construction of the liner or other structures. These bores were originally installed for geotechnical and engineering purposes such as groundwater level and flow direction, and there may be sufficient water level data collected already to serve this purpose. In any case the existing bores can be retained in their current state for the purpose of obtaining more water level data.

Bore GND0571 is outside the proposed foot print of the landfill and is badly damaged and non functional. This should be repaired to enable it to be used for ongoing consent monitoring. Bores GND1352 and GND0567 are also damaged and can not be sampled for water quality or levels. In consultation with the Council these bores will need to be appropriately sealed up and abandoned prior to the commencement of landfill operations.

Condition 17(b) of consent 5347 also requires the installation of a bore down gradient of the proposed leachate holding sump and it would be a more appropriate use of resources to have this bore installed rather than engage in costly repair work on duplicated bores (such as GND0567) inside the landfill foot print. Two more permanent down-gradient bores should be installed prior to the exercise of the consent to collect baseline groundwater quality and level data from as well as be used for long term consent monitoring.

Table 7 gives the current state of the bores, their location in regards to the landfill footprint and gradient and a recommendation for the particular bore.

The recommendations are based on the position of the bore in relation to the landfill foot print and its current state of repair. The yellow shaded rows highlight where action is required to be able to continue baseline monitoring, and the minimum requirement to be able to undertake ongoing monitoring when the consent is exercised.

**Table 7** Current status of groundwater bores on the Central Landfill site at Eltham

STDC Bore Code	TRC Bore Code	Inside foot print?	Up/down gradient of	Current Status	Recommendation
BH1	GND0569	No	Up	Metal toby and risers need repair, sampling difficult.	Repair toby, riser and liner prior to landfill operations commencing
BH1a	GND1351	No	Up	Metal toby and risers need repair sampling difficult.	
BH2	GND0568	Yes	Down	Functional	Use for consent monitoring if possible. Abandon bore when landfill operations encroach.
BH3	GND0567	Yes	Mid	Bore liner blocked or kinked, not able to get sample or level reading.	Abandon bore when landfill operations commence
BH3a	GND1352	Yes	Mid	Bore liner blocked or kinked, a not able to get sample or level reading.	Abandon bore when landfill operations commence
BH5	GND0571	No	Up	Toby and riser have broken, liner probably broken below surface, Not functional for sampling or for taking water levels	Repair toby, riser and liner and continue to use for baseline and future consent monitoring.
BH6	GND1353	Yes	Mid	Functional- maintenance of toby lid required	Repair toby cap. Continue to use for baseline monitoring. Use for consent monitoring if possible. Abandon bore landfill when operations encroach.
BH7	GND0599	No	Deep aquifer Tangahoe formation	Toby and riser replaced 2009	Continue to use for baseline and future consent monitoring
BH7a	GND0600	No	Up	Toby and riser replaced 2009	Continue to use for baseline and future consent monitoring
Two new bores below proposed leachate holding sump		No	Down	Not installed	Install bores and use for ongoing baseline and consent monitoring

STDC to date have being co-operative in making repairs, such as the repairs done on bores GND0599 and 0600. They were asked to defer the more major repair work until a review of the existing data had been undertaken.

On the basis of this review, and if the proposed landfill is likely to become a reality, that the recommendations given in Table 8 be implemented by the consent holder to fulfill their obligations under consent 5347.

Council has been taking groundwater level measurements approximately three times a year since 2005. Sufficient information has been collected and therefore this report will recommend that groundwater monitoring cease until such time that the landfill is confirmed to be going ahead.

## **2.2 Air monitoring**

No air monitoring or inspections were carried out as the landfill is not in operation. Once the Eltham Central landfill commences operations an air quality monitoring programme will be implemented to monitor dust deposition, particulate matter, methane levels and odour. However, the consent is required to undertake land gas dispersion modelling prior to the discharge consents being exercised. STDC has maintained a weather station at the site since 2000 collecting weather data for this purpose. However, it has been ascertained that this data may not be suitable for the purpose of odour dispersion modelling as the weather station was only serviced once per year. This matter has been raised with the consent holder and they have undertaken to collect more robust data prior to the site being developed as per condition 11 of consent 5348-1.

## **2.3 Investigations, interventions, and incidents**

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Unauthorised Incident Register (UIR) includes events where the Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

In the 2013-2014 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the STDC's conditions in resource consents or provisions in Regional Plans.

### **3. Discussion and conclusions**

The Eltham Central landfill site baseline results are not remarkable in themselves. Surrounding farming activities exert subtle and varying pressures on surface water and groundwater quality as would be expected. The results however show no unusually high values for any given water quality indicator. Water quality overall is good for headwaters of a stream in a dairying catchment.

#### **3.1 Alterations to the 2014-2015 monitoring programme**

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the Resource Management Act, the obligations of the Act in terms of monitoring emissions/discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere/discharging to the environment.

It is proposed;

1. THAT in the event that the proposals to construct a Central landfill site at Eltham are confirmed, that STDC immediately implement the recommendations on bore remediation given in Table 8 of this report and that groundwater monitoring resumes.
2. THAT in the event that it is likely the landfill will become operational, biomonitoring shall recommence with at least one survey to be undertaken prior to operations commencing.
3. THAT at least 18 months prior to the landfill commencing operations, a weather station be installed by the consent holder, as required by consent 5348-1.

Recommendations to this effect are attached to this report

#### **3.2 Exercise of optional review of consents**

The next optional review date for the landfill consents is in June 2017.

### 3.3 Evaluation of performance

A tabular evaluation of performance is given in tables 9 to 13. As the consents have not been exercised many of the conditions are not applicable.

**Table 8** Summary of performance for consent 5347-1 to discharge contaminants onto and into land

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall prepare a landfill management plan	Site specific monitoring programme – programme management	Plan provided- will be updated prior to exercise
2. The consent shall adhere to the management plan	Site specific monitoring programme – inspection	N/A
3. The consent holder shall meet cost of a technical advisor on development and operations	Site specific monitoring programme – programme management	N/A
4. The consent holder shall construct a landfill liner to certain specifications	Site specific monitoring programme – inspection	N/A
5. The landfill liner must be certified by a registered engineer	Site specific monitoring programme – programme management	N/A
6. The consent holder shall keep records of wastes accepted	Site specific monitoring programme – programme management	N/A
7. Certain wastes to be handled by specified guidelines.	Site specific monitoring programme – inspection	N/A
8. Contaminated soils accepted at site shall be covered as soon as practical	Site specific monitoring programme – inspection	N/A
9. Appointment of person to control entry to site	Site specific monitoring programme – programme management	N/A
10. Certain wastes not to be accepted	Site specific monitoring programme – inspection	N/A
11. Other special wastes to meet certain criteria	Site specific monitoring programme – inspection	N/A
12. Wastes that do not meet TCLP test or exceed certain contaminant limits not to be accepted	Site specific monitoring programme – inspection	N/A
13. Special waste to handled as specified	Site specific monitoring programme – inspection	N/A
14. Prevent contaminants entering surrounding land	Site specific monitoring programme – inspection and sampling	N/A
15. Compact and cover waste to certain specifications	Site specific monitoring programme – inspection and sampling	N/A
16. Supply report on stage closure	Site specific monitoring programme – programme management	N/A

17. Comply and maintain monitoring plan	Site specific monitoring programme – programme management	Yes - baseline monitoring in progress
18. Results of monitoring to be supplied	Site specific monitoring programme – programme management	Yes - baseline data received
19. Prevent surface run-off into tributaries	Site specific monitoring programme – inspection and sampling	N/A
20. Undertake review and remedial actions should leachate cause contamination	Site specific monitoring programme – programme management	N/A
21. Inspect landfill for leachate breakout at least once a month	Site specific monitoring programme – programme management	N/A
22. Keep records on any remedial actions taken	Site specific monitoring programme – programme management	N/A
23. Keep records on any investigations and engineering works	Site specific monitoring programme – programme management	N/A
24. Liaise and meet with Neighbourhood Liaison Group	Site specific monitoring programme – programme management	N/A
25. Lapse provision	Lapse not due until 2020	N/A
26. Specifies limitations on refuse catchment	Site specific monitoring programme – programme management	N/A
27. Review condition	Next optional review in 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

**Table 9** Summary of performance for consent 5348-1 to discharge emissions into the air from landfilling activities

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall prepare a landfill management plan	Site specific monitoring programme – programme management	Plan provided- will be updated prior to exercise
2. The consent holder shall adopt best practical option	Site specific monitoring programme – inspection	N/A
3. Discharges not to result in objectionable or offensive odours or airborne contaminants beyond the boundary	Site specific monitoring programme – inspection and sampling	N/A
4. Discharges not to result in objectionable or offensive levels of dust, beyond the boundary	Site specific monitoring programme – inspection and sampling	N/A
5. Dust suppression on roads to used	Site specific monitoring programme – inspection	N/A
6. No burning at site	Site specific monitoring programme – inspection	N/A



Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. No composting at site	Site specific monitoring programme – inspection	N/A
8. No extraction venting of landfill gas within 200 metres of site boundary	Site specific monitoring programme – inspection	N/A
9. Avoid discharges entering surround environment	Site specific monitoring programme – inspection and sampling	N/A
10. Comply and maintain monitoring plan	Site specific monitoring programme – programme management	N/A
11. Establish meteorological site and use data to develop gas dispersion model for hydrogen sulphide	Site specific monitoring programme – programme management	-Weather station established, more data required
12. Modelling to be done to parameters supplied I appendix of the application	Site specific monitoring programme – programme management	N/A-modelling not done yet
13. Keep records on any complaints received	Site specific monitoring programme – programme management	N/A
14. Provide results of monitoring plan	Site specific monitoring programme – programme management	N/A
15. Keep records of any site investigations and engineering works	Site specific monitoring programme – programme management	N/A
16. Liaise and meet with Neighbourhood Liaison Group	Site specific monitoring programme – programme management	N/A
17. Lapse provision	Lapse not due until 2020	N/A
18. Specifies limitations on refuse catchment	Site specific monitoring programme – programme management	N/A
19. Review condition	Next optional review in 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

**Table 10** Summary of performance for consent 5350-1 to dam and divert water in the headwaters of an unnamed tributary of the Waingongoro River

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall prepare a landfill management plan	Site specific monitoring programme – programme management	Plan provided- will be updated prior to exercise
2. System designed to minimise erosion in channels	Site specific monitoring programme – inspection	N/A
3. System designed to minimise land instability	Site specific monitoring programme – inspection and sampling	N/A
4. Rehabilitation of any land made unstable	Site specific monitoring programme – inspection	N/A

5. Comply and maintain monitoring plan	Site specific monitoring programme – programme management	N/A
6. Design and construction of system to be certified by registered engineer	Site specific monitoring programme – programme management	N/A
7. Liaise and meet with Neighbourhood Liaison Group	Site specific monitoring programme – programme management	N/A
8. Lapse provision	Lapse not due until 2020	N/A
9. Specifies limitations on refuse catchment	Site specific monitoring programme – programme management	N/A
10. Review condition	Next optional review in 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

**Table 11** Summary of performance for consent 5349-1 to discharge up to 15,000 cubic metres/day of uncontaminated stormwater and 4,000 cubic metres/day of treated stormwater

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall prepare a landfill management plan	Site specific monitoring programme – programme management	Plan provided- will be updated prior to exercise
2. No leachate to be discharged	Site specific monitoring programme – inspection	N/A
3. Leachate storage lagoon bunded to prevent stormwater infiltration	Site specific monitoring programme – inspection	N/A
4. Adopt best practical option	Site specific monitoring programme – inspection	N/A
5. No direct discharge of contaminated stormwater to receiving waters	Site specific monitoring programme – inspection and sampling	N/A
6. Stormwater holding be installed	Site specific monitoring programme – inspection	N/A
7. Discharge not give rise to certain effects in receiving waters	Site specific monitoring programme – inspection and sampling	N/A
8. Contaminants in receiving waters not to exceed certain limits	Site specific monitoring programme – inspection and sampling	N/A
9. System designed to minimise erosion in channels	Site specific monitoring programme – inspection	N/A
10. System designed to minimise land instability	Site specific monitoring programme – inspection and sampling	N/A
11. Rehabilitation of any land made unstable	Site specific monitoring programme – inspection	N/A
12. Minimise disturbance of riparian plants and undertake planting as set out in application.	Site specific monitoring programme – inspection	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
13. Comply and maintain monitoring plan	Site specific monitoring programme – programme management	Yes –baseline monitoring in progress
14. Provide results of monitoring plan	Site specific monitoring programme – programme management	Yes –baseline data received
15. Design and construction of system to certified by registered engineer	Site specific monitoring programme – programme management	N/A
16. Liaise and meet with Neighbourhood Liaison Group	Site specific monitoring programme – programme management	N/A
17. Lapse provision	Lapse not due until 2020	N/A
18. Specifies limitations on refuse catchment	Site specific monitoring programme – programme management	N/A
19. Review condition	Next optional review in 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

**Table 12** Summary of performance for consent 5351-1 to erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. The consent holder shall prepare a landfill management plan	Site specific monitoring programme – programme management	Plan provided- will be updated prior to exercise
2. Construction and maintenance not give rise to certain effects	Site specific monitoring programme – inspection and sampling	N/A
3. Structures designed to minimise land instability	Site specific monitoring programme – inspection	N/A
4. Rehabilitation of any eroded areas	Site specific monitoring programme – inspection	N/A
5. Minimise disturbance of riparian plants and undertake planting as set out in application.	Site specific monitoring programme – inspection	N/A
6. Comply and maintain monitoring plan	Site specific monitoring programme – programme management	N/A
7. Design and construction of system to certified by registered engineer	Site specific monitoring programme – programme management	N/A
8. Removal of structures and reinstatement when structures no longer required.	Site specific monitoring programme – inspection	N/A
9. Liaise and meet with Neighbourhood Liaison Group	Site specific monitoring programme – programme management	N/A
10. Lapse provision	Lapse not due until 2020	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
11. Specifies limitations on refuse catchment	Site specific monitoring programme – programme management	N/A
12. Review condition	Next optional review in 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

STDC demonstrated a high level of administrative compliance with its resource consents. No rating is given for environmental effects as no discharges or stream works have yet to occur.

## 4. Recommendations

1. THAT in the event that the proposals to construct a Central landfill site at Eltham are confirmed, that STDC immediately implement the recommendations on bore remediation given in Table 8 of this report and that groundwater monitoring resumes.
2. THAT in the event that it is likely the landfill will become operational, biomonitoring shall recommence with at least one survey to be undertaken prior to operations commencing.
3. THAT at least 18 months prior to the landfill commencing operations, a weather station be installed by the consent holder, as required by consent 5348-1.

## Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Biomonitoring	Assessing the health of the environment using aquatic organisms.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
CODF	Chemical oxygen demand of a filtered sample.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
g/m <sup>3</sup>	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
NH <sub>4</sub>	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH <sub>3</sub>	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NO <sub>3</sub>	Nitrate, normally expressed in terms of the mass of nitrogen (N).
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	<i>Resource Management Act 1991</i> and including all subsequent amendments.
SS	Suspended solids.
Temp	Temperature, measured in °C (degrees Celsius).
UI	Unauthorised Incident.

UIR                      Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.

Zn\*                      Zinc.

\*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

For further information on analytical methods, contact the Council's laboratory.

## **Bibliography and references**

- South Taranaki District Council (2005): 'Application for Variations and Extensions to Existing Resource Consents for Eltham Landfill'
- Centre for Advanced Engineering, University of Canterbury (2000): 'Landfill Guidelines- Towards Sustainable Waste Management in New Zealand'
- South Taranaki District Council (1998): 'Proposed Central Landfill, Eltham- Application for South Taranaki District Council and Taranaki Regional Council''
- Taranaki Regional Council (1996): 'Baseline Environmental Report for the Proposed South Taranaki District Council (Eltham) Landfill'
- Taranaki Regional Council (2006): 'South Taranaki District Council Central landfill Baseline Monitoring Programme Triennial Report 2004-2007' Technical Report 06-117
- Taranaki Regional Council (2009): 'South Taranaki District Council Central landfill Baseline Monitoring Programme Triennial Report 2007-2009' Technical Report 09-111
- Taranaki Regional Council (2011): 'South Taranaki District Council Central landfill Baseline Monitoring Programme Biennial Report 2009-2011' Technical Report 11-45
- Taranaki Regional Council (2012): 'South Taranaki District Council Central landfill Baseline Monitoring Programme Biennial Report 2011-2012' Technical Report 12-32
- Taranaki Regional Council (2013): 'South Taranaki District Council Central landfill Baseline Monitoring Programme Biennial Report 2012-2013' Technical Report 13-42





## **Appendix I**

### **Resource consents held by STDC**





## **Discharge Permit**

**Pursuant to the Resource Management Act 1991  
a resource consent is hereby granted by the  
Taranaki Regional Council**

PRIVATE BAG 713  
47 CLOTON ROAD  
STRATFORD  
NEW ZEALAND  
PHONE 0-6-765 7127  
FAX 0-6-765 5097

Name of  
Consent Holder: South Taranaki District Council  
Private Bag 902  
HAWERA

Consent Granted  
Date 15 March 2000

### **Conditions of Consent**

Consent Granted: To discharge contaminants onto and into land at the South  
Taranaki District Council Central Landfill, Eltham, at or  
about GR: Q20:222-936

Expiry Date: June 2034

Review Date(s): June 2005, June 2011, June 2017, June 2023, June 2029

Site Location: Central Landfill Rotokare Road Eltham

Legal Description: Pt Sec 26 Sec 27 Blk XIV Ngaere SD

## Consent 5347-1

### General conditions

- a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
  - i) the administration, monitoring and supervision of this consent; and
  - ii) charges authorised by regulations.

### Special conditions

#### 1. THAT :

- a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;
- b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;
- c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and
- d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

#### 2. THAT the consent holder shall ensure that:

- a) the operation of the landfill and the disposal of wastes shall be carried out at all times in accordance with the requirements of the Landfill Management Plan prepared as required in Condition (1) above or subsequent version of that document which does not lessen environmental protection standards;
- b) all site staff working at the landfill are regularly trained on the content and implementation of the Landfill Management Plan, the maximum period between training sessions being 12 months. New staff are to be trained on recruitment and the training record made available to the General Manager, Taranaki Regional Council upon request; and

## Consent 5347-1

- c) in order to avoid adverse effects arising from the exercise of this consent, all site staff are advised immediately of any revision or additions to the Landfill Management Plan.
3. THAT the consent holder shall meet the reasonable cost of the Taranaki Regional Council retaining a Technical Advisor, suitably qualified and knowledgeable in landfill development and operational procedures, to advise the General Manager, Taranaki Regional Council on aspects of the operation of the landfill related to disposal of solid waste and the installation and maintenance of the leachate collection system, and the ability to achieve compliance with the conditions of consent. Apart from other activities undertaken by the Technical Advisor, the Advisor shall undertake annual reviews, or other such reviews as reasonably determined by the General Manager, Taranaki Regional Council, of the landfill operations for the first 6 years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council, in consultation with the Neighbourhood Liaison Group.
4. THAT the consent holder shall:
- a) construct a composite liner in all areas where refuse is to be placed. The liner shall be constructed with a layer of compacted clay with a permeability of less than  $1 \times 10^{-8}$  m/sec and a minimum thickness of 600 mm, overlain by a membrane of high density polyethylene HDPE at least 1.5 mm thick. The consent holder may use materials and a specification other than described above, provided that any such materials shall perform to the same or higher standard than those specified and provided further that the consent holder shall first obtain the written approval of the General Manager, Taranaki Regional Council; and
  - b) provide for collecting leachate from the liner and transferring it to a pond within the landfill property boundary, such pond to be lined with a composite liner as specified in Condition 4(a) above;
  - c) ensure there is no discharge of refuse or leachate to land or water in any area without the liner as required in Conditions 4a and 4b above; and
  - d) remove sufficient daily cover and remove at least 20% of the intermediate cover to ensure downward migration of leachate, before placing refuse on an existing cell.
5. THAT the construction, installation, placement, integrity and expected performance of landfill lining systems, groundwater drainage systems, and leachate interception, collection, holding and recirculation systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to General Manager, Taranaki Regional Council, prior to discharge of waste in those areas.
6. THAT the consent holder shall maintain a manifest / declaration system that shall record the following information on the waste received for disposal. This information is to be forwarded to the General Manager, Taranaki Regional Council on a 6-monthly basis no later than the 10<sup>th</sup> working day of the following month:
- a) general description in volume or quantity in cubic metres or kilograms per day of domestic, commercial and industrial waste received from other than transfer stations; and
  - b) general description in volume or quantity (in cubic metres or kilograms) of all waste received at the landfill from transfer stations.

Where the consent holder reasonably considers any information required under this condition is confidential, it may notify the General Manager, Taranaki Regional Council, accordingly so that reasonable measures can be taken to protect confidentiality.

## Consent 5347-1

7. THAT the consent holder shall ensure that:
  - a) Medical waste is managed in accordance with NZS4304;
  - b) Animal parts are buried immediately upon receipt
  - c) Asbestos is managed in accordance with the Asbestos Regulations;
  - d) Waste that is potentially a health hazard shall be placed in a hole specifically excavated and immediately covered with appropriate cover material. The location of special waste holes shall be recorded by survey.
8. THAT any contaminated soils that are accepted at the landfill and whose contaminant concentration exceeds those levels specified in any New Zealand Standard or guidelines as being appropriate for industrial unpaved sites shall be covered over as soon as practicable such that the risk to human and environmental health is avoided.
9. THAT the consent holder shall appoint a person to control entry of waste into the landfill.
10. THAT the consent holder shall not dispose of waste of an explosive, flammable, reactive, toxic, radioactive, corrosive or infectious nature other than minor quantities of such waste where they are ordinarily part of and found in general wastes. In addition, the consent holder shall not dispose of wastes deemed unacceptable under Conditions 11 and 12.
11. THAT further to Condition 10 of this consent, the wastes which are acceptable or unacceptable are as follows:
  - a) General waste is solid waste generated from residential, commercial and industrial sources. General waste covers all waste not otherwise defined below. It is acceptable and may contain minor quantities of special or prohibited waste which are normally part of the waste stream;
  - b) Difficult wastes are wastes which are acceptable but due to their physical nature require specific disposal management. These wastes include offal, dead animal bodies, wire rope, documents and bulky items;
  - c) Special Wastes contain substances that may adversely affect the final landfill or leachate or landfill gas quality. Their acceptance in the landfill shall be based on an assessment of the nature of the waste and its effects on the landfill and its receiving environment in accordance with the requirements of Condition 12 of this consent;
  - d) Liquid wastes shall not be accepted other than those liquids which are in small containers that are impractical to empty ;
  - e) Sludges may be accepted, as long as they contain no separated liquids.
12. THAT no waste shall be accepted for disposal which may cause a significant potential or actual adverse environmental effect. In the absence of other criteria, no wastes shall be accepted:
  - a) if a TCLP test extract exceeds 2,500 times the level specified in any New Zealand Standard or guideline as being appropriate for stock watering purposes; or
  - b) if containing any contaminant exceeding 300 times the level specified in any New Zealand Standard or guideline as being appropriate for soil for agricultural use unless such wastes have been treated so as to comply with conditions as above and are not placed within the top 4 metres lift of refuse beneath any final landfill cap at any point.

Consent 5347-1

13. THAT in order to maintain the integrity of the liner and to minimise the risk of discharge of contaminants, the consent holder shall ensure that special wastes as defined in Condition 11(c) shall not be deposited within 5 metres of the liner or the top 4 metres lift of refuse beneath the final landfill cap at any point or within 10 metres of the edge of the landfill.
14. THAT the consent holder shall take all practicable measures to avoid the discharge of contaminants from within the landfill site to surrounding land. To this end, the consent holder shall ensure:
  - a) refuse is spread in thin layers and is compacted on the same day refuse is received;
  - b) the amount of refuse exposed at any one time is confined to a practicable minimum; and
  - c) exposed refuse is covered regularly with appropriate material and in any case no less frequently than daily.
15. THAT the consent holder shall:
  - a) compact refuse to such an extent that post closure settlement is minimised, targeting a compacted refuse density averaging at least  $700 \text{ kg/m}^3$  as far as practicable;
  - b) progressively, as parts of the landfill are completed, cover exposed refuse with not less than 650 mm of earth material, of which 500 mm is compacted to a permeability of less than  $1 \times 10^{-7} \text{ m/sec}$ , and no less than 150 mm comprises topsoil, and establish and maintain pasture on those completed areas at the landfill; and
  - c) within two months following the closure of any landfill stage, grade the tipping face to achieve a final slope less than or equal to 1V:3H (1 in 3) on any face.
16. THAT within one month following completion of each stage at the landfill, the consent holder shall report in writing to the General Manager, Taranaki Regional Council of the consent holder's compliance with Condition 15 of this consent.
17. THAT the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The Plan shall describe in detail practices for water and soil chemistry monitoring, shall contain guidelines for the determination of whether contamination is occurring including "alert" and "response" levels for individual contaminants and shall make reference to the Management Plan, to be prepared as required in Condition 1 of this consent. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge of solid wastes authorised by this consent. The initial Monitoring Plan is to include:
  - a) further baseline monitoring [biological, chemical and physical] of surface water quality and groundwater prior to commencement of landfilling;
  - b) quarterly monitoring of groundwater levels and water quality of each of the existing monitoring bores shown in Figure 4 of the application documentation dated May 1998, plus the installation and monitoring of at least one further bore downslope of the leachate storage lagoon at a site approved by the General Manager, Taranaki Regional Council;
  - c) biological, physical and chemical monitoring of surface water quality twice per year in the two unnamed tributaries of the Waingongoro River at site(s) approved by the General Manager, Taranaki Regional Council;

- d) measurement of volume of leachate removed from the site monthly;
  - e) annual testing of leachate for the following components: pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia-N, nitrate-N, reactive dissolved phosphorus; COD, BOD<sub>5</sub>; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc; volatile organic compounds, semi-volatile organic compounds [volatile and semi-volatile organic compound scans to include but not be restricted to benzene, benzo-a-pyrene, phenol, perchlorethylene, and naphthalene], organochlorine pesticides screen, organophosphate pesticide screen, and polyaromatic hydrocarbon screen;
  - f) quarterly testing of leachate for the following components: pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia-N, nitrate-N, reactive dissolved phosphorus; COD, BOD<sub>5</sub>; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc;
  - g) quarterly sampling and testing of groundwater from on-site bores as noted in Condition 17(b) above as follows: Comprehensive testing (April) - pH, conductivity, alkalinity, chloride, sulphate, carbonate, bicarbonate, ammonia-N, nitrate-N, reactive dissolved phosphorus; COD, BOD<sub>5</sub>; aluminium, arsenic, boron, cadmium, calcium, chromium, copper, iron, magnesium, manganese, mercury, sodium, nickel, potassium, lead, zinc, benzo-a-pyrene, benzene, phenol, perchlorethylene, and naphthalene; Indicator testing (July, October, January) - pH, conductivity, COD, boron, iron, manganese, chloride, ammonia-N, nitrate-N;
  - h) annual sampling and testing of surface water supplies and bores on neighbouring properties, located as noted in Appendix 10 of the application documentation dated May 1998, subject to the agreement of the respective owners, as follows: pH, benzene, zinc, alkalinity, conductivity, chloride, ammonia-N, nitrate-N, nitrite-N, boron, COD, iron, manganese; and
  - i) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured.
18. THAT the results of the Annual Monitoring Programme for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to any other interested party.
19. THAT the consent holder shall prevent surface runoff of water or contaminants to the unnamed tributaries of the Waingongoro River from any surface area being used or previously used for the deposition of refuse, or for extraction of soil, clay, or other cover material, or prepared for the deposition of refuse, unless such surface area has been covered and rehabilitated.
20. THAT where any leachate or other contaminants associated with the consent holder's activities or processes associated with the landfill significantly affect surface and ground water, the consent holder shall:
- a) undertake appropriate remedial action as soon as practicable as described in the consent holder's Management Plan required by Condition 1, or other such action reasonably required by the General Manager, Taranaki Regional Council;
  - b) as soon as reasonably practicable, notify the General Manager, Taranaki Regional Council, of the escape of wastes;



Consent 5347-1

- c) shall review the Monitoring Programme and Management Plan and incorporate such reasonable modifications as are considered necessary by the General Manager, Taranaki Regional Council; and
- d) where water supplies are significantly affected, immediately provide alternative supplies as reasonably required by the General Manager, Taranaki Regional Council.

"Significantly affected" for the purposes of this condition shall be determined by the General Manager Taranaki Regional Council, by reference to the monitoring data and taking into account the purpose for which the water is to be used.

- 21. THAT the consent holder shall inspect the landfill for leachate break out, settlement and other adverse environmental effects at least once per month until such time as discharge of refuse to the landfill ceases. Thereafter, the frequency of inspection shall be determined in consultation with the General Manager, Taranaki Regional Council.
- 22. THAT the consent holder shall record the date, time, observations and any remedial action as a result of Condition 21. The record shall be made available to the Neighbourhood Liaison Group and the General Manager, Taranaki Regional Council on an annual basis.
- 23. THAT the consent holder shall ensure that records are kept of any site investigations for any engineering works associated with this consent, and that these records are forwarded to the General Manager, Taranaki Regional Council.
- 24. THAT the consent holder and staff of the Taranaki Regional Council shall meet, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:
  - (a) one month prior to the exercise of this consent;
  - (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;
  - (c) thereafter at one interval of no more than six months; and
  - (d) thereafter at intervals of no more than twelve months;

unless all parties agree that changes to the intervals are acceptable.

The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council

- 25. THAT this consent shall lapse on the expiry of 5 years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
- 26. The consent holder may apply to the Council for a change or cancellation of any of the conditions of this consent in accordance with section 127(1)(a) of the Resource Management Act 1991 to take account of operational requirements or the results of monitoring, provided that such application may not be made more than once in any twelve month period.
- 27. THAT the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

Consent 5347-1

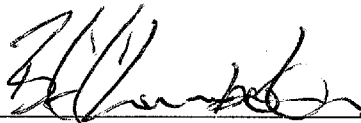
- i) assessing the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 17 of this consent; and
- ii) assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to land.

The review of conditions may allow for:

- a) modification of the Monitoring Programme and methods of implementation outlined in Condition 17 of this consent;
- b) deletion, additions or changes to General Condition (d) and Conditions 3, 4, 7, 8, 11, 13, 14, 15 and 20.

Signed at Stratford on 15 March 2000

For and on behalf of  
Taranaki Regional Council



---

General Manager

## **Discharge Permit**

**Pursuant to the Resource Management Act 1991  
a resource consent is hereby granted by the  
Taranaki Regional Council**

Name of  
Consent Holder: South Taranaki District Council  
Private Bag 902  
HAWERA

Consent Granted  
Date: 15 March 2000

### **Conditions of Consent**

Consent Granted: To discharge emissions into the air from landfilling  
activities at the South Taranaki District Council Central  
Landfill, Eltham, at or about GR: Q20:222-936

Expiry Date: 1 June 2034

Review Date(s): June 2005, June 2011, June 2017, June 2023, June 2029

Site Location: Central Landfill, Rotokare Road, Eltham

Legal Description: Pt Sec 26 Sec 27 Blk XIV Ngaere SD

## Consent 5348-1

### General conditions

- a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
  - i) the administration, monitoring and supervision of this consent; and
  - ii) charges authorised by regulations.

### Special conditions

1. THAT:
  - a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;
  - b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;
  - c) The consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect that already allowed; and
  - d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.
2. THAT the consent holder shall at all times adopt the best practicable option [as defined in section 2 of the Act] to prevent or minimise any actual or likely adverse effect on the environment arising from emissions from the landfill operation.
3. THAT the discharge of contaminants into the air from the landfill shall not result in offensive or objectionable odours or dangerous or noxious ambient concentrations of any airborne contaminant, in the opinion of an appropriately qualified enforcement officer of the Taranaki Regional Council, at or beyond the boundary of the site.

## Consent 5348-1

4. THAT the discharge of contaminants into the air from the landfill shall not result in either dust or other particulate matter that is offensive or objectionable, in the opinion of an appropriately qualified enforcement officer of the Taranaki Regional Council, at or beyond the boundary of the site.
5. THAT the consent holder shall ensure that dust is controlled on access roads and on the landfill as necessary.
6. THAT there shall be no burning of waste at the site.
7. THAT there shall be no composting of waste at the site.
8. THAT there shall be no extraction venting of untreated landfill gases within 200 metres of the boundary of the site.
9. THAT the consent holder shall take all practicable measures to avoid the discharge of waste or contaminants from within the landfill site to the surrounding environment. To this end, the consent holder shall ensure:
  - a) refuse is spread in thin layers and is compacted on the same day refuse is received;
  - b) the amount of refuse exposed at any one time is confined to a practicable minimum; and
  - c) exposed refuse is covered regularly with appropriate material and in any case no less frequently than daily.
10. THAT the consent holder shall maintain and comply with an Annual Monitoring Plan, prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council, and prepared in consultation with the Neighbourhood Liaison Group, setting out details of monitoring to be carried out and containing guidelines for the determination of whether contamination is occurring. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge under this consent. The initial Monitoring Plan is to include:
  - a) annual sampling of landfill gas constituents for a period of five years and thereafter at five yearly intervals from a suitable landfill gas well using a tech tube or equivalent method to the satisfaction of the General Manager Taranaki Regional Council. The head space in the water monitoring bores B1 and B3, as shown in Figures 5 and 8 of Appendix 4 of the application documentation dated May 1998, and in the leachate pump chamber shall also be sampled;
  - b) samples shall be monitored and analysed for: hydrogen sulphide, methane and carbon dioxide, vinyl chloride, benzene, perchlorethylene and xylene;
  - c) every five years another landfill gas well shall be installed in waste placed in the preceding five years and monitored as in (a) and (b) above;
  - d) monitoring of each well shall cease when there is a significant reduction in the level of landfill gas [to the reasonable satisfaction of the General Manager, Taranaki Regional Council];
  - e) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured; and
  - f) monthly odour surveys around the perimeter of the site or a lesser frequency as agreed to by the Neighbourhood Liaison Group.

## Consent 5348-1

11. THAT a meteorological station be established, at a site to the reasonable satisfaction of the General Manager, Taranaki Regional Council, to measure and record, for a period of no less than 12 months commencing within one year of the development of the site, wind speed, wind direction, temperature and net radiation . The results are to be used to undertake dispersion modelling to predict ground level concentrations of hydrogen sulphide or other gaseous or airborne contaminants around the site.
12. THAT in fulfilment of Condition 11 above the meteorological parameters are to be measured as specified in Appendix 10 to the application documentation dated May 1998.
13. THAT the consent holder shall keep a record of any complaints received relating to discharges to air with respect to the landfill activity. The complaints record shall include the following where possible:
  - a) name and address of complainant;
  - b) nature of complaint;
  - c) date and time of the complaint and alleged event;
  - d) weather conditions at the time of the event; and
  - e) any action taken in response to the complaint.
14. THAT the results of the Annual Monitoring Plan, the complaints record, and the meteorological data, for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to the public.
15. THAT the consent holder shall ensure that records are kept of any site investigations for any engineering works associated with this consent, and that these records are forwarded to the General Manager, Taranaki Regional Council.
16. THAT the consent holder and staff of the Taranaki Regional Council shall meet with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:
  - (a) one month prior to the exercise of this consent;
  - (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;
  - (c) thereafter at one interval of no more than six months; and
  - (d) thereafter at intervals of no more than twelve months;unless all parties agree that changes to the intervals are acceptable.

The Technical Adviser may attend one meeting per year for the first six years and thereafter a frequency determined by the General Manager, Taranaki Regional Council.
17. That this consent shall lapse on the expiry of 5 years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

Consent 5348-1

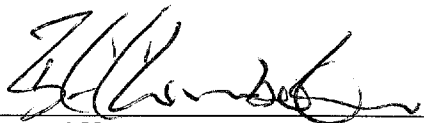
18. The consent holder may apply to the Council for a change or cancellation of any of the conditions of this consent in accordance with section 127(1)(a) of the Resource Management Act 1991 to take account of operational requirements or the results of monitoring provided that such application may not be more than once in any twelve month period.
19. THAT the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:
  - i) assessing the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 10 of this consent; and
  - ii) assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to air.

The review of conditions may allow for:

- a) modification of the Monitoring Programme and methods of implementation outlined in Condition 10 of this consent; and
- b) deletion, additions or changes to conditions 2, 3, 4 and 9 and General Condition (d).

Signed at Stratford on 15 March 2000

For and on behalf of  
Taranaki Regional Council

  
\_\_\_\_\_  
General Manager







PRIVATE BAG 713  
47 CLOTON ROAD  
STRATFORD  
NEW ZEALAND  
PHONE 0-6-765 7127  
FAX 0-6-765 5097

## **Discharge Permit**

**Pursuant to the Resource Management Act 1991  
a resource consent is hereby granted by the  
Taranaki Regional Council**

Name of  
Consent Holder: South Taranaki District Council  
Private Bag 902  
HAWERA

Consent Granted  
Date: 15 March 2000

### **Conditions of Consent**

Consent Granted: To discharge up to 15,000 cubic metres/day of uncontaminated stormwater and 4000 cubic metres/day of treated stormwater from the South Taranaki District Council Central Landfill, Eltham, onto and into land and into an unnamed tributary of the Waingongoro River at or about GR: Q20:222-936

Expiry Date: 1 June 2034

Review Date(s): June 2005, June 2011, June 2017, June 2023, June 2029

Site Location: Central Landfill, Rotokare Road, Eltham

Legal Description: Pt Sec 26 Sec 27 Blk XIV Ngaere SD

Catchment: Waingongoro

Tributaries: Unnamed

## Consent 5349-1

### General conditions

- a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
  - i) the administration, monitoring and supervision of this consent; and
  - ii) charges authorised by regulations.

### Special conditions

1. THAT:
  - a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;
  - b) The Management Plan shall be updated at not greater than two yearly intervals, to the satisfaction of the General Manager, Taranaki Regional Council, and following consultation with the Neighbourhood Liaison Group;
  - c) The consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and
  - d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.
2. THAT no leachate discharge shall be permitted by the exercise of this consent.
3. THAT in order to give effect to Condition 2, the consent holder shall ensure that the leachate storage lagoon is bunded to ensure no entry of stormwater to that lagoon.
4. THAT the consent holder shall at all times adopt the best practicable option [as defined in section 2 of the Act] to keep uncontaminated stormwater separate from contaminated stormwater.

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5. THAT no contaminated stormwater be discharged directly to the unnamed tributaries of the Waingongoro River.
6. THAT stormwater holding ponds be installed.
7. THAT after allowing for reasonable mixing in a zone that extends downstream no further than the western boundary of the site ["the mixing zone"], the discharge shall not give rise to all or any of the following effects in the receiving water:
  - (a) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
  - (b) any conspicuous change in the colour or visual clarity;
  - (c) any emission of objectionable odour;
  - (d) the rendering of freshwater unsuitable for consumption by farm animals; and
  - (e) any significant adverse effects on aquatic life.

8. THAT the exercise of this consent shall not cause the water quality of the tributary streams, beyond the mixing zone, to exceed the following criteria:

<u>Parameter</u>	<u>Limit</u>
pH	6.0-9.0
Copper (dissolved)	0.01 g/m <sup>3</sup>
Iron (dissolved)	1.0 g/m <sup>3</sup>
Manganese (dissolved)	0.01 g/m <sup>3</sup>
Zinc (dissolved)	0.1 g/m <sup>3</sup>
Dissolved reactive phosphorus	0.5 g/m <sup>3</sup>
Nitrate nitrogen	10 g/m <sup>3</sup>
Ammonia nitrogen	1.8 g/m <sup>3</sup>
Suspended solids	100 g/m <sup>3</sup>
Faecal coliforms	1000 n/100 ml

9. THAT all stormwater diversion and containment channels shall be designed, constructed and maintained so as to prevent or minimise erosion of the channel.
10. THAT the earthworks and construction associated with the landfill and the stormwater diversion and containment channels shall be designed, constructed and maintained so as to minimise instability of the surrounding land.
11. THAT the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the diversion channels or landfilling operations associated with the exercise of this consent.
12. THAT the consent holder shall minimise disturbance to riparian vegetation during the exercise of this consent, and shall undertake, at a minimum, planting within the site in accordance with those areas shown in Figures 5a, 5b, 5c, and 5d of the Assessment of Environmental Effects accompanying the application dated May 1998.
13. THAT the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Plan shall describe in detail practices for water monitoring. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is

## Consent 5349-1

to be received by the General Manager, Taranaki Regional Council, at least six months prior to any discharge under this consent. The initial Monitoring Plan is to include:

- a) biological and water quality monitoring twice per year in the two unnamed tributaries of the Waingongoro River at site(s) to the reasonable satisfaction of the General Manager, Taranaki Regional Council; .
- b) monitoring of the parameters as set out in Condition 8 above, and also alkalinity, BOD<sub>5</sub>, and conductivity; and
- c) analysis shall be conducted by a laboratory with appropriate accreditation for those parameters measured.

- 14. THAT the results of the Annual Monitoring Programme for the year ending 30 June be provided to the General Manager Taranaki Regional Council by 31 August of each year following the monitoring, and be made available to the Neighbourhood Liaison Group, and to any other interested party, and to the public.
- 15. THAT the construction, installation, placement, integrity and expected performance of stormwater collection, drainage and holding systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of construction of any such systems, and prior to the disposal of any waste in those areas.
- 16. THAT the consent holder and staff of the Taranaki Regional Council shall meet as appropriate, and at least once per year, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:
  - (a) one month prior to the exercise of this consent;
  - (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;
  - (c) thereafter at one interval of no more than six months; and
  - (d) thereafter at intervals of no more than twelve months;

unless all parties agree that changes to the intervals are acceptable.

The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council.

- 17. THAT this consent shall lapse on the expiry of 5 years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
- 18. The consent holder may apply to the Council for a change or cancellation of any of the conditions of this consent in accordance with section 127(1)(a) of the Resource Management Act to take account of operational requirements or the results of monitoring provided that such application may not be made more than once in any twelve month period.
- 19. THAT the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

Consent 5349-1

- i) assessing the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 13 of this consent; and
- ii) assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the discharge of contaminants to land and water.

The review of conditions may allow for:

- a) modification of the Monitoring Programme and methods of implementation outlined in Condition 13 of this consent; and
- b) deletion, additions or changes to Conditions 7 and 8 and General Condition (d).

Signed at Stratford on 15 March 2000

For and on behalf of  
Taranaki Regional Council

  
\_\_\_\_\_  
General Manager





PRIVATE BAG 713  
47 CLOTON ROAD  
STRATFORD  
NEW ZEALAND  
PHONE 0-6-765 7127  
FAX 0-6-765 5097

## Land Use Consent

**Pursuant to the Resource Management Act 1991  
a resource consent is hereby granted by the  
Taranaki Regional Council**

Name of  
Consent Holder: South Taranaki District Council  
Private Bag 902  
HAWERA

Consent Granted  
Date: 15 March 2000

## Conditions of Consent

Consent Granted: To dam and divert water around the South Taranaki District Council Central Landfill, Eltham, in the headwaters of an unnamed tributary of the Waingongoro River at or about GR: Q20:222-936

Expiry Date: 1 June 2034

Review Date(s): June 2005, June 2011, June 2017, June 2023, June 2029

Site Location: Central Landfill, Rotokare Road, Eltham

Legal Description: Pt Sec 26 Sec 27 Blk XIV Ngaere SD

Catchment: Waingongoro

Tributary: Unnamed

## Consent 5350-1

### General conditions

- a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
  - i) the administration, monitoring and supervision of this consent; and
  - ii) charges authorised by regulations.

### Special conditions

1. THAT:
  - a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;
  - b) the Management Plan shall be reviewed and updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;
  - c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and
  - d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.
2. THAT all stormwater diversion and containment channels shall be designed, constructed and maintained so as to prevent or minimise erosion of the channel in all circumstances.
3. THAT the earthworks and construction associated with the landfill and the stormwater diversion and containment channels shall be designed, constructed and maintained so as to minimise instability of the surrounding land.



## Consent 5350-1

4. THAT the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the diversion channels or landfilling operations associated with the exercise of this consent.
5. THAT the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any dam construction under this consent. The initial Monitoring Plan shall describe in detail practices and sites for water monitoring.
6. THAT the construction, installation, placement, integrity and expected performance of the damming and diversion systems on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of the construction of any such systems in those areas.
7. THAT the consent holder and staff of the Taranaki Regional Council shall meet with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:
  - (a) one month prior to the exercise of this consent;
  - (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;
  - (c) thereafter at one interval of no more than six months; and
  - (d) thereafter at intervals of no more than twelve months;unless all parties agree that changes to the intervals are acceptable.

The Technical Adviser may attend one meeting per year for the first six years and thereafter a frequency determined by the General Manager, Taranaki Regional Council.
8. That this consent shall lapse on the expiry of 5 years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
9. The consent holder may apply to the Council for a change or cancellation of any of the conditions of this consent in accordance with section 127(1)(a) of the Resource Management Act 1991 to take account of operational requirements or the results of monitoring provided that such application may not be made more than once in any twelve month period.
10. THAT the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:

## Consent 5350-1


- i) assessing the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 5 of this consent; and
- ii) assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the damming and diversion of water.

The review of conditions may allow for:

- a) modification of the Monitoring Programme and methods of implementation outlined in Condition 5 of this consent; and
- b) deletion, additions or changes to General Condition (d).

Signed at Stratford on 15 March 2000

For and on behalf of  
Taranaki Regional Council

A handwritten signature in black ink, appearing to read 'G. L. ...', is written over a horizontal line.

**General Manager**



PRIVATE BAG 713  
47 CLOTON ROAD  
STRATFORD  
NEW ZEALAND  
PHONE 0-6-765 7127  
FAX 0-6-765 5097

## **Land Use Consent**

**Pursuant to the Resource Management Act 1991  
a resource consent is hereby granted by the  
Taranaki Regional Council**

Name of  
Consent Holder: South Taranaki District Council  
Private Bag 902  
HAWERA

Consent Granted  
Date: 15 March 2000

## **Conditions of Consent**

Consent Granted: To erect, place and maintain structures in the beds of unnamed tributaries of the Waingongoro River for the construction and maintenance of the South Taranaki District Council Landfill, Eltham, at or about GR: Q20:222-936

Expiry Date: 1 June 2034

Review Date(s): June 2005, June 2011, June 2017, June 2023, June 2029

Site Location: Central Landfill, Rotokare Road, Eltham

Legal Description: Pt Sec 26 Sec 27 Blk XIV Ngaere SD

Catchment: Waingongoro

Tributaries: Unnamed

## Consent 5351-1

### General conditions

- a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.
- b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.
- c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
  - i) the administration, monitoring and supervision of this consent; and
  - ii) charges authorised by regulations.

### Special conditions

#### 1. THAT:

- a) the consent holder shall prepare a Landfill Management Plan addressing proposed operation, management and monitoring at the landfill for the purpose of demonstrating among other things the means by which compliance with the conditions set in this consent shall be achieved, such Plan (excluding that part of the Plan that deals with contingency events) to be prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council three months prior to the exercise of this consent. The initial Management Plan shall be reviewed by the General Manager in consultation with the Neighbourhood Liaison Group. The adverse environmental effects arising from implementation of the Management Plan, and any subsequent version required under Condition 1(b), shall be no greater than those arising from the implementation of the draft plan provided with the application dated May 1998 and in any case shall be within the limits set by the conditions on this consent;
- b) the Management Plan shall be updated at not greater than two yearly intervals, in consultation with the General Manager, Taranaki Regional Council, and the Neighbourhood Liaison Group;
- c) the consent holder shall adhere to and comply with the procedures, requirements, obligations and all other matters specified in the management plan, unless it can be demonstrated to the reasonable satisfaction of the General Manager, Taranaki Regional Council, that any changes in those procedures, requirements, and obligations will result in the same or any lesser adverse environmental effect than already allowed; and
- d) in case of any contradiction between the management plan and the conditions of this resource consent, the conditions of this resource consent shall prevail.

#### 2. THAT the construction and maintenance authorised by this consent, in conjunction with the exercise of any other consent associated with the landfill, shall not give rise to all or any of the following effects in the unnamed tributaries of the Waingongoro River at the western boundary of the site:

- a) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
- b) any conspicuous change in the colour or visual clarity;
- c) any emission of objectionable odour;

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- d) the rendering of freshwater unsuitable for consumption by farm animals; and
  - e) any significant adverse effects on aquatic life.
3. THAT the earthworks and construction associated with the erection, placement and maintenance of structures shall be designed, constructed and maintained so as to minimise instability of the stream banks and the surrounding land.
  4. THAT the consent holder shall repair and rehabilitate any land made unstable and any erosion occurring due to the construction or maintenance of the structures.
  5. THAT the consent holder shall minimise disturbance to riparian vegetation during the exercise of this consent, and that any areas of such vegetation disturbed shall be reinstated and additional areas planted within the site in accordance with those areas shown in Figures 5a, 5b, 5c, and 5d of the Assessment of Environmental Effects accompanying the application dated May 1998.
  6. THAT the consent holder shall maintain and comply with an Annual Monitoring Plan prepared to the reasonable satisfaction of the General Manager, Taranaki Regional Council and prepared in consultation with the Neighbourhood Liaison Group. The Annual Monitoring Plan may be amended by the General Manager following consultation with the consent holder. The initial Monitoring Plan is to be received by the General Manager, Taranaki Regional Council, at least six months prior to any streambed structure construction under this consent. The initial Monitoring Plan shall describe in detail practices and sites for water monitoring.
  7. THAT the construction, installation, placement, integrity and expected performance of the structures in the streambeds on any part of the site shall be certified by a registered engineer, a copy of such certification to be provided to the General Manager, Taranaki Regional Council, prior to and on completion of the construction of any structures in those areas.
  8. THAT the consent holder shall remove any structure(s) in waterways and reinstate the area if and when any structure(s) is no longer required.
  9. THAT the consent holder and staff of the Taranaki Regional Council shall meet as appropriate, and at least once per year, with representatives of the Neighbourhood Liaison Group to discuss any matter relating to the exercise of this resource consent, in order to facilitate ongoing consultation, such meetings to be according to the following schedule:
    - (a) one month prior to the exercise of this consent;
    - (b) thereafter at intervals of three months for the first eighteen months after the date of exercise;
    - (c) thereafter at one interval of no more than six months; and
    - (d) thereafter at intervals of no more than twelve months;

unless all parties agree that changes to the intervals are acceptable.

The Technical Adviser may attend one meeting per year for the first six years and thereafter at a frequency determined by the General Manager, Taranaki Regional Council.

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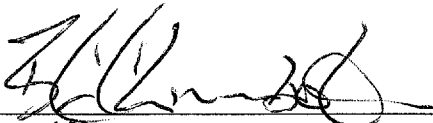
10. THAT this consent shall lapse on the expiry of 5 years after the date of commencement of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.
11. The consent holder may apply to the Council for a change or cancellation of any of the conditions of this consent in accordance with section 127(1)(a) of the Resource Management Act 1991 to take account of operational requirements or the results of monitoring provided that such application may not be made more than once in any twelve month period.
12. THAT the Taranaki Regional Council may, under section 128(1)(a) of the Resource Management Act 1991, serve notice of review of conditions of this consent in June 2005, June 2011, June 2017, June 2023, and June 2029 and within 18 months of the exercise of this consent, for the purpose of:
  - i) assessing the ongoing adequacy of the Monitoring Programme and methods of implementation outlined in Condition 6 of this consent; and
  - ii) assessing the effectiveness of conditions in avoiding, remedying or mitigating adverse effects on the environment from the construction and maintenance of structures.

The review of conditions may allow for:

- a) modification of the Monitoring Programme and methods of implementation outlined in Condition 6 of this consent; and
- b) deletion, additions or changes to General Condition (d) and Condition 2.

Signed at Stratford on 15 March 2000

For and on behalf of  
Taranaki Regional Council

  
\_\_\_\_\_  
General Manager