



Clare County Council

Waste Licence W0031-01

Annual Environmental Report for 2011

Location of facility: Doora Landfill, Bunnow, Ballaghboy,

Gaurus, Doora, Co. Clare

Table of Contents

1. Introduction	4
2. Waste activities carried out at the facility	4
3. Quantity and Composition of Waste received	5
4. Environmental monitoring results and interpretation	5
5. Monthly water balance calculation	26
6. Volume of leachate produced and discharged on site	27
7. Cumulative annual emissions to groundwater	28
8. Resource and energy consumption	28
9. Review of nuisance controls	29
10. Environmental objectives and targets for 2010-2011	29
11. Summary of procedures developed in 2010-2011 for Doora landfill operation	29
12. Reported incidents and complaints summary	30
13. Development works undertaken and proposed	30
14. Annual and cumulative quantities of landfill gas	31
15. Financial provisions including staffing and public information	32

List of Appendices

Appendix I ***Location of Environmental Monitoring Points.***

Appendix II ***Schedule of Objectives and Targets.***

1.0 Introduction

1.1 Licence Reference

Condition	Details
Condition 2 Management of the activity Schedule C	2.8 AER: The licensee shall submit to the agency for its agreement, within thirteen months from the date of grant of this licence, or within one month of the end of each year thereafter. AER Content.

1.2 Waste Licence Register Number

The waste license number is W0031-01.

1.3 Name of Operator, Name and Address of Facility

Clare County Council
Doora Landfill Site
Bunnow/Ballaghboy/Gaurus/Doora
County Clare

1.4 Reporting Period

The reporting period for this AER is the calendar year 2011

1.5 Site Description

1.5.1 Site Location

Doora landfill is located in a semi-rural area approximately 1.6km east of Ennis Town.

1.5.2 Area Occupied

The area occupied by the landfill and its ancillaries amounts to 29.8 hectares, of which 18.7 hectares was used for landfilling. No waste has been deposited at the site since June 30th 2001.

2.0 Waste Activities carried out at the facility.

In accordance with Condition 5.1.2 of the licence, no waste has been accepted for deposition on the site since June 30th 2001.

In accordance with Condition 4.18.1, no waste has been accepted for transfer at the facility since 30th June 2002.

Leachate collection and abstraction began at the site in 2008. This activity was subsequently suspended temporarily for much of 2009 to facilitate groundwork's as part of the remediation project. Leachate tankering off site recommenced in November 2009. Clare County Council personnel monitor the level of leachate stored in the collection tank on a frequent basis, and removed off site to an appropriate facility as required.

3.0 Quantity and Composition of Waste Received in 2011.

No waste was received at the facility since June 2002.

4.0 Environmental Monitoring Results and Interpretation.

Section 4 presents the results of environmental monitoring undertaken from January to December 2011 in accordance with Condition 9 of Waste Licence No.0031-01, as indicated in Table 4.1 below.

During this reporting period, consultants TMS Environment Ltd conducted monthly, quarterly and annual monitoring programmes for surface water, groundwater and leachate. TMS Environment also carried out monitoring for dust, noise and gas flare emissions. Conservation Services carried out biological monitoring on surface water drains and on the R. Fergus. Weekly gas monitoring and leachate level monitoring surveys, together with monthly surface water monitoring were carried out by Clare County Council staff. Monitoring locations are shown on Drawing Number 1 in Appendix I. PRTR emissions data included in Appendix III.

Table 4.1 :Doora Landfill (W0031-01) Monitoring Schedule

Schedule	Monitoring Requirement
E.1	Landfill Gas
E.2	Dust
E.3	Noise
E.4	Surface Water, Groundwater and Leachate
E.5	Enclosed Landfill Gas Flare

Note ¹: The monitoring frequency for surface water visual inspections was reduced to monthly from August 2008, as agreed with the EPA.

Monitoring was carried out in accordance with Schedule E of the Waste Licence as indicated in Table 4.1 unless otherwise noted in this report. Results for key parameters are summarised in Sections 4.1 to 4.6 of this report.

4.1. Landfill Gas

Clare County Council staff conducted landfill gas monitoring at weekly and monthly intervals during the reporting period, in accordance with Schedule E.1 of the waste licence. Gas monitoring locations are shown in Drawing No. 1 "Environmental Monitoring Points" in Appendix I. Monitoring was undertaken at forty-two locations across the three zones of Doora landfill. Thirty-five of these locations were tested on a monthly basis primarily to enable field balancing to be carried out to optimise gas collection and flare efficiency. The remaining seven locations are the original gas monitoring wells (LG1 to LG7) that are not connected to the gas network. Wells that were previously reported as being damaged during 2008/2009 have been repaired, and routine monitoring has recommenced. Gas monitoring results from January to December 2011 are shown in figures 1a to 1e. As can be seen from these graphs, higher concentrations of landfill gas were detected in LG2, and LG3. Methane levels were higher than CO₂ levels in these wells. The ratio of CH₄ to CO₂ is related to the age and stage of decomposition of the waste. Methane and CO₂ levels were similar in LG1 and LG6, where lower landfill gas levels have been measured. Monitoring at wells LG4, 5 & 7 did not take place due to damage at these wells, however, based on historic trends at each location, concentrations of CH₄ and CO₂ are similar to values at the other four wells.

Fig. 1a

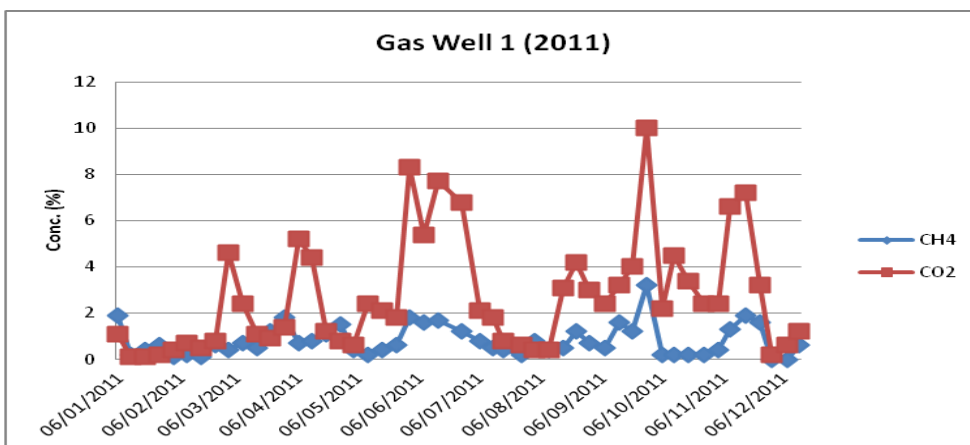


Fig. 1b

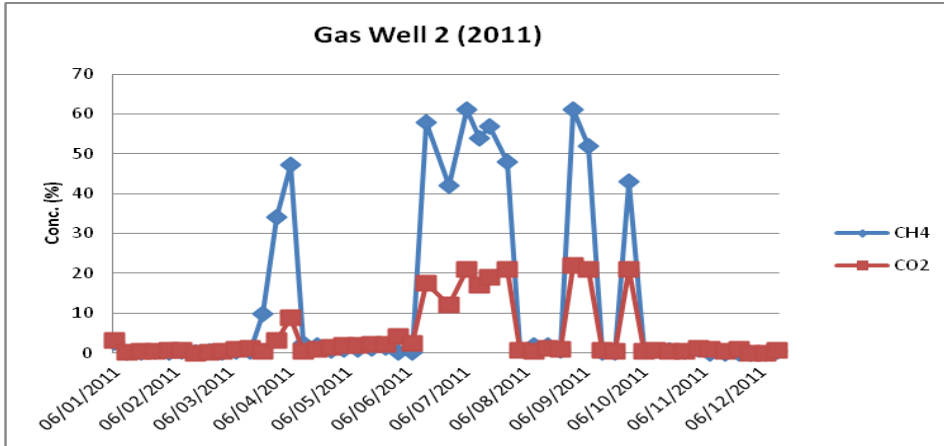


Fig. 1c

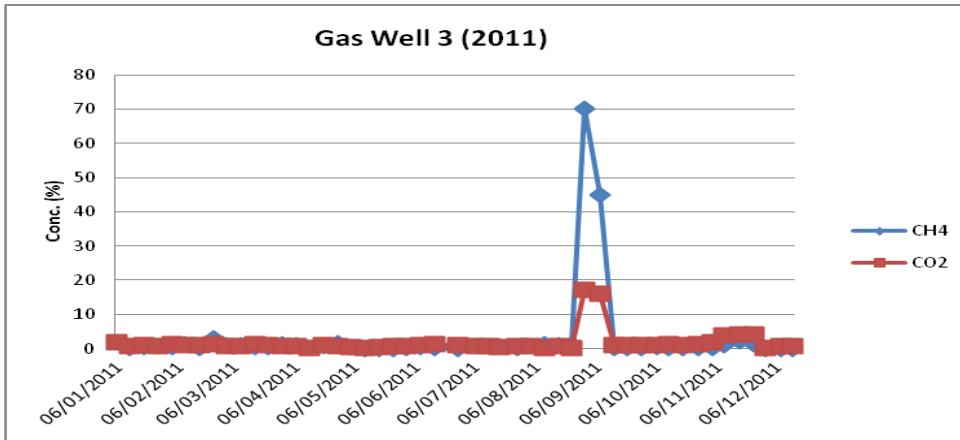
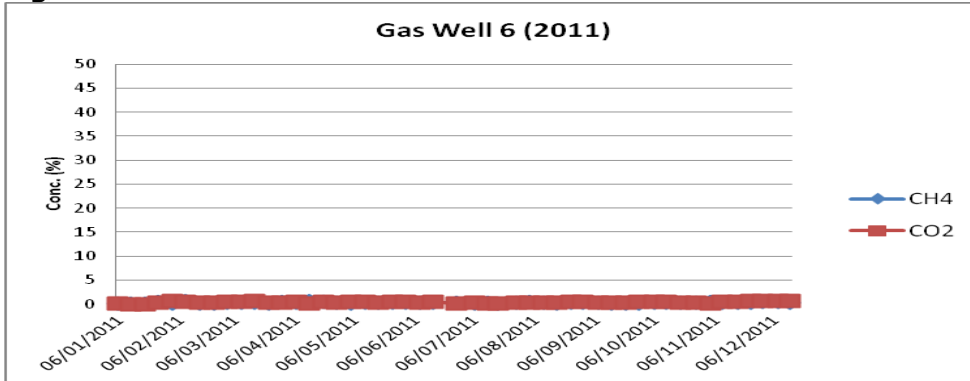


Fig. 1d



4.2. Dust

Three ambient dust monitoring surveys were completed during this reporting period 2011. Monitoring locations are shown in Drawing 1 in Appendix I. Results are summarised in Table 4.2 below. There were no exceedences observed in 2011.

Table 4.2: Total Dust Monitoring Results.

Sample location	Monitoring Period		Dust Deposition Limit (mg/m ² /day)
	Jul-11 (mg/m ² /day)	Aug-11 (mg/m ² /day)	
ST1	142	55	350
ST2	84	87	350
ST3	33	109	350
ST4	44	46	350
ST5	Note 1*	278	350

Note 1* Dust gauge D5 had fallen over during monitoring interval and therefore there is no result available

4.3 Noise

An annual noise monitoring survey was conducted on the 27th July 2011 at noise sensitive locations N1 to N4 and S1 to S4. The daytime noise limit value of 55dB(a) L_{Aeq, 30 mins} was not exceeded at any stage during 2011. No waste activities were conducted on site during 2011, nor were any significant infrastructural works. The main sources of noise within the immediate vicinity of the site, is passing traffic on the adjacent public road. This is reflected in the monitoring results recorded at locations near the public road.

4.4 Groundwater, Surface Water and Leachate.

4.4.1 Groundwater

Groundwater monitoring was carried out in accordance with schedule E.4 of Waste Licence W0031-01 for the parameters and at the monitoring frequency specified in Table E.4.1 at locations: OB1, BR1, OB2, BR2, OB3, BR3, OB4, OB5, OB6, OB8, BR6, BR7, BR8 and BR9 (refer to Drawing No. 1 in Appendix I. for locations).

Results for key parameters chloride and ammonia at all wells are summarised below.

Chloride:

Groundwater chloride levels are graphed in figures 2 and 3 below. As can be seen from the graphs, higher chloride levels were observed in wells located close to the R. Fergus (OB1, BR1, OB2, BR2, and OB5). These elevated chloride levels may be in part attributed to the influence of the R. Fergus. Groundwater contamination from landfilling activities at the site may also be a factor (see section on ammonia below).

Fig. 2

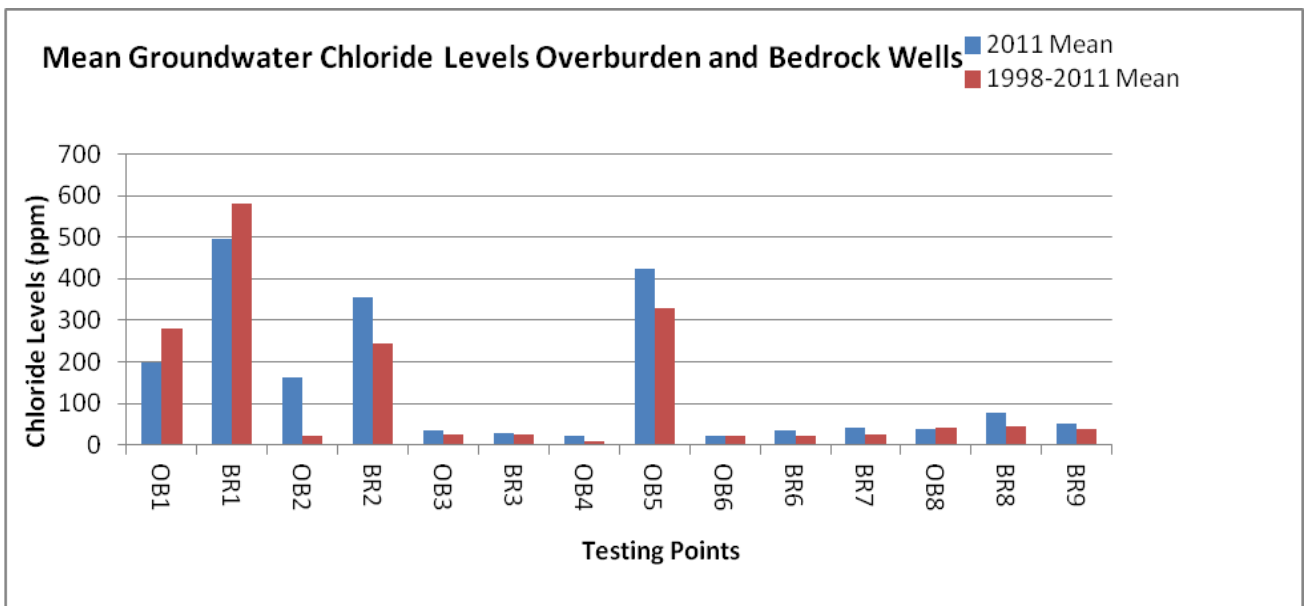
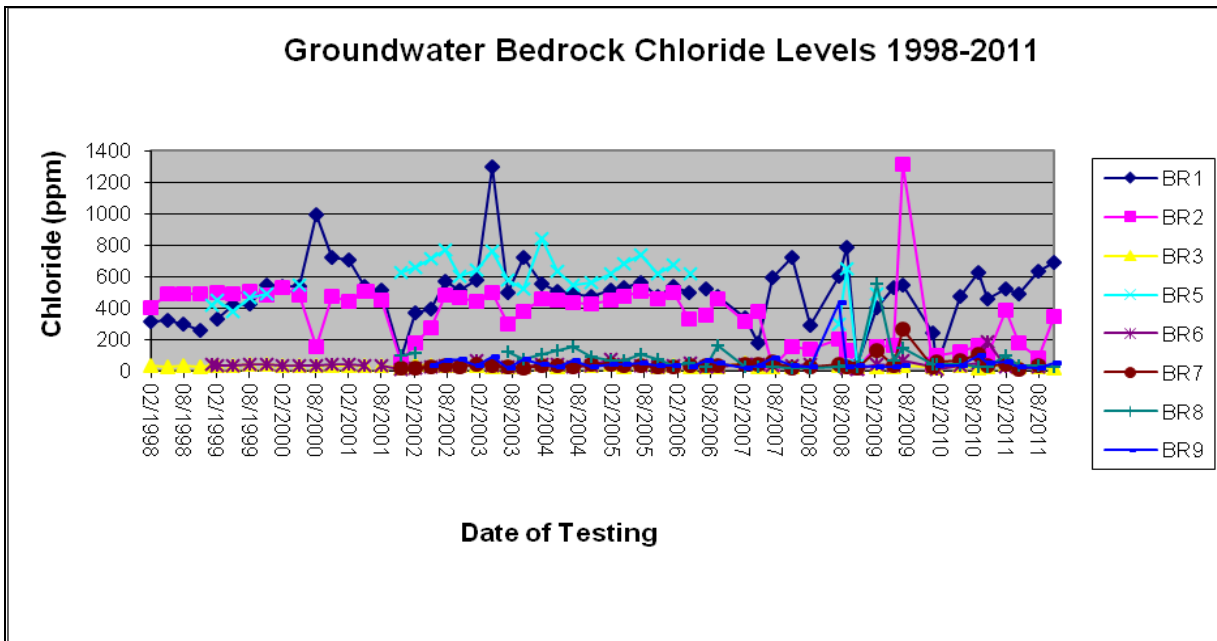


Fig. 3



Ammonia:

Groundwater ammonia levels for the eight-year period from January 2004 to December 2011 are graphed below in figures 4 to 12. Mean ammonia levels for the period are graphed in figure 13. It should be noted that the spike in the ammonia mean value at BR9 for 2011 is solely due to an anomaly recorded on the 22nd November 2011, where a value of 792ppm. This is in the region of 1000% greater than normal values recorded at this location for other dates during 2011, and may be possibly attributed to an administrative error on the part of the consultants.

As can be seen from the graphs, groundwater ammonia results have been elevated for onsite monitoring wells (OB1/BR1 and OB2/BR2) since monitoring commenced at the site. Highest results for 2011 were obtained at these four wells, particularly at BR2, which is located close to the south-western boundary of the site. However when compared to 2010, and previous years ammonia levels at BR2 decreased over the period 2011. BR2 is down-gradient of zones 2 and 3 of the landfill. BR10 was installed in 2008 to provide additional data on groundwater values. Similarly results for BR10, obtained for the period 2011, while they unusually elevated compared to other wells within the site, did demonstrate a decrease in values throughout 2011, when compared to values from previous years. It would be expected that this

decrease would continue into 2012. Results for 2011 are presented below in figure 12.

As expected, lowest ammonia levels were found in up-gradient wells OB3, BR3 and BR7 and in the cross-gradient nested pair of wells OB6 and BR6. Mean ammonia levels at these locations were below 0.5ppm for this twelve-month monitoring period (see figures 9 to 11 and 13)

Fig. 4

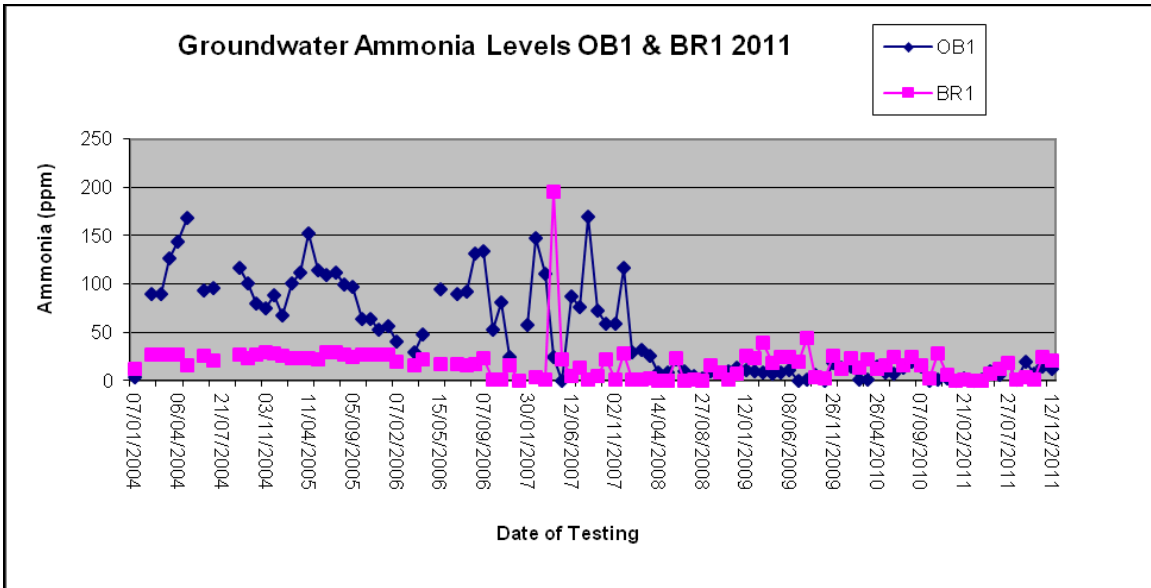


Fig 5.

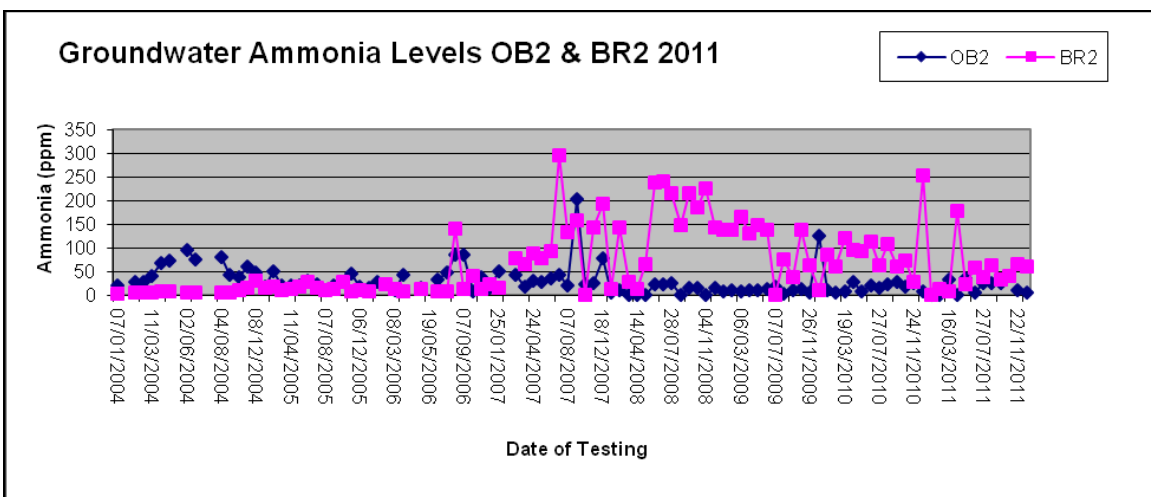


Fig 6.

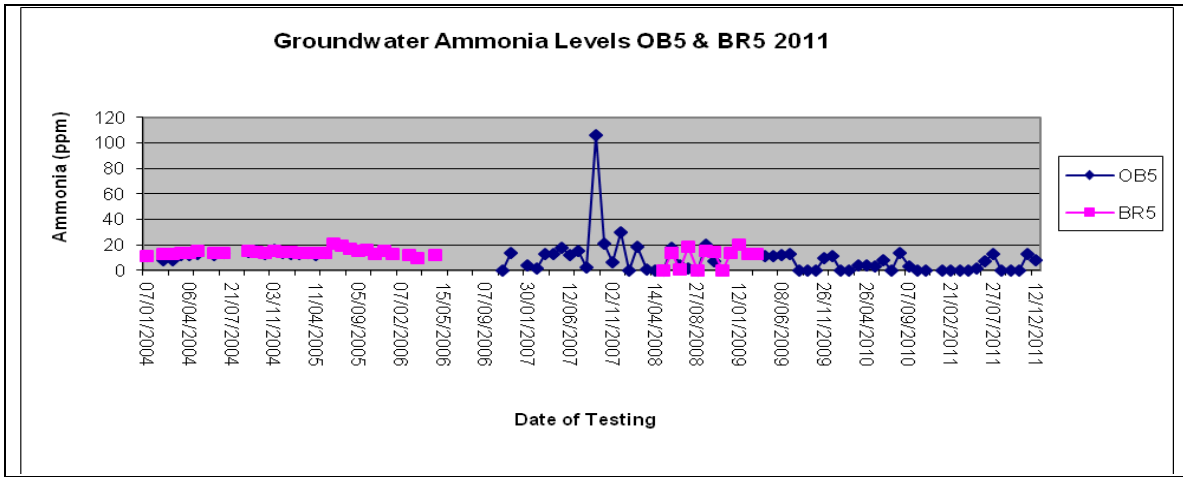


Fig. 7

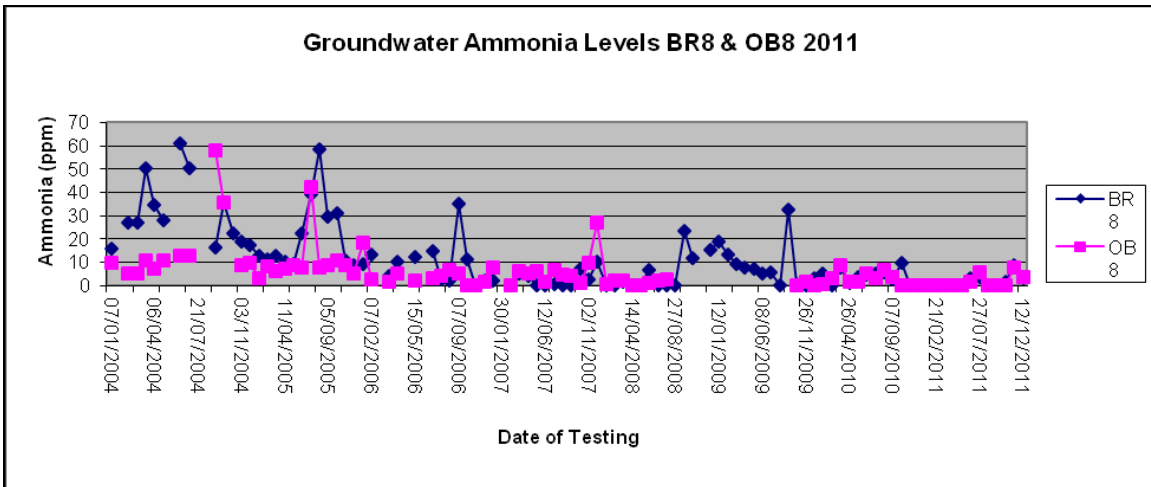


Fig. 8

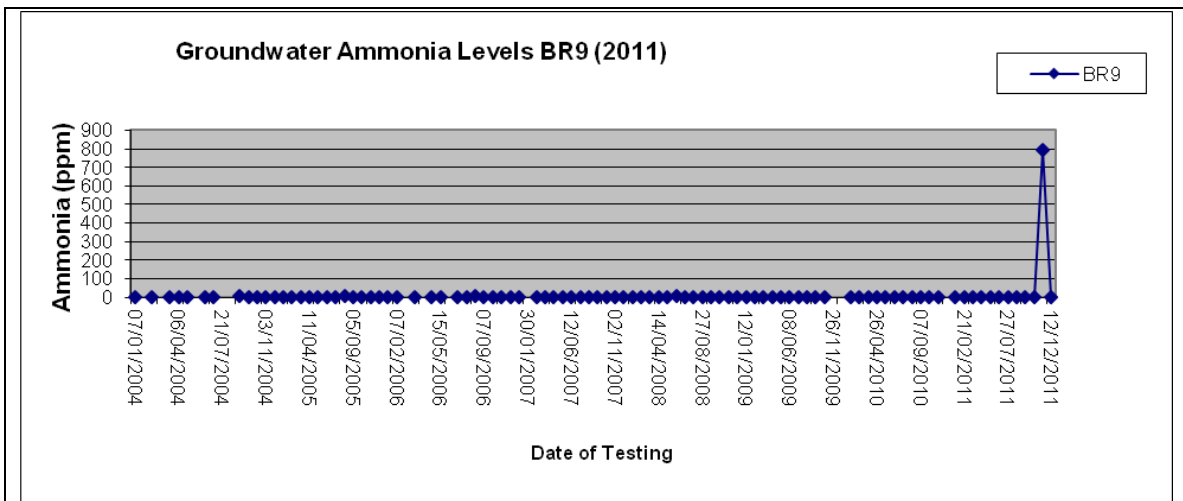


Fig. 9

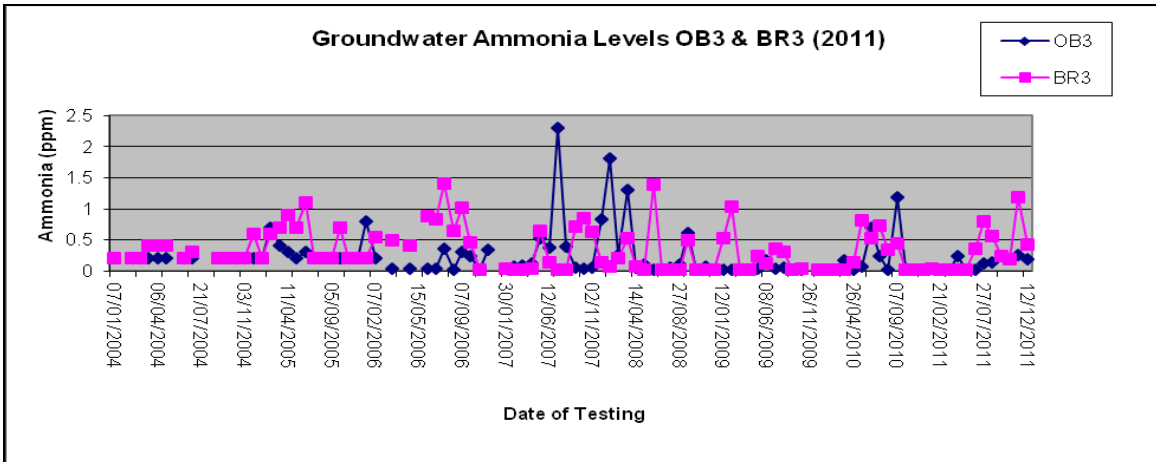


Fig. 10

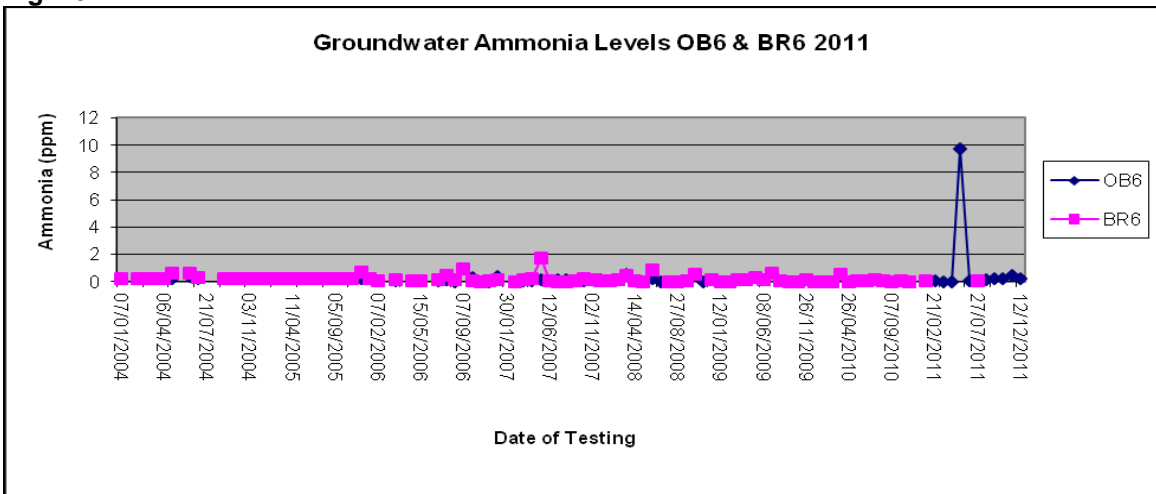


Fig. 11

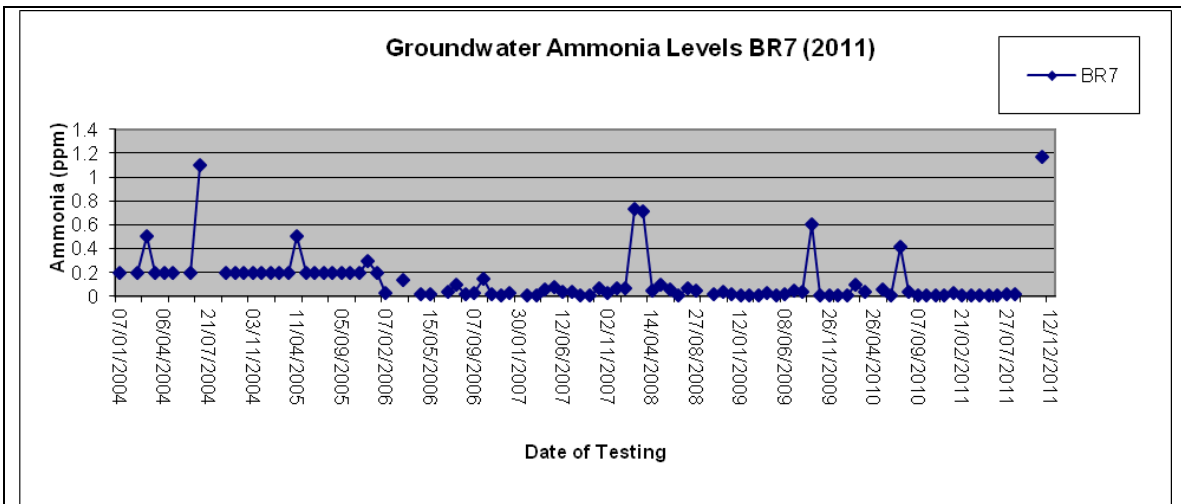


Fig. 12

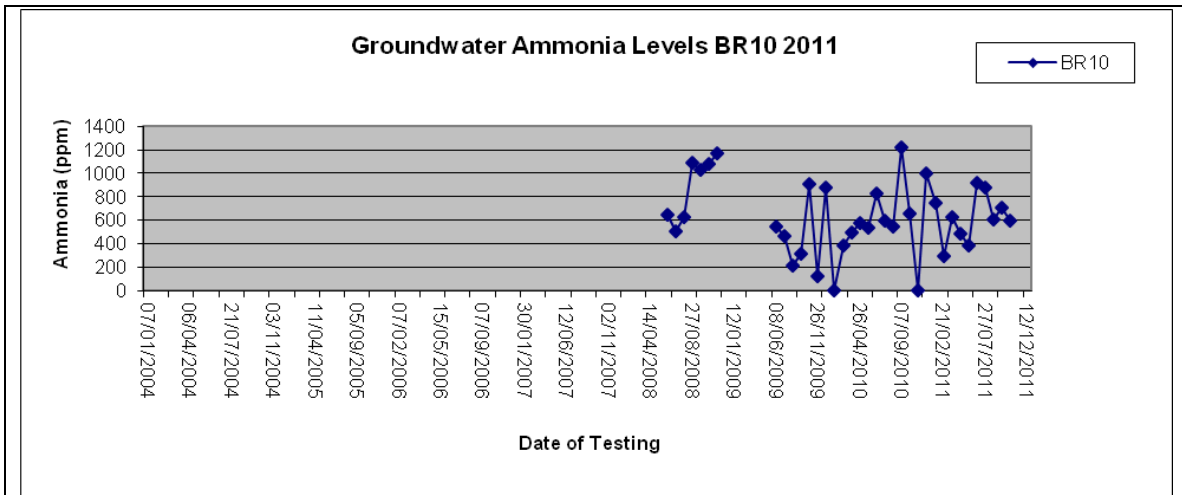
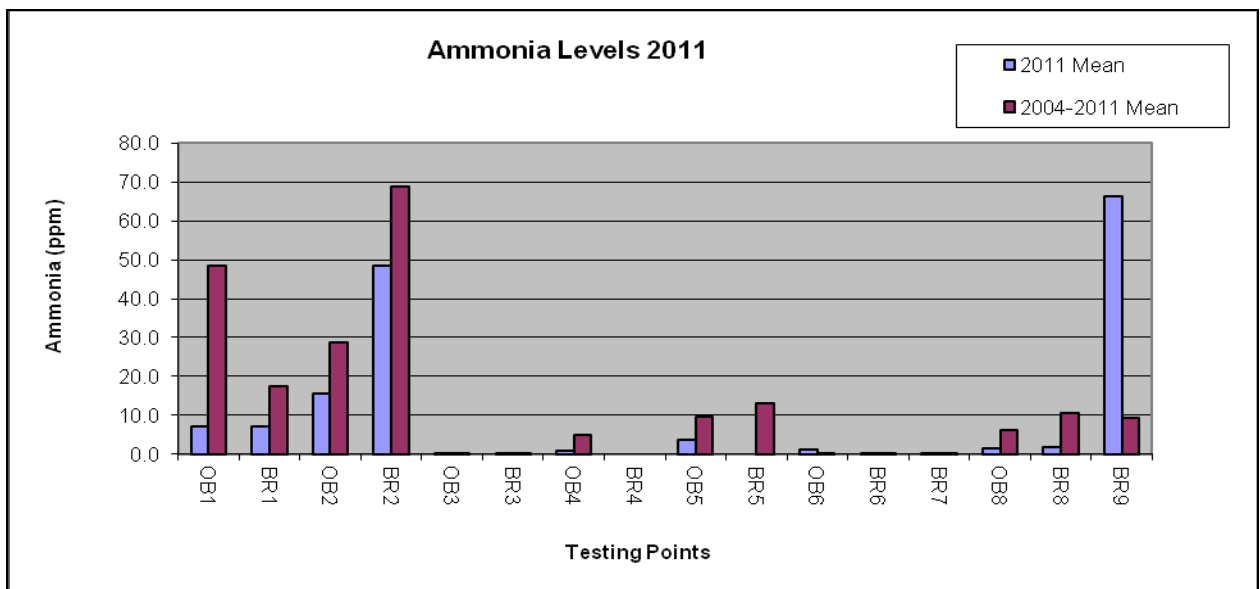


Fig. 13



4.4.2 Surface Water

Surface water monitoring was carried out during the year at the following locations: SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW11, SW12, SW13, SW14 and SW15. Monitoring locations are shown in Drawing no. 1 in Appendix I. Surface water samples were collected for analysis as specified in Table E.4.1 of Waste Licence W0031-01. In addition, monthly monitoring was carried out at SW2, SW3 and SW7 for pH, conductivity and ammonia levels.

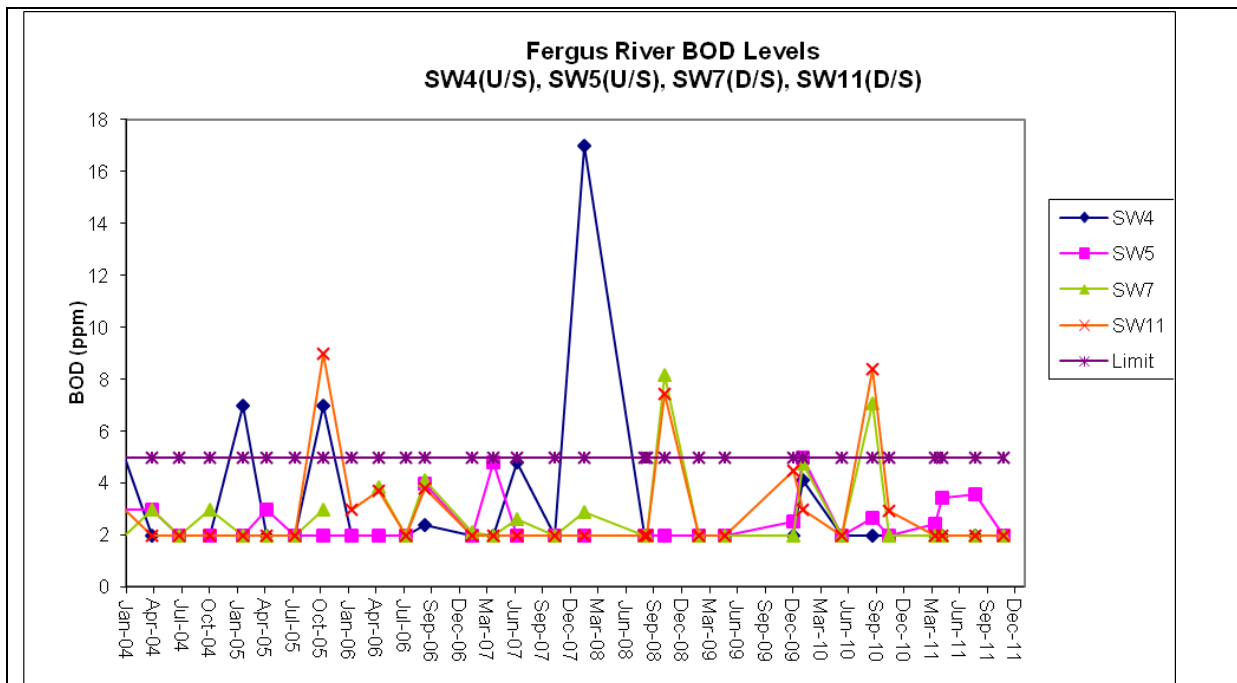
Results for key parameters ammonia and BOD are summarised in this report.

BOD:

BOD results for the R. Fergus and R. Gaurus for the eight-year period from 2004 to 2011 are graphed in figures 14 and 15 respectively. The R. Fergus is classified as a Salmonid water¹ to which a 5ppm BOD limit applies. This limit is shown in figure 14.

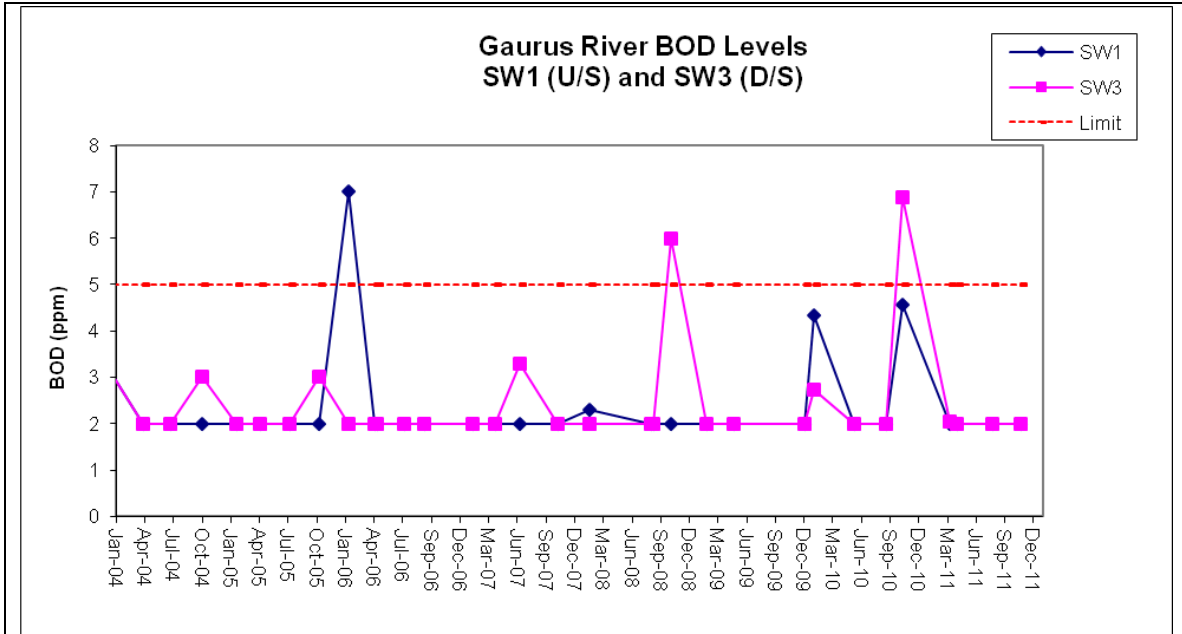
1: From European Communities (Quality of Salmonid Waters) Regulations, 1988 (SI No. 293 of 1988). Note that the freshwater fish directive 2006/44/EC does not include a mandatory BOD limit but does include a guide BOD level of ≤3ppm for salmonid waters.

Fig. 14



Gaurus River BOD results are graphed in figure 15. The 5ppm Salmonid limit is also shown on this graph for comparative purposes.

Fig. 15



There are two surface water sampling locations (SW12 and SW13) on the eastern boundary drain. This drain runs in a southerly direction along the eastern boundary and is piped underground close to the southern site boundary, feeding into the R. Fergus upstream of Doora Bridge. BOD levels in the eastern boundary drain are graphed in figure 16.

There are three sampling locations on the western boundary drain (SW2, SW8 and SW14) which feeds into the R. Gaurus downstream of SW2. Results for this drain are graphed in figure 17. Also included on the graphs is the 7ppm BOD for A3 waters from the Surface Water Regulations (1989). This limit is included for comparative purposes only; no limits exist for BOD levels in site drains.

Fig 16.

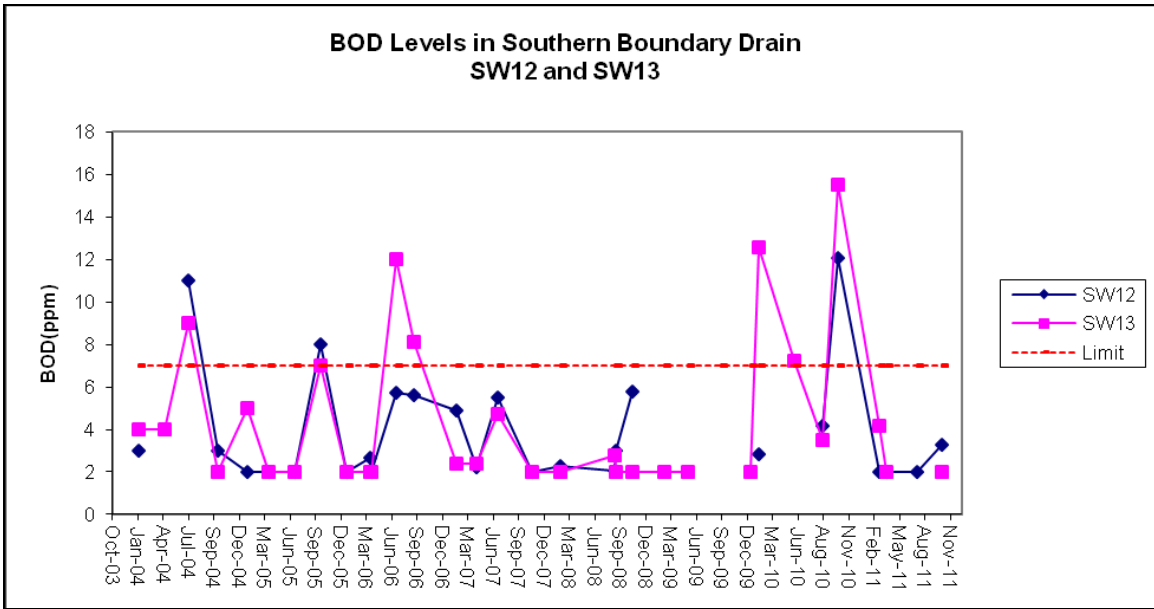
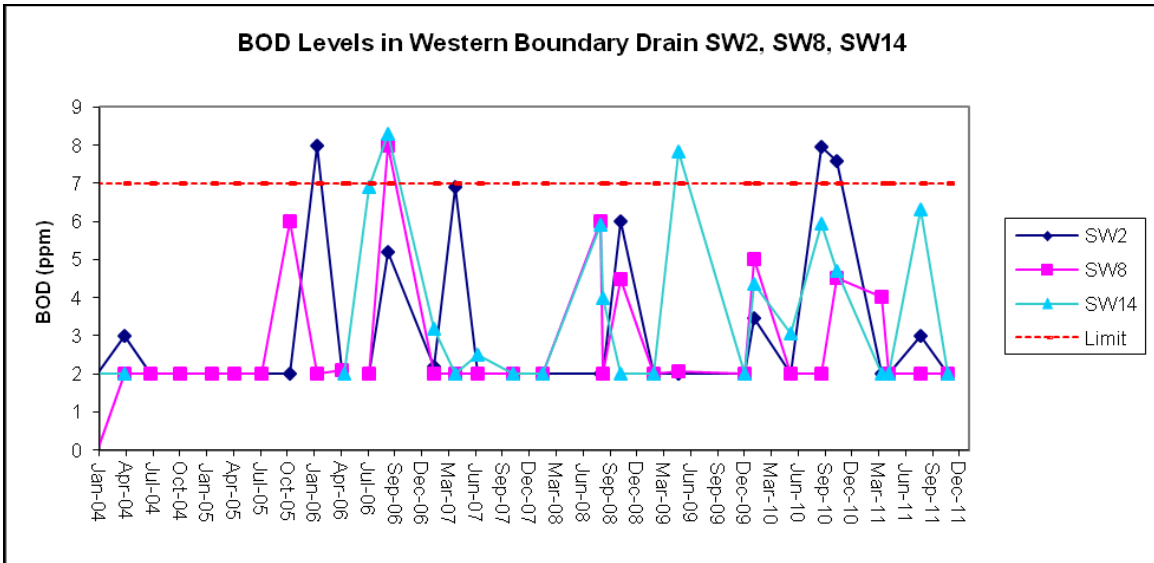


Fig 17.



Ammonia:

Ammonia results for Gaurus and Fergus river samples for the eight-year period from January 2004 to December 2011 are graphed in figures 18 and 19 respectively. Also shown on the graphs is the 1ppm ammonia limit for Salmonid Waters. This limit is included in the Gaurus river graph for comparative purposes only.

As can be seen from figure 18a & b, ammonia levels at all locations remained below the 1ppm Salmonid limit throughout 2011, bar a single anomaly recorded on the 27th July 2011, at SW5, where a value of 14.65ppm was recorded. It is unclear as to the reason for this spike in value, however, as it occurred at an upstream location, it is clear that the cause cannot be attributed to the facility. Fig 18b provides a clearer view of values recorded during 2011, by removing this single spike at SW5.

Fig. 18a

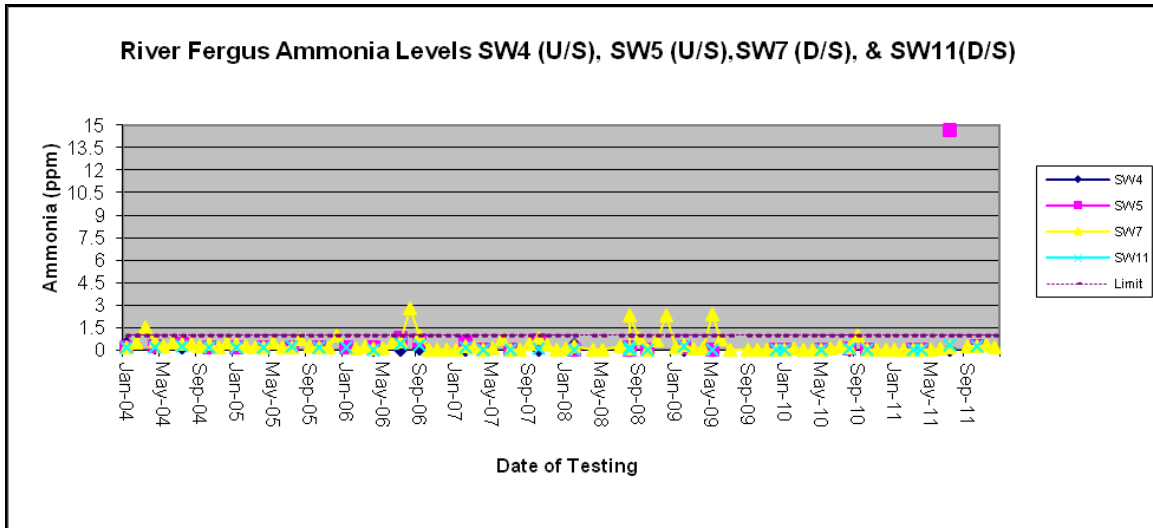
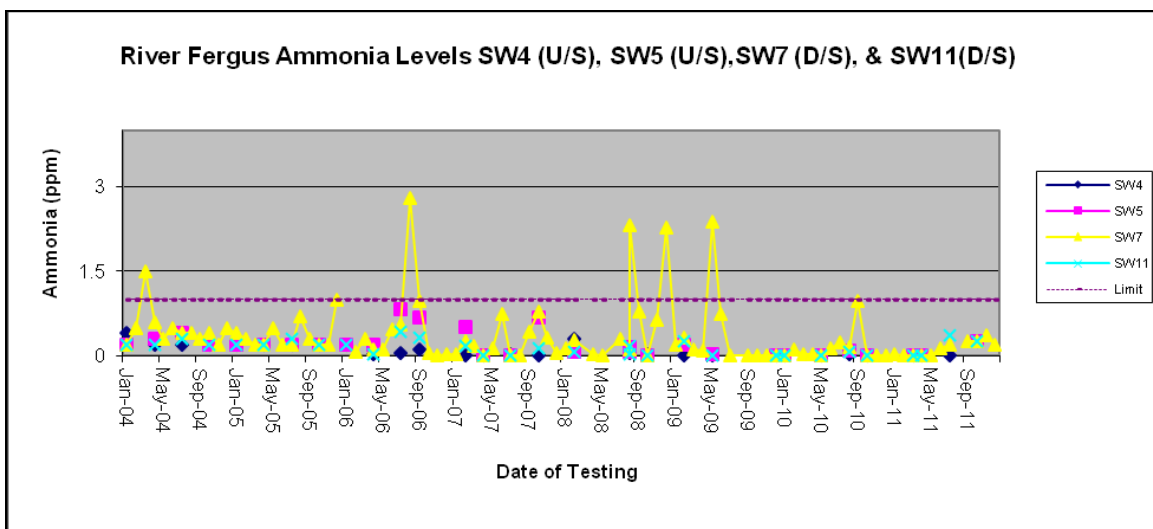
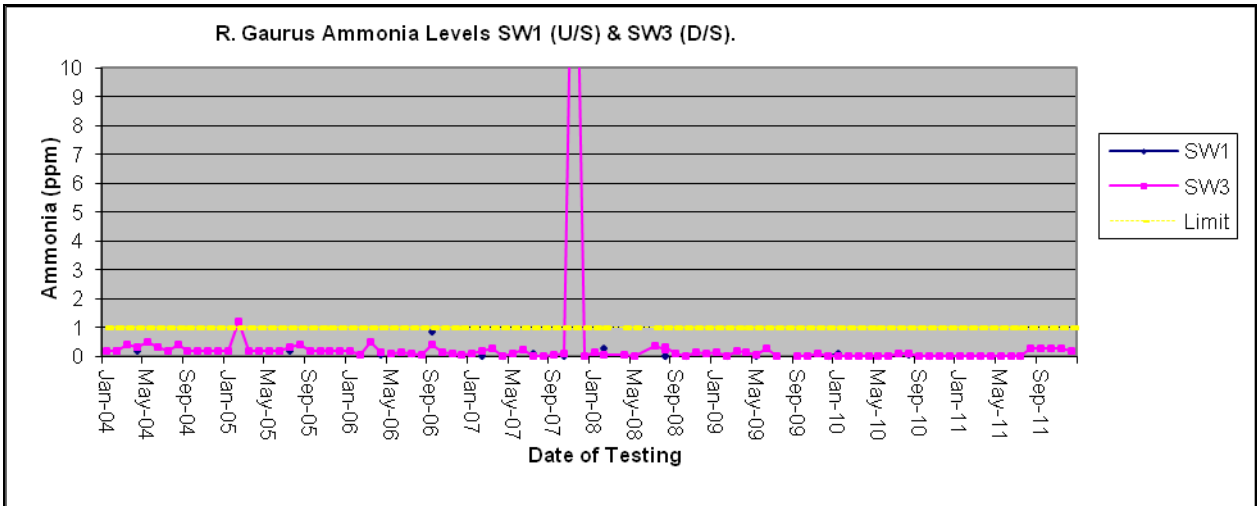


Fig 18.b



Ammonia results for Gaurus river location SW1 (upstream of the landfill) have been below 1ppm for the eight year period from January 2004 to December 2011. Ammonia results at SW3 (downstream of the landfill) remained below 1ppm for the 2011 period.

Fig. 19



Ammonia results for the western and eastern boundary drains from January 2004 to December 2011 are shown in figures 20 and 21.

Fig. 20

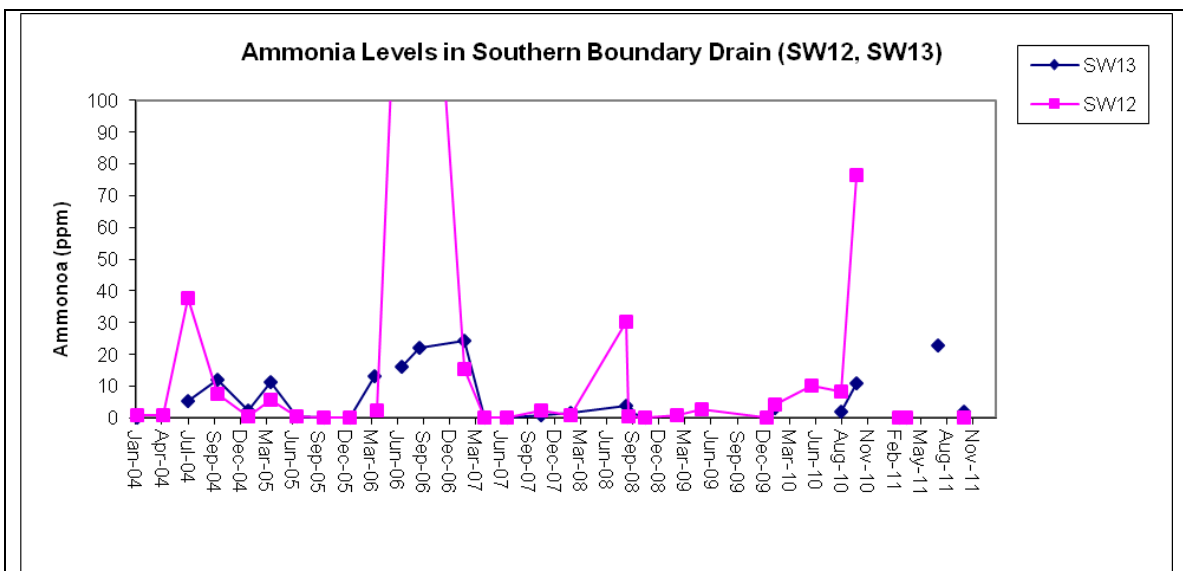
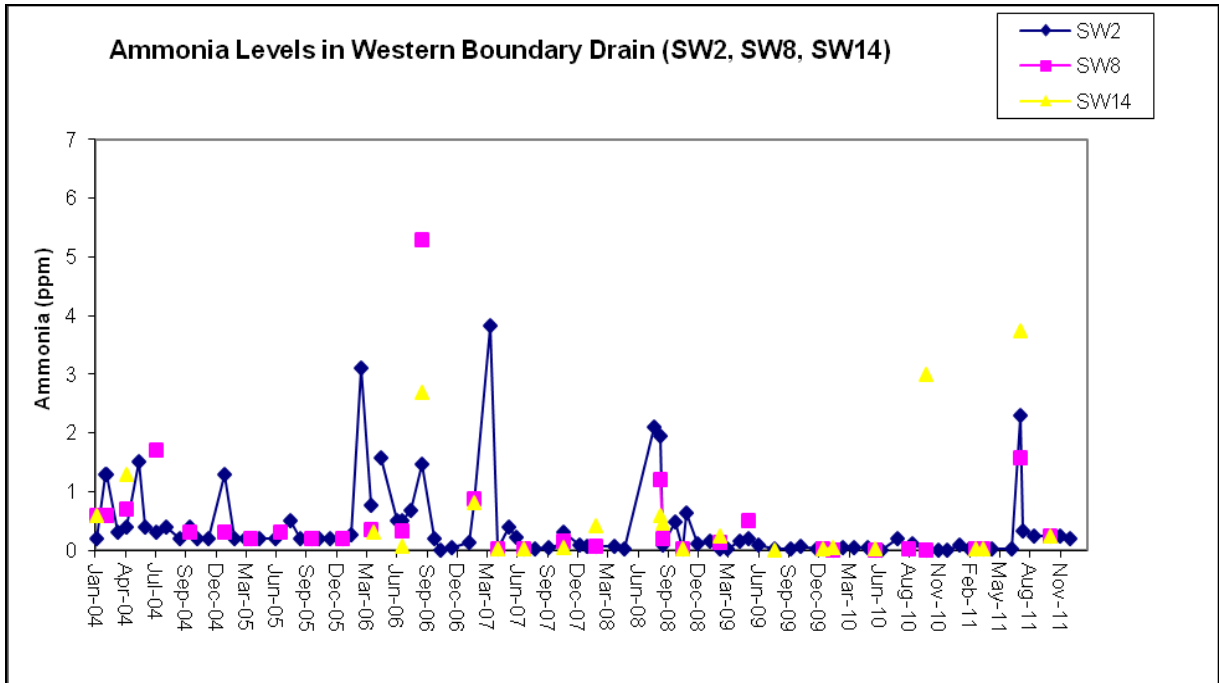


Fig. 21



Ammonia levels at all locations on the southern and western boundaries have remained consistently low for the 2011 period. Historical elevated ammonia levels displayed in Figures 20 & 21 are explained in previous AER's and other correspondence to the EPA.

4.4.3 Leachate

Leachate monitoring was conducted in accordance with Schedule E.4 of Waste Licence W0031-01 for the parameters and at the monitoring frequency specified in Table E.4.1 at locations L1, L6, L7, L8 and L9 (see Drawing No. 1 in Appendix I for locations). An additional leachate abstraction well (L10) was installed in mid 2008 in zone 3 of the landfill. Monitoring of this well commenced in July 2008.

Ammonia, BOD and COD results for leachate wells are graphed in figures 22 to 25.

As would be expected given the locations of L8, L9 and L10 in Zone 3 (the area of most recent waste deposition) BOD, COD and ammonia levels were higher in these wells than in zone 1 (L1) and zone 2 (L6).

Fig. 22

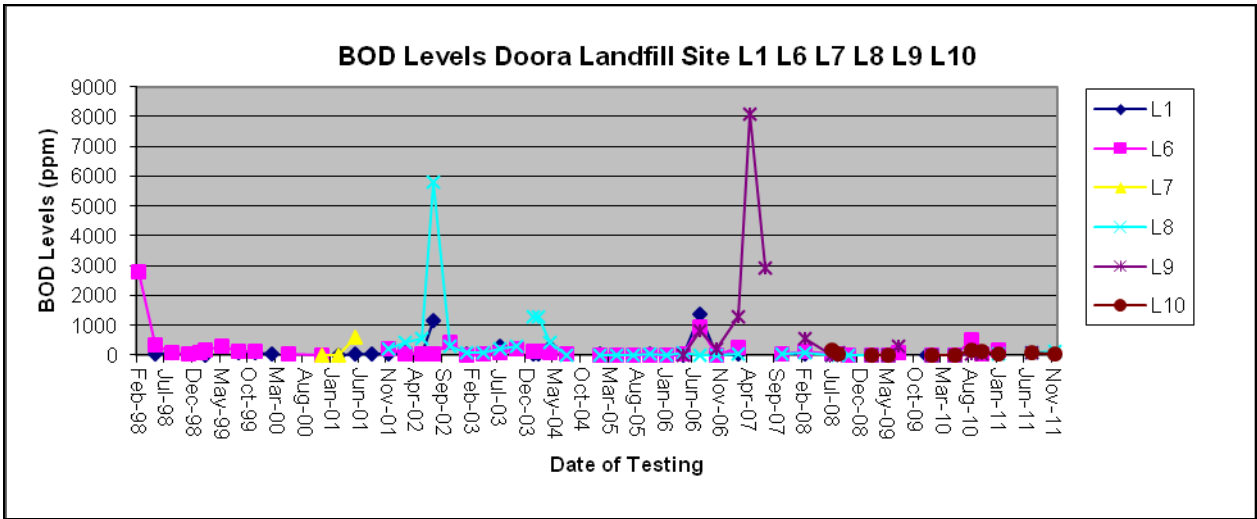


Fig. 23

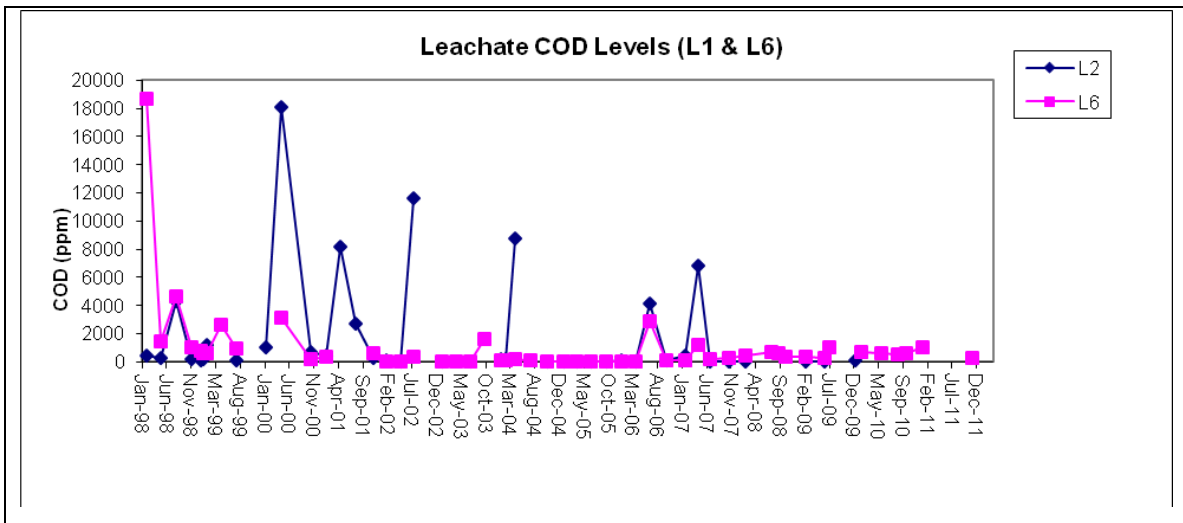


Fig. 24

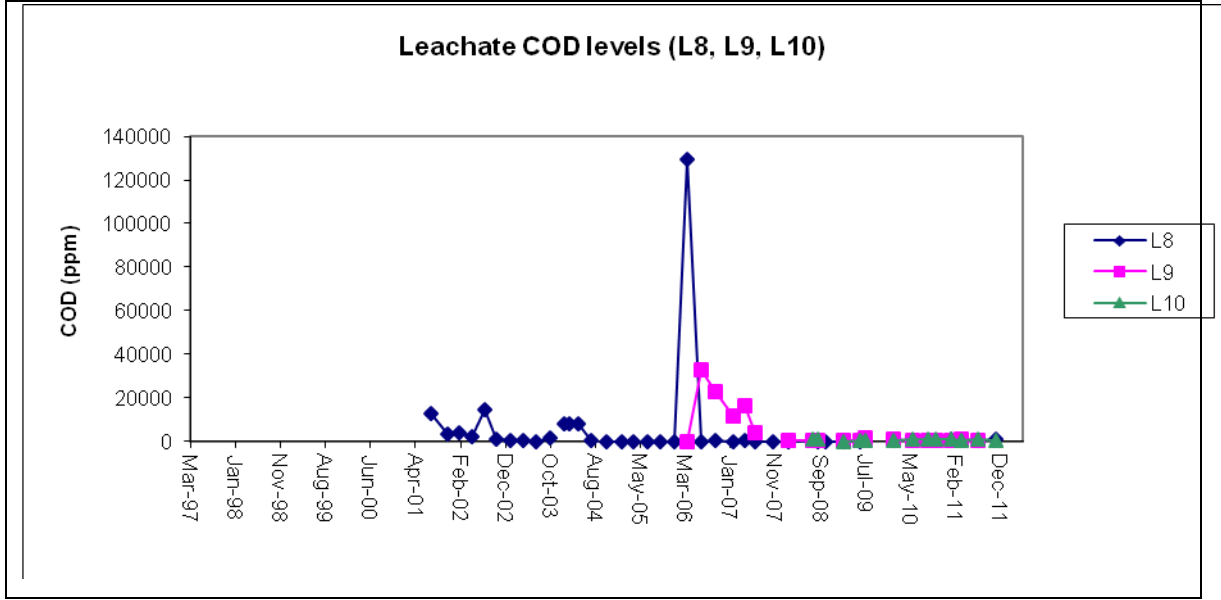
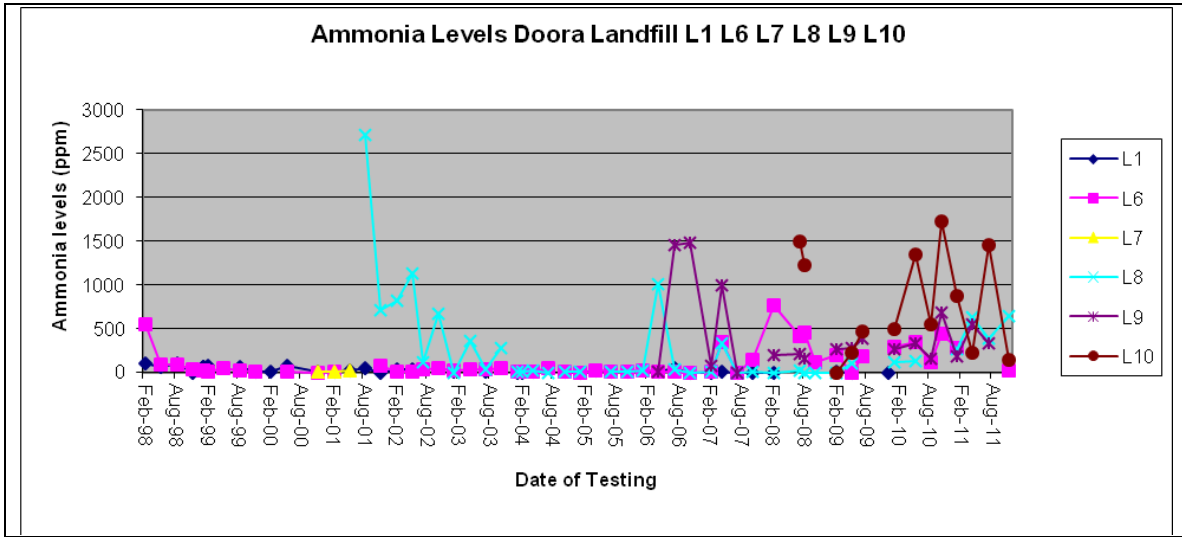


Fig. 25



4.5 Landfill Gas Flare Unit.

Emissions to atmosphere from the enclosed landfill gas flare were monitored in accordance with the requirements of Schedule E.5. of Waste Licence W0031-01. This monitoring was carried out by TMS Environment monitoring staff, on the 24th June & 23rd November 2011.

Monitoring results are presented below in Table 4.3:

Table 4.3: Flare Monitoring Results:			
Parameter/units	24th June 2011	23rd November 2011	Emission Limit¹
Nitrogen Oxides (NO _x) as NO ₂ (mg/Nm ³)	104.1	29.1	150 mg/m ³ for Flare Stacks
Carbon Monoxide (CO) (mg/Nm ³)	Note 1*	12.7	50 mg/m ³ for Flare Stacks
Sulphur Dioxide (SO ₂) (mg/Nm ³)	<7.26	<2.9	-
Temperature (°C)	1559	943	-
Volumetric Flow Rate (Nm ³ /hr)	489.2	100.6	-
Vinyl Chloride (mg/Nm ³)	Note 1*	<15.2	-
Acetonitrile (mg/Nm ³)	Note 1*	<15.2	-
Dichloromethane (mg/Nm ³)	Note 1*	<15.2	-
Tetrachloroethylene (mg/Nm ³)	Note 1*	<15.2	-
TA Luft Class I (mg/Nm ³)	Note 1*	<1.52	20 mg/m ³ (at mass flows >0.1 kg/hr)
TA Luft Class II (mg/Nm ³)	Note 1*	<7.6	100 mg/m ³ (at mass flows >2 kg/hr)
TA Luft Class III (mg/Nm ³)	Note 1*	<15.2	150 mg/m ³ (at mass flows >3 kg/hr)
HCl (mg/Nm ³)	Note 1*	<8.2	50 mg/m ³ (at mass flows >0.3kg/hr)
HF (mg/Nm ³)	Note 1*	Note 2*	5 mg/m ³ (at mass flows >0.05 kg/hr)

All results were within emission limit values specified in Schedule F.4. of Waste Licence W0031-01.

Note 1* High Flare temperature resulted in inaccurate reading.

Note 2* Result not provided by consultants at time of reporting.

4.6 Biological Monitoring

A Biological Monitoring survey was carried out in May and September 2011 in accordance with Condition 9, Schedule E of WL 31-1. Survey conclusions are summarised below:

4.6.1 Gaurus River

Results at WQ1 as observed during the 2011 period has deteriorated slightly in September, dropping to a Q rating of 3, compared a more typical value of 3-4. Results for WQ3 remained the same as results for previous years. These ratings are in line with historic data for both locations

4.6.2 Fergus River

Three sites are monitored on the R. Fergus: WQ4, WQ5 and WQ6. For the 2011 period, results remained broadly the same as in 2010 at WQ4, 5, & 6, with results for the September 2011 monitoring reporting a tentative improvement with ratings of Q3 for all three locations.

The poor water quality in the R. Fergus immediately upstream and downstream of the R. Gaurus confluence would appear to be due to upstream conditions in the Fergus rather than any impact from the Gaurus, however an impact from the R. Gaurus on both sites on incoming and outgoing tides cannot be conclusively ruled out.

The ongoing monitoring since 2002 have shown that the sites monitored on the R. Fergus have a very unstable invertebrate community. This instability is likely due to the tidal and occasional saline conditions at these sites.

It cannot be concluded from the invertebrate data that there is an adverse impact on the Fergus from the landfill, however, given the tentative nature of the Q-ratings at these sites a minor impact cannot be ruled out.

	WQ1	WQ2	WQ3	WQ4	WQ5	WQ6
April 2002	4-5	3-4	3	3	3	3
May 2002	4	3-4	3	3	3	3
April 2003	4	3-4	3	3	3	3
June 2003	3-4	3-4	3	3	3	3
Sept. 2003	3-4	3	3	3	3	3
July 2004	3	3	3	3	3	3
Sept 2004	3-4	3	3	3	3	3
May 2005	3-4	3	3	3	3	3
Sept 2005	3-4	3-4	3	3	2-3	3
May 2006	3-4	3	3	2-3	2-3	2-3
Sept 2006	3-4	3	3	3	3	3
May 2007	3-4	3	3	3	3	3
Aug 2007	3	3	3	3	3	3
May 2008	3-4	3	3	3	3	3
Aug 2008	3	3	2-3	3	3	3
May 2009	3-4	3	3	2-3	3	2-3
Oct 2009	3-4	3	3	2-3	2-3	2-3
July 2010	3-4	3	3	3	3	3
Sept 2010	3-4	3	3	2-3	2-3	2-3
May 2011	3-4	3	3	2-3	3	2-3
Sept 2011	3	3	3	3	3	3

4.7 Odours

No odour problems were encountered during the reporting period.

5.0 Monthly Water Balance Calculations and Interpretation

Total effective rainfall for the reporting period 2011 was calculated using monthly data from the Shannon Airport Meteorological Station. Rainfall details are summarised in Table 5.1:

Table 5.1 Rainfall Details for Shannon Airport From January to December 2011

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Rainfall	74.1	149	34.3	42.2	93.3	112.5	31.7	54.1	94.7	99.1	87.2	144.7
P ₁	8.096	16.266	37.414	62.903	71.368	79.604	74.671	62.073	44.002	27.698	18.492	14.325
E.R. ₁	66.004	132.734	-3.114	-20.703	21.932	32.896	-42.971	-7.973	50.698	71.402	68.708	130.375

Note¹: Evapotranspiration values (Penman).

Note²: Effective rainfall

The effective rainfall for the period January to December 2011 was **499.988mm**.

The water balance calculation for the period is set out in Table 5.2 below:

Table 5.2: Water Balance Calculation at Infiltration Rates from 10-30%.

Capped area infiltration (%)	Active Area	Active area infiltration	Capped Area (m ²)	Total rainfall (m)	Net Leachate 2011 (m ³)
30%	0	0	186,900	0.499	27,978.93
20%	0	0	186,900	0.499	18,652.62
10%	0	0	186,900	0.499	9,326.31

As for previous reports, the rainfall infiltration through capping was assessed at three infiltration rates (10%, 20% and 30%), based on a variation in capping thickness throughout the site. At these infiltration rates, the theoretical total leachate production for the period ranged from 9,326m³ to 27,978m³. Final capping has been in place throughout the site since early November 2008 so in practice, the actual amount of rainfall infiltration will be at the lower end of the range from that time.

6.0 Volume of Leachate Produced and Discharged On Site

The theoretical assessment of leachate generation at the Doora site was based on the monthly water balance calculation provided in Table 5.2. As the landfill was operated on the “dilute and disperse” principle, it is not possible to provide an absolute value for leachate volumes arising during the year. The volume of leachate produced is linked to two external factors (in addition to the moisture content of the waste deposited):

- Possible infiltration from tidal movement as the landfill site is below the high water mark.
- Rainfall infiltration.

Infiltration from tidal movement cannot be quantified. An assessment of tidal infiltration was made from two wells in Zones 2 and 3 in January 2004 and no link was found (8m well depth). This assessment was not carried out in Zone 1 so the possibility of tidal infiltration can't be ruled out here but observations from monitoring data indicate that Zone 1 is virtually dry with very little leachate produced.

The most significant factor limiting rainfall infiltration and resultant leachate production at Doora is the extent of capping in place at the facility. Prior to November 2008, there were varying depths of soil cover through the site. Trial pit investigations revealed that the majority of Zone 3 had a capping thickness of >1.5m. The southern part of Zone 3 had up to 6m of cover and in the northeast, the cover ranged from 3.5 to 5m. Less capping was in place in the older landfilled zones - Zones 1 and 2. Areas in each of these zones had between 0.5 and 2m of capping in place but there were sections with less than 0.5m of cover. Since November 2008, the required thickness of final capping material has been in place throughout the site and rainfall infiltration should now be minimal.

Based on the water balance calculations for the period (given in table 5.2), the theoretical minimum daily volume of leachate generated was 25 m³ and the maximum volume generated was 76.6m³. This assumes that the level of rainfall infiltration ranges from 10% to 30%, depending on the level of capping in place.

7.0 Cumulative Annual Emissions to Groundwater

Leachate is the most significant emission to groundwater from the site. Monitoring results indicate that leachate is more likely to be discharging to ground than to surface waters. Theoretical leachate volumes are addressed in Sections 5 and 6 above. In summary, the theoretical leachate generation for 2011 ranged from 25m³ to 76m³ per day. The direction of groundwater flow is northeast to southwest across the site, towards the Fergus river. Existing information from investigations on Drumcliffe Springs in the same bedrock body, located approx 3.5km to the northwest of the landfill, indicate that there is no hydrological link between surface and groundwater bodies.

In the latter period of 2009, a dedicated leachate storage tank was commissioned, as planned under the remediation project. Off site tankering commenced in late 2009, and was ongoing throughout the year 2010 & 2011.

8.0 Resource and energy consumption

8.1 Fuel usage

There was minimal fuel usage on site during 2011. Restoration work was completed in 2009, and the only use of machinery on site during 2011, related to maintenance of the site, in the form of grass cutting and similar landscaping related activities

8.2 Electrical usage:

The facility is a closed landfill site with no power-consuming equipment in use except for the landfill gas flare and the leachate abstraction pumps. Approximate data on electrical usage for the period is as follows:

Day Units: 4,482

Night Units: 2,537

8.3 Water usage

No full-time staff have been employed at the site since October 2004. Toilet facilities at the site have since been decommissioned, hence, there is no water usage for the period 2011.

9.0 Review of nuisance controls

9.1 Site Inspection

As Doora landfill is a closed facility, site inspections are no longer formally carried out. However Council staff visit the facility once per week at a minimum, to carry out surface water visual inspections and to measure gas and leachate levels. No nuisance was noted during these site visits.

9.2 Litter Control

Doora landfill is a closed facility. The most significant potential issue in relation to fresh litter would be fly tipping outside the site entrance. There was no incidence of fly tipping during this reporting period. Clare County Council personnel carry out informal litter audits as part of the weekly surface water visual inspection surveys. There were no litter problems noted.

9.3 Bird Control

No bird nuisance was observed by Council staff or reported to the Council by any other person during the reporting period. Since closure of the landfill and capping of the waste body birds have not been a problem.

9.4 Odour Control

No odours were observed by Council staff or by our monitoring consultants during this reporting period. The Council received no complaints of odours relating to Doora landfill during the period.

10.0 Environmental objectives and targets.

A copy of the Environmental Objectives and Targets is included in Appendix II.

11.0 Summary of procedures developed in 2011.

No new procedures were developed during this reporting period.

12.0 Incidents

No incidents were recorded during 2011.

12.1 Complaints

No complaints were received during the reporting period.

13.0 Development works undertaken and proposed development of the facility with timescale

Restoration of the landfill completed in latter half 2009. As part of the facility restoration, the site has been developed for recreational purposes. The completed development includes two sports pitches (located in Zone 1). A new entrance has been constructed to the east of the existing entrance, giving access to a public car park. From the car park there is a pedestrian-only access to the sports pitches and to zones 2 and 3, where a network of landscaped scenic walks has been completed.

14.0 Financial provisions, staffing and public information.

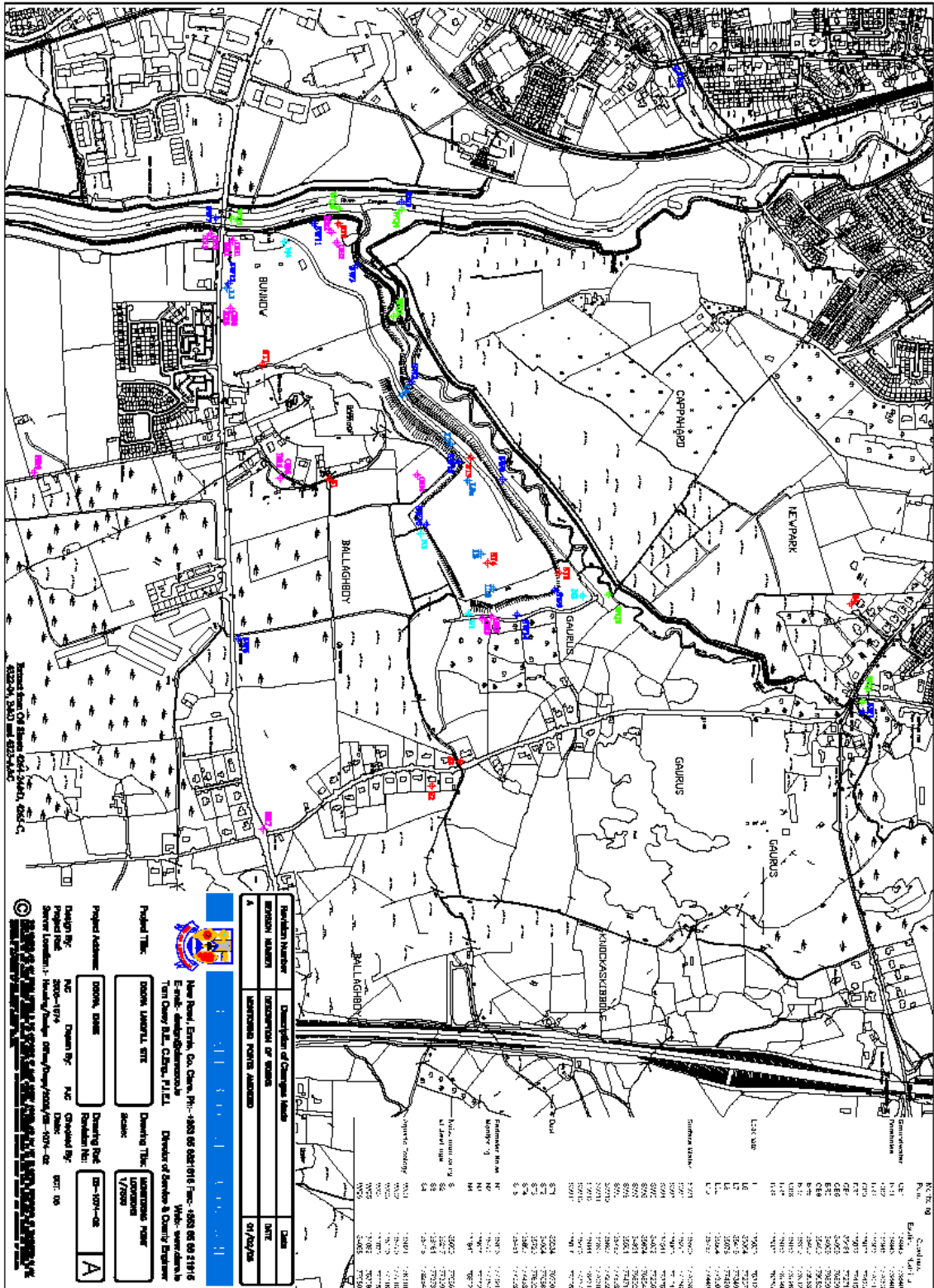
14.1 Budgetary allocations for the facility.

The maintenance budget for the facility for 2011 is €76,715.

14.2 Public Information.

Information relating to monitoring of the facility and correspondence to/from the EPA is available for inspection at the Environment Section of Clare County Council, Áras Contae An Chláir, New Road, Ennis, County Clare.

APPENDIX I



APPENDIX II

DOORA LANDFILL

WASTE LICENCE

Ref W0031-01

ENVIRONMENTAL OBJECTIVES AND TARGETS

FOR PERIOD 2010-2011

Environmental Objectives and Targets

Objective 1

Comply with all aspects of the licence.

Target 1.1 - Every effort will be made to comply with all conditions of the waste licence by the prescribed dates.

The Senior Engineer, Executive Engineer and various contractors under the supervision of Clare County Council staff have responsibility for implementing this objective.

Performance against Target: - Waste licence requirements have been complied with in a timely manner on all occasions except on occasion in relation to quarterly reports where delay in receipt of reports from consultants resulted in a delay in submission of reports to the Agency.

Objective 2

Ensure that sufficient funds are available to comply with Condition 11 of the licence. Responsibility for ensuring compliance with this objective lies with the Finance Officer of Clare County Council.

Performance against Target: Satisfactory.

Objective 3

Rehabilitate the closed landfill.

Target 3.1 – Ensure that the site is restored in accordance with a plan submitted to the EPA and ensure good aftercare.

The Senior Engineer, Environmental Services has responsibility for implementing this objective with the assistance of the Executive Engineer in charge and the Environmental Awareness Officer in the Environment Dept.

Performance against Target: On time. Restoration of the facility commenced in summer 2008 and is on target to be completed in August 2009. Ongoing maintenance of site as amenity throughout 2011

Objective 4

Develop the closed Landfill site as an amenity for the public.

Target 4.1 – Restore the site to a green field site and develop playing pitches and facilities for the general public. These facilities to be developed by the year 2009.

The Executive Engineer in charge has responsibility for implementing this objective.

Performance against Target: Upon completion of remediation works two playing pitches and a series of public walkways will be assessable from a carpark facility on the site.

Objective 5

Improve correspondence with the E.P.A.

Target 5.1 - Council will make every effort to reply to letters of correspondence received from the Agency by the requested dates.

The Executive Engineer in charge and Senior Staff Officer have responsibility for implementing this objective.

Performance against Target: The Council has responded to EPA communications by prescribed dates

Objective 6

Continue monitoring of site for leachate and landfill gas

Performance against Target: The Council is in compliance with this objective on an ongoing basis. Upon completion of the remediation works improved gas and leachate infrastructure will have been installed on site.

Time scale

The time scale for achieving these objectives is generally outlined in the target description. The others are generally ongoing and the aim is to achieve progress before the next review of the E.M.P.

Designation of Responsibilities

The Senior Engineer, Environmental Services Section of Clare County Council has overall responsibility for the implementation of these objectives. The specific responsibilities for each objective are outlined in the description.

Responsibility for ensuring compliance with objective number 2 lies with the Finance Officer of Clare County Council.