ANNUAL ENVIRONMENTAL REPORT

Bord na Móna Resource Recovery
Drehid Waste Management Facility
January 2011
Through
December 2011

Waste License Registration Number:	W0201-03
Licensee:	Bord Na Móna Resource Recovery Drehid Waste Management Facility
Location of Activity:	Killinagh Upper, Carbury, Co. Kildare
Attention:	Office of Environmental Enforcement, EPA Headquarters, PO Box 3000, Johnstown Castle Estate, Co. Wexford
Prepared by:	Anua Environmental

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BORD NA MÓNA

REVISION CONTROL TABLE

User is Responsible for Checking the Revision Status of This Document.

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
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Client: Bord na Mona Drehid Waste Management Facility

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1. INTRODUCTION

The following document is the 2011 Annual Environmental Report (AER) for Bord na Mona Waste Management Facility at Drehid, County Kildare. It covers the period from 1st January 2011 to 31st December 2011. The facility is a non-hazardous residual landfill and is also authorised to carry out composting of biodegradable wastes, however the composting plant was not operational in 2011.

The Environmental Protection Agency (Agency) granted the Waste Licence (W0201-01) in August 2005 and construction works began in August 2006. Phase 1 was completed in 2007 and the facility began accepting waste in February 2008. In April 2009, the Agency issued a revised Waste Licence (W0201-02), which increased the annual waste acceptance limit to 350,000 tonnes for a seven year period or until the end of 2015, whichever is sooner. In March 2010, the Agency issued a revised Waste Licence (W0201-03), which was primarily aimed at ensuring the landfill is operating in compliance with all relevant requirements of the Landfill Directive (199913 1IEC) including the need to divert biodegradable municipal waste from landfill.

The content of this AER is based on Schedule F of the Waste Licence and the report format follows guidelines set in the "Guidance Note for Annual Environmental Report" issued by the Agency.

2. SITE DESCRIPTION

2.1 Site Location and Layout

The facility is located approximately 9km south of Enfield in County Kildare and is within the confines of the Bord na Mona owned Timahoe bog. The site encompasses a total area of approximately 179 hectares (ha), which includes the site access road, clay borrow area, landfill footprint, sand and gravel borrow area and associated infrastructure.

The landfill, when complete, will encompass approximately 39 ha. It will be developed in eight distinct phases, each having duration of between 2 to 3 years. Waste deposition will only take place in the active phase and each phase will occupy between 2.2ha and 2.6 ha in area. The initial construction phase was completed in January 2008 and waste acceptance began in February of that year.

Subsequent phases will involve the construction of additional engineered cells, the provision of additional leachate storage capacity required, landfill gas management infrastructure including a utilisation plant that will generate electricity, and the development of a composting facility.

2.2 Waste Types & Volumes

Only non-hazardous, solid, residual waste is accepted for disposal. Hazardous and liquid wastes are not accepted. All wastes deliveries are subject to Waste Acceptance Procedures that have been approved by the Agency, as specified in Condition 8.1.10 of the Waste Licence.

A maximum of 360,000 tonnes of non hazardous municipal, commercial and industrial waste can be accepted annually for disposal until the end of 2015, after which the annual intake reduces to 120,000 tonnes per annum. A maximum of 25,000 tonnes of compostable wastes can be accepted in the composting facility, however this facility has not yet become operational. An unlimited amount of suitable inert waste can be accepted for use in on-site engineering works.

2.3 Waste Activities

The facility is a full containment landfill, which is designed to accept treated waste for final disposal. The waste activities carried out during the reporting period were: -

- Disposal (landfilling) of wastes,
- Recovery of wastes for removal off-site for recycling, and
- Recovery of certain inert wastes on-site for use in engineering works and as daily cover.

2.4 Waste Received, Recovered & Consigned

The different types and quantities of wastes received, disposed, recovered and consigned from the facility in 2011 are shown in Tables 2.1 and 2.2. The consigned wastes are those generated by daily operations and which were not suitable for recovery or disposal on-site.

Table 2.1 Waste Received 2011

WasteType	Description	Tonnes
Commercial and Domestic	Mixed Commercial and Domestic	314,147
Industrial	Non Hazardous Industrial Solid Waste	1,651
Total Disposed to Landfill		**315,799**
Construction and Demolition	Inert Soil and Fines Material	59,868
Construction and Demolition	Shredded Timber	8,591
Municipal & Agriculture	Stable compost & Inert material	10,786
Commercial	End of Life tyres for reuse	46
Construction and Demolition Rubble	Mix of C&D concrete, brick, tiles and ceramic	20,493
Total recovered on-site		**99,784**
Total Accepted onsite including Inert Waste		**415,583**

Table 2.2 Waste Consigned 2011

Description	Tonnes
Engine, Gear & Lube Oils	1.26
Leachate	30,528.61
Waste Electrical Equipment	0.64
Sand and stone containing Hydrocarbons	42.48
Paper & cardboard	0.34
Total Consigned	**30,572.07**

2.5 Landfill Capacity

The most recent topographic survey of landfill cell footprint is included in Appendix 1, which also includes calculations of the void space that has been used. The total capacity of the entire facility is estimated to be 4,080,000m^3. The current construction phase void space was calculated to be 1,985,336m^3 .It is estimated that approximately 1,236,069 m^3 of void space has been used. That leaves an actual remaining void space of 761,923 in the current constructed phases of the landfill. The remaining capacity of the entire as built landfill is approximately 2,843,931m^3. The projected closure date of the facility is 2028. The mass balance calculation is included in Appendix 1.

2.6 Method of Deposition of Wastes

2.6.1 Waste Acceptance

The waste accepted for disposal is residual waste from household, commercial and industrial sources. All of the waste collectors that deliver the waste have systems in place whereby the recyclable fraction is either collected separately, or else separation is carried out at their recovery/transfer facilities.

Wastes are delivered in Heavy Goods Vehicles (HGV) provided with the appropriate covers to prevent loss of load. Each vehicle first proceeds to the incoming weighbridge where it is weighed. The weighbridge operator and/or the Facility Manager may, at their own discretion, request the load to be tipped in the Waste Inspection Area to ensure it is suitable for acceptance.

The vehicles then proceed to the active fill area, where it is deposited under the direction of a banksman. Each landfill cell is divided into a number of 'grids', which are used to identify the areas where waste is deposited. Each load is assigned the relevant grid number. The vehicles weigh out at the outgoing weighbridge and receive an individual weighbridge docket before exiting the site.

2.6.2 Working Face

Waste is deposited close to and above the advancing tipping face. In accordance with Condition 5.6.1, the active face is confined to a height of 2.5 metres after compaction, a width of 25 metres and a slope no greater than 1 in 3. The site operatives inspect the deposited waste for items that are not acceptable under the Waste Licence, such as tyres, gas bottles, batteries etc. These are removed and stored in appropriate areas for later removal from the site.

The deposited waste is then spread in shallow layers on the inclined surface and compacted. Steel-wheeled compactors operate on the gradient of the more shallow

face, pushing and compacting thin layers of waste. Each day's waste input forms a 'block', which is compacted and covered. The following day a new

'block' of waste is deposited adjacent to this block. This allows areas that have been filled and are to be left for a period, to be progressively restored over the site life, minimising the areas of active waste deposition.

3. ENVIRONMENTAL MONITORING

Bord na Móna implements a comprehensive environmental monitoring programme to assess the significance of emissions from site activities. The programme, which is specified in Schedule C of the Waste Licence, includes groundwater, surface water, leachate, landfill gas, noise, dust and particulate monitoring and a biological assessment of the Cushaling River. The monitoring locations are shown on Figure 3.1.

The monitoring results, including the full laboratory reports, were submitted to the Agency at quarterly intervals in the reporting period. This section presents a summary of the monitoring, with summary graphs showing trends included in Appendix 2.

3.1 Groundwater Monitoring

3.1.1 Baseline Groundwater Conditions

The site is underlain by the Carboniferous Kildare Shelf, which comprises the Waulsortian, Boston Hill and Allenwood limestone Formations. The majority of the site is underlain by Waulsortian limestone, which comprises pale grey, fine grained limestone. The subsoil comprises basin peat deposits, which are underlain by thick (10 to 35m) undifferentiated till

The groundwater monitoring carried out before the start of the construction works established naturally occurring elevated ammonia, iron, manganese and electrical conductivity levels. The hydrochemistry in the upgradient and downgradient wells is similar and characteristic of the limestone rocks in confined conditions.

3.1.2 Groundwater Quality

Groundwater quality was monitored at monthly intervals. The sampling was carried out in accordance with internationally accepted techniques and control procedures and the analyses were completed by a laboratory using standard and internationally accepted procedures. Samples obtained were analysed for the monthly and annual parameters specified in Schedule C.3 of the Licence.

The results were generally consistent with those obtained previously, with naturally high levels of ammonia detected at all monitoring wells. The monitoring programme confirmed that the site activities are not impacting on groundwater quality.

3.2 Surface Water Monitoring

The site is located in the catchment of the River Barrow and a divide between the Barrow and the River Boyne catchments is more than 500m to the north. There is an extensive man made drainage network across the Bord na Móna landholding and the site is divided into a number of discrete areas, referred to as 'peat fields' formed by the surface water drains.

The drains connect to a central culvert, which flows towards the south, where it passes through settlement ponds, before discharging to the Cushaling River. Rainfall on roof and paved areas of the landfill discharge to the underground culvert and are directed to the settlement ponds prior to discharge to the Cushaling. The Cushaling supports salmonid and cyprinid fish, the latter being dominant in the slower flowing upper reaches.

The Cushaling is a tributary of River Figile, which is a sub-catchment of the River Barrow. Biological monitoring in the Figile downstream of the site before site development works began established that the surface water quality had been impacted by the peat extraction activities. The Barrow is a candidate Special Area of Conservation (cSAC), and a nationally important river for fisheries.

3.2.1 Visual Assessment

Bord-na-Mona carries out weekly inspections of the surface water drainage system. The inspections completed in the reporting period did not identify the presence of any impact on the drainage system associated with site activities.

3.2.2 Chemical Assessment

The surface water monitoring was conducted weekly at the three locations specified in the Waste Licence. The sampling was carried out in accordance with internationally accepted techniques and control procedures, the analyses were completed by a laboratory using standard and internationally accepted procedures.

BOD, Ammonia and Total Suspended Solids (TSS) levels were compared to their relevant emission limit values (ELV's). BOD did not exceed its ELV at any time thoughout the reporting period. The ELV for ammonia was consistently exceeded at SW 6 (Settlement Lagoon). The likely cause is due to the pumping of groundwater, which contains naturally occurring high ammonia, into the settlement lagoons to regulate their levels.

The ELV for Total Suspended Solids (TSS) was exceeded on 5 occasions at SW-6. The reasons for the exceedances are most likely due to heavy rainfall prior to the monitoring events.

3.3 Leachate

Leachate samples are analysed quarterly for BOD and COD at one monitoring location LT1. The samples are also analysed annually for the range of parameters specified in the Licence. The results are typical of those of a leachate from a relatively young municipal solid waste landfill.

3.4 Landfill Gas (LFG)

The gas monitoring programme includes monthly measurements of methane, carbon dioxide, oxygen and atmospheric pressure in wells located both outside and inside the waste body. The wells are at 50m intervals around the landfill footprint and two per hectare within the cells. The locations of the 17 external wells (LG-01 – LG-17), which were agreed in advance with the Agency, are shown on the monitoring location map included in Appendix 2.

3.4.1 Outside the Waste Body

The concentration limit for methane (1% v/v) was not exceeded in any of the monitoring wells in 2011.

The concentration limit for carbon dioxide (1.5% v/v) was also not exceeded at any of the monitoring wells in 2011.

3.4.2 Inside the Waste Body

Methane levels varied from 4 to 66 %v/v, carbon dioxide levels varied from 4 to 60 %v/v, while oxygen levels varied from 0 to 21. %v/v. These levels are typical of those in an operational non-hazardous waste landfill

3.5 Fugitive Emissions Survey

An investigation of fugitive emissions was conducted at the Drehid Facility to evaluate potential areas of landfill gas release/flux from the surface of the landfill cap. The survey involved landfill cap source monitoring using a portable Photo Ionisation Detector (PID) and a portable Flame Ionisation Detector (FID) to detect VOC's and Methane. A Global Positioning System (Trimble GPS) was used to mark areas sampled using a grid system. The emissions survey was carried out on 21st October 2011 by Odour Monitoring Ireland.

3.6 Noise Survey

Noise monitoring is carried out annually at five monitoring locations (N2 – N5 and NSL-1) in accordance with International Standards Organisation 1996: Acoustics-description and Measurement of Environmental Noise (Parts 1, 2 and 3). The monitoring includes both daytime and night time monitoring. The results confirmed compliance with the emission limits. See monitoring location map in Appendix 2

3.7 Dust Monitoring

Dust deposition is monitored monthly at five monitoring locations (D1, D2, D5, D6 and D8) as shown on the monitoring location map in Appendix 2. With the exception of monitoring location D6 in August all of the monitoring results were less than the deposition limit set in the licence (350 mg/m^2/day). The exceedance at D6 was due to its location beside an internal haul road which was busy with loader traffic carrying earth removed from the newly engineered landfill cell to the clay borrow area.

3.8 Meteorological Monitoring

Average rainfall, temperature, humidity and wind speed and direction for the monitoring period were obtained from the Meteorological Station at Casement Aerodrome, which is located approximately 40 km from the facility, is presented in Table 3.1.

Table 3.1 Meteorological Data: Casement Aerodrome – 2011

Rainfall	
Total Annual	727 mm
Maximum monthly (October)	165.9 mm
Minimum monthly (March)	15 mm
Temperature	
Mean	10°C
Mean Maximum (August)	14.1°C
Mean Minimum (January)	3.1°C
Wind (Knots)	
Mean	10.6Kts
Maximum Month (December)	16.1Kts
Minimum Month (July)	6.8Kts
Prevailing direction	South West
Prevailing sector	South West

The total annual rainfall is 716 mm. The winds are predominantly from the south west sector.

3.9 Biological Monitoring

The annual biological assessment of the Cushaling River was carried out in accordance with Condition 8.11 of the Licence 19th of September 2011. Sampling was undertaken at one monitoring location downstream of the facility. As the river rises on-site there is no upstream sampling location. The assessment used the EPA Q-rating system for the evaluation of rivers and streams. Benthic macro-invertebrates were sampled qualitatively using kick-sampling and the results indicated that the Q value to be Q3-4, which is slightly polluted. The results of is that same as that for the 2008 assessment, which was carried out prior to waste acceptance. The assessment indicates that the facility is not impacting the Cushaling River.

4. SITE DEVELOPMENT WORKS

4.1 Tank, Pipeline and Bund Testing

An inspection and integrity testing of the bunds at the facility was carried out by Fehily Timoney and Co in the previous reporting year.

4.2 Summary of Resource & Energy Consumption

Table 4.1 presents an estimate of the resources used on-site in 2011. Bord na Mona completed an Energy Efficiency Audit of the facility in compliance with Conditions 7.1 and 7.2 of the Licence in January 2009. The audit was carried out in accordance with the Agency's "Guidance Note on Energy Efficiency Auditing" (2003). The Audit report recommended the development of a documented energy policy statement, as this is considered fundamental to the successful implementation of any management system as it provides the framework for the introduction and maintenance of energy efficiency and conservation measures in the day to day operation of the facility.

The facility is a significant source of greenhouse gas emissions, not through the use of fossil fuels, but as a result of the production and flaring of landfill gas. To address this Bord-na-Mona intends to install a landfill gas utilisation plant at the facility, when gas volumes are sufficient to support it. When operational, this will significantly reduce the facility's carbon footprint.

Table 4.1 Resources Used On-Site

Resources	Quantities
Diesel (green)	280,364 litres
Kerosene	2500 litres
Electricity	341,250 kWh

4.3 Site Developments

Phase 3 of the landfill was completed in 2009 and work began in 2010 on the construction of phase 4 of the landfill. Construction of the composting plant also began in quarter 4 of 2010 and construction was completed in quarter 3 of 2011.

4.4 Stability Assessment

The Drehid Facility is currently within Phase 4 of construction works, which together with Phases 1, 2 and 3 are subject to a stringent Construction Quality Assurance (CQA) programme. This programme ensures the side slopes of the retaining bunds are stable. The CQA plan has been submitted to the Agency. The method of waste placement, where the active waste face is confined to a height of 2.5 metres after compaction, a width of 25 metres and a slope no greater than 1 in 3 means the risk of slope failure is negligible. Based on visual inspections, from visits to the Drehid Waste Management Facility, and in particular the Landfill Site, it is Tobin Consulting Engineers opinion that the stability of the side slopes of the landfill are satisfactory, however this opinion is subject to continuing control of leachate levels.

If any significant change of slope condition arises as mentioned, then a geotechnical professional should be consulted to ensure the stability of the slope is maintained.

5. EMISSIONS

5.1 Landfill Gas

The volumes of landfill gas generated at the facility during the reporting period were estimated using predictive gas generation model GasSim Version 1.54. The model input data were site specific values, i.e. size of the site, operational period, quantity and type of waste.

The model estimates that approximately 2507m^3 / hour of landfill gas (methane and carbon dioxide) was generated at the facility over the reporting period. The total landfill gas flared from the site was calculated to be 2193.3m^3/ hour. Therefore the fugitive landfill gas was calculated to be 313.7m^3/ hour. The fugitive landfill gas rate can be divided in to 51.1m^3/ hour of methane and 262.6m^3/ hour of carbon dioxide.

5.2 Surface Water

Rainfall from the landfill cap and hard stand areas of the landfill discharges firstly into a regulated settlement lagoon, the outlet of which (SW-6) is continuously monitored. The discharge then flows to the extensive manmade drainage network across the Bord na Móna landholding formed by the surface water drains between areas referred to as “Peat fields”. The drain connect to a central culvert, which flows towards the south, where it passes through settlement ponds, before discharging to the Cushaling River.

5.3 Leachate

The amount of leachate taken offsite in 2011 was 30,528.61 tonnes. The leachate was removed off site for treatment at Kildare County Council’s Waste Water Treatment Plant in Lexslip, Co. Kildare and also to Dublin City Councils Ringsend Waste Water Treatment Plant Facility.

6. NUISANCE CONTROL

Bord na Móna is committed to operating in the best possible manner, using the best available techniques to minimise impacts to the environment and local residential neighbours. The potential sources of nuisance at the facility are odour, vermin, birds, flies, mud, dust and litter.

6.1 Odour

In addition to the gas extraction and flaring system, good operational practices on-site are the main controls to avoid odour nuisances. The handling, depositing and covering of waste at the facility is carried out in accordance with the Agency's Landfill Manual "Landfill Operational Practices". In addition, Bord na Móna have developed a site specific "Odour Management Plan".

The waste delivery trucks are unloaded at the working face and the waste is compacted within 3 to 4 minutes. The level areas of the working face are covered on a continuous basis during the day. The slope of the working face is covered completely with artificial cover sheets at the end of each working day, which can easily be removed again the following day prior to commencement of operations.

6.2 Vermin / Flies / Insects

The methods used for vermin control are as detailed in the EMS, which is ISO 14001 accredited. These control measures have found to be successful.

6.3 Birds

Bord na Móna employs one of the leading bird control specialists, Falcon Bird Control Services, who operate a seven day dawn to dusk programme. An aviary is provided at the site, which houses the birds of prey. The aim is to create an association of danger, so that birds choose not to fly around the area where bird control is active. To date these measures have proven to be successful.

6.4 Dust & Litter

Bord na Móna has prepared a Dust and Litter Control Plan, a copy of which is included in Appendix 4.

Dust and mud control measures were implemented at the start of the construction phase of the site and continued into the operational phase. These measures include the use of a wheelwash, road sweeper and a water bowser to dampen access roads and stockpiles during periods of dry weather. To date these measures have proven to be successful.

Litter is controlled by fencing which was installed around the landfill footprint as specified in the Waste Licence. Portable litter fencing is also used at the working face, which can be moved to various points around the working face depending on the wind direction. As part of operational controls all litter is collected at the end of the working day and litter has not been an issue at the facility.

7. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

7.1 Incidents

There were forty-five (45) incidents on-site during the reporting period. The majority (39) related to exceedances of the ammonia limit set in the Licence at SW-6. Four related to exceedances of both the ammonia and suspended solids limit at SW6. A single incident related to a flare shutdown. The remaining incident related to diesel spill on the access road. All of these incidents were reported to the Agency.

7.2 Register of Complaints

Bord na Móna maintains a register of complaints in compliance with Condition 11.4. Details of all complaints received during the reporting period and the action taken by Bord na Móna are available at the facility. A total of 78 complaints were received in the reporting period relating to odour (75), litter (1), lights (1), and traffic (1)at the facility. All of the complaints were addressed by facility staff and were resolved.

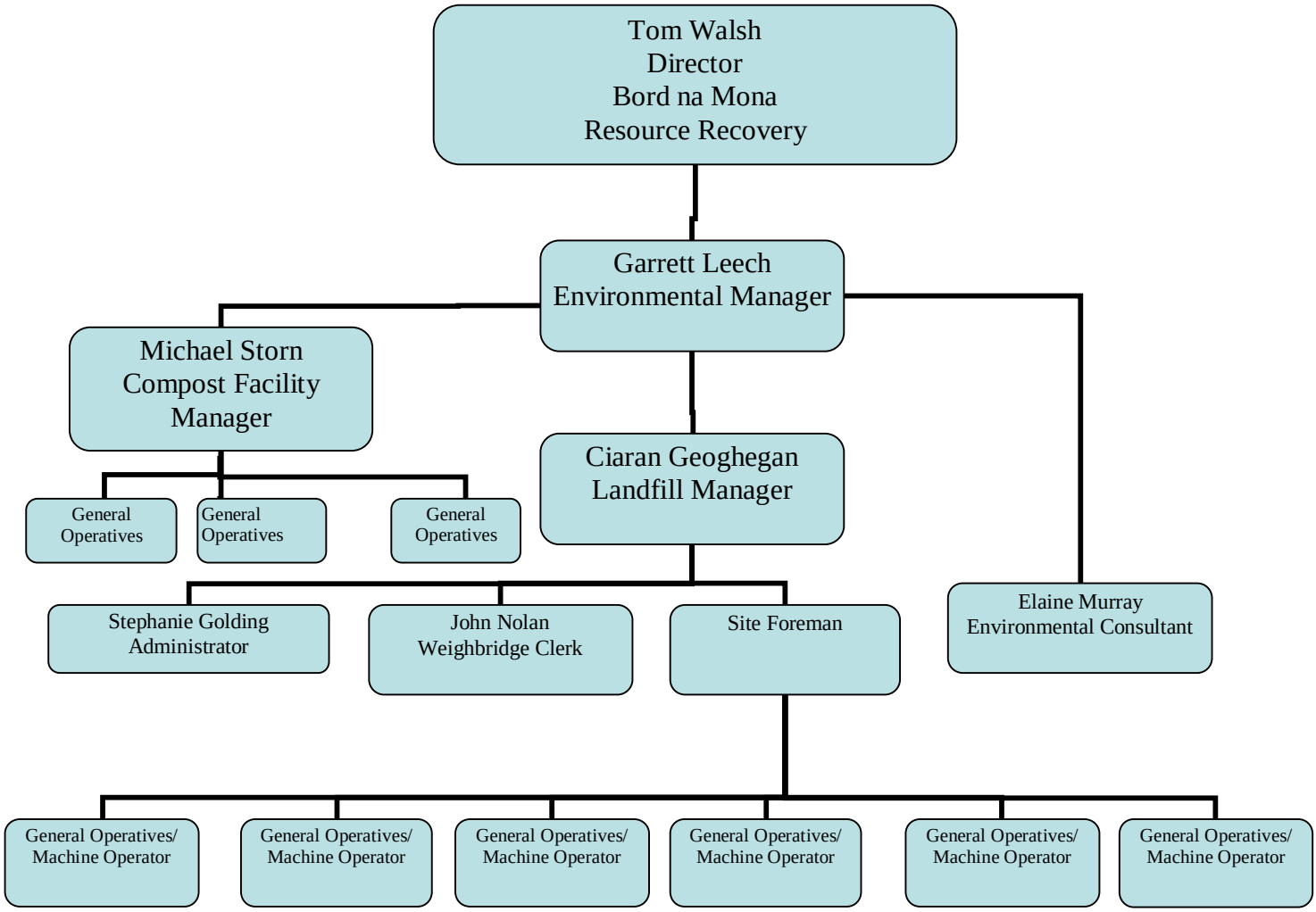
8. ENVIRONMENTAL MANAGEMENT SYSTEM

8.1 Management Structure

The Management Structure as required by Condition 2.2.2.1 of the waste licence was submitted to the Agency on 26th May 2006, as part of the EMS. An amended version is included below.

8.1.1 Site Management Structure

The day to day management of the facility and supervision of waste activities are the responsibility of the Environmental Manager, Landfill Manager, Facility Supervisor/Foreman and the General Operatives. The site organisational chart is shown below.



8.1.2 Staff Training

Staff training is carried out in accordance with the Environmental Management System (EMS)training procedures for the facility which is included in Appendix 5.

8.2 EMP

In compliance with Condition 2.2.1 an Environmental Management System (EMS) has been documented and implemented at the Facility. As part of the EMS an Environmental Management Programme (EMP) was developed.

8.2.1 Schedule of Objectives 2011

Table 8.1 describes the implementation of the objectives and targets in the reporting period.

8.2.2 Schedule of Objectives 2012

Bord na Mona has set a schedule of targets and objectives for 2012. These are presented in Table 8.2.

8.3 Communications Programme

The Communications Programme required by Condition 2.4.1 Licence, was established three months before the start of waste activities and has been submitted to the Agency.

Table 8.1 Progress Report on Schedule of Objectives and Targets for 2011

Ref.	Objective	Target	Status	Responsibility
1	Completion of Construction Strategy	Construction of additional phases 4-8	Complete	CG
2	Completion of Construction Strategy	Construction of further engineered landfill cells along with associated infrastructure in line with the phased construction management plan. (Phases 4-8)	Complete	CG
3	Waste Minimisation ongoing target (2020)	Re-use where possible materials used on site.	Complete	Team
		Minimise import of materials from off site	Complete	Team
4	Upkeep of Environmental Management System	Maintain EMS to ISO 14001 standard/certification	Incomplete	Team
		Implement ISO 16001 at the Facility	Incomplete	SG/EM/CG
		Roll out of the Environmental Management System at the Composting Plant	Incomplete	Team
		Roll out Oof ISO 9001	Complete	SG/EM/CG
		Maintain Policy for control of the office waste	Complete	JN
5	Raise awareness with contractors of Environmental Policy of the site	Contractors Induction	Complete	Technical Services/EM
6	Environmental Monitoring	Noise, Weekly surface water, Annual & Monthly Groundwater, Monthly Landfill Gas and Dust Monitoring	Complete	CG
7	Environmental Training and Awareness	Continue internal training programme and assessment of training needs for all operational staff during 2011	Complete	Team
8	Review effectiveness of Nuisance Control measures	For: Litter dust, birds and vermin	Complete	CG
9	Meteorological monitoring	Maintain log of Meteorological data- *Continuous*	Complete	EM
10	BMW conversion rate (in line with EU Landfill Directive)	*Condition 8.1.2 of Waste Licence W0201-03* 'From 1st July 2010 to 30th June 2013 inclusive, a mazimum of 47% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW), measured on a calendar year basis or, in 2010 and 2012, part thereof'	Complete	PON
11	Completion of Construction of the Composting Plant	Construction of the Composting Plant began in the last quarter of 2010. This facility id due to be completed in the third quarter of 2011.	Complete	CG
12	Review outstanding Energy Efficiency Audit recommendations	Assess recommendations and introduce where possible. Investigate and implement possible measures for the reduction of diesel consumption.	Complete	CG

Table 8.2 Schedule of Objectives and Targets for 2011 (continued)

Ref.	Objective	Target	Status	Responsibility
13	Review Aspects Register to reflect Composting Plant and Construction Phases 4-8.	Assess risks associated with new construction phases	Complete	Team
14	Intermediate Liner Installation	Installation of an intermediate liner to minimise leachate generation and fugitive emissions from the landfill	Complete	CG
15	Environmental Compliance	Review licence conditions outlined within W0201-03	Complete	EM/CG
16	Environmental Auditing	Carrying out audits of customers to establish environmental compliance	Complete	EM/CG/SG

Table 8.2 Schedule of Objectives and Targets for 2012

Ref No	Objective	Target	Timescale	Response	Status
1	O&T 2012				Ongoing
2	Completion of Construction Strategy	Construction of further engineered landfill cells along with associated infrastructure in line with the phased construction management plan. (Phases 4-8)	Ongoing	CG	Ongoing
3	Waste Minimisation ongoing target (2020)	Re-use where possible materials used on site.	Ongoing	CG	Ongoing
		Minimise import of materials from off site	Ongoing	Team	Ongoing
4	Upkeep of Environmental Management System	Maintain EMS to ISO 14001 standard/certification	Ongoing	Team	Ongoing
		Implement ISO 16001 at the Facility	Dec-12	Team	Ongoing
		Roll out of the Environmental Management System at the Composting Plant	Aug-12	SG/EM/MS	Ongoing
		Roll out Oof ISO 9001	Dec-12	Team	Ongoing
		Maintain Policy for control of the office waste	Ongoing	SG/EM/CG	Ongoing
5	Raise awareness with contractors of Environmental Policy of the site	Contractors Induction	Ongoing	JN	Ongoing

6	Environmental Monitoring	Noise, Weekly surface water, Annual & Monthly Groundwater, Monthly Landfill Gas and Dust Monitoring	Ongoing	Technical Services/EM	Ongoing
7	Environmental Training and Awareness	Continue internal training programme and assessment of training needs for all operational staff during 2012	Ongoing	CG	Ongoing
8	Review effectiveness of Nuisance Control measures	For: Litter dust, birds and vermin	Ongoing	Team	Ongoing
9	Meteorological monitoring	Maintain log of Meteorological data- *Continuous*	Ongoing	CG	Ongoing
10	Landfill Gas Utilisation	Installation of landfill gas engines on-site for power generation.	Dec-12	CG/GL	Ongoing
11	BMW conversion rate (in line with EU Landfill Directive)	*Condition 8.1.2 of Waste Licence W0201-03* 'From 1st July 2010 to 30th June 2013 inclusive, a maximum of 47% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW), measured on a calendar year basis or, in 2010 and 2012, part thereof'	Ongoing	EM	Ongoing
12	Review outstanding Energy Efficiency Audit recommendations	Assess recommendations and introduce where possible. Investigate and implement possible measures for the reduction of diesel consumption.	Ongoing	CG	Ongoing
13	Review Aspects Register to reflect Composting Plant and Construction Phases 4-8.	Assess risks associated with new construction phases	Ongoing	Team	Ongoing
14	Intermediate Liner Installation	Installation of an intermediate liner to minimise leachate generation and fugitive emissions from the landfill	Ongoing	CG	Ongoing
15	Environmental Compliance	Review licence conditions outlined within W0201-03	Ongoing	EM/CG	Ongoing
16	Environmental Auditing	Carrying out audits of customers to establish environmental compliance	Ongoing	EM/CG/SG	Ongoing

9. OTHER REPORTS

9.1 Financial Provision

An Environmental Liability Risk Assessment (ELRA) was submitted as part of 2007 AER. There has been no change in operations at the facility and hence there remains no change in the environmental risks and liabilities. The ELRA outlines

- Estimated costs that may arise from accidents and unplanned events
- Estimated costs associated with the closure, restoration and aftercare measures, including unexpected closure

The following conclusions were made in the ELRA –

Cost of unexpected closure at the end of year 1 and reoccurring costs - €1,400,000.
Restoration and aftercare costs at the end of scheduled operational life - €3,200,000.
Maximum cost of unplanned incident - €200,000.

9.2 Contributions to Community fund

A contribution of €397,279.27was made to the community fund in 2011 in compliance with planning condition 17 of PL09.212059.

9.3 Statement on Costs of Landfill

The costs in the setting up, operation of, and provision of financial security and closure and after-care for a period of at least 30 years, are covered by the price charged for the disposal of waste at the facility.

9.4 European Pollutant Release and Transfer Register

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Bord na Móna are required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is included in Appendix6

9.5 Waste Recovery Report

National and regional policy on waste management is based on the Department of the Environment and Local Government's policy statement of September 1998, "Changing Our Ways", in which the Government affirmed its commitment to the EU hierarchy of waste management. In order of preference this is: -

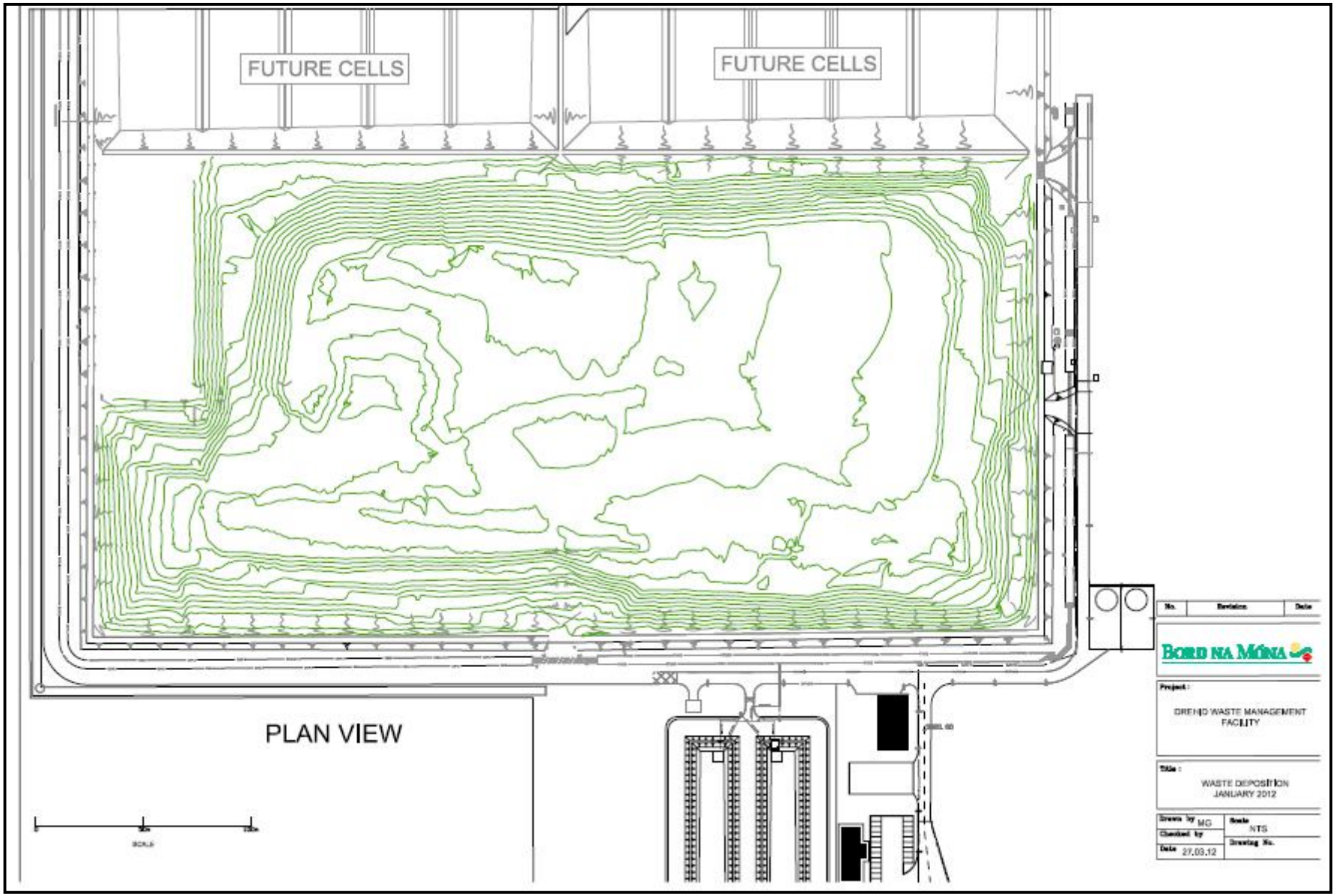
- Prevention,
- Minimisation,
- Reuse,
- Recycling,
- Energy Recovery,
- Disposal.

The policy statement was based on, and is supported by, EU legislation (Landfill Directive 99/339/EC) that requires the diversion of organic wastes, including green waste, from landfill to alternative waste treatment facilities.

In 2011, Bord na Móna accepted 99,784 tonnes of inert waste for recovery which was used in on-site engineering works at the facility.

APPENDIX 1

Topographic Survey


FUTURE CELLS
FUTURE CELLS
PLAN VIEW
No.
Revision
Date
BORD NA MÓNA
Project :
DREHID WASTE MANAGEMENT FACILITY
Title :
WASTE DEPOSITION JANUARY 2012
Drawn by MC
Checked by
Date 27.03.12
Scale NTS
Drawing No.

Mass Balance Calculation

To calculate the total void space consumed a number of assumptions must be made.

Assume Density of 0.88t/ m3 for General Solid waste.

Assume Density of 1 .8t/ m3 Non Hazardous soils + Sludge

Etc. (as in Table 1 below)

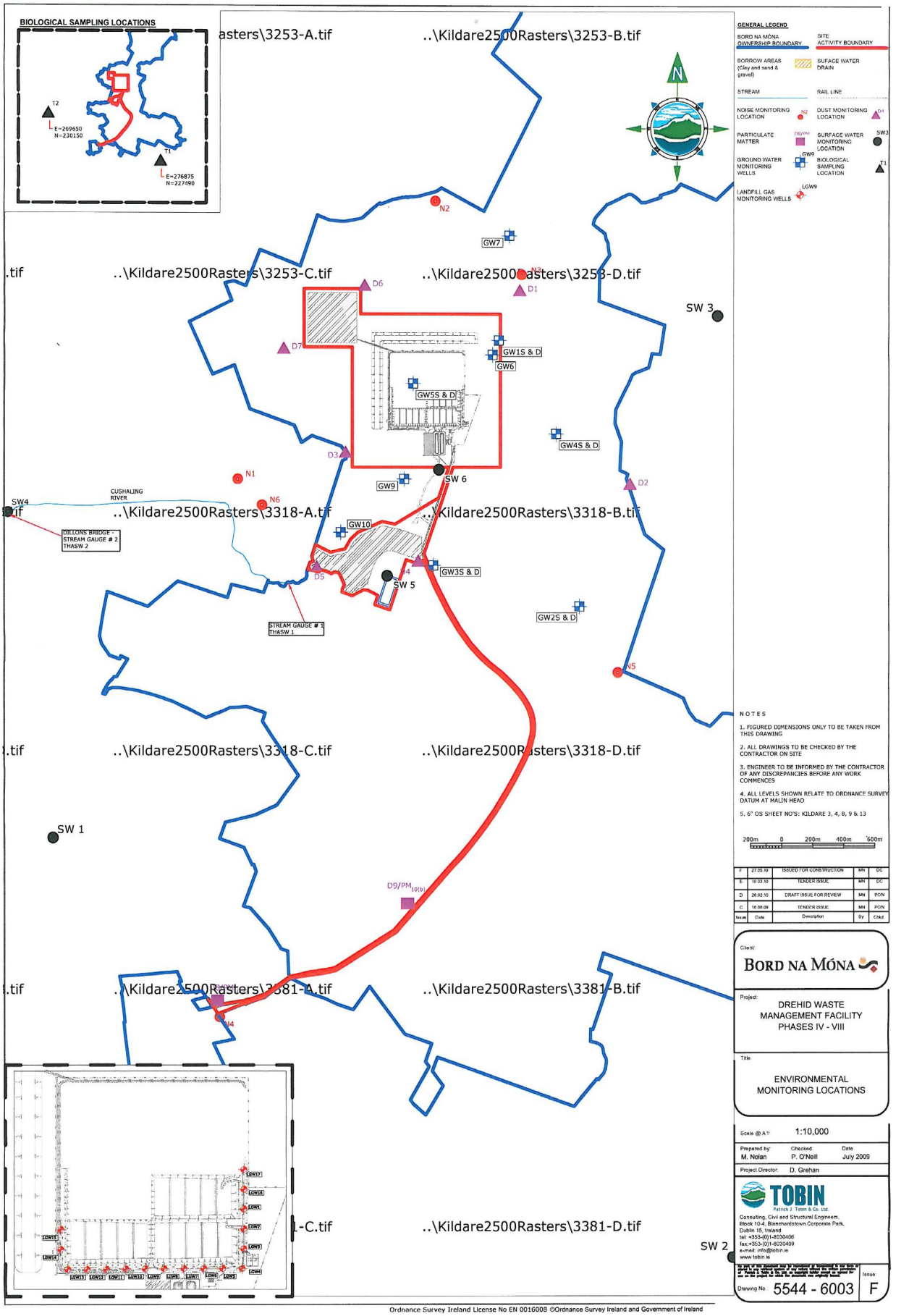
Total void space consumed by General Waste in 2011 = **315,799** m3
Total void space consumed by Inert material in 2011= **99,784**. m3
Total void space consumed in 2008 = **164,167**m3
Total void space consumed in 2009 = **305,947**m3
Total void space consumed in 2010 = **446,641**
Total viod space consumed in 2011 = 435,900
Total void space remaining = 2,727,345 m3

Table 1 Mass Balance 2011

Waste Types	Tonnage Intake	Density Tonnes / m^3	Volume Intake m^3
General Solid Waste	315,799	0.88	288,842.46
Inert Soil and Fines Material	59,868	1.6	9,887.26
Shredded Timber	8591	0.7	4,637.32
Municipal and Agricultural Compost	10,786	1.6	1,157.79
Construction and Demolition Rubble	20493	1.9	47,063.63
Total Waste (excl tyres)	**415,537**		**435,900**

APPENDIX 2

Monitoring Location Maps / Monitoring Results


BIOLOGICAL SAMPLING LOCATIONS
T2
E=269650
N=230150
T1
E=276875
N=227490
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..\Kildare2500Rasters\3253-B.tif
..\Kildare2500Rasters\3253-C.tif
..\Kildare2500Rasters\3253-D.tif
..\Kildare2500Rasters\3318-A.tif
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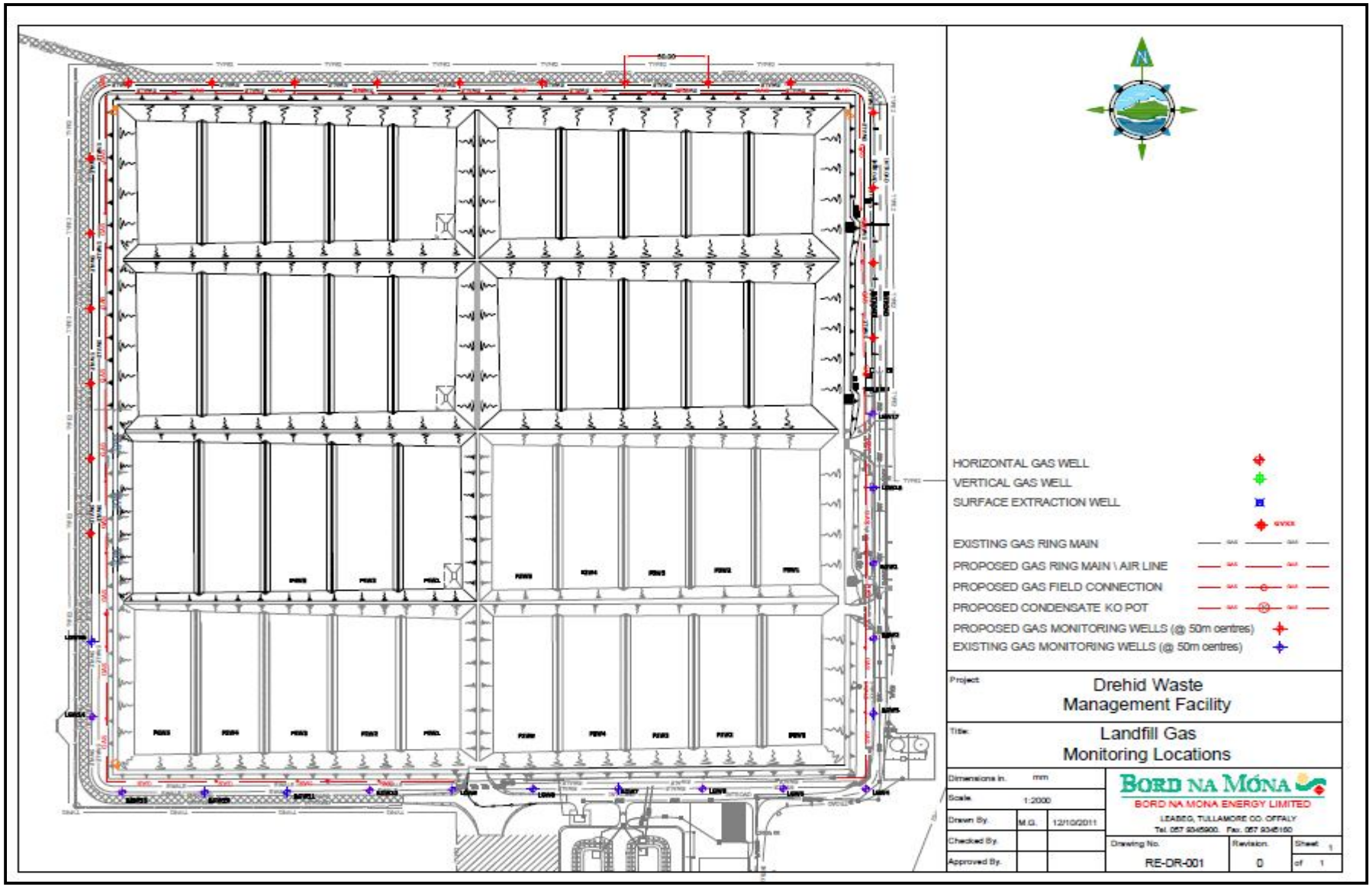
..\Kildare2500Rasters\3318-C.tif
..\Kildare2500Rasters\3318-D.tif
..\Kildare2500Rasters\3381-A.tif
..\Kildare2500Rasters\3381-B.tif
..\Kildare2500Rasters\3381-C.tif
..\Kildare2500Rasters\3381-D.tif
GENERAL LEGEND
BORD NA MÓNA OWNERSHIP BOUNDARY
SITE ACTIVITY BOUNDARY
BORROW AREAS (Clay and sand & gravel)
SUFACE WATER DRAIN
STREAM
RAIL LINE
NOISE MONITORING LOCATION
DUST MONITORING LOCATION
PARTICULATE MATTER
SURFACE WATER MONITORING LOCATION
GROUND WATER MONITORING WELLS
BIOLOGICAL SAMPLING LOCATION
LANDFILL GAS MONITORING WELLS
N
N1
N2
N3
N4
N5
N6
D1
D2
D3
D4
D5
D6
D7
D9/PM10(b)
GW1S & D
GW2S & D
GW3S & D
GW4S & D
GW5S & D
GW6
GW7
GW9
GW10
SW 1
SW 2
SW 3
SW 4
SW 5
SW 6
CUSHALING RIVER
DILLONS BRIDGE - STREAM GAUGE # 2 THASW 2
STREAM GAUGE # 1 THASW 1
NOTES
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD
5. 6" OS SHEET NO'S: KILDARE 3, 4, 8, 9 & 13
200m 0 200m 400m 600m
F 27.05.10 ISSUED FOR CONSTRUCTION MN DC
E 19.03.10 TENDER ISSUE MN DC
D 26.02.10 DRAFT ISSUE FOR REVIEW MN PDN
C 16.08.09 TENDER ISSUE MN PDN
Issue Date Description By Chkd
Client: BORD NA MÓNA
Project: DREHID WASTE MANAGEMENT FACILITY PHASES IV - VIII
Title: ENVIRONMENTAL MONITORING LOCATIONS
Scale @ A1: 1:10,000
Prepared by: M. Nolan
Checked: P. O'Neill
Date: July 2009
Project Director: D. Grehan
TOBIN
Patrick J. Tobin & Co. Ltd.
Consulting, Civil and Structural Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland
tel: +353-(0)1-8030406
fax:+353-(0)1-8030409
e-mail: info@tobin.ie
www.tobin.ie
Drawing No: 5544 - 6003
Issue: F
Ordnance Survey Ireland License No EN 0016008 ©Ordnance Survey Ireland and Government of Ireland


HORIZONTAL GAS WELL
VERTICAL GAS WELL
SURFACE EXTRACTION WELL
EXISTING GAS RING MAIN
PROPOSED GAS RING MAIN \ AIR LINE
PROPOSED GAS FIELD CONNECTION
PROPOSED CONDENSATE KO POT
PROPOSED GAS MONITORING WELLS (@ 50m centres)
EXISTING GAS MONITORING WELLS (@ 50m centres)
Project:
Drehid Waste Management Facility
Title:
Landfill Gas Monitoring Locations
Dimensions in: mm
Scale: 1:2000
Drawn By: M.G. 12/10/2011
Checked By:
Approved By:
BORD NA MÓNA
BORD NA MONA ENERGY LIMITED
LEABEG, TULLAMORE CO. OFFALY
Tel. 057 9345900 Fax. 057 9345160
Drawing No. RE-DR-001
Revision: 0
Sheet 1 of 1

Groundwater Results

Parameter	Units	GW1s											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
pH	pH Units	7.2	7.1	7.3	7.3	7.3	7.3	7.3	7.3	7.2	7.3	7.2	7.3
Conductivity	µS/cm	911	730	937	773	781	735	753	743	932	883	980	1029
Ammoniacal Nitrogen	mg/l	8.1	7.2	7.0	7.3	7.1	7.5	7.1	7.1	7.1	6.7	7.1	7.1
Visual / Odour		Dull/ Cloudy, few S.S, Slight odour	Cloudy/ grey, few S.S, slight odour	Cloudy/ dull brown, high S.S, slight odour	Grey, high S.S, no odour	Light brown, some S.S, slight odour	Cloudy, some S.S, slight odour	Cloudy, some S.S, no odour	Slightly cloudy, some S.S, no odour	Grey, some S.S, slight odour	Cloudy/ light brown, some S.S, no odour	Cloudy/ light brown, some S.S, no odour	Cloudy/ light grey, some S.S, foul odour
Chloride	mg/l	13	13	14	14	13	13	13	13	14	14	13	13
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.03		
Total Phosphorus	mg/l										0.93		
Sulphate	µg/l										0.99		
Sodium	µg/l										18		
Magnesium	µg/l										22		
Potassium	µg/l										1.4		
Calcium	µg/l										244		
Aluminium µg/l	µg/l										190		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										2		
Cobalt µg/l	µg/l										4		
Manganese µg/l	µg/l										536		
Nickel µg/l	µg/l										25		
Copper µg/l	µg/l										5		
Zinc µg/l	µg/l										54		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										514		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										7		
Selenium	µg/l										<2		
Iron mg/l	mg/l										16		
Boron µg/l	mg/l										16		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										78		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										>100		
e.Coli	CFU/100mls										>100		

Parameter	Units	GW1d											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Clear, no S.S, no odour	Cloudy/ grey,few S.S, no odour	Clear,no S.S, no odour	Clear, no S.S, no odour	Cloudy, few S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Grey, some S.S, no odour	Cloudy, few S.S, no odour	Cloudy, few S.S, no odour	Cloudy, few S.S, no odour
pH	pH Units	7.7	7.5	7.3	7.4	7.2	7.4	7.1	7.1	7.4	7.1	7.4	7.3
Conductivity	µS/cm	776	952	737	761	741	723	766	734	728	726	722	706
Ammoniacal Nitrogen	mg/l	7.80	7.60	7.50	7.80	7.60	7.00	7.50	6.70	7.60	7.20	6.20	5.70
Chloride	mg/l	12	12	12	13	12	12	12	12	13	11	11	11
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.01		
Total Phosphorus	mg/l										0.68		
Sulphate	µg/l										<0.5		
Sodium	µg/l										14		
Magnesium	µg/l										7.4		
Potassium	µg/l										1.4		
Calcium	µg/l										187		
Aluminium µg/l	µg/l										148		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										<2		
Cobalt µg/l	µg/l										13		
Manganese µg/l	µg/l										225		
Nickel µg/l	µg/l										51		
Copper µg/l	µg/l										94		
Zinc µg/l	µg/l										50		
Cadmium µg/l	µg/l										4		
Barium µg/l	µg/l										429		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										5		
Selenium	µg/l										<2		
Iron mg/l	mg/l										11		
Boron µg/l	mg/l										12		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										325		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										0		
e.Coli	CFU/100mls										0		

Parameter	Units	GW2s											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Orange/ Dark Brown, Few S.S, Slight odour	Light brown, few S.S, no odour	Light brown, few S.S, no odour	Light brown, no S.S, Slight odour	Light brown, few S.S, Slight odour	Cloudy/ Light brown, few S.S, no odour	Light brown, few S.S, no odour	V.Light brown, few S.S, no odour	Pale yellow, some S.S, slight odour	Cloudy/ brown, high S.S, no odour	Dark Orange, high S.S, no odour	Light brown, some S.S, no odour
pH	pH Units	7.3	7.5	7.2	7.2	7.1	7.3	7.0	7.0	7.2	7.0	7.3	7.3
Conductivity	µS/cm	863	837	824	851	864	847	876	860	851	827	843	825
Ammoniacal Nitrogen	mg/l	1.07	0.72	1.18	2.34	1.32	2.46	1.02	1.75	1.36	2.04	2.08	1.84
Chloride	mg/l	11	11	12	13	12	12	12	12	12	12	11	11
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.12		
Total Phosphorus	mg/l										0.26		
Sulphate	µg/l										7.94		
Sodium	µg/l										7.4		
Magnesium	µg/l										30		
Potassium	µg/l										0.8		
Calcium	µg/l										378		
Aluminium µg/l	µg/l										517		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										3		
Cobalt µg/l	µg/l										8		
Manganese µg/l	µg/l										901		
Nickel µg/l	µg/l										34		
Copper µg/l	µg/l										10		
Zinc µg/l	µg/l										61		
Cadmium µg/l	µg/l										2		
Barium µg/l	µg/l										756		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										10		
Selenium	µg/l										2		
Iron mg/l	mg/l										17		
Boron µg/l	mg/l										42		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										20		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										>100		
e.Coli	CFU/100mls										>100		

Parameter	Units	GW3s											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Dark Orange / Brown, Some S.S, no odour	Light brown, few S.S, foul odour	Pale yellow, some S.S, foul odour	Cloudy, some S.S, no odour	Green /grey, some S.S, foul odour	Yellow, few S.S, foul odour	Light Brown/ Cloudy, few S.S, foul odour	Grey, few S.S, foul odour	Pale grey, some S.S, slight odour	Grey, some S.S, foul odour	Light brown /orange, some S.S, foul odour	Light brown, few S.S, foul odour
pH	pH Units	7.1	7.3	7.0	7.1	7.0	7.2	6.8	7.0	7.0	6.6	7.2	7.2
Conductivity	µS/cm	852	804	824	824	849	853	896	892	872	832	788	760
Ammoniacal Nitrogen	mg/l	1.51	1.23	4.32	5.00	5.30	5.20	5.30	5.20	5.20	4.77	4.10	3.02
Chloride	mg/l	15	16	15	16	15	15	14	14	15	13	13	13
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.02		
Total Phosphorus	mg/l										0.75		
Sulphate	µg/l										2.62		
Sodium	µg/l										15		
Magnesium	µg/l										18		
Potassium	µg/l										1.7		
Calcium	µg/l										218		
Aluminium µg/l	µg/l										326		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										2		
Cobalt µg/l	µg/l										<2		
Manganese µg/l	µg/l										432		
Nickel µg/l	µg/l										6		
Copper µg/l	µg/l										5		
Zinc µg/l	µg/l										48		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										556		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										8		
Selenium	µg/l										<2		
Iron mg/l	mg/l										14		
Boron µg/l	mg/l										25		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										9		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										>100		
e.Coli	CFU/100mls										>100		

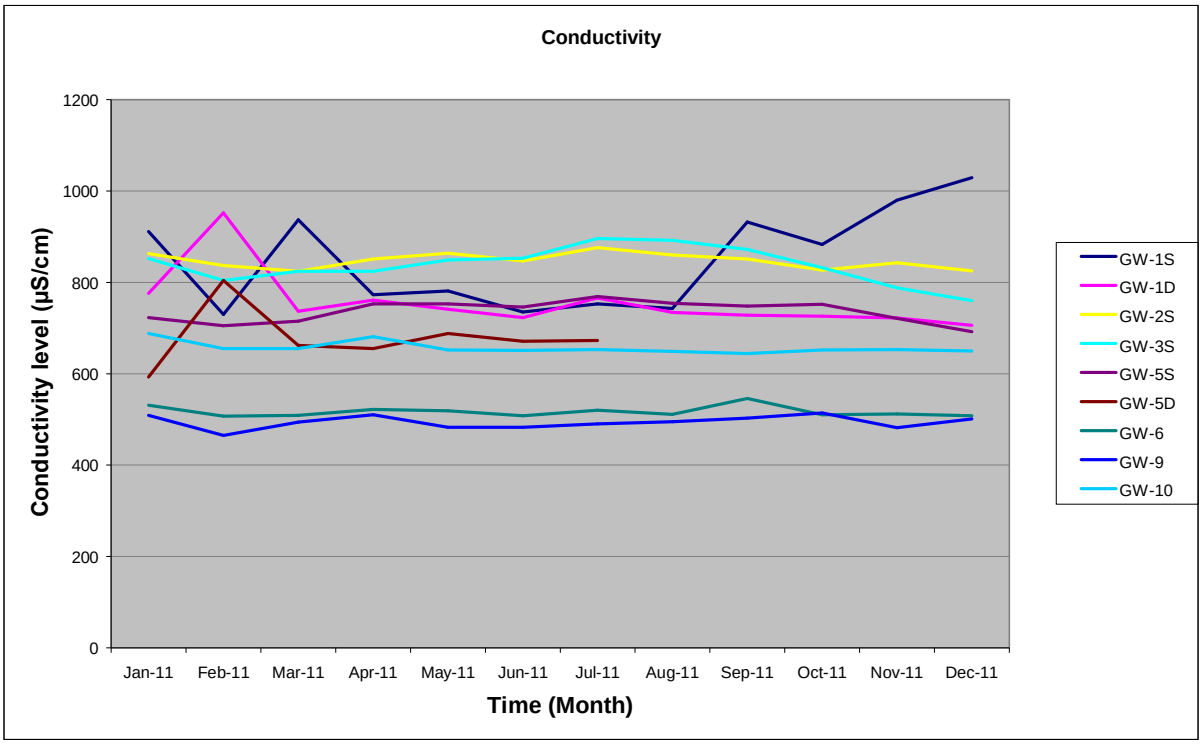
Parameter	Units	GW5s											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Dark Yellow/ grey, few S.S, slight odour	Light brown, some S.S, no odour	Light brown, some S.S, no odour	Cloudy/ Grey, few S.S, slight odour	Light Brown, some S.S, slight odour	Light Brown / Cloudy, no odour	Light Brown / some S.S, no odour	Light Brown / high S.S, no odour	Light Brown, some S.S, no odour	Light brown, some S.S, slight odour	Pale yellow, no S.S, no odour	Cloudy, some S.S, slight odour
pH	pH Units	7.3	7.4	7.1	7.2	7.1	7.3	7.0	7.1	7.3	7.0	7.3	7.3
Conductivity	µS/cm	723	705	715	753	753	746	769	754	748	752	721	692
Ammoniacal Nitrogen	mg/l	3.85	3.70	3.84	4.44	4.90	4.77	5.30	6.20	6.70	5.60	6.60	7.20
Chloride	mg/l	9.2	7.5	8.0	8.2	8.0	8.6	8	8.4	9.3	8.8	9.3	8.7
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										<0.01		
Total Phosphorus	mg/l										0.75		
Sulphate	µg/l										4.52		
Sodium	µg/l										6.6		
Magnesium	µg/l										5.6		
Potassium	µg/l										1.8		
Calcium	µg/l										184		
Aluminium µg/l	µg/l										341		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										<2		
Cobalt µg/l	µg/l										<2		
Manganese µg/l	µg/l										330		
Nickel µg/l	µg/l										40		
Copper µg/l	µg/l										4		
Zinc µg/l	µg/l										46		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										680		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										7		
Selenium	µg/l										<2		
Iron mg/l	mg/l										18		
Boron µg/l	mg/l										10		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										225		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										>100		
e.Coli	CFU/100mls										>100		

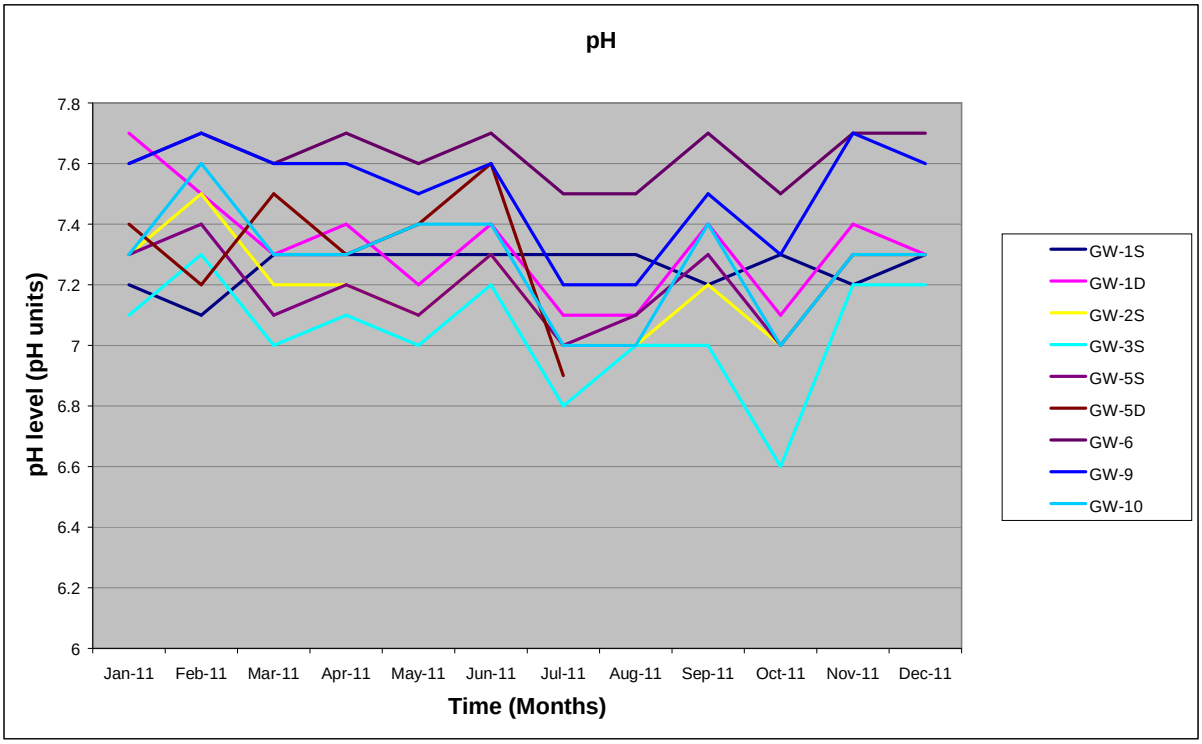
Parameter	Units	GW5d											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Brown / Cloudy, high S.S, slight odour	Brown, high S.S, no odour	Brown/ cloudy, high S.S, no odour	Brown/ cloudy, high S.S, no odour	Light Brown, some S.S, no odour	Pale Brown / Cloudy, high S.S, no odour	Cloudy, few S.S, no odour	-	-	-	-	-
pH	pH Units	7.4	7.2	7.5	7.3	7.4	7.6	6.9	-	-	-	-	-
Conductivity	µS/cm	593	804	662	655	688	671	673	-	-	-	-	-
Ammoniacal Nitrogen	mg/l	0.93	0.63	1.49	1.60	0.98	1.14	1.60	-	-	-	-	-
Chloride	mg/l	7.1	6.7	7.5	7.2	8.0	8.3	8	-	-	-	-	-
Nitrate-N	mg/l										-		
Nitrite-N	mg/l										-		
Ortho-Phosphate-P	mg/l										-		
Total Phosphorus	mg/l										-		
Sulphate	µg/l										-		
Sodium	µg/l										-		
Magnesium	µg/l										-		
Potassium	µg/l										-		
Calcium	µg/l										-		
Aluminium µg/l	µg/l										-		
Antimony µg/l	µg/l										-		
Chromium µg/l	µg/l										-		
Cobalt µg/l	µg/l										-		
Manganese µg/l	µg/l										-		
Nickel µg/l	µg/l										-		
Copper µg/l	µg/l										-		
Zinc µg/l	µg/l										-		
Cadmium µg/l	µg/l										-		
Barium µg/l	µg/l										-		
Berylium µg/l	µg/l										-		
Silver µg/l	µg/l										-		
Lead µg/l	µg/l										-		
Selenium	µg/l										-		
Iron mg/l	mg/l										-		
Boron µg/l	mg/l										-		
Tin µg/l	mg/l										-		
Arsenic µg/l	mg/l										-		
Mercury µg/l	mg/l										-		
SVOC'	µg/l										-		
VOC's USEPA	µg/l										-		
Total Coliforms	CFU/100mls										-		
e.Coli	CFU/100mls										-		

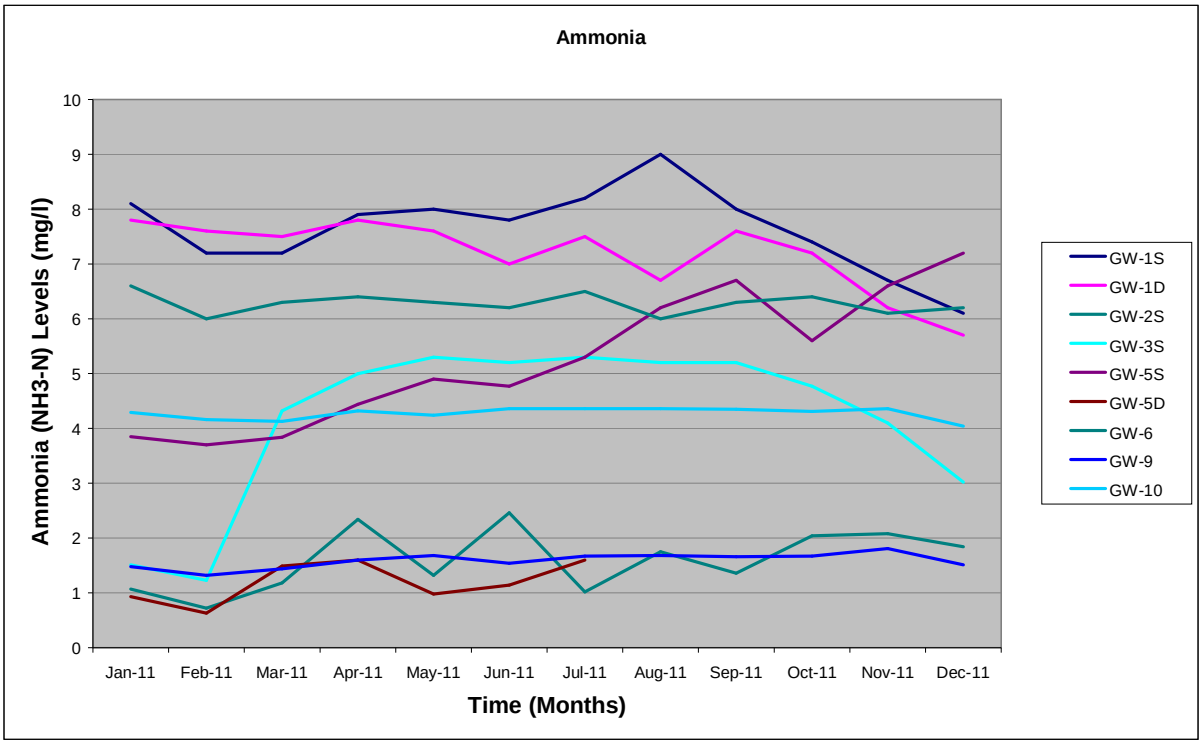
Parameter	Units	GW6											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no S.S, no odour	Clear, no odour, no SS	Clear, no S.S, no odour	Clear, no S.S, no odour
pH	pH Units	7.6	7.7	7.6	7.7	7.6	7.7	7.5	7.5	7.7	7.5	7.7	7.7
Conductivity	µS/cm	531	507	509	522	519	508	520	511	546	510	512	508
Ammoniacal Nitrogen	mg/l	6.60	6.00	6.30	6.40	6.30	6.20	6.50	6.00	6.30	6.4	6.10	6.20
Chloride	mg/l	12	12	12	12	12	12	12	12	23	12	12	11
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.01		
Total Phosphorus	mg/l										0.19		
Sulphate	µg/l										<0.5		
Sodium	µg/l										13		
Magnesium	µg/l										9.4		
Potassium	µg/l										1.8		
Calcium	µg/l										86		
Aluminium µg/l	µg/l										<2		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										<2		
Cobalt µg/l	µg/l										9		
Manganese µg/l	µg/l										30		
Nickel µg/l	µg/l										24		
Copper µg/l	µg/l										<2		
Zinc µg/l	µg/l										59		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										155		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										<2		
Selenium	µg/l										<2		
Iron mg/l	mg/l										5.8		
Boron µg/l	mg/l										13		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										265		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										7		
e.Coli	CFU/100mls										0		

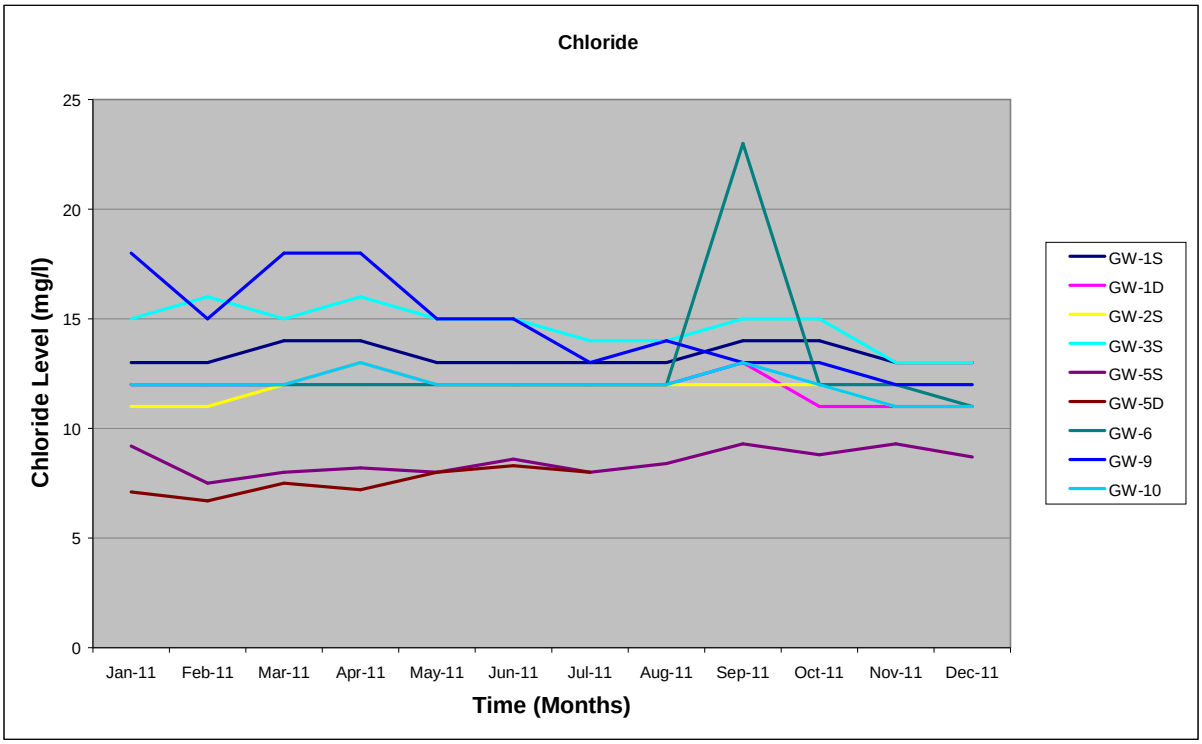
Parameter	Units	GW9											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Cloudy/ brown, high S.S., no odour	Light brown, some S.S., no odour	Cloudy, some S.S., slight odour	Cloudy, some S.S., slight odour	Cloudy / Grey, some S.S., foul odour	Yellow, high S.S., foul odour	Light brown, high S.S., slight odour	Pale brown, some S.S., foul odour	Light brown, some S.S., no odour	Light brown, no odour, some ss	Grey/ brown, some S.S., slight odour	Brown, high S.S., slight odour
pH	pH Units	7.6	7.7	7.6	7.6	7.5	7.6	7.2	7.2	7.5	7.3	7.7	7.6
Conductivity	µS/cm	509	465	494	510	483	483	490	495	503	514	482	501
Ammoniacal Nitrogen	mg/l	1.48	1.32	1.44	1.60	1.68	1.54	1.67	1.68	1.66	1.67	1.81	1.51
Chloride	mg/l	18	15	18	18	15	15	13	14	13	13	12	12
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.05		
Total Phosphorus	mg/l										0.48		
Sulphate	µg/l										0.54		
Sodium	µg/l										13		
Magnesium	µg/l										8.5		
Potassium	µg/l										1		
Calcium	µg/l										196		
Aluminium µg/l	µg/l										334		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										4		
Cobalt µg/l	µg/l										4		
Manganese µg/l	µg/l										608		
Nickel µg/l	µg/l										19		
Copper µg/l	µg/l										8		
Zinc µg/l	µg/l										72		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										176		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										10		
Selenium	µg/l										<2		
Iron mg/l	mg/l										5.2		
Boron µg/l	mg/l										11		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										20		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										67		
e.Coli	CFU/100mls										67		

Parameter	Units	GW10											
		January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Visual / Odour		Yellow, few S.S, foul odour	Light brown, few S.S, slight odour	Yellow, some S.S, slight odour	Yellow, some S.S, slight odour	Cloudy, some S.S, no odour	Yellow, few S.S, slight odour	Yellow /Brown tint, few S.S, slight odour	Pale Yellow , few S.S, slight odour	Light brown, some S.S., no odour	Pale yellow, slight odour, few ss	Light brown, some S.S, slight odour	Light brown, few S.S, slight odour
pH	pH Units	7.3	7.6	7.3	7.3	7.4	7.4	7.0	7.0	7.4	7.0	7.3	7.3
Conductivity	µS/cm	688	655	655	681	652	651	653	649	644	652	653	650
Ammoniacal Nitrogen	mg/l	4.29	4.16	4.13	4.32	4.24	4.36	4.36	4.36	4.35	4.31	4.36	4.04
Chloride	mg/l	12	12	12	13	12	12	12	12	13	12	11	11
Nitrate-N	mg/l										<0.05		
Nitrite-N	mg/l										<0.03		
Ortho-Phosphate-P	mg/l										0.07		
Total Phosphorus	mg/l										0.23		
Sulphate	µg/l										<0.5		
Sodium	µg/l										8		
Magnesium	µg/l										12		
Potassium	µg/l										0.7		
Calcium	µg/l										154		
Aluminium µg/l	µg/l										189		
Antimony µg/l	µg/l										<2		
Chromium µg/l	µg/l										3		
Cobalt µg/l	µg/l										<2		
Manganese µg/l	µg/l										269		
Nickel µg/l	µg/l										5		
Copper µg/l	µg/l										2		
Zinc µg/l	µg/l										21		
Cadmium µg/l	µg/l										<2		
Barium µg/l	µg/l										134		
Berylium µg/l	µg/l										<2		
Silver µg/l	µg/l										<2		
Lead µg/l	µg/l										4		
Selenium	µg/l										<2		
Iron mg/l	mg/l										4.9		
Boron µg/l	mg/l										6		
Tin µg/l	mg/l										<2		
Arsenic µg/l	mg/l										8		
Mercury µg/l	mg/l										<1		
SVOC'	µg/l										<detectable limit		
VOC's USEPA	µg/l										<10		
Total Coliforms	CFU/100mls										0		
e.Coli	CFU/100mls										0		


Conductivity
Conductivity level (µS/cm)
1200
1000
800
600
400
200
0
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Time (Month)
GW-1S
GW-1D
GW-2S
GW-3S
GW-5S
GW-5D
GW-6
GW-9
GW-10


pH
pH level (pH units)
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Time (Months)
GW-1S
GW-1D
GW-2S
GW-3S
GW-5S
GW-5D
GW-6
GW-9
GW-10


Ammonia
Ammonia (NH3-N) Levels (mg/l)
0
1
2
3
4
5
6
7
8
9
10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Time (Months)
GW-1S
GW-1D
GW-2S
GW-3S
GW-5S
GW-5D
GW-6
GW-9
GW-10


Chloride
Chloride Level (mg/l)
0
5
10
15
20
25
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Time (Months)
GW-1S
GW-1D
GW-2S
GW-3S
GW-5S
GW-5D
GW-6
GW-9
GW-10

Surface Water Results

Parameter	Units	SW4 Cushaling Stream																								
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
Suspended Solids	mg/l	7	9	6	9	<5	7	<5	5	7	<5	16	7	5	7	9	6	5	<5	-	<5	<5	<5	<5	<5	-	-
NH3-N	mg/l	0.18	0.1	0.18	0.16	0.15	0.09	0.09	0.09	0.24	0.09	0.1	0.05	0.09	0.05	0.04	0.06	0.04	0.06	-	0.07	0.04	0.05	0.05	0.05	-	-
Chloride	mg/l	13	16	14	42	12	12	12	12	12	12	12	12	13	12	12	12	12	12	-	12	12	11	11	11	-	-
BOD	mg/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	-	-
COD	mg/l	75							72	68	77	56			71	57		57	57	-		47	38	32	45	-	-

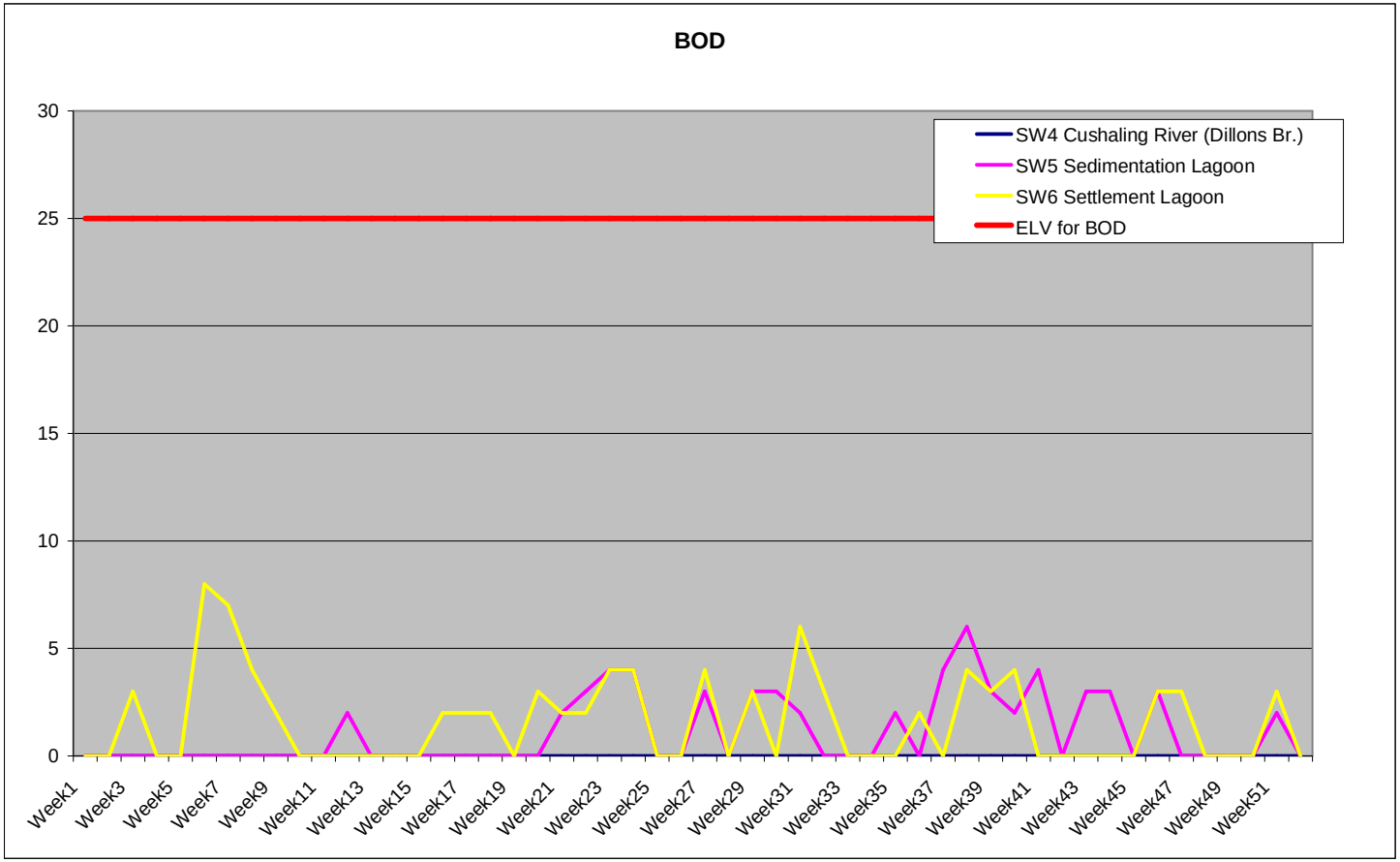
Parameter	Units	SW4 Cushaling Stream																								
		Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39	Week 40	Week 41	Week 42	Week 43	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49	Week 50	Week 51	Week 52
Suspended Solids	mg/l	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	-
NH3-N	mg/l	0.05	0.04	0.04	0.05	0.05	0.05	0.04		0.04	0.02	0.03	0.02	0.04	0.12	<0.02	0.02	0.19	0.03	0.03	0.07	0.04	-	0.08	0.07	0.08	-
Chloride	mg/l	12	12	12	12	11	12	12	-	43	12	13	13	13	13	12	13	13	13	12	12	13	-	13	14	15	-
BOD	mg/l	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	-
COD	mg/l	37	126	46	36	48	49	64	-	12.78	-	42	49	51	82	73	62	93	61	74	88	55	-	61	92	103	-

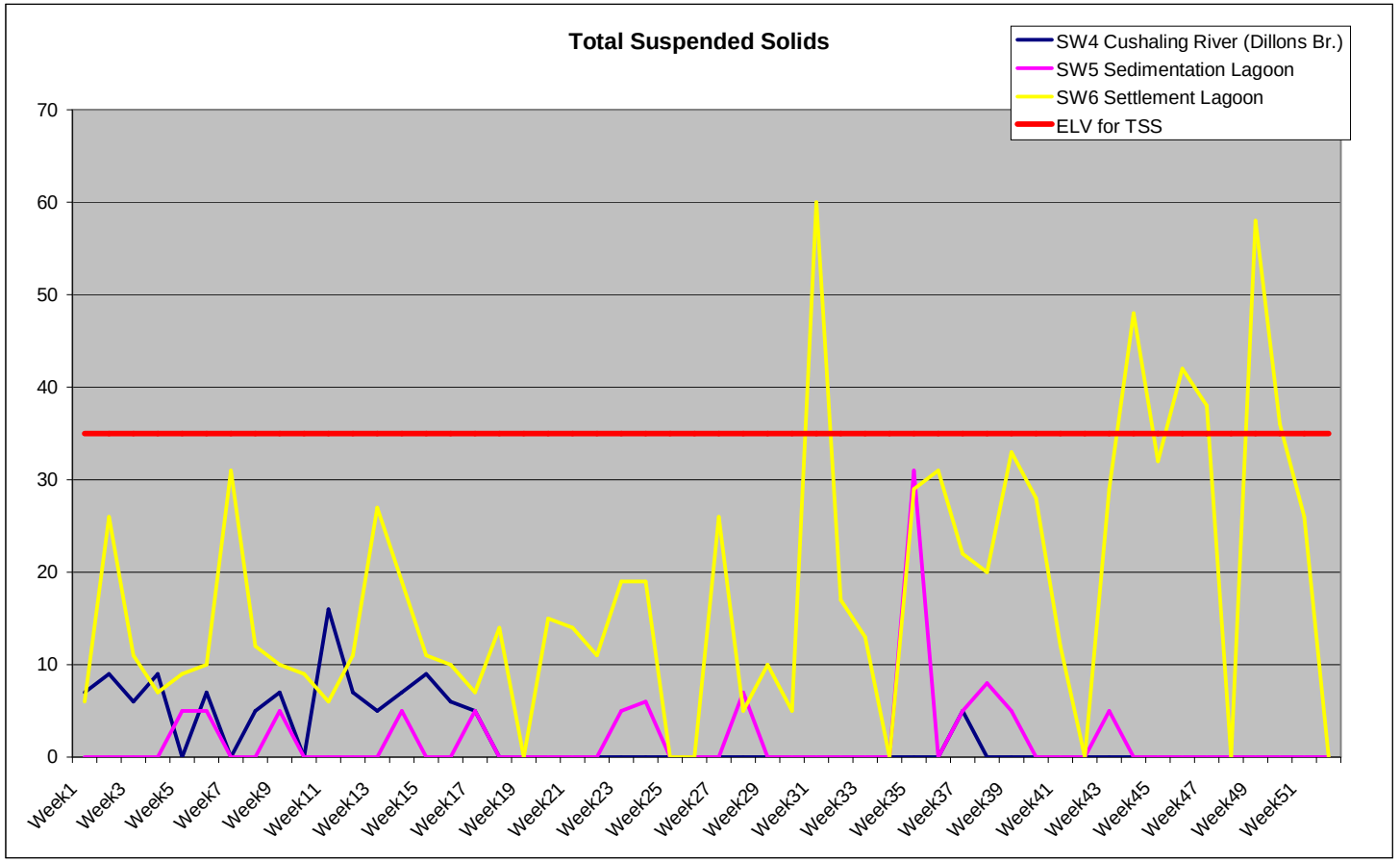
Parameter	Units	SW5 Sedimentation Lagoon																								
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
Suspended Solids	mg/l	<5	<5	<5	<5	5	5	<5	<5	5	<5	<5	<5	<5	5	<5	<5	5	<5	-	<5	<5	<5	5	6	-	-
NH3-N	mg/l	0.35	0.22	0.38	0.43	0.3	0.16	0.18	0.17	0.23	0.24	0.21	0.2	0.16	0.11	0.09	0.08	0.06	0.04	-	0.05	0.03	0.02	0.02	0.03	-	-
Chloride	mg/l	12	11	13	12	12	10	10	11	10	11	11	13	12	12	12	12	12	12	-	12	13	14	14	14	-	-
BOD	mg/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2	<2	<2	<2	<2	<2	<2	-	<2	2	3	4	4	-	-
COD	mg/l	96							90	90	87	82			86	76		85	80	-		58	57	60	70	-	-

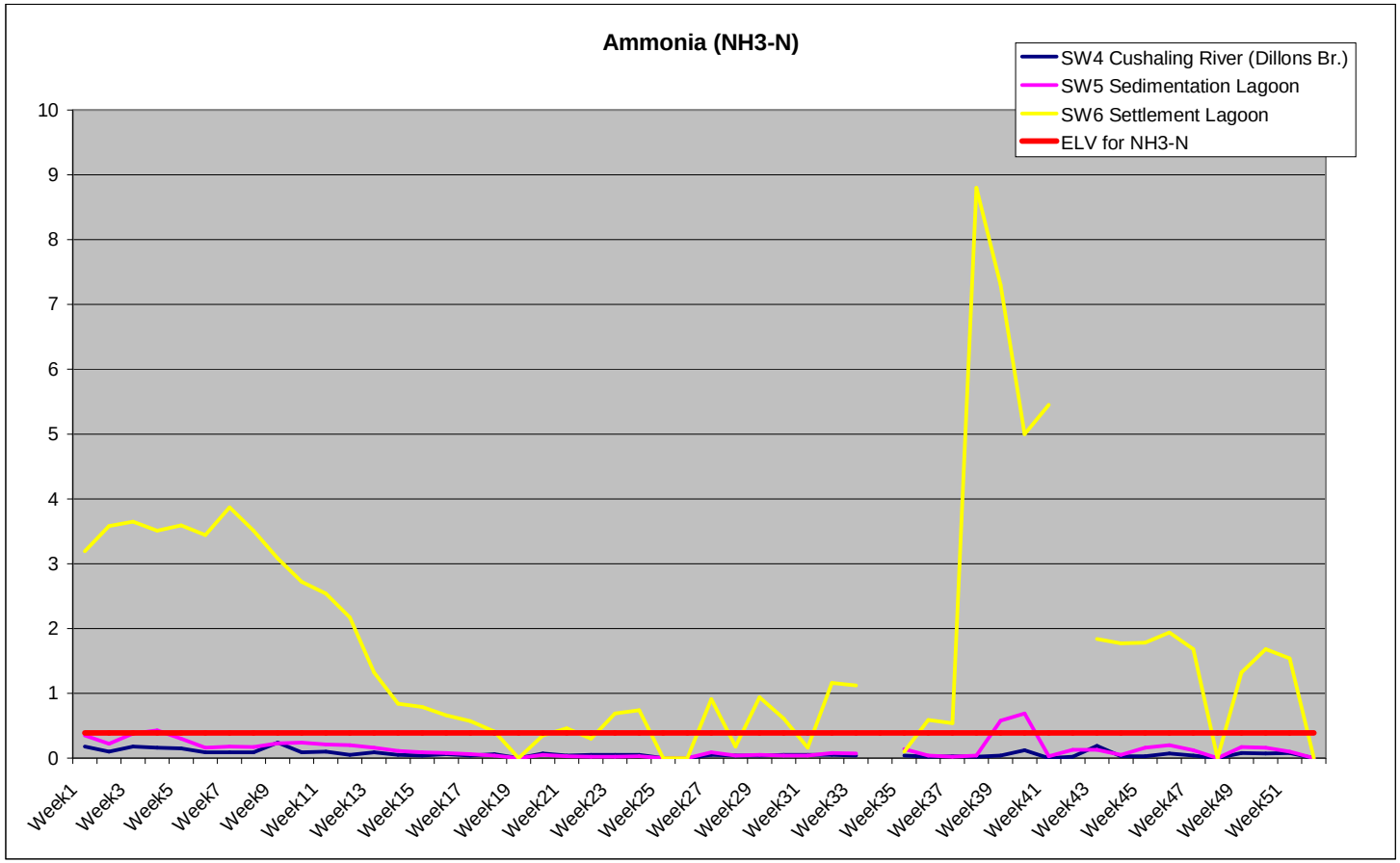
Parameter	Units	SW5 Sedimentation Lagoon																								
	°C	Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39	Week 40	Week 41	Week 42	Week 43	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49	Week 50	Week 51	Week 52
Suspended Solids	mg/l	<5	7	<5	<5	<5	<5	<5	-	31	<5	5	8	5	<5	<5	<5	5	<5	<5	<5	<5	-	<5	<5	<5	-
NH3-N	mg/l	0.09	0.04	0.05	0.04	0.04	0.08	0.07		0.14	0.04	0.02	0.04	0.58	0.69	0.03	0.13	0.13	0.05	0.16	0.2	0.12	-	0.17	0.16	0.1	-
Chloride	mg/l	15	15	14	13	13	12	12	-	72	12	15	13	13	14	12	12	12	12	12	12	12	-	13	13	13	-
BOD	mg/l	3	<2	3	3	2	<2	<2	-	2	<2	4	6	3	2	4	<2	3	3	<2	3	<2	-	<2	<2	2	-
COD	mg/l	130	64	60	66	58	53	50	-	11.92	-	56	77	59	101	100	93	130	105	103	99	64	-	72	120	111	-

Parameter	Units	SW6 Settlement Lagoon																									
		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
Suspended Solids	mg/l	6	26	11	7	9	10	31	12	10	9	6	11	27	19	11	10	7	14	-	15	14	11	19	19	-	-
NH3-N	mg/l	3.19	3.58	3.65	3.51	3.59	3.44	3.87	3.51	3.08	2.72	2.54	2.17	1.32	0.84	0.79	0.66	0.57	0.41	-	0.35	0.46	0.3	0.69	0.74	-	-
Chloride	mg/l	50	48	46	13	40	36	36	35	34	33	32	30	31	28	26	26	25	24	-	23	23	23	22	22	-	-
BOD	mg/l	<2	<25	3	<2	<2	8	7	4	2	<2	<2	<2	<2	<2	<2	2	2	2	-	3	2	2	4	4	-	-
COD	mg/l	32							38	44	25	19			25	24		20	32	-		17	22	29	31	-	-

Parameter	Units	SW6 Settlement Lagoon																									
		Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39	Week 40	Week 41	Week 42	Week 43	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49	Week 50	Week 51	Week 52
Suspended Solids	mg/l	26	5	10	5	60	17	13	-	29	31	22	20	33	28	12	-	29	48	32	42	38	-	58	36	26	-
NH3-N	mg/l	0.91	0.18	0.94	0.61	0.16	1.16	1.12		0.1	0.59	0.54	8.8	7.3	5	5.45		1.84	1.77	1.78	1.94	1.68	-	1.32	1.68	1.54	-
Chloride	mg/l	21	14	21	21	21	21	20	-	60	12	19	28	26	24	-	-	19	18	17	17	17	-	18	23	24	-
BOD	mg/l	4	<2	3	<2	6	3	<2	-	<2	2	<2	4	3	4	-	<2	<2	<2	<2	3	3	-	<2	<2	3	-
COD	mg/l	29	52	44	<10	35	35	25	-	22.31	-	24	36	47	33	-	-	15	18	28	15	<10	-	10	30	17	-

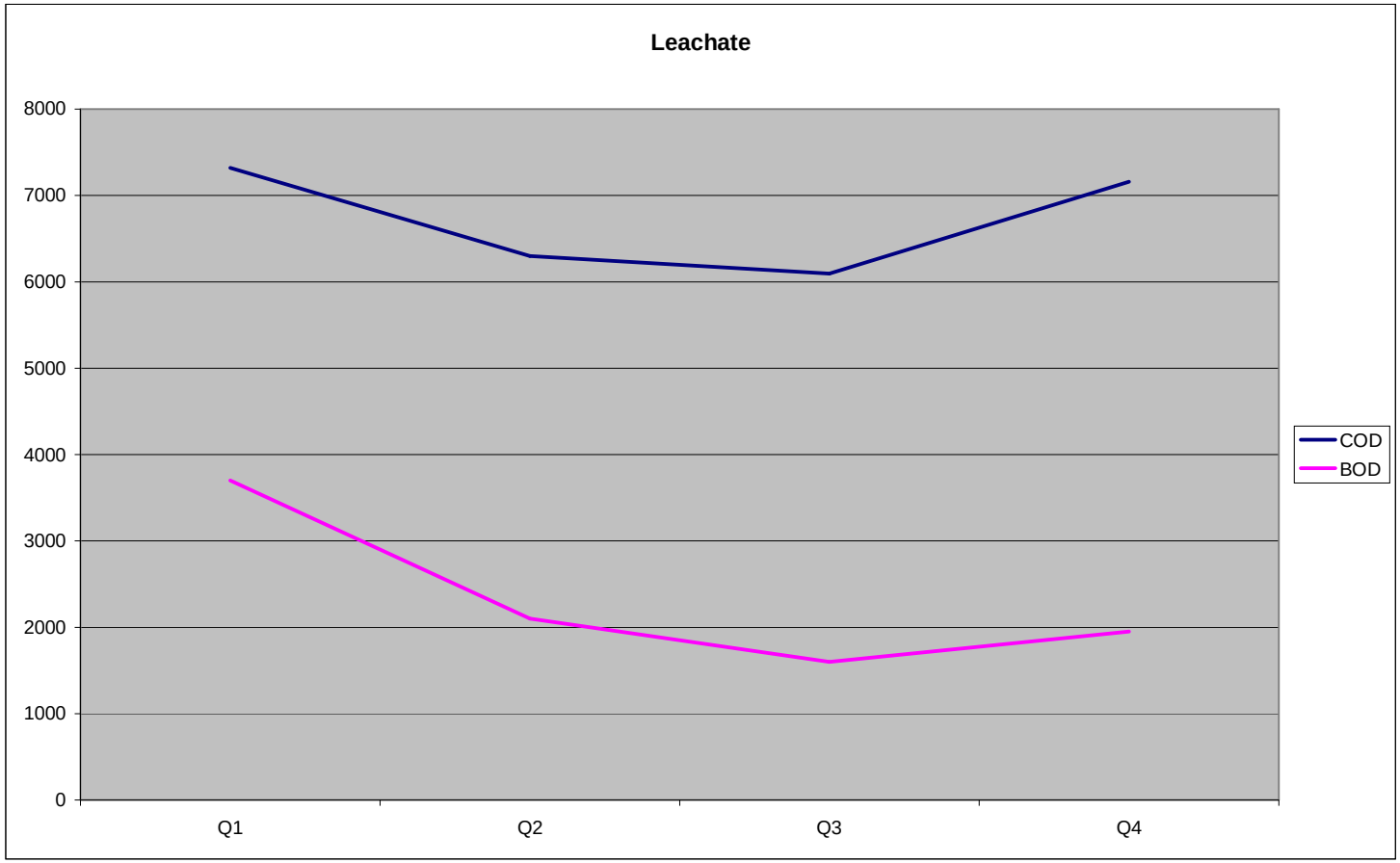

BOD
30
25
20
15
10
5
0
SW4 Cushaling River (Dillons Br.)
SW5 Sedimentation Lagoon
SW6 Settlement Lagoon
ELV for BOD
Week1
Week3
Week5
Week7
Week9
Week11
Week13
Week15
Week17
Week19
Week21
Week23
Week25
Week27
Week29
Week31
Week33
Week35
Week37
Week39
Week41
Week43
Week45
Week47
Week49
Week51


Total Suspended Solids
SW4 Cushaling River (Dillons Br.)
SW5 Sedimentation Lagoon
SW6 Settlement Lagoon
ELV for TSS
70
60
50
40
30
20
10
0
Week1
Week3
Week5
Week7
Week9
Week11
Week13
Week15
Week17
Week19
Week21
Week23
Week25
Week27
Week29
Week31
Week33
Week35
Week37
Week39
Week41
Week43
Week45
Week47
Week49
Week51


Ammonia (NH3-N)
SW4 Cushaling River (Dillons Br.)
SW5 Sedimentation Lagoon
SW6 Settlement Lagoon
ELV for NH3-N
10
9
8
7
6
5
4
3
2
1
0
Week1
Week3
Week5
Week7
Week9
Week11
Week13
Week15
Week17
Week19
Week21
Week23
Week25
Week27
Week29
Week31
Week33
Week35
Week37
Week39
Week41
Week43
Week45
Week47
Week49
Week51

Leachate Results

Parameters	Units	LT1			
		Q1	Q2	Q3	Q4
		24/02/2011	05/05/2011	08/07/2011	02/12/2011
COD	mg/l	7320	6300	6095	7160
BOD	mg/l	3700	2100	1600	1950
pH	pH Units	7.8			
Conductivity	µS/cm	21450			
Ammonia-N	mg/l	1748			
Orthophosphate	mg/l	2.63			
Chloride	mg/l	2010			
Nitrate	mg/l	<0.2			
Boron	µg/l	3470			
Mercury	µg/l	<10			
Arsenic	µg/l	120			
Silver	µg/l	<20			
Aluminium	µg/l	686			
Beryllium	µg/l	<20			
Barium	µg/l	207			
Chromium	µg/l	236			
Cadmium	µg/l	<20			
Cobalt	µg/l	22			
Copper	µg/l	1787			
Tin	µg/l	<20			
Nickel	µg/l	197			
Lead	µg/l	22			
Antimony	µg/l	36			
Selenium	µg/l	<20			
Zinc	µg/l	325			
Iron	mg/l	5			
Toluene	µg/l	26			
M,p-Xylene	µg/l	17			
4-Isopropyltoluene	µg/l	28			
Chloroform	µg/l	27			
TPH	µg/l	71			
VOC's USEPA (all remaining)	µg/l	<10			
Acetone (VOC by GC FID)	mg/l	12.2			
Methanol (VOC by GC FID)	mg/l	<0.5			
Ethanol (VOC by GC FID)	mg/l	<0.5			
Isopropanol (VOC by GC FID)	mg/l	11.2			
Acetonitrile (VOC by GC FID)	mg/l	<0.5			
Comb Pesticide Suit (All components)	µg/l	<0.01			
Phenol(SVOC)	µg/l	244			
4-Methylphenol(SVOC)	µg/l	2030			
2-Methylphenol (SVOC)	µg/l	25.3			
Bis(2-ethylhexyl)phthalate(SVOC)	µg/l	30.8			
SVOC's (All remaining)	µg/l	<detectable limit			


Leachate
8000
7000
6000
5000
4000
3000
2000
1000
0
Q1
Q2
Q3
Q4
COD
BOD

Dust Results

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	*Emission Limit ($mg/m^2/day$)*
D1	22	22	27	23	92	101	65	43	139	40	18	86	***350***
D2	<16	22	32	<17	34	107	48	22	39	40	30	48	***350***
D5	<16	39	27	29	Note 1	154	27	48	56	23	65	48	***350***
D6	32	50	38	29	Note 2	196	161	134	122	69	178	70	***350***
D8	43	94	70	86	75	137	183	70	255	46	113	108	***350***

Note 1 * Invalid result due to large quantity of dead insects in bergerhoff jar.
**Note 2 ***Monitoting point removed to due ongoing construction works

Noise Results

NOISE MEASUREMENT RESULTS ON THE 19th OCTOBER 2011 & 14th DECEMBER 2011 (DAY TIME)							
Location No.	**Monitoring Period (mins.)**	**Start Time**	**LA_{eq} dB(A)**	**L_{10} dB(A)**	**L_{90} dB(A)**	**L_{AFMax} dB(A)**	**Comments / Site Observations Summary**
N5	30	11:41 19/10/11	43	46	38	66	**Site;** Very faint and distant sound of vehicles entering and exiting site on site road. **Background;** Occasional bird song. Distant traffic from direction of the R403.
N3	30	13:36 19/10/11	45	49	38	61	**Site;** Loaders and noise of machinery engines from the site **Background;** Dominant noise sources included cars passing along the L5025 road and bird song.
N2	30	14:20 19/10/11	46	47	35	78	**Site;** Movement and associated reverse alarms from excavators/loaders on the landfill **Background;** Dominant noise sources included cars passing nearby along the L5025 road.
N1 (NSL)	30	13:34 14/12/11	38	40	35	59	**Site;** No noise was emanating from any site activities. **Background;** Occasional bird song. Distant traffic from direction of the R403 and a faint continuous hum from operations at the Carbury Mushroom Factory.
N4	30	14:26 14/12/11	**63**	65	45	81	**Site;** Waste trucks/ cars entering and exiting Landfill access road. **Background;** Traffic passing on the R403 and wind sock attachment banging on flagpole

NOISE MEASUREMENT RESULTS ON THE 13th & 14th DECEMBER 2011 (NIGHT TIME)							
Location No.	**Monitoring Period (mins.)**	**Start Time**	**LA_{eq} dB(A)**	**L_{10} dB(A)**	**L_{90} dB(A)**	**L_{AFMax} dB(A)**	**Comments / Site Observations Summary**
N5	30	23:25 13/12/11	43	44	35	68	**Site;** No noise was emanating from any site activities. **Background;** Very Distant traffic from direction of the R403, rustling of trees and a dog barking in the distance
N4	30	00:14 14/12/11	**48**	51	40	67	**Site;** No noise was emanating from any site activities. **Background;** Traffic passing on the R403, wind sock attachment banging on flagpole, rustling of trees and car door shutting.
N3	30	01:12 14/12/11	42	45	34	60	**Site;** No noise was emanating from any site activities. **Background;** Noise sources included 1 car passing on the L5025 road (100m from meter) and occasional gusts rustling vegetation
N2	30	01:52 14/12/11	**47**	46	35	78	**Site;** No noise was emanating from any site activities. **Background;** Dominant noise sources included a car passing along the L5025 road (15m from meter), bellowing cattle in sheds nearby and dogs barking in the distance.
N1 (NSL)	30	02:42 14/12/11	36	37	31	62	**Site;** No noise was emanating from any site activities. **Background;** A faint continuous hum from operations at the Carbury Mushroom Factory and dog barking in the distance.

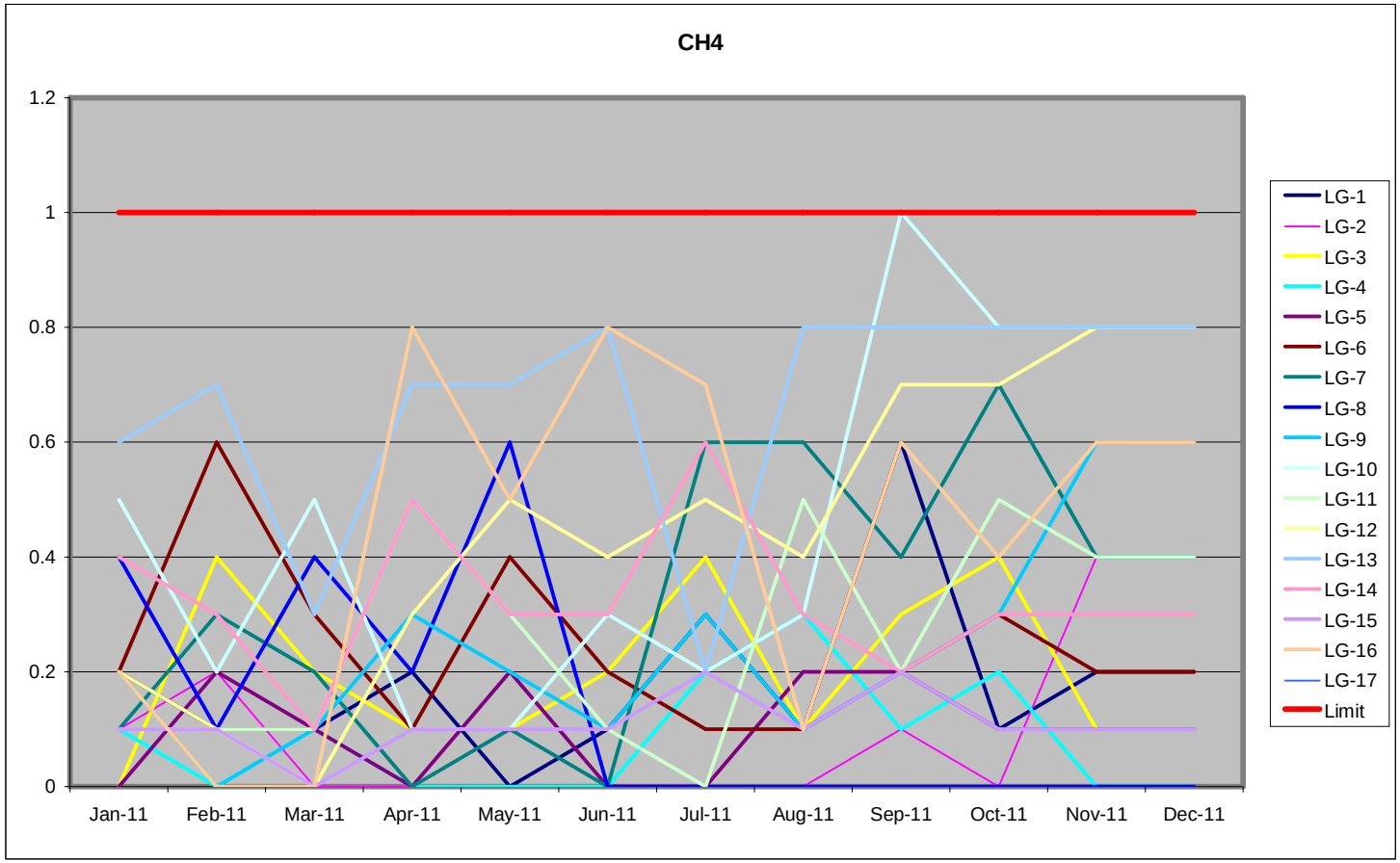
WEATHER DATA FROM MET EIREANN, MULLINGAR (19th OCTOBER 2011 &14th DECEMBER)				
Date	Rainfall (mm)	Max. Temp ^{0}C	Min. Temp ^{0}C	Mean Wind Speed (m/sec)
19/10/11	1.6	9.5	2.9	2.77
14/12/11	0	4	-1.3	4.11

Landfill Gas Results

Sample Station	Jan-11			Feb-11			Mar-11			Apr-11			May-11			Jun-11		
	CH4	CO2	O2	CH4	CO2	O2	CH4	CO2	O2	CH4	CO2	O2	CH4	CO2	O2	CH4	CO2	O2
	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
LG-1	0.2	0.4	19.1	0.1	0.9	19.3	0.1	1.3	19.4	0.2	0.8	19.5	0.0	0.3	20.3	0.1	0.7	18.6
LG-2	0.1	0.3	20.2	0.2	0.3	20.4	0.0	0.3	20.2	0.0	0.3	20.1	0.1	0.5	19.2	0.0	0.4	19.5
LG-3	0.0	0.3	19.3	0.4	0.7	19.5	0.2	0.8	18.2	0.1	0.2	19.3	0.1	0.3	20.1	0.2	0.5	19.7
LG-4	0.1	0.7	18.5	0.0	0.3	20.2	0.1	0.7	20.1	-	-	-	-	-	-	-	-	-
LG-5	0.0	0.2	20.1	0.2	1.0	19.7	0.1	0.3	20.7	0.0	0.5	18.7	0.2	0.7	18.9	0.0	0.3	20.4
LG-6	0.2	0.6	19.4	0.6	0.3	17.6	0.3	0.2	21.6	0.1	0.7	18.1	0.4	0.6	19.7	0.2	0.8	19.3
LG-7	0.1	0.8	18.6	0.3	0.8	19.7	0.2	1.4	17.8	0.0	0.4	17.9	0.1	1.1	19.1	0.0	0.3	18.6
LG-8	0.4	1.1	20.3	0.1	1.1	18.9	0.4	0.9	18.6	0.2	1.3	19.1	0.6	1.2	18.3	0.0	1.0	19.4
LG-9	0.2	0.9	18.6	0.0	0.4	19.3	0.1	1.0	19.5	0.3	0.4	18.6	0.2	0.8	17.8	0.1	0.3	20.3
LG-10	0.5	1.3	19.7	0.2	0.9	20.1	0.5	0.8	20.3	0.1	0.7	19.5	0.1	0.5	19.5	0.3	1.2	18.7
LG-11	0.1	0.4	18.2	0.1	1.1	21.0	0.1	0.7	20.6	0.5	0.2	18.7	0.3	0.9	18.8	0.1	0.9	19.8
LG-12	0.2	0.8	17.3	0.1	1.3	20.6	0.0	0.6	19.5	0.3	1.0	19.6	0.5	0.8	19.3	0.4	0.6	19.2
LG-13	0.6	1.3	17.1	0.7	0.4	20.1	0.3	0.7	19.3	0.7	1.3	19.2	0.7	1.0	18.6	0.8	1.1	17.8
LG-14	0.4	0.9	18.6	0.3	0.7	19.2	0.1	1.0	18.2	0.5	0.7	18.4	0.3	0.7	19.1	0.3	0.3	19.1
LG-15	0.1	0.4	20.1	0.1	0.9	20.7	0.0	1.3	20.4	0.1	0.4	19.7	0.1	0.4	20.2	0.1	0.6	20.2
LG-16	0.2	0.7	19.4	0.0	1.0	20.4	0.0	1.2	17.8	0.8	1.3	18.9	0.5	0.9	18.1	0.8	1.3	18.3
LG-17																		
LFG-1A	36.4	26.1	0.8	52.8	38.8	0.4	28	6	3							55.9	41.8	0.1
LFG-5A	54.1	31.8	0.2	60	41.4	0.6	47	33	5									
LFG-6													44	33	3			
LFG-3																62	41	0
LFG-2										58	37	1						
GV-1	51	29	1	60.4	34.7	0.3	58	32	2	40	32	1	52	29	3	50	37	1
GV-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GV-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GV-4	16	36	10	10.3	31.3	16.2	58	40	0	40	27	6	21	39	11	60	39	1
GV-5	37	29	3	52.5	35.5	2.6	13	14	14	4	9	11	12	8	16	11	7	16
GV-6	29	12	8	11.4	6.5	1.7	24	14	13	16	10	15	6	4	18	7	15	18
GV-7	41	36	5	44.6	29.4	7.2	36	32	6	28	19	11	42	28	5	51	34	4
GV-8	34	28	3	56.0	29.9	2	28	32	3	47	39	5	39	27	3	39	27	7
GV-9	49	37	6	61.0	41	1	27	32	12	57	39	0	57	32	1	28	19	11
GV-10	26	21	11	39.4	40.1	12.2	22	39	11	62	39	0	54	39	1	55	40	1
GV-11										61	40	0	48	42	0	48	37	3
GV12										50	50	0	16	40	4	37	29	1
GV13													11	29	11	19	38	14

Sample Station	Jul-11			Aug-11			Sep-11		
	CH4	**CO2**	**O2**	**CH4**	**CO2**	**O2**	**CH4**	**CO2**	**O2**
	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
LG-1	0.3	0.7	18.1	0.1	0.3	18.1	0.6	0.4	12.8
LG-2	0.0	0.5	17.6	0.0	0.2	17.8	0.1	0.6	13.6
LG-3	0.4	1.3	16.2	0.1	0.6	15.9	0.3	1.4	15.9
LG-4	0.2	0.6	19.9	0.3	0.4	20.1	0.1	1.0	18.2
LG-5	0.0	1.1	17.5	0.2	1.0	17.7	0.2	1.3	17.9
LG-6	0.1	0.5	18.1	0.1	0.4	19.8	0.2	0.9	11.2
LG-7	0.6	1.0	16.2	0.6	0.2	20.2	0.4	1.2	20.5
LG-8	-	-	-	-	-	-	-	-	-
LG-9	0.3	1.4	17.4	0.1	0.3	19.7	0.2	0.3	17.4
LG-10	0.2	0.7	18.6	0.3	0.5	20.1	1.0	1.2	16.8
LG-11	0.0	1.3	16.4	0.5	0.6	18.7	0.2	0.5	19.7
LG-12	0.5	0.9	17.7	0.4	1.0	15.8	0.7	1.1	17.5
LG-13	0.2	1.1	17.1	0.8	1.3	16.9	0.8	1.4	17.6
LG-14	0.6	0.2	16.3	0.3	0.8	17.3	0.2	1.0	19.9
LG-15	0.2	0.8	18.8	0.1	0.2	18.4	0.2	0.3	20.4
LG-16	0.7	0.9	18.1	0.1	1.2	17.5	0.6	0.9	19.2
LG-17									
LFG-1	35	29	4	31	26	5	58	37	1
LFG-5A									
LFG-6									
LFG-3									
LFG-2									
GV-1	50	37	1	47	36	0	-	-	-
GV-2	-	-	-	-	-	-	41	32	3
GV-3	-	-	-	-	-	-	38	31	5
GV-4	60	39	1	30	21	4	58	38	1
GV-5	11	7	13	19	26	17	48	32	4
GV-6	7	15	8	15	4	18	15	13	14
GV-7	22	36	12	26	14	2	12	9	16
GV-8	25	43	7	17	27	5	10	8	20
GV-9	38	21	4	37	20	4	18	22	8
GV-10	55	40	1	53	37	1	24	19	10
GV-11	42	30	2	42	29	3	-	-	-
GV12	34	27	6	34	18	2	39	30	6
GV13	25	18	3	40	28	4	50	37	0
GV14	32	25	2	43	27	3	55	38	2
GV15				33	21	3	44	39	2
GV16							34	54	2
GV17							32	60	1

Sample Station	Oct-11			Nov-11			Dec-11		
	CH4	**CO2**	**O2**	**CH4**	**CO2**	**O2**	**CH4**	**CO2**	**O2**
	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)	(% v/v)
LG-1	0.1	0.4	19.3	0.2	0.6	18.4	0.2	0.6	18.4
LG-2	0.0	0.2	20.1	0.4	0.7	19.7	0.4	0.7	19.7
LG-3	0.4	0.7	18.9	0.1	0.4	19.4	0.1	0.4	19.4
LG-4	0.2	0.9	17.3	0.0	0.3	20.2	0.0	0.3	20.2
LG-5	0.1	1.1	18.2	0.1	0.1	20.0	0.1	0.1	20.0
LG-6	0.3	0.5	19.8	0.2	0.3	19.1	0.2	0.3	19.1
LG-7	0.7	1.0	17.0	0.4	0.9	18.0	0.4	0.9	18.0
LG-8	-	-	-	-	-	-	-	-	-
LG-9	0.3	0.6	18.4	0.6	1.0	17.3	0.6	1.0	17.3
LG-10	0.8	1.3	17.1	0.8	0.8	16.7	0.8	0.8	16.7
LG-11	0.5	0.9	16.7	0.4	1.2	17.9	0.4	1.2	17.9
LG-12	0.7	1.1	18.4	0.8	0.9	18.6	0.8	0.9	18.6
LG-13	0.8	1.3	16.3	0.8	1.2	16.0	0.8	1.2	16.0
LG-14	0.3	0.8	17.9	0.3	0.8	17.9	0.3	0.8	17.9
LG-15	0.1	0.5	18.8	0.1	0.3	19.8	0.1	0.3	19.8
LG-16	0.4	1.2	18.0	0.6	0.7	20.3	0.6	0.7	20.3
LG-17									
LFG-1	49	24	2	52	37	3	46	29	2
PH1-V1	40	36	3	50	32	4	43	29	1
PH1-V2	31	13	5	37	19	7	50	27	9
PH1-V3	53	38	8	49	28	3	47	27	2
PH1-V4	58	41	2	51	37	4	44	31	1
PH1-V5	46	28	6	50	36	1	43	26	3
PH2-V1	27	16	12	39	22	7	30	42	18
PH2-V2	20	14	17	28	12	17	41	22	17
PH2-V3	17	9	21	12	38	19	20	37	11
PH2-V4	29	17	9	17	29	4	51	37	2
PH2-V5	38	41	5	43	56	8	40	36	11
PH3-V1	51	43	3	56	38	1	56	35	2
PH3-V2	59	42	0	58	43	0	47	39	1
PH3-V3	62	55	0	66	57	0	61	52	0
PH3-V4	51	39	2	62	43	2	55	46	4
PH3-V5	48	31	0	49	37	6	49	37	6
PH4-V1	41	54	3	38	49	5	57	49	0
PH4-V2	39	21	6	33	28	4	36	22	9
PH4-V3				55	47	0	53	40	3
PH4-V4							41	23	15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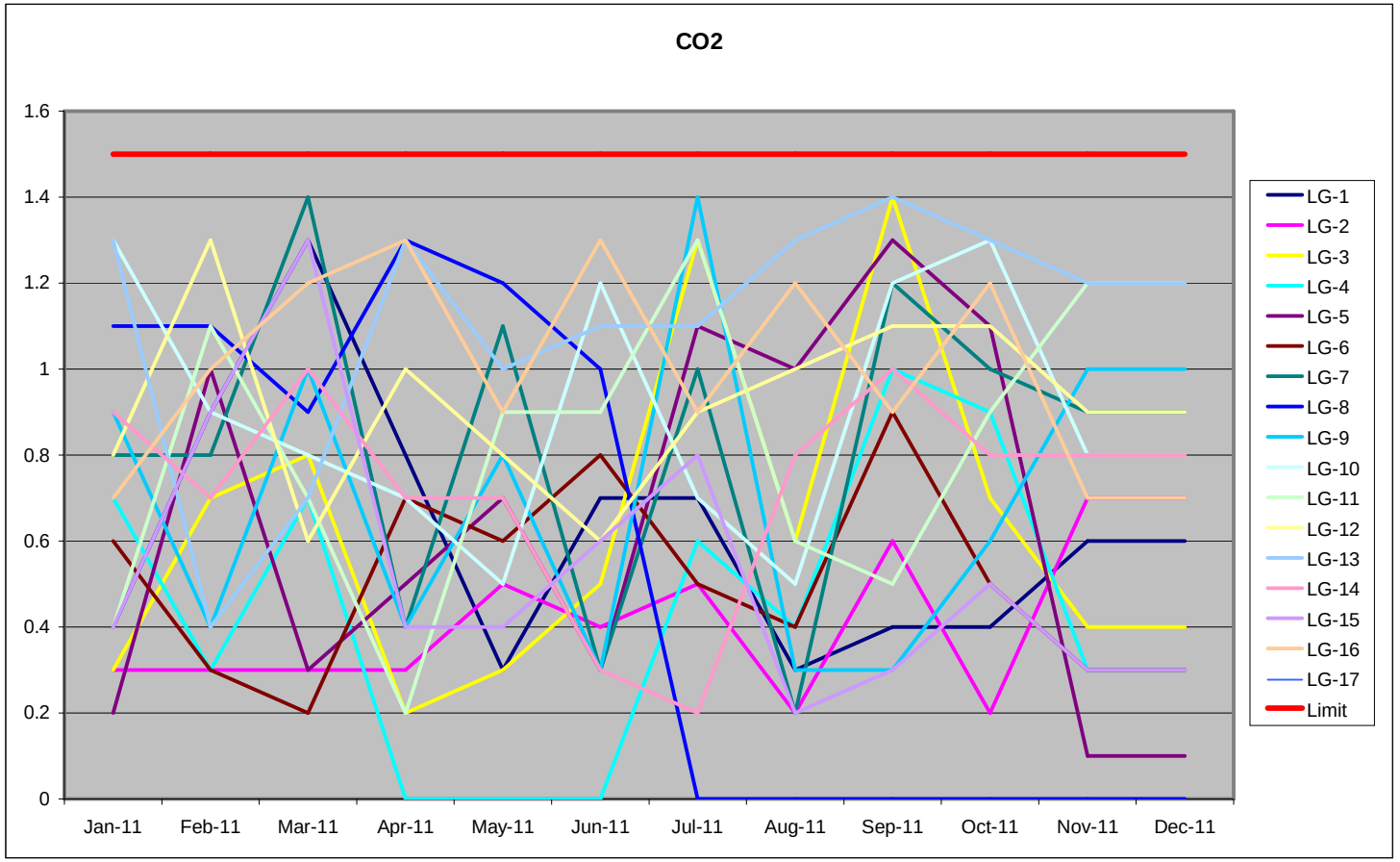
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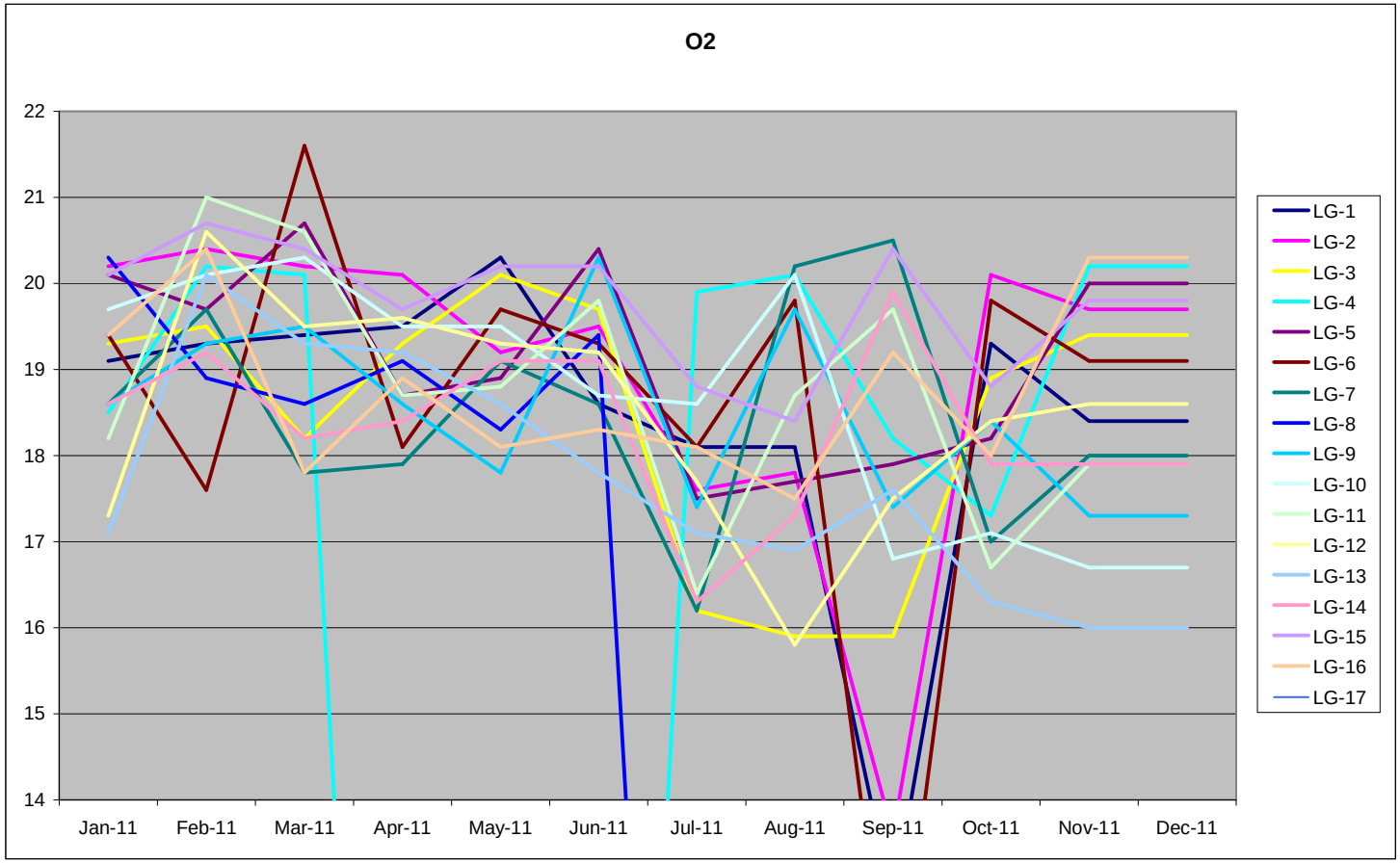
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APPENDIX 3

Dust & Litter Control Plan

Title **Litter and Dust Control**

1.1.1.1

Purpose: The facility licence requires that litter and dust is controlled, and, wherever possible, contained within the site boundary. However, under certain conditions it will be impossible to contain all litter. In such circumstances, litter that has left the site and contaminated other people's property must be collected as a priority.

Scope: Every day the foreman ensures that an employee checks the environs of the site and to collect any loose litter by placing it into plastic bags or similar. These are disposed of at the tip face, before the end of the working day. All litter should be collected in accordance with Licence by 10 am the following morning..

References: WIF 5.1 Daily Site Snspection
Customer contact list

Procedure

1. Permanent litter nets are erected around the lined area with an entrance for access, they consist of 6m poles with UV treated netting.

2. Semi-permanent litter nets or cages should be erected close to the active face working cell, across the front of the cell while still allowing access for vehicles to the working face.

   Semi-Permanent Litter Netting is the most common type of litter prevention on site. Typically these nets are 3-4 metres in height and are suspended on mobile litter poles it is important that on a 4 meter pole you use a 5m net ensuring that in a high wind event, the additional force on the net from the litter in the net does not cause windblown litter to escape underneath. Alternatively, poles mounted in a tripod fashion may also be used.
   All nets should be cleared on a routine daily basis to prevent too much litter accumulating in the nets and causing them to split or overturn.

   Litter Cages are also available on site. Cages must only be used on the direction of the FM or supervisor. The cages should be positioned next to each other in lines around the tipping area to minimise windblown litter. The cages should only be moved by on-site plant.

During high wind events the Landfill Manager and Site Foreman will agree if necessary to close the site.

Customers are contacted and given notice of closure from the Customer contact list.

Once working face is closed all staff will assist in litter picking and insure excessive pressure is not on the netting system.

3. **Dust minimisation** The site foreman must insure that there dust generation is minimised on the site.
   With speed restrictions, wetting of haul roads, wetting of stockpiles prior to movement and grassing up exposed soil.

   Adhering to site conditions, speed restrictions, and using only the designated access roads, will assist in limiting dust problems.

   In dry weather, it may be necessary to damp down areas using water from bowsers, sprays or similar - this action is decided locally by the FM.

   A wheelwash has been installed on site to prevent tracking of material onto the public road. All vehicles leaving the tip face must use this wheelwash.

   Occasionally, due both to heavy traffic and works elsewhere on site, material may start to track past the wheelwash and along the site road. To remediate this, the metalled site roads and hard standing surfaces are swept using a road sweeper as conditions dictate. The road should be swept until the FM or his representative is satisfied that the required standard has been reached and maintained.

APPENDIX 4

Training Procedures

Title Training

Purpose: To define how Bord na Móna ensures awareness of environmental issues and how environmental training is identified and conducted.

Scope: This procedure applies to employees at the Drehid Waste Management Facility

References:
EPF 19.1 Environmental Training Record
EPF 19.2 Environmental Training Summary
EPF 19.3 Training Needs Matrix
EPF 19.4 Employee Induction Training Certificate

Procedure:

1. The Landfill Manager is responsible for ensuring that his reports are fully trained for their specific tasks, and are aware of the implications of waste licence.

2. All employees shall be made familiar with their environmental responsibilities through a comprehensive environmental training programme

   - All employees will have an individual training file created which will detail all training received.
   - Training shall be updated as the environmental responsibilities of employees develop.

3. Environmental Training Records will be maintained on file for individual employees for 7 years.

4. External training programmes conducted on Drehid Waste Management Facility premises will be documented on Environmental Training Summary EPF 19.2, and the trainee's individual Environmental Training Records EPF 19.1 should be updated with same.

5. The Landfill Manager shall request that all relevant personnel undertake training in any new environmental procedure adopted by Drehid Waste Management Facility. (or any new amendments to existing environmental procedures). This Internal training should be recorded in the Environmental Training Records EPF 19.1.

6. As part of the Annual Review, the Management will review all training requirements. This environmental training review will identify the specific environmental training requirements for each operation within the company.

7. The Environmental Management Team will identify Environmental Training needs under the following headings:
    - Introduction of new materials
    - Introduction of new or altered work processes
    - Appointment of new personnel to plant
    - Transfer of personnel to new duties in plant
    - As part of Annual Review of Objectives and Targets and programmes
    - New environmental regulatory requirements
    - Updating of skills
    - Corrective and Preventive Action
    - Environmental Complaints

8. The planned environmental Training shall be documented on the Environmental Training need matrix EPF 19.3. This planned training shall be undertaken as scheduled.

9. The Landfill Manager shall ensure that all training tasks are completed by each employee identified as requiring environmental training.

10. Once an environmental training task has been completed by an employee, the Environmental Training record EPF 19.1 shall be updated.

11. All new employees will be required to undergo an environmental induction programme before commencing work at the facility. EPF 19.4 the Employee Induction Training Certificate shall be completed detailing the elements covered by the training. The induction will include the following:
    - Information with regards to the Company Structure and Environmental Responsibility
    - Environmental Policy Statement
    - Supplied with a description of the Waste Licence
    - Awareness of the Emergency Response Procedures
    - Supplied with a description of activities on site
    - Reporting of environmental incidents to Environmental Team

When induction is completed an Environmental Training Record EPF 19.1 is created for each individual. All subsequent environmental training will also be retained on this record.

12. Employees, who have potential to have an effect on the environment, should undergo a more comprehensive training programme subsequent to Environmental Induction as follows:
    - Training on all Environmental Procedures specific to their roles in the EMS
    - Fire Hazard Training
    - Spill Kit Training

When environmental training is complete Environmental Training Record EPF 19.1 will be updated.

APPENDIX 5

Programme for Public Information

Title Programme for Public Information

Purpose: To define how Bord na Móna manages the communication of environmental information concerning the facility with external parties.

Scope: This procedure applies to Bord na Móna Drehid Waste Management Facility.

References: Data Protection Act 1988 with 2003 amendment

Procedure

4. All external, out-going communication of environmental issues, unless specifically outlined below, must be approved by the Landfill Operations Manager. If the Facility Manager is unavailable, then the designated Environmental Officer may approve the communication.

5. Certain environmental information, as detailed below, will be available to external parties. Only 1 copy of each document is available for view at any time.

6. It is recommended that visitors should phone or write in advance, as this will facilitate the company to arrange for the necessary staff and documents to be available. However, a prior appointment by any member of the public is not necessary.

7. Viewing time is restricted to normal office hours (9.30 to 12.50, 14.00 to 16.30). No more than 1 hour of staff time is available for assistance or queries per day.

8. Visitors may ask for the Landfill Operations Manager. They are requested to sign in at reception, giving their name, address, and reason for their visit.

9. Access is restricted to the Meeting Room, and the information will be brought to this designated room for viewing. The original documents are not to be removed, altered or damaged in any way.

10. A copy of the following files will be kept in Document Control and are available to the public as outlined above:

- Waste licence
- Annual Environmental Reports
- Monthly monitoring reports
- Ground water monitoring results
- Surface water monitoring results
- Air monitoring results
- Environmental noise monitoring results

11. Every effort will be made to keep the files up-to-date. The information provided will comply with legal requirements and the requirements of the Waste licence, but confidential and commercially sensitive information will be restricted and Bord na Móna must comply with the Data Protection Act 1988 with 2003 amendment.

APPENDIX 6

EPRTR
(European Pollutant Release and Transfer Register)

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011

1. FACILITY IDENTIFICATION

Parent Company Name	Bord na Mona Public Limited Company
Facility Name	Drehid Waste Management Facility
PRTR Identification Number	W0201
Licence Number	W0201-03

Waste or IPPC Classes of Activity

No.	class_name
3.1	Deposit on, in or under land (including landfill).
11.1	##

Address 1	In the townlands of Parsonstown, Loughnacush, Kilkeaskin, Drumond
Address 2	Timahoe West, Coolcarrigan
Address 3	Killinagh Lower and Killinagh Upper, Carbury
Address 4	County Kildare
	Kildare
Country	Ireland
Coordinates of Location	-9.77721 54.1523
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Ciaran Geoghegan
AER Returns Contact Email Address	ciaran.geoghegan@bnm.ie
AER Returns Contact Position	Landfill Manager
AER Returns Contact Telephone Number	045 439470
AER Returns Contact Mobile Phone Number	0863880679
AER Returns Contact Fax Number	045 439489
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(d)	Landfills
5(c)	Installations for the disposal of non-hazardous waste

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs				
POLLUTANT		METHOD					QUANTITY		
			Method Used		Combined Flares				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	C	OTH	Gas Sim Lite	7027124.3	0	7325758.3	0.0	298634.0
03	**Carbon dioxide (CO2)**	C	OTH	Gas Sim Lite	4547387.2	0	9094774.4	0.0	4547387.2

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Drehid Waste Management Facility

Please enter summary data on the quantities of methane flared and / or utilised	**T (Total) kg/Year**	**M/C/E**	**Method Used: Method Code**	**Method Used: Designation or Description**	**Facility Total Capacity m3 per hour**	
Total estimated methane generation (as per site model)	7325758.3	C	OTH	Gas Sim Lite	N/A	
Methane flared	7027124.3	E	Estimate	Calculated based on percent	2500.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	298634.0	C	OTH	Gas Sim Lite	N/A	

4.2 RELEASES TO WATERS Link to previous years emissions data | PRTR# : W0201 | Facility Name : Drehid Waste Management Facility | Filename : W0201_2011 (version 1).xls | Return Year : 2011 | 30/03/2012 20:03

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs				
POLLUTANT					QUANTITY				
			Method Used		SW6				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	Emission Point 2	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
303	BOD	M	CRM	G/04 INAB Accredited	1985.24	0.0	1985.24	0.0	0.0
238	Ammonia (as N)	M	CRM	G/67 INAB Accredited	343.6	0.0	343.6	0.0	0.0
240	Suspended Solids	M	CRM	G/19 INAB Accredited	1985.24	0.0	1985.24	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	03 03 08	No	0.34	wastes from sorting of paper and cardboard destined for recycling	R3	M	Weighed	Offsite in Ireland	AES Tullamore,W0104-02	Capincurr,Tullamore,C. Offaly,.,Ireland		
Within the Country	16 02 14	No	0.64	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R4	M	Weighed	Offsite in Ireland	AES Tullamore,W0104-02	Capincurr,Tullamore,C. Offaly,.,Ireland		
Within the Country	17 05 03	Yes	42.48	soil and stones containing dangerous substances	R9	M	Weighed	Offsite in Ireland	Enva,W0184-01	Clonminam Industrial Estate,.,Portlaoise,Co. Laois,Ireland	Enva,W0184-01	Clonminam Industrial Estate,.,Portlaoise,Co. Laois,Ireland
Within the Country	**19 07 03**	**No**	30528.61	landfill leachate other than those mentioned in 19 07 02	D8	M	Weighed	Offsite in Ireland	Thorntons Recycling,WCP-DC-09-1190-01	Unit S3b,Henry Road,Parkwest Buisness Park,Dublin 12,Ireland		
Within the Country	13 02 08	Yes	1.26	other engine, gear and lubricating oils	R9	M	Weighed	Offsite in Ireland	Enva,W0184-01	Clonminam Industrial Estate,.,Portlaoise,Co. Laois,Ireland	Enva,W0184-01	Clonminam Industrial Estate,.,Portlaoise,Co. Laois,Ireland

* Select a row by double-clicking the Description of Waste then click the delete button

Link to previous years waste data
Link to previous years waste summary data & percentage change