



**Annual Environmental Report 2009**  
**P0504-01**

**March 2010**

Bord na Móna today operates 5 main subsidiary companies in more than 20 locations throughout Ireland, the UK and USA. The principal businesses are in the Energy, Resource Recovery, Horticulture, Home Heating and Wastewater Treatment and Air Pollution Abatement markets. The company also engages in an extensive rehabilitation program to develop its peat lands in an environmentally sustainable manner.

## A NEW CONTRACT WITH NATURE

Bord na Móna has long recognised the need to diversify its activities in order to secure a sustainable future. In this context we identified the energy and resource recovery sectors as appropriate areas of growth and development, given our assets, strengths and skills. Significant challenges face Ireland in meeting the country's needs to provide secure sustainable energy and manage waste while minimising the impact on the environment.

Bord na Móna is in a strong position to contribute to dealing with these challenges. We have a unique mixture of assets, experience and innovation which will enable us to cross-link our activities in energy, water and resource recovery to provide products and services which will meet Ireland's needs. We also have the capacity to become an exemplar for others to follow in these fields.

With this background we have scoped out a new vision for the future sustainable development of Bord na Móna.

Following on from our vision, we have developed a new mission for Bord na Móna which the Company is committed to achieving.

In 1934 the Turf Development Board was formed to 'develop and improve the turf industry.' The experience of fuel shortages during the war re-enforced the Irish State's commitment to developing the country's bogs. In 1944 the TDB was asked to devise and submit a comprehensive programme, the outcome was the transformation in 1946 of the TDB into Bord na Móna. The Board was given a mandate to increase the use of peat as a fuel and in energy production. Markets for the use of moss peat in horticulture were also developed.

In 1990 Bord na Móna implemented a divisionalised and decentralised structure, designed to delegate responsibility downwards ensuring a sharper focus on each profit centre and a greater spirit of enterprise.

## Group Vision



The vision statement defines the Company's purpose, in terms of its values.

Values are guiding beliefs about how things should be done.

The vision statement communicates both the purpose and values of Bord na Móna.

For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with customers, it shapes the customers' understanding of why they should work with Bord na Móna.

Bord na Móna will seek solutions that optimise the creative energy and potential of the organisation, driven by long term goals and the organisation's vision and mission.

In this context our devolved business units will align their vision and strategic planning with the global direction provided.

Consistent with our vision, innovation will once again return to the core of everything we do. We will capitalise on opportunities to cross fertilise our unique range of skills and technologies that add value and are socially and environmentally sustainable.

Greater focus will be placed on managing and developing our land assets in a responsible and sustainable manner. Our award winning initiatives at Lough Boora (Co. Offaly) and Oweninny (Co Mayo), provide shining examples of what can be achieved

## Group Mission

We conduct our affairs with openness, honesty and integrity.

We are Ireland's leading environmentally responsible integrated utility service provider encompassing electricity, heating solutions, resource recovery, water, horticulture and related services.

We capitalise on international opportunities where we have a competitive advantage.

We achieve continuing growth through superior customer service, outstanding quality and innovation delivered through the excellence and commitment of our people.

We engage in sustainable profitable business in the communities we serve, which is rewarding and challenging for employees and other stakeholders.

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## **1.0 Introduction**

**1.1 IPPC Licence No** P0504-01

### **1.2 Name & Location of Site**

**Name:** Bord na Mona Energy Limited.

**Address:** Mountdillon Group  
C/o Mountdillon Works  
Lanesboro  
Co. Longford.

**Telephone No:** 043 21117 Fax No 043 21259

**Contact Name** Danny Murray

**Position** Resource Manager

**National Grid Reference** E204720 N268880

## 1.3 Description of Activities

### **Peat Milling Operations.**

For milled peat production the bog is laid out in a series of rectangular fields of varying length and 15m wide with drains located between. There are essentially four operations involved in milled peat production:

Milling.

Harrowing.

Ridging.

Harvesting.

#### **Milling.**

Special milling machines work their way along the fields, milling approximately 15mm of peat from the top of the bog in a pass.

#### **Harrowing**

In the course of drying, the milled peat is turned a number of times to avail of the drying conditions. This is achieved with a machine called a harrow. The milled peat is harrowed until its moisture content is down to approximately 40-50%, which can take up to two to three days, weather depending.

#### **Ridging**

The dry peat is then scraped into long ridges running down the centre of each field. This is done with a ridger, a machine consisting of a series of blades in the shape of a v that opens the full width of the field.

#### **Harvesting**

During harvesting every eleventh field is used to stockpile the peat, with this field receiving the milled peat from the five fields either side.

The milled peat is then transported via the existing network of peatland railways or via road to the following location.

Power station

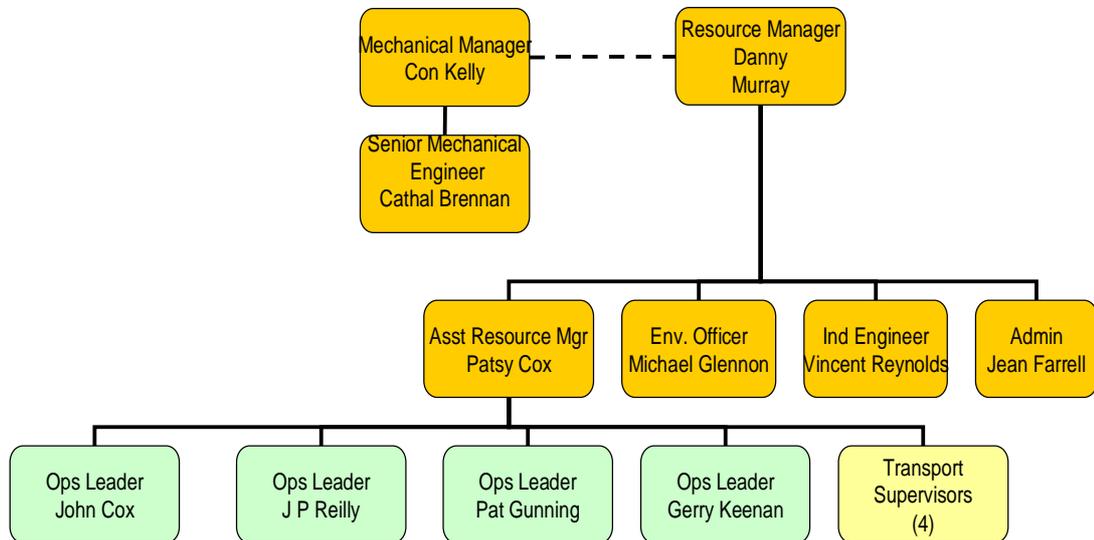
## 1.4 Environmental Management of the Company

The organisational structure within the Mount Dillon Group is presented in the flow chart below.

### Group

### Environmental Responsibilities

## Mountdillon Organisational Structure.



## 1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Ireland's peat resources in the national interest.

Bord na Mona Energy Limited is committed to gather and make available information on all aspects of its environmental impact and to help improve understanding among the public generally of its role and the importance of Irish peatlands.

Bord na Mona Energy Limited recognises the importance of peatland conservation.

Bord na Mona Energy Limited will leave behind all areas it owns as either an economically or socially integrated resource of a high environmental value.

Bord na Mona Energy Limited seeks to conduct all aspects of its business in an environmentally sensitive value.

Bord na Mona Energy Limited will establish an environmental management system specifically addressing the following impacts.

- Discharges to water.
- Emissions to atmosphere.
- Waste disposal.
- Use of natural resources.
- Noise, vibration, odour, dust and visual effects.
- Natural environment and eco-system.

The environmental management system will be monitored, maintained and continually improved.

A system of regular environmental audits will be put in place.

Bord na Mona Energy Limited will continue research and development into all aspects of its environmental impact.

This statement is published and is available at all locations within the division and its contents are brought to the attention of all employees.

## 2.0 Summary Information

### 2.1 Emissions to Water Summary

#### 2.1.1 Silt Pond Emissions (Quarterly Grab)

##### Comment

Surface water monitoring was carried on a quarterly basis during the reporting period. In total, analysis was carried out at seven different locations. These locations are as follows, Clonshannagh @ SW8, Granaghan @ SW23, Begnagh @ SW55, Cloneeney @ SW61, Derrycolumb @ SW88, Derryshanoge @ SW94 and Loughbannow @ SW95.

The parameters measured during each sampling event were as follows:

Total Phosphorus, Total Solids, Suspended Solids, pH, Ammonia, Colour and COD.

In general results were constant across all parameters at each monitoring location. November was the wettest month of 2009 with rainfall of 175.7 mm being recorded, while February was the driest with 22.9 mm recorded.

The quarterly grab sampling programme proved to be 100% compliant for the year as were the 2006, 2007 and 2008 regimes.

Monitoring will continue at the same locations in 2009.

**pH** values were between 7 and 7.9, with normal emission limit values being of the range 6 and 9. This represented a slight narrowing of the pH bands on previous years.

**Suspended solids** varied from 5mg/l to 21mg/l and would depend on activities ( piping, ditching ) etc, in the catchments at the time of sampling. All were within the licence limit of 35mg/l.

**Ammonia** levels were constant across all monitoring locations and well below I/PV of 4mg/l for A3 waters. Analysis results were of the range 0.05 mg/l and 1.5 mg/l. The slightly elevated ammonia recorded in 2007 at SW 23 appears to have returned to normal levels, with no other location warranting comment. There appears to have been a narrowing of the range in relation to ammonia, compared with previous years.

**COD** readings were consistently below Bord na Mona set trigger levels of 100 mg/l, with the exception of 3<sup>rd</sup> quarter monitoring at SW61 and 4<sup>th</sup> quarter monitoring at SW88. The levels dropped at SW61 in the final quarter event. The results at SW88 will be closely monitored following the 1<sup>st</sup> quarter round of analysis 2010. With the exception of SW88, results were down on previous year's analysis.

**Flow** rates were similar to previous years. There was however increased flows during the 4<sup>th</sup> quarter, not surprising as November was the wettest month of 2009. The increased flows in the 4<sup>th</sup> quarter appear to have had a very slight effect on suspended solids results in the same period.

**Total Phosphorus** results were of the range 0.05 mg/l and 0.32 mg/l, all of which were within quality guidelines.

Surface Water Results are contained in Appendix 1

#### 2.1.2 Yard Discharges (Monthly Grab)

Comment

Yard runoff monitoring took place at six different locations during the reporting period. Sampling frequency was monthly and COD was the parameter requiring analysis. As is evident from the graph, on several occasions no sample was available on the day of sampling. The recurring issue is the physical size of the catchments, which makes it difficult to guarantee a sample.

Trigger levels of 100mg/l were exceeded at, Workshop SWE2 and Yard SWE2, during the reporting period, however subsequent results from the same location indicate a return to normal levels.

Sampling will continue at the same locations during 2010.

Yard Emission Results are contained in Appendix 2

#### 2.1.3 Composite Sampler Report

Comment

The composite sampler was operating at SW96 during the reporting period. The parameters measured were Total Phosphorus, Total Solids, Suspended Solids, pH, Ammonia, Colour and COD, with Suspended solids being the only parameter with an emission limit value ( 35mg/l ).

In general results were satisfactory, and compliant for the period.

November was the wettest month of 2009 with rainfall of 175.7mm being recorded, while February was the driest with 22.9mm recorded. The particularly wet weather in November seems to have had a slight affect on suspended solids results during that time, although as stated above there was no exceedence of the emission limit value.

Instances in the composite results tables, in appendix 3, where no flow or negative flow is recorded, can be attributed to either, flooding of the outfall on which the sampler is located or mechanical failure of the sampler itself. A continual flow reading of similar amount is due to the sampler locking out which is also due to mechanical problems. During the closing days of 2009 the sampler was frozen and although recording flow, the ground temperatures in exceedence of -12 degrees centigrade meant that it was unable to take a sample.

Composite Sampler Results are contained in Appendix 3.

## 2.1.4 Emissions to Water Non-compliance's

| <b>Emissions to Water Non-Compliances 2009</b> |                        |                         |
|--|------------------------|-------------------------|
| <b>Licence: P0504-01</b>                       |                        |                         |
| <b>Works: Mt Dillon</b>                        |                        |                         |
| <b>Type</b>                                    | <b>Non-Compliances</b> | <b>Location / SW Nr</b> |
| Composite                                      | 0                      |                         |
| Quarterly Grab                                 | 0                      |                         |
| Monthly Yard                                   | N/A                    |                         |
| <b>Totals</b>                                  | <b>0</b>               |                         |

There emissions to water were fully compliant for the period

## 2.2 Emissions to Air

### 2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on four occasions between April and August. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of analysis was used.

The monitoring locations were as follows, Edera and Cloonshanagh. All results were within the emission value of 350 mg/m<sup>2</sup>/day set out in the licence and no complaints were received in relation to dust. Sampling will continue at the same locations during 2010.

Dust Monitoring Results are contained in Appendix 4.

### 2.2.2 Emissions to Air Non-compliance's

| <b>Dust Non-Compliances 2009</b> |                        |
|----------------------------------|------------------------|
| <b>Licence:P0504-01</b>          |                        |
| <b>Works: Mt Dillon</b>          |                        |
| <b>Location / DM Nr</b>          | <b>Non-Compliances</b> |
| Edera / DM 01                    | 0                      |
| Cloonshannagh / DM 02            | 0                      |
| <b>Total</b>                     | <b>0</b>               |

The emissions to air during the reporting period were compliant.

## 2.1 Waste Arisings

### 2.3.1 Non Hazardous Waste

| Non Hazardous Waste Data 2009 |                |          |                         |               |
|-------------------------------|----------------|----------|-------------------------|---------------|
| IPPC Licence: P0502-01        |                |          |                         |               |
| Works: Mtdillon               |                |          |                         |               |
| Type                          | Tonnes         | EWC Code | Contractor              | Licence Nr    |
| Skips                         | 19.02          | 20 03 01 | AES                     | 053/OY/39/02  |
| Polyethylene                  | 102.74         | 02 01 04 | Leinster Environmentals | WP 2008/06    |
| Scrap Steel                   | 93.99          | 17 04 07 | Hammond Lane            | 050/OY/162/04 |
| Silt Pond Cleanings           | 1425.00        | 01 01 02 | Bord na Mona            | IPPC P 0499   |
| Cardboard                     | 9.90           | 20 01 01 | Mulleadys               | S/E 152/2002  |
| Peat Screenings               | 1205.00        | 01 01 02 | Bord na Mona            | IPPC P 0499   |
| Plastic Swamp Shoes           | 3.60           | 02 01 04 | AES                     | 053/OY/39/02  |
| <b>Totals</b>                 | <b>2859.25</b> |          |                         |               |

**Note:** Polythene, Cardboard and Steel are recycled.

### 2.3.2 Hazardous Waste

| Hazardous Waste Data 2009 |              |          |                                |                   |             |
|---------------------------|--------------|----------|--------------------------------|-------------------|-------------|
| IPPC Licence: P0504-01    |              |          |                                |                   |             |
| Works: Mount Dillon       |              |          |                                |                   |             |
| Type                      | Tonnes       | EWC Code | Contractor                     | Licence Nr        | Destination |
| Waste Oil                 | 10.40        | 13 02 05 | Enva Ireland Ltd Portlaoise    | 184-1             | Portlaoise  |
| Oil Filters               | 1.96         | 16 01 07 | Enva Ireland Ltd Portlaoise    | 184-1             | Portlaoise  |
| Lead Acid Batt            | 1.55         | 16 06 01 | Enva Ireland Ltd Portlaoise    | 184-1             | Portlaoise  |
| Parts Wash                | 10.53        | 11 01 13 | Safety Kleen, Tallaght, Dublin | 99-1              | Dublin      |
| Florescent Tubes          | .21          | 20 02 01 | Irish Lamp Recycling           | WCP-DC-08-1115-01 | Kildare     |
| <b>Total</b>              | <b>24.65</b> |          |                                |                   |             |

## 2.4 Energy and Water Consumption

### 2.4.1 Energy Consumption

Water is not used as part of the production process and is only used on a domestic scale at canteens and workshops.

| Energy Consumption 2009 |                 |                 |                     |                          |
|-------------------------|-----------------|-----------------|---------------------|--------------------------|
| Licence: P0504-01       |                 |                 |                     |                          |
| Works: Mt Dillon        |                 |                 |                     |                          |
| Units                   | Diesel (Litres) | Petrol (Litres) | Electricity (Units) | Peat Briquettes (Tonnes) |
| <b>Totals</b>           | 1594338         | 1676            | 1898850             |                          |
| <b>MW Hours</b>         | 15612.4         | 15.15097        | 1898.85             | 0                        |
| <b>Total MW Hours</b>   | <b>17526.4</b>  |                 |                     |                          |

**Note:** The electricity consumption figure was extracted from ESB on line information systems. Some of the consumption figures relate to estimated readings which do not reflect on the exact amount of consumption. Going forward/ Bord na Mona are liaising with the supplier, to try and eliminate all estimated readings. This will give a more precise figure in relation to consumption in the future

## 2.5 Environmental Incidents and Complaints

### 2.5.1 Incidents

| Environmental Incidents 2009 |          |
|------------------------------|----------|
| Licence: P0504-01            |          |
| Works: Mt Dillon             |          |
|                              | Number   |
| Incidents                    | 0        |
| Requiring corrective action  |          |
| Category                     |          |
| Water                        |          |
| Air                          |          |
| Procedural                   |          |
| Miscellaneous                |          |
| <b>Total</b>                 | <b>0</b> |

There were no incidents during the reporting period.

## 2.5.2 Complaints

| <b>Environmental Complaints 2009</b> |               |
|--------------------------------------|---------------|
| <b>Licence:P0504-01</b>              |               |
| <b>Works: Mt Dillon</b>              |               |
|                                      | <b>Number</b> |
| Complaints                           | 0             |
| Requiring corrective action          | 0             |
| <b>Category</b>                      |               |
| Water                                |               |
| Air                                  |               |
| Procedural                           |               |
| Miscellaneous                        |               |
| <b>Total</b>                         | <b>0</b>      |

There were no complaints during the reporting period

### 3.0 Management of the Activity

#### 3.1 Achievement of Objectives & Targets 2009

| Project   | Description & Status  |
|---|---|
| <p><b>Project 1:</b></p> <p>Reduction of fugitive dust emissions.</p> | <p><b>Training.</b><br/>Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.<br/><b>Status</b><br/>145 employees received environmental training during the reporting period.</p> <p><b>Hydraulic Harrows.</b><br/>There are four new Hydraulic Harrows programmed for delivery over a five year period. These will be used in Dust Sensitive Locations.<br/><b>Status</b><br/>The first of the hydraulic harrows due in 2009 is now due to arrive in 2010.</p> <p><b>Headland Peat Collection.</b><br/>Continue with the collection of headland peat, particularly at dust sensitive locations. A new mobile Haku Harvester is programmed for delivery for 2008/09 which will include dust sensitive headlands in its operations.<br/><b>Status</b><br/>Due to the above average rainfall experienced during the 2009 production season and the effect this had on production, headland peat was not collected during the period.</p> |
| <p><b>Project 2:</b></p> <p>Waste Management</p>                      | <p><b>Waste Streamlining.</b><br/>Following the purchase by Bord na Mona of AES Ltd, meetings with that company's management will be ongoing to see how best Bord na Mona's needs can be catered for. Key account managers dedicated to Bord na Mona have been requested and are due to be in place in 2009.<br/><b>Status</b><br/>A pilot programme has been put in place at Bord na Mona Boora works. Should this prove successful it will be extended to all Bord na Mona works. The service promises to include the issuing of quarterly reports on waste quantities and types.</p>   |

|   |   |
|---|---|
| <p><b>Project 3:</b></p> <p>Minimisation of Suspended Solids.</p>                         | <p><b>Training.</b><br/>Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.</p> <p><b>Status</b><br/>145 employees received environmental training during the reporting period.</p>   |
| <p><b>Project 4:</b></p> <p>Effective spill leak management of mobile fuelling units.</p> | <p><b>Research and Development.</b><br/>Continue to introduce rail operated fuel service wagons on a phased basis, with Mt Dillon works budgeted to receive one wagon during 2009. Increased bund provisions where required, will be provided in 2009.</p> <p><b>Status</b><br/>Mountdillon works took delivery of one new double skinned service train in 2009.</p>                            |
| <p><b>Project 5:</b></p> <p>Collection storage and reuse of polyethylene.</p>             | <p><b>Identify Recyclers.</b><br/>Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.</p> <p><b>Status</b><br/>There was 102.74 tonnes of polyethylene removed for recycling in 2009.</p>  |
| <p><b>Project 6:</b></p> <p>PCB Directive</p>   | <p><b>Survey.</b><br/>Carry out a comprehensive survey of all PCB suspect appliances. Following this, liaise with EPA in deciding plan of action once a definitive amount of suspect PCB holdings are agreed.</p> <p><b>Status</b><br/>As of December 2009, 100% of all potential Mountdillon PCB contained appliances have been sampled, with results indicating no PCB's present to date.</p> |

### 3.2 Environmental Management Programme Proposal for 2010

| Project   | Description & Status  |
|---|---|
| <p><b>Project 1:</b></p> <p>Reduction of fugitive dust emissions.</p>                     | <p><b>Training.</b><br/>Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.</p> <p><b>Hydraulic Harrows.</b><br/>There is one new Hydraulic Harrows programmed for delivery in 2010. This will be deployed at a Dust Sensitive Location.</p> <p><b>Headland Peat Collection.</b><br/>Continue with the collection of headland peat, particularly at dust sensitive locations. A new mobile Haku Harvester is programmed for delivery in 2010 which will include dust sensitive headlands in its operations.</p> |
| <p><b>Project 2:</b></p> <p>Waste Management</p>  | <p><b>Waste Streamlining.</b><br/>Following the setting up of a pilot project at Boora works in relation to waste management. The extension of the project to other works including Moundillon is planned.</p>  |
| <p><b>Project 3:</b></p> <p>Minimisation of Suspended Solids.</p>                         | <p><b>Training.</b><br/>Continue to train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.</p>   |
| <p><b>Project 4:</b></p> <p>Effective spill leak management of mobile fuelling units.</p> | <p><b>Research and Development.</b><br/>Installation of a new fuel storage tank and associated bunding at Moundillon Yard.</p>  |
| <p><b>Project 5:</b></p> <p>Collection storage and reuse of polyethylene.</p>             | <p><b>Identify Recyclers.</b><br/>Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.</p>  |
| <p><b>Project 6:</b></p> <p>Mini Sod Project</p>  | <p><b>Carry out Trial.</b><br/>On a trial basis switch from milled peat to mini sod production at Edera bog. Part of this project is to mitigate against dust nuisance as the area is dust sensitive.</p>   |
| <p><b>Project 7:</b></p> <p>Energy Management</p>   | <p><b>Internal Meter Reading.</b><br/>As part of an energy management process a programme of internal meter readings will commence in 2010. The purpose of this exercise is to establish accurate energy consumption as here to fore a high percentage of electricity bills have been estimated by the supplier.</p>  |

### 3.3 Environmental Expenditure

| Environmental Expenditure 2009   |                 |
|----------------------------------|-----------------|
| Licence:P0504-01                 |                 |
| Works: Mt Dillon                 |                 |
| Description                      | Cost €          |
| Capital Costs                    | €5,600          |
| Silt Control,(Wages + Materials) | €185,248        |
| Analytical & Consultancy Costs   | €11,807         |
| EPA Fees                         | €9,208          |
| Bog Rehabilitation               | €0              |
| Waste Management                 | €4,613          |
| <b>Total</b>                     | <b>€216,476</b> |

### 4.0 Licence Specific Reports

#### 4.1 Surface Water Discharge Monitoring Location Programme Review

Surface water monitoring proved to be quite successful during the reporting period, with no non-compliances recorded in the reporting period. This was a quite satisfactory performance considering the rainfall experienced, with 175.7mm of rainfall recorded in November.

Sampling will take place at the same locations in 2010.

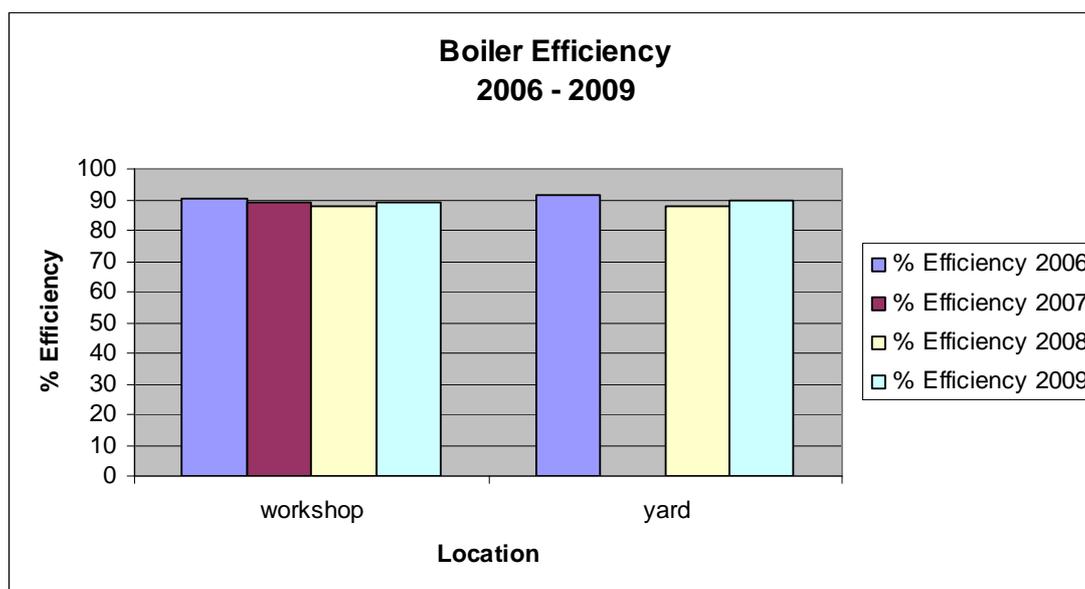
#### 4.2 Bunding Programme

| Bund Locations & Numbers Mt Dillon Works |             |             |                  |               |             |                  |
|--|-------------|-------------|------------------|---------------|-------------|------------------|
| IPPC Licence: P0504-01                   |             |             |                  |               |             |                  |
| Location                                 | Bund Number | Last Tested | Status Pass/Fail | Next Test Due | Last Tested | Status Pass/Fail |
| Mount Dillon Works Bund                  | 504-05-01   | Nov-07      | Pass             | Nov-09        | Mar-09      | Pass             |
| Works Waste Oil Bund                     | 504-05-02   | Aug-09      | Pass             | Aug-11        |             |                  |
| Mount Dillon Yard Bund                   | 504-05-03   | Mar-07      | Fail             | ASAP          |             |                  |
| Yard Waste Oil Bund                      | 504-05-04   | Aug-09      | Pass             | Aug-11        |             |                  |
| Lough Ree Transport Bund                 | 504-05-05   | Mar-07      | Pass             | Mar-09        | Sep-09      | Pass             |
| Cuil na Gun Bund                         | 504-05-06   | Mar-07      | Pass             | Mar-09        | Feb-09      | Pass             |

The table above is an overview of the bund testing carried out during 2009. The bund at Moundillon Yard is currently being assessed with regard to suitability for repair. The option of decommissioning the existing tank and replacing it is also being considered.

### 4.3 Boiler Combustion Efficiency

| Boiler Emissions 2009 |                   |                   |                   |                   |
|-----------------------|-------------------|-------------------|-------------------|-------------------|
| Licence: P0504-01     |                   |                   |                   |                   |
| Works: Mt Dillon      |                   |                   |                   |                   |
| Boiler Location       | % Efficiency 2006 | % Efficiency 2007 | % Efficiency 2008 | % Efficiency 2009 |
| Workshop              | 90.6              | 89.2              | 87.7              | 89.25             |
| Yard                  | 91.4              | 0                 | 87.6              | 89.5              |



**Note:** Due to an error an efficiency test was not conducted at Moundillon Yard boiler in 2007.

### 4.4 Resource consumption summary

| Resource Consumption 2009 |                 |               |          |
|---------------------------|-----------------|---------------|----------|
| Licence: P0504-01         |                 |               |          |
| Works: Mt Dillon          |                 |               |          |
| Product                   | Tonnes Produced | Tonnes Sold   | Customer |
| Milled Peat               | 423,914         | 935,220       | ESB      |
| <b>Totals</b>             | <b>423914</b>   | <b>935220</b> |          |

| Proposed Production 2010 |                 |
|--------------------------|-----------------|
| Licence: P0504-01        |                 |
| Works: Mt Dillon         |                 |
| Product                  | Proposed Target |
| Milled Peat              | 662280          |
| <b>Totals</b>            | <b>662280</b>   |

#### **4.5 De-Silting Report**

The De-silting programme worked well during 2009 with all ponds receiving at least two cleanings. In some instances ponds received three cleanings.

Silt Pond Cleaning Programme attached in Appendix 5.

#### **4.6 Bog Development and Operational Programme**

Bog development took place at Cuil na Gun bog. This involved the conversion of some old sod turf cutaway bog into milled peat production bog by using earth moving machinery to level the terrain. In all, the works extended to approximately 40 hectares. It is proposed to set out and ditch this area in 2009.

The area developed is already serviced by an appropriately designed silt settlement pond.

#### **4.7 Bog Rehabilitation Report**

2008: Following consultation with the National Parks and Wildlife Service, an exercise was carried out, to identify potential areas within the Licence area that may be suitable for management with a biodiversity focus. Following from the initial desktop survey and mapping exercise, key areas of potential biodiversity areas within the Mountdillon Bogs were identified. These include Derryarogue Island, and parts of Derraghan and Lough Bannow Bogs.

2009: In September 2009, a large-scale baseline ecological survey of all of the Bord na Mona bogs commenced. The survey will target those areas identified during the mapping project in 2008 and will form the basis for development of *Rehabilitation Plans* for all bog areas, while also identifying areas considered as being rich biodiversity. To date, none of the Mountdillon Bogs have been surveyed and there are selected sites ear-marked for survey in 2010. Possible rehabilitation measures will be outlined and developed as areas are removed from the peat production process.

Further consultation with the NPWS was carried out in 2009, including a meeting with Judit Keleman, Sue Moles, William Cormacan, Pdraig O'Donnell and others. The outline long-term rehabilitation plans for the Mountdillon bogs were discussed and it was agreed to notify the NPWS when potential Biodiversity Areas are identified and more site specific rehabilitation plans drawn up.

An area was also identified for experimental crop trials. The site was developed on Derrycashel Bog and planted by NPWS in June 2009 and will be monitored to determine possible benefits for small bird populations in the area.

## **4.8 Archaeological Report**

There was no archaeology carried out in Mountdillon during the reporting period.

## **5.0 Summary**

With regard to environmental compliance at the Mountdillon Group of Bogs, the quarterly grab sampling of the ponds in the Surface Water Discharge Monitoring Location Programme were compliant. The Composite Sampler was also compliant during the period of January to the end of December.

Dust monitoring results were also compliant and there were no complaints received in relation to dust or silt in 2009.

We intend to build on the success of 2009 and increase our efforts to minimise the impact of our operations on the environment. This will include the supply of additional plant, equipment and bunding. We have greatly improved our fire prevention and fire fighting capabilities in line with experience gained from the bog fires in June of 2006

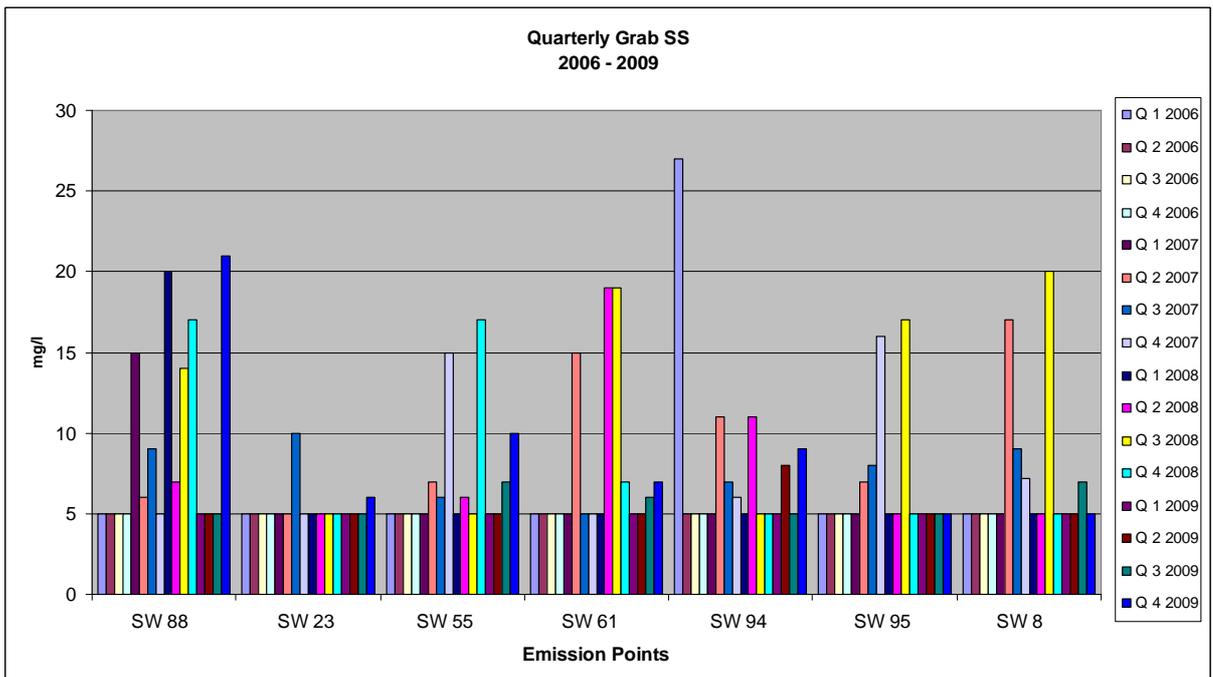
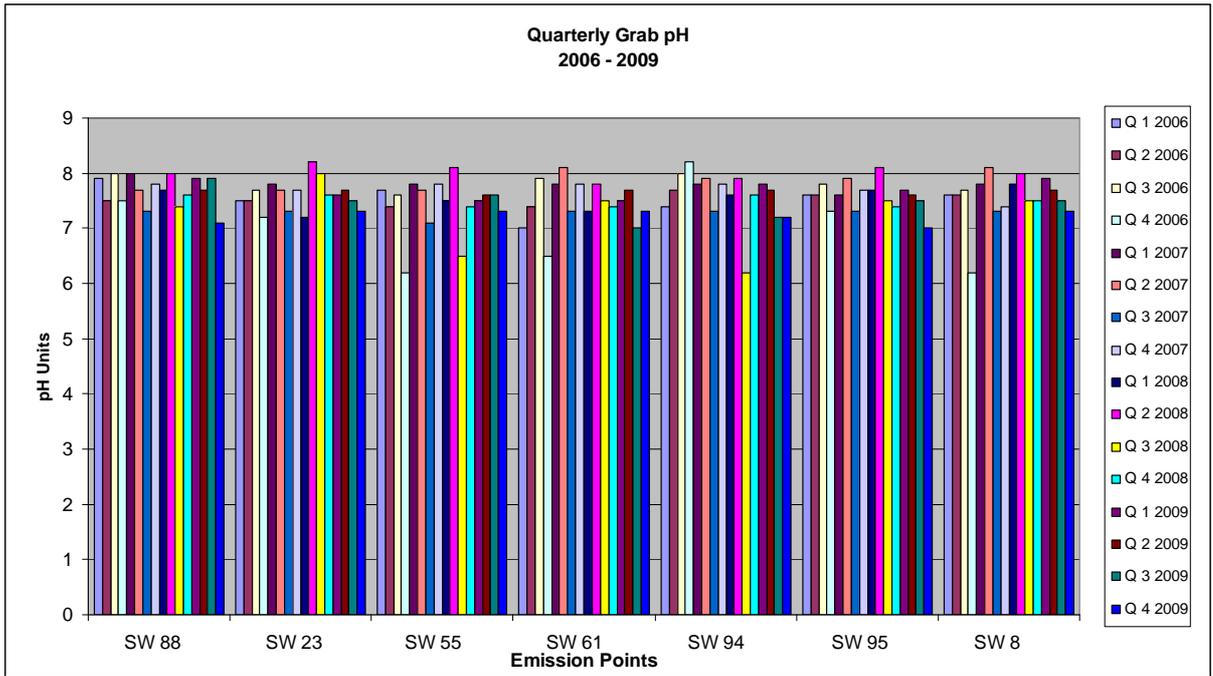
Edera bog, which is a dust sensitive location, is to have the traditional peat harvesting system ie. milling, harrowing, ridging and harvesting replaced with a mini sod harvesting operation, in an effort to reduce dust generation.

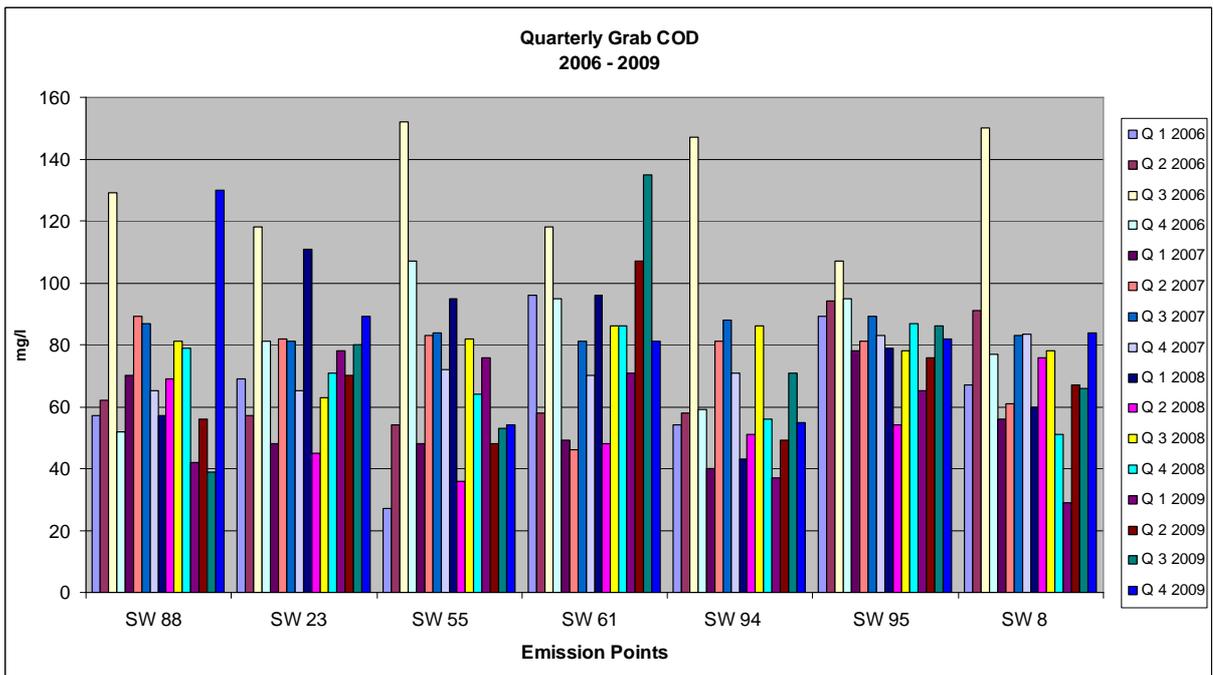
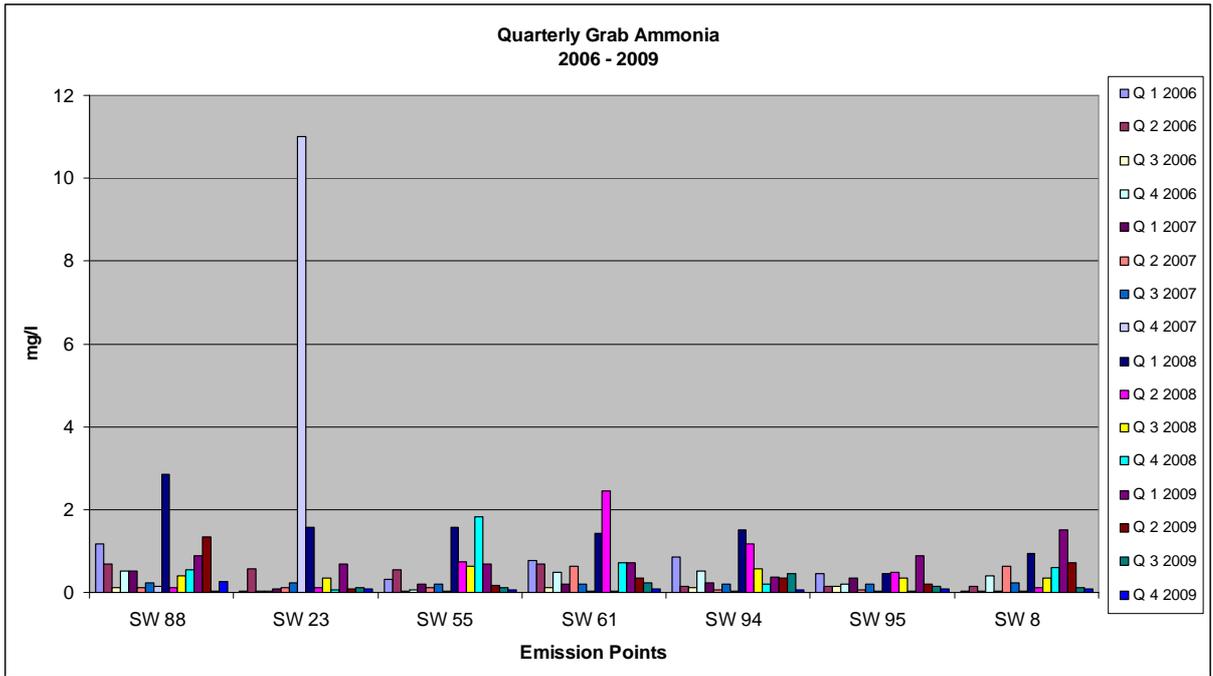
Bord na Mona Energy Ltd are represented on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

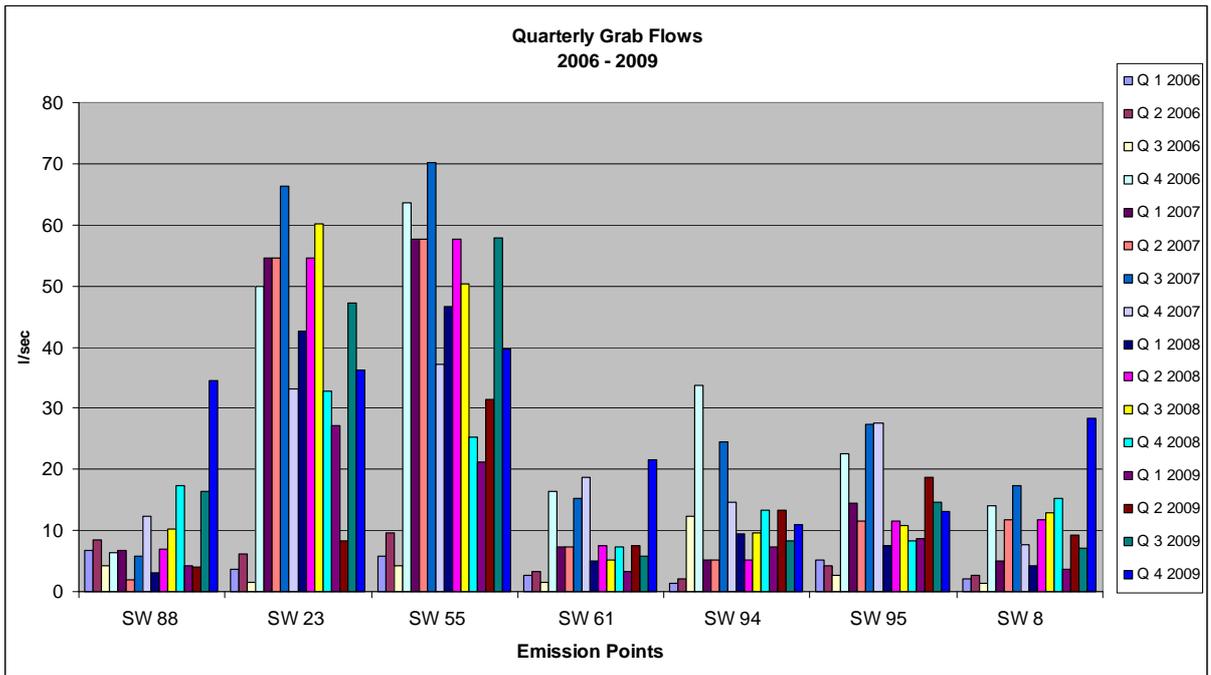
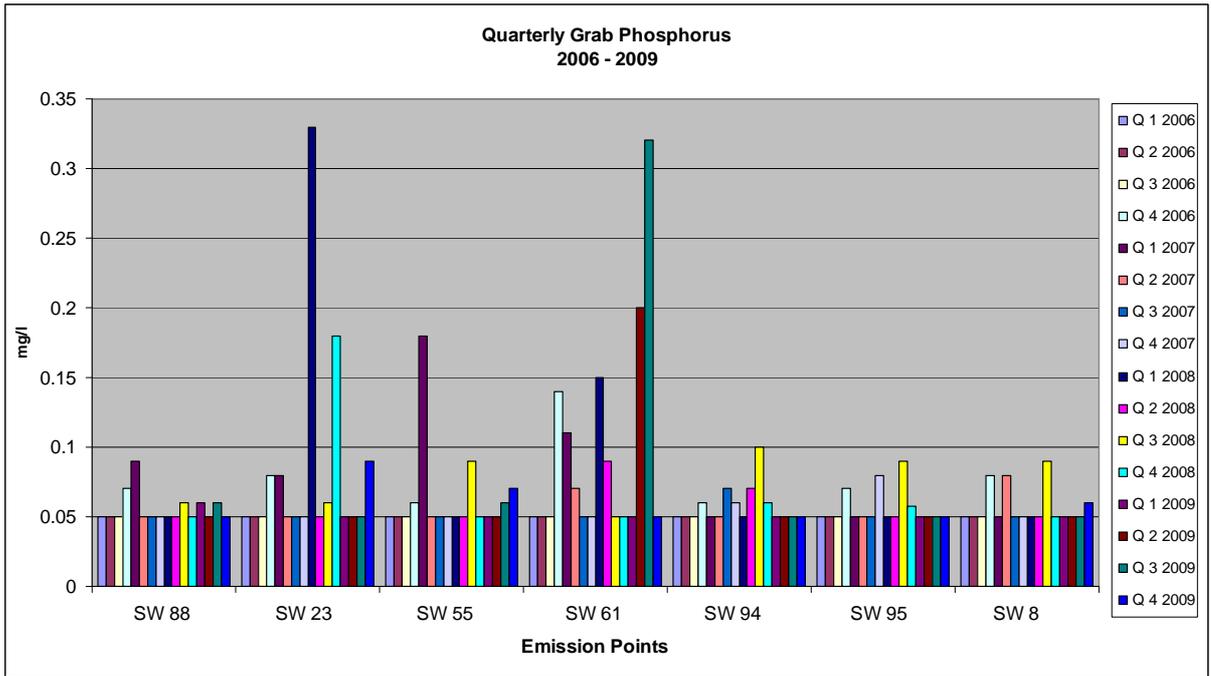
Bord na Mona Energy Ltd would like to take this opportunity to advise the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection measures.

# **APPENDIX 1**

## **Surface Water Discharge Monitoring Results Bogs**



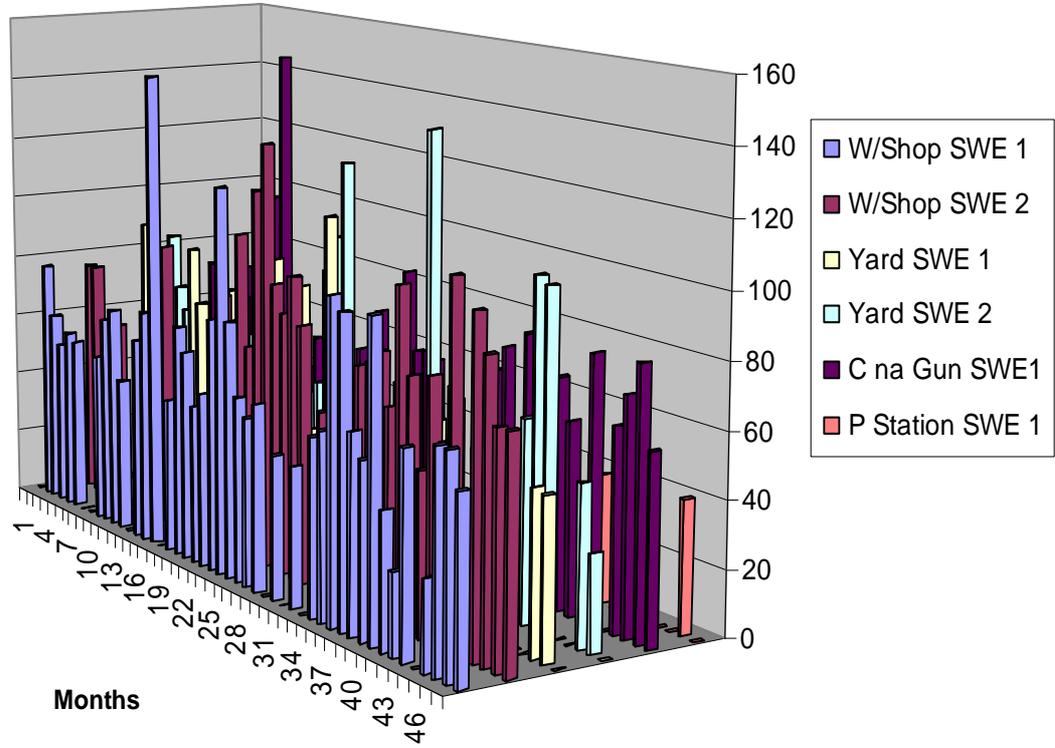




# **APPENDIX 2**

## **Surface Water Discharge Monitoring Results Yards**

### Yard Discharge COD Results (mg/l) 2006-2009



# **APPENDIX 3**

## **Surface Water Discharge Monitoring Results Composite**

| Month   |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|---------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| January | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009    |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96    |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1       | 7.8 | 75   | 0.8        | 0.05       | 5         | 372    | 108    | 1785888        | 133.94 | 1.43       | 0.09         | 8.93      | 664.35 |
| 2       |     |      |            |            | 38        | 488    |        | 1323043        |        |            |              | 50.28     | 645.64 |
| 3       |     |      |            |            | 37        | 488    |        | 1640045        |        |            |              | 60.68     | 800.34 |
| 4       |     |      |            |            | 14        | 480    |        | 1877299        |        |            |              | 26.28     | 901.10 |
| 5       |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 6       |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 7       | 8.1 | 51   | 0.02       | 0.05       | 7         | 286    | 117    | 1877299        | 95.74  | 0.04       | 0.09         | 13.14     | 536.91 |
| 8       |     |      |            |            | 23        | 394    |        | 1877299        |        |            |              | 43.18     | 739.66 |
| 9       |     |      |            |            | 16        | 410    |        | 1877299        |        |            |              | 30.04     | 769.69 |
| 10      |     |      |            |            | 31        | 346    |        | 1877299        |        |            |              | 58.20     | 649.55 |
| 11      |     |      |            |            | 30        | 312    |        | 1877299        |        |            |              | 56.32     | 585.72 |
| 12      |     |      |            |            | 0         |        |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 13      |     |      |            |            | 21        | 252    |        | 1877299        |        |            |              | 39.42     | 473.08 |
| 14      | 8.2 | 85   | 0.66       | 0.08       | 32        | 256    | 155    | 1877299        | 159.57 | 1.24       | 0.15         | 60.07     | 480.59 |
| 15      |     |      |            |            | 11        | 260    |        | 1877299        |        |            |              | 20.65     | 488.10 |
| 16      |     |      |            |            | 38        | 252    |        | 1877299        |        |            |              | 71.34     | 473.08 |
| 17      |     |      |            |            | 11        | 258    |        | 1877299        |        |            |              | 20.65     | 484.34 |
| 18      |     |      |            |            | 5         | 320    |        | 1877299        |        |            |              | 9.39      | 600.74 |
| 19      |     |      |            |            | 39        | 230    |        | 1877299        |        |            |              | 73.21     | 431.78 |
| 20      |     |      |            |            | 28        | 244    |        | 1877299        |        |            |              | 52.56     | 458.06 |
| 21      | 8.1 | 71   | 0.63       | 0.05       | 17        | 214    | 166    | 1877299        | 133.29 | 1.18       | 0.09         | 31.91     | 401.74 |
| 22      |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 23      |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 24      |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 25      |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 26      |     |      |            |            | 0         | 0      |        | 1877299        |        |            |              | 0.00      | 0.00   |
| 27      |     |      |            |            | 0         | 0      |        | 1669853        |        |            |              | 0.00      | 0.00   |
| 28      |     |      |            |            | 0         | 0      |        | 1715126        |        |            |              | 0.00      | 0.00   |
| 29      | 7.8 | 84   | 0.73       | 0.08       | 21        | 288    | 144    | 1280016        | 107.52 | 0.93       | 0.10         | 26.88     | 368.64 |
| 30      |     |      |            |            | 0         | 0      |        | 1416096        |        |            |              | 0.00      | 0.00   |
| 31      |     |      |            |            | 0         | 0      |        | 7391520        |        |            |              | 0.00      | 0.00   |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| Feb   | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1     |     |      |            |            | 0         | 0      |        | 9961920        |        |            |              | 0.00      | 0.00   |
| 2     |     |      |            |            | 0         | 0      |        | 86             |        |            |              | 0.00      | 0.00   |
| 3     |     |      |            |            | 0         | 0      |        | 17807          |        |            |              | 0.00      | 0.00   |
| 4     |     |      |            |            | 0         | 0      |        | 271581         |        |            |              | 0.00      | 0.00   |
| 5     |     |      |            |            | 0         | 0      |        | 422271         |        |            |              | 0.00      | 0.00   |
| 6     |     |      |            |            | 0         | 0      |        | 5644771        |        |            |              | 0.00      | 0.00   |
| 7     |     |      |            |            | 0         | 0      |        | 10614240       |        |            |              | 0.00      | 0.00   |
| 8     |     |      |            |            | 0         | 0      |        | 4487443        |        |            |              | 0.00      | 0.00   |
| 9     |     |      |            |            | 0         | 0      |        | 1692403        |        |            |              | 0.00      | 0.00   |
| 10    |     |      |            |            | 0         | 0      |        | 1768349        |        |            |              | 0.00      | 0.00   |
| 11    | 7.7 | 43   | 0.4        | 0.05       | 5         | 298    | 117    | 1358035        | 58.40  | 0.54       | 0.07         | 6.79      | 404.69 |
| 12    |     |      |            |            | 20        | 240    |        | 1434672        |        |            |              | 28.69     | 344.32 |
| 13    |     |      |            |            | 22        | 232    |        | 1306195        |        |            |              | 28.74     | 303.04 |
| 14    |     |      |            |            | 20        | 228    |        | 1383264        |        |            |              | 27.67     | 315.38 |
| 15    |     |      |            |            | 28        | 222    |        | 1374624        |        |            |              | 38.49     | 305.17 |
| 16    |     |      |            |            | 34        | 272    |        | 1389917        |        |            |              | 47.26     | 378.06 |
| 17    |     |      |            |            | 23        | 265    |        | 1136074        |        |            |              | 26.13     | 301.06 |
| 18    | 7.7 | 61   | 0.81       | 0.05       | 23        | 236    | 175    | 1317082        | 80.34  | 1.07       | 0.07         | 30.29     | 310.83 |
| 19    |     |      |            |            | 14        | 398    |        | 1380326        |        |            |              | 19.32     | 549.37 |
| 20    |     |      |            |            | 16        | 420    |        | 1458864        |        |            |              | 23.34     | 612.72 |
| 21    |     |      |            |            | 17        | 406    |        | 1637107        |        |            |              | 27.83     | 664.67 |
| 22    |     |      |            |            | 12        | 390    |        | 1687219        |        |            |              | 20.25     | 658.02 |
| 23    |     |      |            |            | 11        | 400    |        | 1724544        |        |            |              | 18.97     | 689.82 |
| 24    |     |      |            |            | 8         | 406    |        | 1625357        |        |            |              | 13.00     | 659.89 |
| 25    | 7.6 | 57   | 1.72       | 0.05       | 8         | 424    | 125    | 1646525        | 93.85  | 2.83       | 0.08         | 13.17     | 698.13 |
| 26    |     |      |            |            | 32        | 374    |        | 1570666        |        |            |              | 50.26     | 587.43 |
| 27    |     |      |            |            | 33        | 380    |        | 1811549        |        |            |              | 59.78     | 688.39 |
| 28    |     |      |            |            | 7         | 348    |        | 1456531        |        |            |              | 10.20     | 506.87 |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| March | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1     |     |      |            |            | 34        | 388    |        | 1651968        |        |            |              | 56.17     | 640.96 |
| 2     |     |      |            |            | 7         | 338    |        | 1115597        |        |            |              | 7.81      | 377.07 |
| 3     |     |      |            |            | 7         | 346    |        | 1550362        |        |            |              | 10.85     | 536.43 |
| 4     | 8   | 66   | 1.33       | 0.05       | 20        | 352    | 133    | 1991693        | 131.45 | 2.65       | 0.10         | 39.83     | 701.08 |
| 5     |     |      |            |            | 18        | 50     |        | 1989274        |        |            |              | 35.81     | 99.46  |
| 6     |     |      |            |            | 13        | 168    |        | 1533341        |        |            |              | 19.93     | 257.60 |
| 7     |     |      |            |            | 7         | 342    |        | 1064189        |        |            |              | 7.45      | 363.95 |
| 8     |     |      |            |            | 5         | 198    |        | 1324598        |        |            |              | 6.62      | 262.27 |
| 9     |     |      |            |            | 6         | 234    |        | 1598314        |        |            |              | 9.59      | 374.01 |
| 10    |     |      |            |            | 13        | 360    |        | 1249517        |        |            |              | 16.24     | 449.83 |
| 11    | 7.9 | 85   | 0.08       | 0.05       | 5         | 140    | 327    | 1625184        | 138.14 | 0.13       | 0.08         | 8.13      | 227.53 |
| 12    |     |      |            |            | 0         | 0      |        | 1296864        |        |            |              | 0.00      | 0.00   |
| 13    |     |      |            |            | 0         | 0      |        | 1348877        |        |            |              | 0.00      | 0.00   |
| 14    |     |      |            |            | 0         | 0      |        | 752734         |        |            |              | 0.00      | 0.00   |
| 15    |     |      |            |            | 0         | 0      |        | 232537         |        |            |              | 0.00      | 0.00   |
| 16    |     |      |            |            | 0         | 0      |        | 139208         |        |            |              | 0.00      | 0.00   |
| 17    |     |      |            |            | 0         | 0      |        | 237073         |        |            |              | 0.00      | 0.00   |
| 18    | 7.9 | 40   | 1.32       | 0.05       | 14        | 444    | 57     | -17660         | -0.71  | -0.02      | 0.00         | -0.25     | -7.84  |
| 19    |     |      |            |            | 0         | 0      |        | 197407         |        |            |              | 0.00      | 0.00   |
| 20    |     |      |            |            | 0         | 0      |        | 1267402        |        |            |              | 0.00      | 0.00   |
| 21    |     |      |            |            | 0         | 0      |        | 465515         |        |            |              | 0.00      | 0.00   |
| 22    |     |      |            |            | 0         | 0      |        | 1283818        |        |            |              | 0.00      | 0.00   |
| 23    |     |      |            |            | 0         | 0      |        | 498131         |        |            |              | 0.00      | 0.00   |
| 24    |     |      |            |            | 0         | 0      |        | 728706         |        |            |              | 0.00      | 0.00   |
| 25    |     |      |            |            | 0         | 0      |        | 799209         |        |            |              | 0.00      | 0.00   |
| 26    |     |      |            |            | 0         | 0      |        | 729873         |        |            |              | 0.00      | 0.00   |
| 27    |     |      |            |            | 0         | 0      |        | 711755         |        |            |              | 0.00      | 0.00   |
| 28    |     |      |            |            | 0         | 0      |        | 595642         |        |            |              | 0.00      | 0.00   |
| 29    |     |      |            |            | 0         | 0      |        | 555725         |        |            |              | 0.00      | 0.00   |
| 30    |     |      |            |            | 0         | 0      |        | 945043         |        |            |              | 0.00      | 0.00   |
| 31    |     |      |            |            | 0         | 0      |        | 846650         |        |            |              | 0.00      | 0.00   |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |         |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|---------|
| April | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total   |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids  |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day  |
| 1     | 8.2 | 59   | 1.24       | 0.05       | 10        | 478    | 95     | 330420         | 19.49  | 0.41       | 0.02         | 3.30      | 157.94  |
| 2     |     |      |            |            | 15        | 400    |        | 971568         |        |            |              | 14.57     | 388.63  |
| 3     |     |      |            |            | 12        | 404    |        | 1085702        |        |            |              | 13.03     | 438.62  |
| 4     |     |      |            |            | 14        | 418    |        | 668105         |        |            |              | 9.35      | 279.27  |
| 5     |     |      |            |            | 13        | 424    |        | 805723         |        |            |              | 10.47     | 341.63  |
| 6     |     |      |            |            | 13        | 400    |        | 771327         |        |            |              | 10.03     | 308.53  |
| 7     |     |      |            |            | 5         | 406    |        | 816610         |        |            |              | 4.08      | 331.54  |
| 8     | 8.5 | 57   | 0.87       | 0.05       | 13        | 418    | 124    | 801991         | 45.71  | 0.70       | 0.04         | 10.43     | 335.23  |
| 9     |     |      |            |            | 5         | 368    |        | 1093824        |        |            |              | 5.47      | 402.53  |
| 10    |     |      |            |            | 5         | 242    |        | 930355         |        |            |              | 4.65      | 225.15  |
| 11    |     |      |            |            | 5         | 296    |        | 1898554        |        |            |              | 9.49      | 561.97  |
| 12    |     |      |            |            | 5         | 176    |        | 943574         |        |            |              | 4.72      | 166.07  |
| 13    |     |      |            |            | 5         | 338    |        | 932170         |        |            |              | 4.66      | 315.07  |
| 14    |     |      |            |            | 13        | 400    |        | 701931         |        |            |              | 9.13      | 280.77  |
| 15    | 8.2 | 47   | 0.97       | 0.05       | 7         | 348    | 140    | 1270771        | 59.73  | 1.23       | 0.06         | 8.90      | 442.23  |
| 16    |     |      |            |            | 9         | 440    |        | 651499         |        |            |              | 5.86      | 286.66  |
| 17    |     |      |            |            | 8         | 474    |        | 1709683        |        |            |              | 13.68     | 810.39  |
| 18    |     |      |            |            | 5         | 444    |        | 2600035        |        |            |              | 13.00     | 1154.42 |
| 19    |     |      |            |            | 5         | 472    |        | 2600035        |        |            |              | 13.00     | 1227.22 |
| 20    |     |      |            |            | 5         | 452    |        | 2600035        |        |            |              | 13.00     | 1175.22 |
| 21    |     |      |            |            | 5         | 460    |        | 2600035        |        |            |              | 13.00     | 1196.02 |
| 22    | 8.4 | 62   | 0.93       | 0.05       | 5         | 473    | 100    | 2600035        | 161.20 | 2.42       | 0.13         | 13.00     | 1229.82 |
| 23    |     |      |            |            | 6         | 294    |        | 2600035        |        |            |              | 15.60     | 764.41  |
| 24    |     |      |            |            | 5         | 306    |        | 2600035        |        |            |              | 13.00     | 795.61  |
| 25    |     |      |            |            | 5         | 316    |        | 2600035        |        |            |              | 13.00     | 821.61  |
| 26    |     |      |            |            | 5         | 364    |        | 2542406        |        |            |              | 12.71     | 925.44  |
| 27    |     |      |            |            | 9         | 280    |        | 861520         |        |            |              | 7.75      | 241.23  |
| 28    |     |      |            |            | 5         | 286    |        | 1317514        |        |            |              | 6.59      | 376.81  |
| 29    | 8.4 | 45   | 0.97       | 0.05       | 5         | 456    | 97     | 1281053        | 57.65  | 1.24       | 0.06         | 6.41      | 584.16  |
| 30    |     |      |            |            | 5         | 422    |        | 230748         |        |            |              | 1.15      | 97.38   |

| Month |     |      |            | Parameters |           |        |        |         |        |            | Daily Totals |           |         |
|-------|-----|------|------------|------------|-----------|--------|--------|---------|--------|------------|--------------|-----------|---------|
| May   | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow    | COD    | Ammonia as | Total        | Suspended | Total   |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily   | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids  |
| 1     |     |      |            |            | 5         | 400    |        | 964570  |        |            |              | 4.82      | 385.83  |
| 2     |     |      |            |            | 5         | 292    |        | 235328  |        |            |              | 1.18      | 68.72   |
| 3     |     |      |            |            | 5         | 409    |        | 264367  |        |            |              | 1.32      | 108.13  |
| 4     |     |      |            |            | 5         | 360    |        | 254405  |        |            |              | 1.27      | 91.59   |
| 5     |     |      |            |            | 5         | 420    |        | 163832  |        |            |              | 0.82      | 68.81   |
| 6     | 8   | 47   | 1.11       | 0.05       | 15        | 414    | 130    | 88413   | 4.16   | 0.10       | 0.0044       | 1.33      | 36.60   |
| 7     |     |      |            |            | 5         | 358    |        | 601085  |        |            |              | 3.01      | 215.19  |
| 8     |     |      |            |            | 5         | 488    |        | 1054426 |        |            |              | 5.27      | 514.56  |
| 9     |     |      |            |            | 5         | 360    |        | 1282867 |        |            |              | 6.41      | 461.83  |
| 10    |     |      |            |            | 5         | 482    |        | 2214000 |        |            |              | 11.07     | 1067.15 |
| 11    |     |      |            |            | 5         | 388    |        | 1061251 |        |            |              | 5.31      | 411.77  |
| 12    |     |      |            |            | 5         | 326    |        | 919296  |        |            |              | 4.60      | 299.69  |
| 13    | 8   | 60   | 1.11       | 0.05       | 11        | 278    | 132    | 781013  | 46.86  | 0.87       | 0.04         | 8.59      | 217.12  |
| 14    |     |      |            |            | 5         | 306    |        | 918864  |        |            |              | 4.59      | 281.17  |
| 15    |     |      |            |            | 13        | 138    |        | 793619  |        |            |              | 10.32     | 109.52  |
| 16    |     |      |            |            | 6         | 238    |        | 1195862 |        |            |              | 7.18      | 284.62  |
| 17    |     |      |            |            | 5         | 274    |        | 1046909 |        |            |              | 5.23      | 286.85  |
| 18    |     |      |            |            | 5         | 286    |        | 1473206 |        |            |              | 7.37      | 421.34  |
| 19    |     |      |            |            | 7         | 406    |        | 2917901 |        |            |              | 20.43     | 1184.67 |
| 20    | 7.8 | 56   | 0.79       | 0.05       | 5         | 276    | 143    | 1863821 | 104.37 | 1.47       | 0.09         | 9.32      | 514.41  |
| 21    |     |      |            |            | 13        | 352    |        | 1315958 |        |            |              | 17.11     | 463.22  |
| 22    |     |      |            |            | 7         | 350    |        | 1060301 |        |            |              | 7.42      | 371.11  |
| 23    |     |      |            |            | 12        | 420    |        | 1125878 |        |            |              | 13.51     | 472.87  |
| 24    |     |      |            |            | 9         | 390    |        | 1347494 |        |            |              | 12.13     | 525.52  |
| 25    |     |      |            |            | 9         | 442    |        | 1001549 |        |            |              | 9.01      | 442.68  |
| 26    |     |      |            |            | 6         | 352    |        | 1163462 |        |            |              | 6.98      | 409.54  |
| 27    | 8.1 | 65   | 0.61       | 0.05       | 5         | 374    | 175    | 839704  | 54.58  | 0.51       | 0.04         | 4.20      | 314.05  |
| 28    |     |      |            |            | 0         | 0      |        | 845977  |        |            |              | 0.00      | 0.00    |
| 29    |     |      |            |            | 0         | 0      |        | 806907  |        |            |              | 0.00      | 0.00    |
| 30    |     |      |            |            | 0         | 0      |        | 1027382 |        |            |              | 0.00      | 0.00    |
| 31    |     |      |            |            | 0         | 0      |        | 802561  |        |            |              | 0.00      | 0.00    |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| June  | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1     |     |      |            |            | 0         | 0      |        | 783294         |        |            |              | 0.00      | 0.00   |
| 2     |     |      |            |            | 0         | 0      |        | 627134         |        |            |              | 0.00      | 0.00   |
| 3     |     |      |            |            | 0         | 0      |        | 507989         |        |            |              | 0.00      | 0.00   |
| 4     |     |      |            |            | 5         | 610    |        | 462594         |        |            |              | 2.31      | 282.18 |
| 5     |     |      |            |            | 5         | 602    |        | 447267         |        |            |              | 2.24      | 269.25 |
| 6     |     |      |            |            | 5         | 590    |        | 733113         |        |            |              | 3.67      | 432.54 |
| 7     |     |      |            |            | 6         | 644    |        | 577843         |        |            |              | 3.47      | 372.13 |
| 8     |     |      |            |            | 11        | 628    |        | 630677         |        |            |              | 6.94      | 396.07 |
| 9     |     |      |            |            | 8         | 584    |        | 819780         |        |            |              | 6.56      | 478.75 |
| 10    | 8.2 | 43   | 0.21       | 0.06       | 5         | 599    | 81     | 439664         | 18.91  | 0.09       | 0.03         | 2.20      | 263.36 |
| 11    |     |      |            |            | 5         | 750    |        | 511790         |        |            |              | 2.56      | 383.84 |
| 12    |     |      |            |            | 6         | 678    |        | 445003         |        |            |              | 2.67      | 301.71 |
| 13    |     |      |            |            | 5         | 698    |        | 512516         |        |            |              | 2.56      | 357.74 |
| 14    |     |      |            |            | 10        | 640    |        | 627852         |        |            |              | 6.28      | 401.83 |
| 15    |     |      |            |            | 32        | 516    |        | 662541         |        |            |              | 21.20     | 341.87 |
| 16    |     |      |            |            | 5         | 648    |        | 489750         |        |            |              | 2.45      | 317.36 |
| 17    | 8   | 44   | 0.02       | 0.05       | 27        | 728    | 56     | 286476         | 12.60  | 0.01       | 0.01         | 7.73      | 208.55 |
| 18    |     |      |            |            | 22        | 367    |        | 2133562        |        |            |              | 46.94     | 783.02 |
| 19    |     |      |            |            | 6         | 444    |        | 636872         |        |            |              | 3.82      | 282.77 |
| 20    |     |      |            |            | 9         | 402    |        | 669159         |        |            |              | 6.02      | 269.00 |
| 21    |     |      |            |            | 9         | 544    |        | 585386         |        |            |              | 5.27      | 318.45 |
| 22    |     |      |            |            | 9         | 450    |        | 854228         |        |            |              | 7.69      | 384.40 |
| 23    |     |      |            |            | 30        | 434    |        | 479235         |        |            |              | 14.38     | 207.99 |
| 24    | 7.8 | 73   | 1.7        | 0.05       | 20        | 424    | 99     | 587183         | 42.86  | 1.00       | 0.03         | 11.74     | 248.97 |
| 25    |     |      |            |            | 10        | 470    |        | 389318         |        |            |              | 3.89      | 182.98 |
| 26    |     |      |            |            | 16        | 448    |        | 330584         |        |            |              | 5.29      | 148.10 |
| 27    |     |      |            |            | 28        | 536    |        | 578828         |        |            |              | 16.21     | 310.25 |
| 28    |     |      |            |            | 34        | 436    |        | 513743         |        |            |              | 17.47     | 223.99 |
| 29    |     |      |            |            | 10        | 426    |        | 637744         |        |            |              | 6.38      | 271.68 |
| 30    |     |      |            |            | 15        | 556    |        | 466646         |        |            |              | 7.00      | 259.46 |

| July | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total      | Suspended | Total   |
|------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|------------|-----------|---------|
| 2009 |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus | Solids    | Solids  |
| SW96 |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day     | Kg/Day    | Kg/Day  |
| 1    | 8   | 55   | 1.14       | 0.05       | 8         | 432    | 124    | 438558         | 24.12  | 0.50       | 0.02       | 3.51      | 189.46  |
| 2    |     |      |            |            | 5         | 378    |        | 578578         |        |            |            | 2.89      | 218.70  |
| 3    |     |      |            |            | 15        | 430    |        | 968544         |        |            |            | 14.53     | 416.47  |
| 4    |     |      |            |            | 20        | 294    |        | 1656461        |        |            |            | 33.13     | 487.00  |
| 5    |     |      |            |            | 27        | 264    |        | 671000         |        |            |            | 18.12     | 177.14  |
| 6    |     |      |            |            | 11        | 326    |        | 798690         |        |            |            | 8.79      | 260.37  |
| 7    |     |      |            |            | 26        | 269    |        | 3669667        |        |            |            | 95.41     | 987.14  |
| 8    | 7.6 | 82   | 0.83       | 0.05       | 18        | 342    | 209    | 1518307        | 124.50 | 1.26       | 0.08       | 27.33     | 519.26  |
| 9    |     |      |            |            | 11        | 398    |        | 1258330        |        |            |            | 13.84     | 500.82  |
| 10   |     |      |            |            | 5         | 394    |        | 673393         |        |            |            | 3.37      | 265.32  |
| 11   |     |      |            |            | 18        | 359    |        | 926294         |        |            |            | 16.67     | 332.54  |
| 12   |     |      |            |            | 0         | 0      |        | 916358         |        |            |            | 0.00      | 0.00    |
| 13   |     |      |            |            | 5         | 456    |        | 885686         |        |            |            | 4.43      | 403.87  |
| 14   |     |      |            |            | 12        | 440    |        | 1251158        |        |            |            | 15.01     | 550.51  |
| 15   | 8   | 63   | 0.04       | 0.05       | 7         | 6321   | 126    | 976406         | 61.51  | 0.04       | 0.05       | 6.83      | 6171.86 |
| 16   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 17   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 18   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 19   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 20   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 21   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 22   | 7.5 | 62   | 0.76       | 0.05       | 27        | 448    | 142    | 836611         | 51.87  | 0.64       | 0.04       | 22.59     | 374.80  |
| 23   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 24   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 25   |     |      |            |            | 0         | 0      |        | 836611         |        |            |            | 0.00      | 0.00    |
| 26   |     |      |            |            | 0         | 0      |        | 767569         |        |            |            | 0.00      | 0.00    |
| 27   |     |      |            |            | 0         | 0      |        | 332510         |        |            |            | 0.00      | 0.00    |
| 28   |     |      |            |            | 0         | 0      |        | 1023926        |        |            |            | 0.00      | 0.00    |
| 29   |     |      |            |            | 0         | 0      |        | 1073088        |        |            |            | 0.00      | 0.00    |
| 30   |     |      |            |            | 0         | 0      |        | 927850         |        |            |            | 0.00      | 0.00    |
| 31   |     |      |            |            | 0         | 0      |        | 863516         |        |            |            | 0.00      | 0.00    |

| Month  |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|--------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| August | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009   |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96   |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1      |     |      |            |            | 0         | 0      |        | 721673         |        |            |              | 0.00      | 0.00   |
| 2      |     |      |            |            | 0         | 0      |        | 984701         |        |            |              | 0.00      | 0.00   |
| 3      |     |      |            |            | 0         | 0      |        | 929750         |        |            |              | 0.00      | 0.00   |
| 4      |     |      |            |            | 0         | 0      |        | 697248         |        |            |              | 0.00      | 0.00   |
| 5      | 7.6 | 50   | 0.86       | 0.05       | 10        | 530    | 108    | 798267         | 39.91  | 0.69       | 0.04         | 7.98      | 423.08 |
| 6      |     |      |            |            | 9         | 506    |        | 591028         |        |            |              | 5.32      | 299.06 |
| 7      |     |      |            |            | 10        | 528    |        | 791052         |        |            |              | 7.91      | 417.68 |
| 8      |     |      |            |            | 11        | 482    |        | 546497         |        |            |              | 6.01      | 263.41 |
| 9      |     |      |            |            | 9         | 482    |        | 326125         |        |            |              | 2.94      | 157.19 |
| 10     |     |      |            |            | 16        | 467    |        | 712549         |        |            |              | 11.40     | 332.76 |
| 11     |     |      |            |            | 7         | 522    |        | 463415         |        |            |              | 3.24      | 241.90 |
| 12     | 8.2 | 52   | 0.04       | 0.05       | 13        | 524    | 91     | 539801         | 28.07  | 0.02       | 0.03         | 7.02      | 282.86 |
| 13     |     |      |            |            | 9         | 350    |        | 579113         |        |            |              | 5.21      | 202.69 |
| 14     |     |      |            |            | 5         | 580    |        | 902189         |        |            |              | 4.51      | 523.27 |
| 15     |     |      |            |            | 5         | 482    |        | 732033         |        |            |              | 3.66      | 352.84 |
| 16     |     |      |            |            | 32        | 366    |        | 1004746        |        |            |              | 32.15     | 367.74 |
| 17     |     |      |            |            | 6         | 474    |        | 680322         |        |            |              | 4.08      | 322.47 |
| 18     |     |      |            |            | 5         | 578    |        | 686586         |        |            |              | 3.43      | 396.85 |
| 19     | 8.1 | 37   | 0.82       | 0.05       | 5         | 446    | 119    | 763888         | 28.26  | 0.63       | 0.04         | 3.82      | 340.69 |
| 20     |     |      |            |            | 7         | 358    |        | 1050883        |        |            |              | 7.36      | 376.22 |
| 21     |     |      |            |            | 20        | 258    |        | 2853619        |        |            |              | 57.07     | 736.23 |
| 22     |     |      |            |            | 5         | 202    |        | 3287607        |        |            |              | 16.44     | 664.10 |
| 23     |     |      |            |            | 5         | 330    |        | 1330646        |        |            |              | 6.65      | 439.11 |
| 24     |     |      |            |            | 0         | 0      |        | 3250368        |        |            |              | 0.00      | 0.00   |
| 25     |     |      |            |            | 12        | 220    |        | 1949962        |        |            |              | 23.40     | 428.99 |
| 26     | 8   | 85   | 0.23       | 0.05       | 5         | 322    | 193    | 1363306        | 115.88 | 0.31       | 0.07         | 6.82      | 438.98 |
| 27     |     |      |            |            | 11        | 414    |        | 1892938        |        |            |              | 20.82     | 783.68 |
| 28     |     |      |            |            | 30        | 290    |        | 1617581        |        |            |              | 48.53     | 469.10 |
| 29     |     |      |            |            | 19        | 328    |        | 2134685        |        |            |              | 40.56     | 700.18 |
| 30     |     |      |            |            | 26        | 392    |        | 1880410        |        |            |              | 48.89     | 737.12 |
| 31     |     |      |            |            | 15        | 334    |        | 1407802        |        |            |              | 21.12     | 470.21 |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |        |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|--------|
| Sept  | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total  |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day |
| 1     |     |      |            |            | 7         | 326    |        | 1964477        |        |            |              | 13.75     | 640.42 |
| 2     | 7.8 | 109  | 0.02       | 0.05       | 33        | 292    | 222    | 1588032        | 173.10 | 0.03       | 0.08         | 52.41     | 463.71 |
| 3     |     |      |            |            | 7         | 464    |        | 1956614        |        |            |              | 13.70     | 907.87 |
| 4     |     |      |            |            | 5         | 488    |        | 1623197        |        |            |              | 8.12      | 792.12 |
| 5     |     |      |            |            | 5         | 468    |        | 1342310        |        |            |              | 6.71      | 628.20 |
| 6     |     |      |            |            | 6         | 334    |        | 867542         |        |            |              | 5.21      | 289.76 |
| 7     |     |      |            |            | 5         | 354    |        | 800608         |        |            |              | 4.00      | 283.42 |
| 8     |     |      |            |            | 10        | 334    |        | 1005782        |        |            |              | 10.06     | 335.93 |
| 9     | 8.1 | 74   | 0.68       | 0.05       | 6         | 354    | 212    | 1501200        | 111.09 | 1.02       | 0.08         | 9.01      | 531.42 |
| 10    |     |      |            |            | 33        | 614    |        | 1431907        |        |            |              | 47.25     | 879.19 |
| 11    |     |      |            |            | 33        | 408    |        | 1044058        |        |            |              | 34.45     | 425.98 |
| 12    |     |      |            |            | 11        | 426    |        | 1098749        |        |            |              | 12.09     | 468.07 |
| 13    |     |      |            |            | 6         | 442    |        | 1026259        |        |            |              | 6.16      | 453.61 |
| 14    |     |      |            |            | 5         | 495    |        | 1069805        |        |            |              | 5.35      | 529.55 |
| 15    |     |      |            |            | 5         | 466    |        | 980208         |        |            |              | 4.90      | 456.78 |
| 16    | 8.1 | 72   | 0.08       | 0.05       | 5         | 476    | 159    | 1493770        | 107.55 | 0.12       | 0.07         | 7.47      | 711.03 |
| 17    |     |      |            |            | 14        | 614    |        | 640068         |        |            |              | 8.96      | 393.00 |
| 18    |     |      |            |            | 18        | 724    |        | 702130         |        |            |              | 12.64     | 508.34 |
| 19    |     |      |            |            | 13        | 570    |        | 915235         |        |            |              | 11.90     | 521.68 |
| 20    |     |      |            |            | 12        | 654    |        | 844690         |        |            |              | 10.14     | 552.43 |
| 21    |     |      |            |            | 11        | 652    |        | 676892         |        |            |              | 7.45      | 441.33 |
| 22    |     |      |            |            | 8         | 622    |        | 767560         |        |            |              | 6.14      | 477.42 |
| 23    | 8   | 68   | 1.55       | 0.05       | 17        | 650    | 85     | 541140         | 36.80  | 0.84       | 0.03         | 9.20      | 351.74 |
| 24    |     |      |            |            | 21        | 824    |        | 690552         |        |            |              | 14.50     | 569.01 |
| 25    |     |      |            |            | 34        | 848    |        | 751075         |        |            |              | 25.54     | 636.91 |
| 26    |     |      |            |            | 33        | 910    |        | 612420         |        |            |              | 20.21     | 557.30 |
| 27    |     |      |            |            | 30        | 816    |        | 842322         |        |            |              | 25.27     | 687.33 |
| 28    |     |      |            |            | 15        | 832    |        | 665695         |        |            |              | 9.99      | 553.86 |
| 29    |     |      |            |            | 34        | 906    |        | 952128         |        |            |              | 32.37     | 862.63 |
| 30    | 8.1 | 72   | 0.33       | 0.05       | 25        | 232    | 74     | 877819         | 63.20  | 0.29       | 0.04         | 21.95     | 203.65 |

| Month |     |      |            | Parameters |           |        |        |         |        |            | Daily Totals |           |         |
|-------|-----|------|------------|------------|-----------|--------|--------|---------|--------|------------|--------------|-----------|---------|
| Oct   | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow    | COD    | Ammonia as | Total        | Suspended | Total   |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily   | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids  |
| 1     |     |      |            |            | 34        | 843    |        | 873072  |        |            |              | 29.68     | 736.00  |
| 2     |     |      |            |            | 26        | 932    |        | 1091318 |        |            |              | 28.37     | 1017.11 |
| 3     |     |      |            |            | 29        | 848    |        | 881798  |        |            |              | 25.57     | 747.76  |
| 4     |     |      |            |            | 23        | 688    |        | 744284  |        |            |              | 17.12     | 512.07  |
| 5     |     |      |            |            | 17        | 816    |        | 1205280 |        |            |              | 20.49     | 983.51  |
| 6     |     |      |            |            | 23        | 878    |        | 1053389 |        |            |              | 24.23     | 924.88  |
| 7     | 8   | 71   | 0.54       | 0.05       | 20        | 870    | 77     | 1130544 | 80.27  | 0.61       | 0.06         | 22.61     | 983.57  |
| 8     |     |      |            |            | 5         | 756    |        | 1237853 |        |            |              | 6.19      | 935.82  |
| 9     |     |      |            |            | 5         | 382    |        | 802224  |        |            |              | 4.01      | 306.45  |
| 10    |     |      |            |            | 13        | 636    |        | 1334102 |        |            |              | 17.34     | 848.49  |
| 11    |     |      |            |            | 22        | 480    |        | 937872  |        |            |              | 20.63     | 450.18  |
| 12    |     |      |            |            | 5         | 544    |        | 1116806 |        |            |              | 5.58      | 607.54  |
| 13    |     |      |            |            | 18        | 573    |        | 1313539 |        |            |              | 23.64     | 752.66  |
| 14    | 8   | 74   | 1.46       | 0.05       | 31        | 680    | 96     | 977270  | 72.32  | 1.43       | 0.05         | 30.30     | 664.54  |
| 15    |     |      |            |            | 0         | 0      |        | 1271203 |        |            |              | 0.00      | 0.00    |
| 16    |     |      |            |            | 0         | 0      |        | 129842  |        |            |              | 0.00      | 0.00    |
| 17    |     |      |            |            | 0         | 0      |        | 132106  |        |            |              | 0.00      | 0.00    |
| 18    |     |      |            |            | 0         | 0      |        | 136331  |        |            |              | 0.00      | 0.00    |
| 19    |     |      |            |            | 0         | 0      |        | 170415  |        |            |              | 0.00      | 0.00    |
| 20    |     |      |            |            | 0         | 0      |        | 249048  |        |            |              | 0.00      | 0.00    |
| 21    |     |      |            |            | 0         | 0      |        | 148357  |        |            |              | 0.00      | 0.00    |
| 22    | 7.6 | 40   | 0.76       | 0.05       | 5         | 326    | 112    | 127293  | 5.09   | 0.10       | 0.01         | 0.64      | 41.50   |
| 23    |     |      |            |            | 10        | 378    |        | 3377462 |        |            |              | 33.77     | 1276.68 |
| 24    |     |      |            |            | 5         | 354    |        | 904435  |        |            |              | 4.52      | 320.17  |
| 25    |     |      |            |            | 12        | 394    |        | 2203978 |        |            |              | 26.45     | 868.37  |
| 26    |     |      |            |            | 19        | 328    |        | 2140301 |        |            |              | 40.67     | 702.02  |
| 27    |     |      |            |            | 31        | 438    |        | 2222035 |        |            |              | 68.88     | 973.25  |
| 28    | 7.9 | 124  | 0.9        | 0.05       | 22        | 328    | 142    | 2877984 | 356.87 | 2.59       | 0.14         | 63.32     | 943.98  |
| 29    |     |      |            |            | 32        | 172    |        | 1221437 |        |            |              | 39.09     | 210.09  |
| 30    |     |      |            |            | 20        | 480    |        | 1184285 |        |            |              | 23.69     | 568.46  |
| 31    |     |      |            |            | 30        | 322    |        | 3084134 |        |            |              | 92.52     | 993.09  |

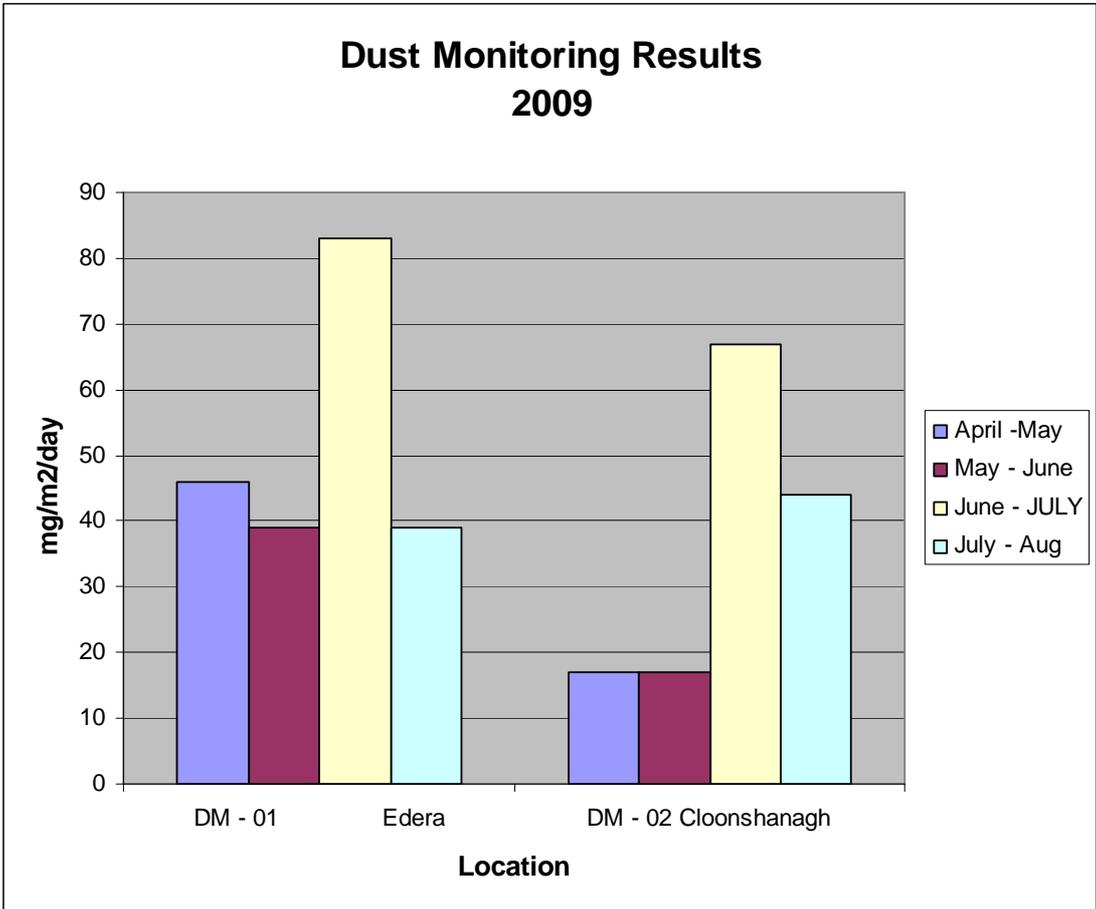
| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |         |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|---------|
| Nov   | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total   |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids  |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day  |
| 1     |     |      |            |            | 23        | 292    |        | 1682294        |        |            |              | 38.69     | 491.23  |
| 2     |     |      |            |            | 33        | 262    |        | 5091466        |        |            |              | 168.02    | 1333.96 |
| 3     |     |      |            |            | 26        | 446    |        | 3941827        |        |            |              | 102.49    | 1758.05 |
| 4     | 7.7 | 103  | 0.67       | 0.05       | 13        | 410    | 204    | 2239142        | 230.63 | 1.50       | 0.11         | 29.11     | 918.05  |
| 5     |     |      |            |            | 15        | 340    |        | 2408314        |        |            |              | 36.12     | 818.83  |
| 6     |     |      |            |            | 17        | 216    |        | 2272752        |        |            |              | 38.64     | 490.91  |
| 7     |     |      |            |            | 25        | 264    |        | 3692563        |        |            |              | 92.31     | 974.84  |
| 8     |     |      |            |            | 5         | 250    |        | 4211741        |        |            |              | 21.06     | 1052.94 |
| 9     |     |      |            |            | 34        | 216    |        | 1756253        |        |            |              | 59.71     | 379.35  |
| 10    |     |      |            |            | 18        | 296    |        | 4073328        |        |            |              | 73.32     | 1205.71 |
| 11    | 7.6 | 103  | 0.62       | 0.05       | 16        | 352    | 184    | 3473539        | 357.77 | 2.15       | 0.17         | 55.58     | 1222.69 |
| 12    |     |      |            |            | 5         | 294    |        | 1889741        |        |            |              | 9.45      | 555.58  |
| 13    |     |      |            |            | 10        | 202    |        | 5163177        |        |            |              | 51.63     | 1042.96 |
| 14    |     |      |            |            | 31        | 184    |        | 1857600        |        |            |              | 57.59     | 341.80  |
| 15    |     |      |            |            | 9         | 306    |        | 6971097        |        |            |              | 62.74     | 2133.16 |
| 16    |     |      |            |            | 26        | 172    |        | 2070403        |        |            |              | 53.83     | 356.11  |
| 17    |     |      |            |            | 5         | 316    |        | 5600016        |        |            |              | 28.00     | 1769.61 |
| 18    | 7.3 | 92   | 0.35       | 0.05       | 33        | 168    | 192    | 3186173        | 293.13 | 1.12       | 0.16         | 105.14    | 535.28  |
| 19    |     |      |            |            | 31        | 179    |        | 6127574        |        |            |              | 189.95    | 1096.84 |
| 20    |     |      |            |            | 22        | 116    |        | 5145293        |        |            |              | 113.20    | 596.85  |
| 21    |     |      |            |            | 22        | 56     |        | 4629830        |        |            |              | 101.86    | 259.27  |
| 22    |     |      |            |            | 25        | 134    |        | 4839955        |        |            |              | 121.00    | 648.55  |
| 23    |     |      |            |            | 24        | 280    |        | 4963594        |        |            |              | 119.13    | 1389.81 |
| 24    |     |      |            |            | 26        | 118    |        | 4905619        |        |            |              | 127.55    | 578.86  |
| 25    | 7.6 | 105  | 0.38       | 0.12       | 29        | 132    | 185    | 5079110        | 533.31 | 1.93       | 0.61         | 147.29    | 670.44  |
| 26    |     |      |            |            | 13        | 556    |        | 4455302        |        |            |              | 57.92     | 2477.15 |
| 27    |     |      |            |            | 19        | 549    |        | 1896739        |        |            |              | 36.04     | 1041.31 |
| 28    |     |      |            |            | 9         | 522    |        | 1795997        |        |            |              | 16.16     | 937.51  |
| 29    |     |      |            |            | 11        | 538    |        | 1824077        |        |            |              | 20.06     | 981.35  |
| 30    |     |      |            |            | 12        | 474    |        | 1749766        |        |            |              | 21.00     | 829.39  |

| Month |     |      |            | Parameters |           |        |        |                |        |            | Daily Totals |           |         |
|-------|-----|------|------------|------------|-----------|--------|--------|----------------|--------|------------|--------------|-----------|---------|
| Dec   | pH  | COD  | Ammonia as | Total      | Suspended | Total  | Colour | Flow           | COD    | Ammonia as | Total        | Suspended | Total   |
| 2009  |     | mg/l | N mg/l     | Phosphorus | Solids    | Solids | Pt Co  | Daily          | Kg/Day | Kg/Day     | Phosphorus   | Solids    | Solids  |
| SW96  |     |      |            | mg/l       | mg/l      | mg/l   | units  | Total (litres) |        |            | Kg/Day       | Kg/Day    | Kg/Day  |
| 1     |     |      |            |            | 12        | 548    |        | 1802822        |        |            |              | 21.63     | 987.95  |
| 2     | 7.7 | 93   | 1.28       | 0.05       | 12        | 530    | 161    | 2664058        | 247.76 | 3.41       | 0.13         | 31.97     | 1411.95 |
| 3     |     |      |            |            | 0         | 0      |        | 1781741        |        |            |              | 0.00      | 0.00    |
| 4     |     |      |            |            | 0         | 0      |        | 1528934        |        |            |              | 0.00      | 0.00    |
| 5     |     |      |            |            | 0         | 0      |        | 1830211        |        |            |              | 0.00      | 0.00    |
| 6     |     |      |            |            | 0         | 0      |        | 3913488        |        |            |              | 0.00      | 0.00    |
| 7     |     |      |            |            | 0         | 0      |        | 2120342        |        |            |              | 0.00      | 0.00    |
| 8     |     |      |            |            | 0         | 0      |        | 1978301        |        |            |              | 0.00      | 0.00    |
| 9     |     |      |            |            | 0         | 0      |        | 2347661        |        |            |              | 0.00      | 0.00    |
| 10    |     |      |            |            | 15        | 460    |        | 1943395        |        |            |              | 29.15     | 893.96  |
| 11    |     |      |            |            | 5         | 484    |        | 1740269        |        |            |              | 8.70      | 842.29  |
| 12    |     |      |            |            | 33        | 596    |        | 1701302        |        |            |              | 56.14     | 1013.98 |
| 13    |     |      |            |            | 5         | 592    |        | 1638576        |        |            |              | 8.19      | 970.04  |
| 14    |     |      |            |            | 5         | 72     |        | 1533514        |        |            |              | 7.67      | 110.41  |
| 15    |     |      |            |            | 12        | 548    |        | 1637626        |        |            |              | 19.65     | 897.42  |
| 16    | 7.9 | 76   | 1.41       | 0.05       | 5         | 572    | 139    | 1860192        | 141.37 | 2.62       | 0.09         | 9.30      | 1064.03 |
| 17    |     |      |            |            | 0         | 0      |        | 1683763        |        |            |              | 0.00      | 0.00    |
| 18    |     |      |            |            | 0         | 0      |        | 1572048        |        |            |              | 0.00      | 0.00    |
| 19    |     |      |            |            | 0         | 0      |        | 1414886        |        |            |              | 0.00      | 0.00    |
| 20    |     |      |            |            | 0         | 0      |        | 1793750        |        |            |              | 0.00      | 0.00    |
| 21    |     |      |            |            | 0         | 0      |        | 1625789        |        |            |              | 0.00      | 0.00    |
| 22    |     |      |            |            | 0         | 0      |        | 1421107        |        |            |              | 0.00      | 0.00    |
| 23    |     |      |            |            | 0         | 0      |        | 1365120        |        |            |              | 0.00      | 0.00    |
| 24    |     |      |            |            | 0         | 0      |        | 1582675        |        |            |              | 0.00      | 0.00    |
| 25    |     |      |            |            | 0         | 0      |        | 1213402        |        |            |              | 0.00      | 0.00    |
| 26    |     |      |            |            | 0         | 0      |        | 2124490        |        |            |              | 0.00      | 0.00    |
| 27    |     |      |            |            | 0         | 0      |        | 1724026        |        |            |              | 0.00      | 0.00    |
| 28    |     |      |            |            | 0         | 0      |        | 2990131        |        |            |              | 0.00      | 0.00    |
| 29    |     |      |            |            | 0         | 0      |        | 1361923        |        |            |              | 0.00      | 0.00    |
| 30    |     |      |            |            | 0         | 0      |        | 4077648        |        |            |              | 0.00      | 0.00    |
| 31    |     |      |            |            | 0         | 0      |        | 13180320       |        |            |              | 0.00      | 0.00    |

# **APPENDIX 4**

## **Dust Monitoring Results.**

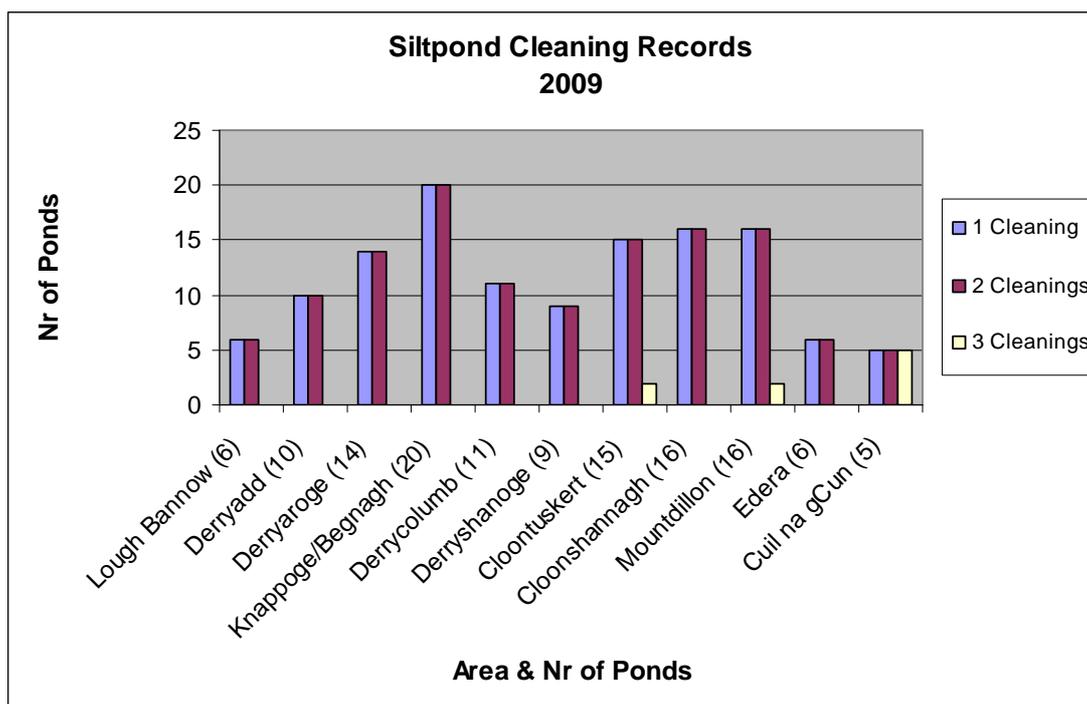
| Dust Monitoring Results 2009 |               |                      |
|------------------------------|---------------|----------------------|
| Licence:P0504-01             |               |                      |
| Works: Mt Dillon             |               |                      |
| Sample Period                | DM - 01 Edera | DM - 02 Cloonshanagh |
| April -May                   | 46            | 17                   |
| May - June                   | 39            | 17                   |
| June - July                  | 83            | 67                   |
| July - Aug                   | 39            | 44                   |



# **APPENDIX 5**

## **De-silting Programme Review.**

| <b>Siltpond Cleaning Programme 2009</b> |                   |                    |                    |
|---|-------------------|--------------------|--------------------|
| <b>IPPC Licence: P0504-01</b>           |                   |                    |                    |
| <b>Works: Mt Dillon</b>                 |                   |                    |                    |
| <b>Bog Area &amp; Nr Ponds</b>          | <b>1 Cleaning</b> | <b>2 Cleanings</b> | <b>3 Cleanings</b> |
| Lough Bannow (6)                        | 6                 | 6                  |                    |
| Derryadd (10)                           | 10                | 10                 |                    |
| Derryaroge (14)                         | 14                | 14                 |                    |
| Knappoge/Begnagh (20)                   | 20                | 20                 |                    |
| Derrycolumb (11)                        | 11                | 11                 |                    |
| Derryshanoge (9)                        | 9                 | 9                  |                    |
| Cloontuskert (15)                       | 15                | 15                 | 2                  |
| Cloonshannagh (16)                      | 16                | 16                 |                    |
| Mountdillon (16)                        | 16                | 16                 | 2                  |
| Edera (6)                               | 6                 | 6                  |                    |
| Cuil na gCun (5)                        | 5                 | 5                  | 5                  |



# **APPENDIX 6**

## **AER & PRTR Data**