



Annual Environmental Report 2006
P0501-01

March 2007

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1.0 Introduction

1.1 IPPC Licence No PO501-01

1.2 Name & Location of Site

Name: Bord na Mona Energy Limited.

Address: Derrygreenagh Works,
Rochfortbridge,
Mullingar,
Co. Westmeath.

Telephone No: 044 9222181 Fax No. 044 9222344

Contact Name: Paul Riordan

Position: General Manager

National Grid Reference: E249450 N238140

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 of 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 one of the following locations.

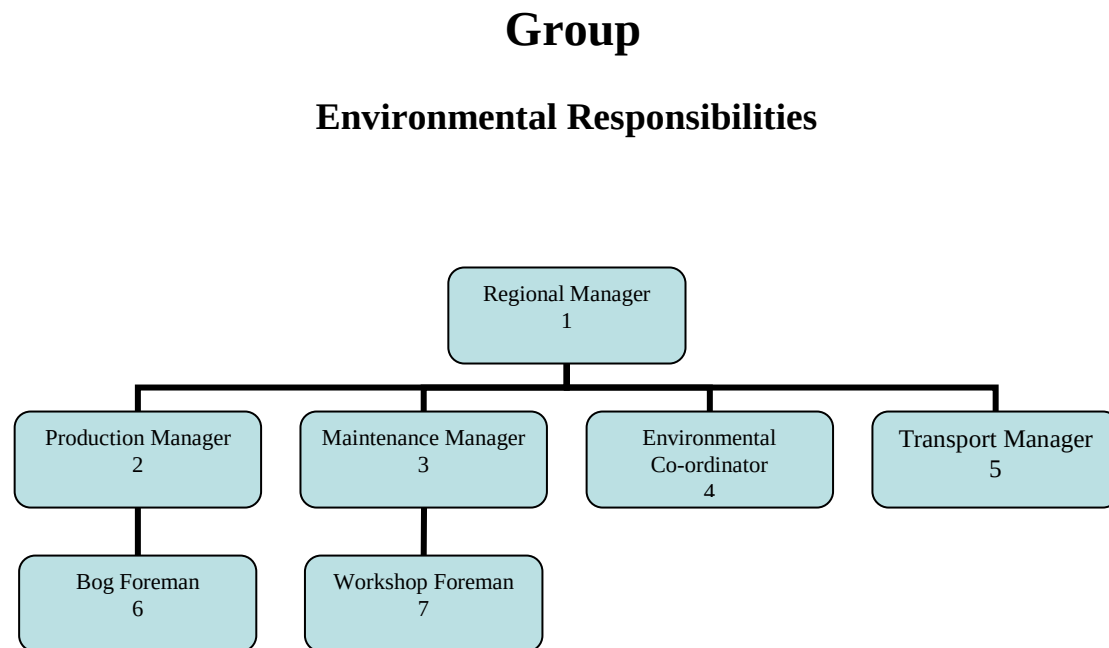
Power station

Horticultural Factory.

Briquette Factory.

1.4 Environmental Management of the Company

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



- (1) Overall environmental responsibilities
- (2) All production related issues
- (3) Machine maintenance
- (4) Co-ordinating environmental affairs
- (5) All peat transportation matters
- (6) Environmental issues relating to peatlands.
- (7) Environmental issues relating to Workshops.

1.5 Environmental Policy



Bord na Mona Energy Limited is a commercial semi-state body with responsibility to develop Irelands 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

Comment

Surface water monitoring was carried out four times during the reporting period. In total analysis was carried out at five different locations. These locations are as follows, Derryhinch @ SW1, Drumman @ SW6, Bracklin @ SW30, Carranstown @ SW32 and Rossan @ SW43. 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.

May was the wettest month of 2006 with rainfall of 151mm being recorded, while June was the driest with 13.2mm recorded.

The quarterly grab sampling programme proved to be 100% compliant for the year as was the 2005 regime.

pH values were between 6.4 and 8.3, with normal emission limit values being of the range 6 and 9. The graph clearly shows consistent trends for the period.

Suspended solids varied from 5mg/l to 56mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. Increased flow is noted at the time of the most elevated result during the 3rd quarter monitoring event. All other location results are within the licence limit of 35mg/l.

Ammonia levels were slightly elevated during the 1st quarter monitoring event at SW1, 30 and 43. This is not unusual for waters discharging from peatlands.

COD readings were slightly elevated during 2nd quarter monitoring event. This can be attributed to reduced flow rates and increased temperature during that time.

Flow rates were far greater during the 4th quarter sampling event. This is to be expected as the year ended with unusually inclement weather.

Total Phosphorus results are slightly elevated at SW32 3rd quarter. Future trends will be monitored to establish whether this is typical of that location.

Sampling will continue at the same locations during 2007.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges

Comment

Yard runoff monitoring took place at one location 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. This was due to no flow at the emission point as the catchments are quite small. Sampling will continue at the same locations during 2007.

Yard Emission Results are attached in Appendix 2.

2.1.3 Composite Sampler Report

Comment

The composite sampler has been operating at Derryhinch SW3 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). May was the wettest month of 2006 with rainfall of 151mm being recorded, while June was the driest with 13.2mm recorded. In general results were satisfactory with no non-compliances being recorded for the period. The internal battery was replaced on the sampler during the period, there were also some technical difficulties addressed which led to some missing data. A proposal to relocate the composite sampler during 2007 will be submitted to the agency, as a suitable site has been identified at Toar bog SW15. This site because of its nature has the potential to give more accurate flow data when it becomes operational.

Composite Sampler Results are contained in Appendix 3.

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances

Licence: P0501-01

Works: Derrygreenagh

Type	Non-Compliances	Location / SW Nr
Composite	0	
Quarterly Grab	0	
Monthly Yard	NA	
Totals	0	

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on three occasions between May and August. Each monitoring event lasted between 28 and 32 days and the Bergerhoff method of collection was used.

The monitoring locations were as follows, Toar DM01, Derryhinch DM02 and Ballivor DM03. The emission limit value was not exceeded during the period and no complaints of a dust nature were received.

Sampling will continue at the same locations during 2007.

Dust Monitoring Results are attached in Appendix 4.

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances	
Licence:P0501-01	
Works: Derrygreenagh	
Location / DM Nr	Non-Compliances
	0
Total	0

2.3 Waste Arisings

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data

Licence: P0501-01

**Works:
Derrygreenagh**

Type	Tonnes	EWG Code	Contractor	Licence Nr
Skips	12.04	20 03 01	Wallace Recycling	031/OY/76/03
Wheelie Bins	11.20	20 03 01	AES	053/OY/39/02
Polyethylene	144.06	02 01 04	APEC PLASTICS	205/2005
Scrap Steel	55.45	17 04 07	Hammond Lane	050/OY/162/04
Timber Pallets	15.51	15 01 02	Kiawah Ltd	WP/TN/24
Silt Pond Cleanings	155.17	01 01 02	Bord na Mona	IPPC P 0501
Peat Screenings	0.00	01 01 02	Bord na Mona	IPPC P 0501
Totals	386.39			

2.3.2 Hazardous Waste

Hazardous Waste Data

Licence: P0501-01

Works: Derrygreenagh

Type	Tonnes	EWC Code	Contractor	Licence Nr	Destination
Waste Oil	9.90	13 02 05	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	0.66	16 01 07	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.72	15 02 02	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	0.00	13 08 99	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	1.80	16 06 01	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Fluorescent Tubes	0.08	20 02 21	Enva Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	0.56	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Asbestos	6.92	17 06 05	KTK Landfill	81-3	Kilcock
Asbestos	1.32	17 06 05	Rialta Environmentals	192-1	Dublin
Total	21.96				

2.4 Energy and Water Consumption

2.4.1 Energy

The table below shows energy consumption for the year. Water is not included, as it is only used in offices, canteens and workshops on a domestic scale. It is not used as part of the production process.

Energy Consumption

Licence: P0501-01

Works: Derrygreenagh

Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	242054.1	750	442.193	0
MW Hours	2370.3	6.779967	0.442193	0
Total MW Hours	2377.5			

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

There were four incidents during the year two relating to dust nuisance and two due to bog fires. In all cases the agency was informed and corrective action taken.

Environmental Incidents	
Licence: P0501-01	
Works: Derrygreenagh	
	Number
Incidents	4
Requiring corrective action	4
Category	
Water	
Air	4
Procedural	
Miscellaneous	
Total	4

2.5.2 Complaints.

There were two complaints during the year both relating to dust nuisance, corrective action was taken and the agency informed.

Environmental Complaints	
Licence:P0501-01	
Works: Derrygreenagh	
	Number
Complaints	2
Requiring corrective action	2
Category	
Water	
Air	2
Procedural	
Miscellaneous	
Total	2

3.0 Management of the Activity

3.1 Environmental Management Programme Report 2006

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Achieved. All new employees received environmental training during the year, 33 in all. Hydraulic Harrows. Ongoing. There was one new hydraulic harrow introduced during the to Ballybeg Bog which seems to be having a positive effect on dust control. Headland Peat Collection. Ongoing. Headland peat was collected in all bogs by our harvesters as required and deposited further down the bog fields.
Project 2: Minimisation of suspended solids	On Site Inspections. Project didn't materialise. Will commence at start of production 2007.
Project 3: Effective spill leak management of mobile fuelling units.	On Site Inspections. Project didn't materialise. Will commence at start of production 2007. Service trains are inspected continuously a number have been overhauled and records kept on file.
Project 4: Reuse of silt pond waste.	Trials. Trials in the past proved unsuccessful. For peat silt to be reused, it must be available on the production bog for transfer into the piles. 99 % of all silt ponds are located on the outfall. Another factor is contamination, as these ponds are excavated into the mineral soil to achieve gravity drainage, and as such the silt excavated from the pond is contaminated with mineral soil. Should suitable bog come into production in the future, this project will be considered.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Ongoing During the year 144 tonnes of polythene has been sent for recycling to Apec Plastics Co. Kildare Waste Permit No. 205/2005.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Ongoing. A shelter belt was planted at Daingean Bog during the year and we plan to plant more there during 2007.

3.2 Environmental Management Programme Proposal for 2007

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all new employees in environmental matters. Copy environmental video to disk and distribute more widely. All new employees will be trained during the year. Hydraulic Harrows. Continue to supply hydraulic harrows. Prioritising dust sensitive locations. There is one Hydraulic Harrow in operation at the moment we will continue to monitor the situation regarding introducing any more. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Supply more headland peat collection machinery as required and research efficient ways of collecting such peat for use as a saleable product.
Project 2: Minimisation of suspended solids	On Site Inspections. A full programme of internal audits will be carried out as soon as production commences. Particular emphasis will be put on cleaner production procedures, milling, harrowing, ridging, harvesting and loading.
Project 3: Effective spill leak management of mobile fuelling units.	On Site Inspections. As part of the above project, service trains will also be prioritised with a fitter accompanying the auditor during inspections to highlight any risks or potential risks that may occur.
Project 4: Fire Prevention.	Fire Patrols. There will be extra emphasis on fire patrols this coming production season. Research on improved fire fighting techniques will also be investigated. The newly adopted Fire and Environmental Plan will be communicated to all personnel.
Project 5: Collection storage and reuse of polyethylene.	Identify Recyclers. Continue with the recycling of polyethylene. The sourcing of more recycling contractors will be ongoing.

Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Ongoing Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. A shelter belt will be planted at Daingean again this year.
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3.3 Environmental Expenditure

Environmental Expenditure

Licence:P0501-01

Works: Derrygreenagh

Description	Cost €
Capital Costs	€10,000
Silt Control	€101,680.17
Analytical & Consultancy Costs	€8,991.25
EPA Fees	€8,535.75
Bog Rehabilitation,	0
Total	€129,207.17

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

A proposal to relocate some of the quarterly sampling locations will be sent to the Agency for approval during 2007. A proposal to relocate the composite sampler was sent for approval prior to the submission of this report. The new location is much better suited to collecting flow data and should make for a more accurate sampling regime in the forthcoming year. The new location is SW15 at Toar Bog.

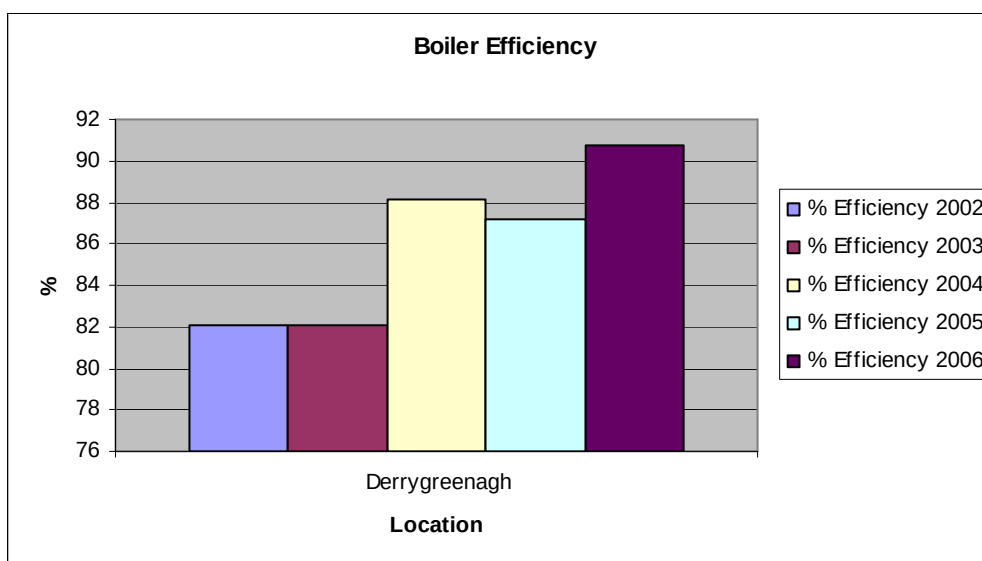
4.2 Bunding Programme

We have recently carried a Bund Integrity Tests on all bunds in our licence. All bunds in the 501 licence area passed and results are kept on file.

4.3 Boiler Combustion Efficiency

Works: Derrygreenagh

Boiler Location	% Efficiency 2002	% Efficiency 2003	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006
Derrygreenagh	82.1	82.1	88.1	87.2	90.71



Note: Copies of the actual test results are contained in Appendix 5.

4.4 Resource consumption summary

We produced just over 152,000 tonnes of peat and sold 194,000 tonnes in 2006 and a minimal amount of turf to private individuals. This year we hope to produce just over 171,000 tonnes of peat and sell near what we sold last year of turf. See table below.

Resource Consumption			
Licence: P0501-01			
Works: Derrygreenagh			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	59,686	109,373	ESB
Moss	93,000	84,633	Horticulture
Turf	251	251	Private
Other	0	0	N/A
Totals	152,937	194,257	N/A

Proposed Production 2007	
Licence: P0501-01	
Works: Derrygreenagh	
Product	Proposed Target
Milled Peat	91,743
Moss	80,000
Turf	250
Other	0
Totals	171993

4.5 De-Silting Report

Where possible ponds were cleaned at least twice during the year, however where there was no production some ponds didn't need to be cleaned as often as there was no silt present when inspected.

Silt Pond Cleaning Review attached in Appendix 6.

4.6 Bog Development and Operational Programme

There was no development in the licence area during the year.

4.7 Bog Rehabilitation Report

No bog rehabilitation took place in this licence during the year.

4.8 Archaeological Report

DERRGREENAGH GROUP

Thirty three sites in Toar Bog were excavated under 20 licences during the 2006 field season in the southern part of the bog. This was the second of two field seasons in Toar Bog. Five sites were excavated in 2005 which were located in the northern part of the bog on the periphery of the main cluster of sites. The sites were all relatively small brushwood and roundwood structures (eight platforms, three toghers and nine archaeological wood) and were excavated over the course of a six week period. The Toar Bog sites were, in most cases, very fragmentary in nature. There are several possible reasons for this. The majority of the sites were composed of light brushwood elements and were already partially exposed on the field surface.

5.0 Summary

With regard to environmental compliance at the Derrygreenagh Group of Bogs, there was no exceedence of the emission limit value in relation to suspended solids from grab sampling of the silt ponds in the Surface Water Discharge Monitoring Location Programme.

There was no non-compliances in relation to the Composite Sampler during the monitoring period January to December. Dust monitoring results showed no non-compliance. There was no complaints of an environmental nature received during the reporting period.

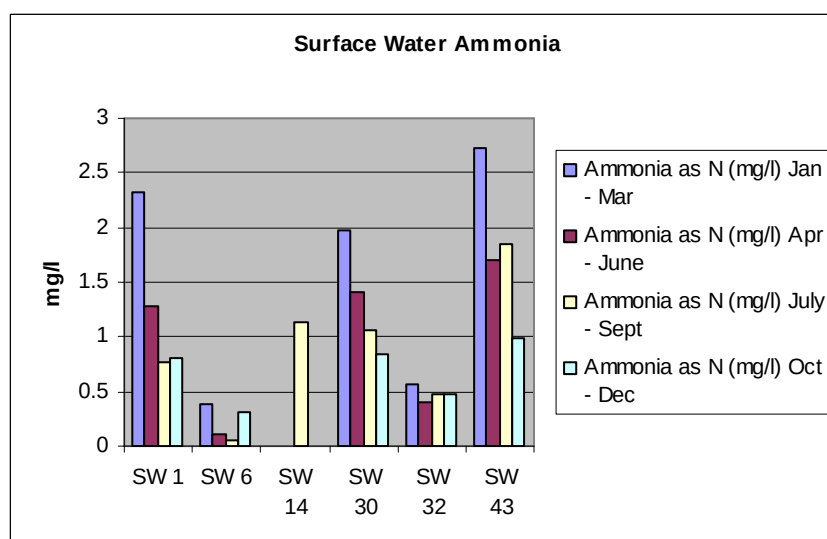
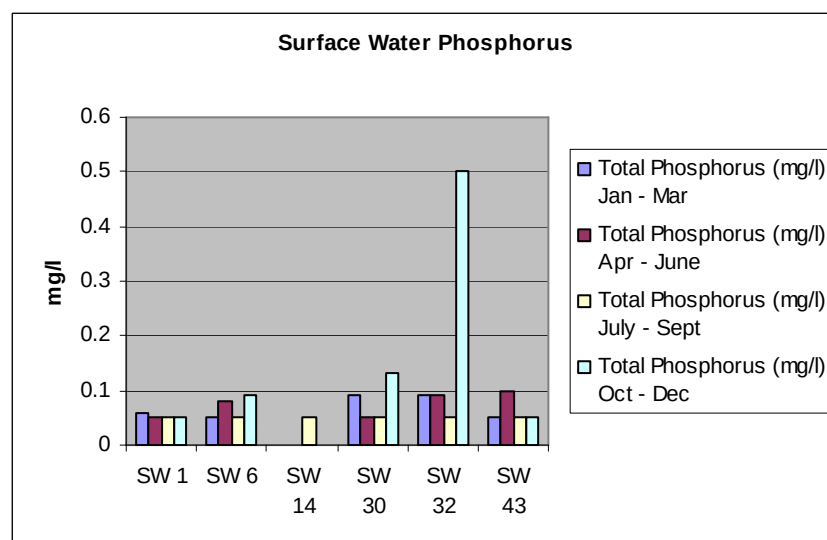
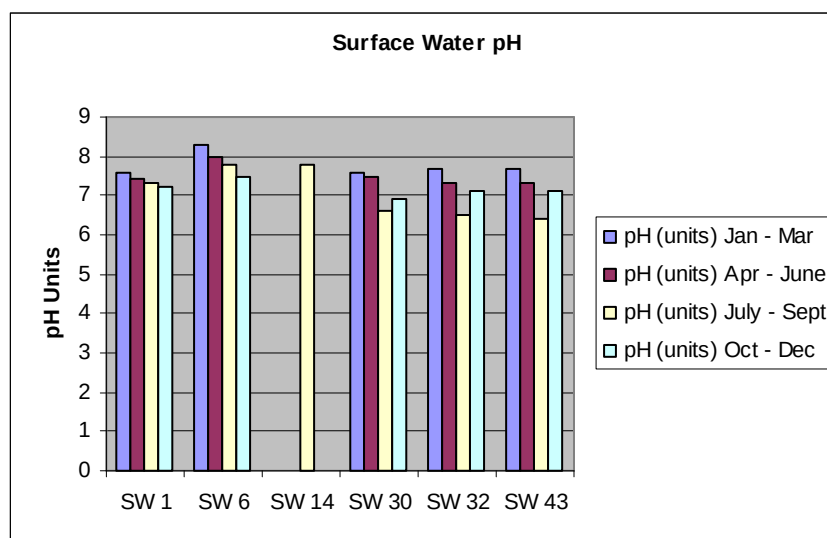
Bord na Mona, Derrygreenagh Group, will continue to strive to maintain and improve its level of environmental compliance.

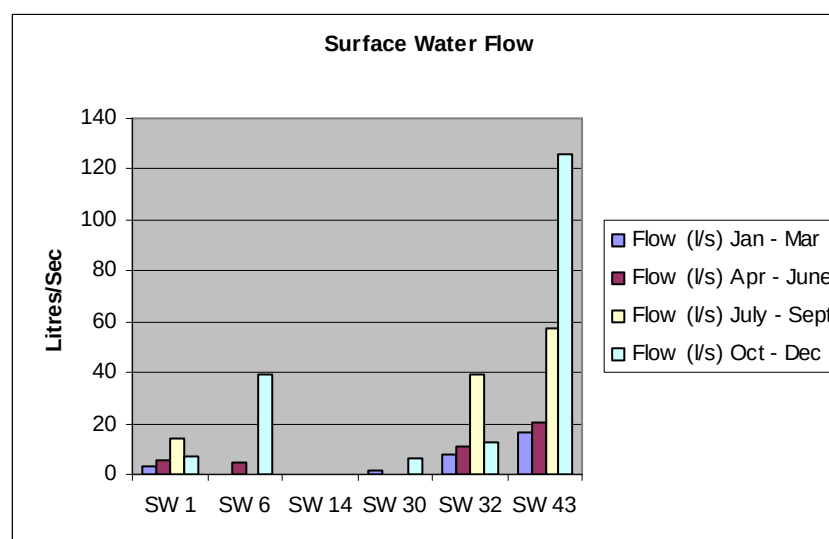
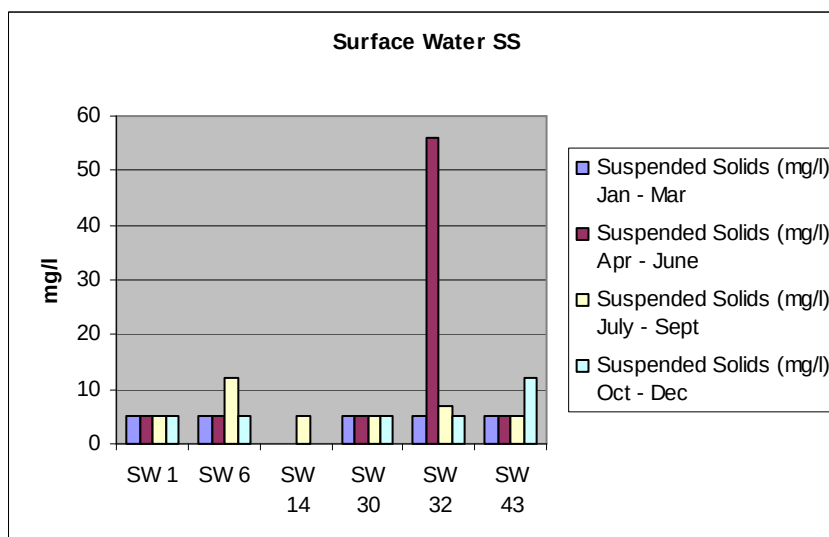
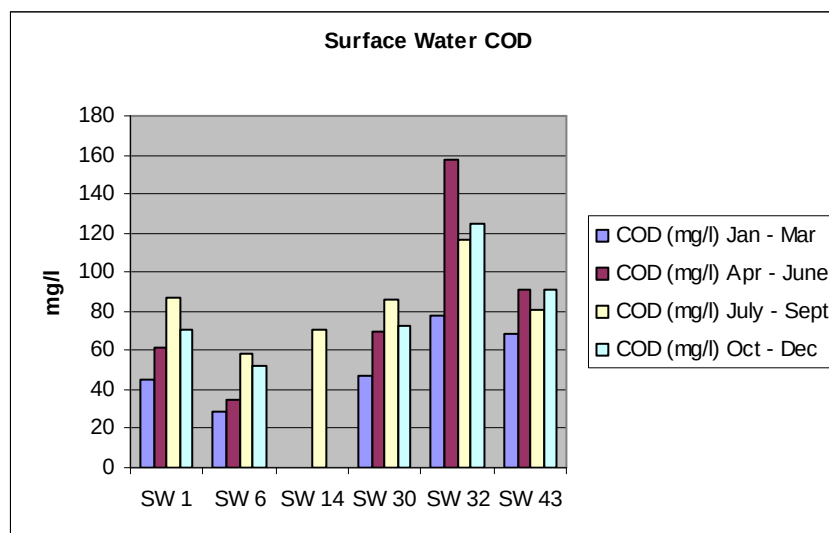
The staff awareness through training and involvement in the operation of the licence has also improved immensely. A full programme of training and awareness has been conducted at the works and has targeted all personnel ie. Office, Workshop, Transport and Production.

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

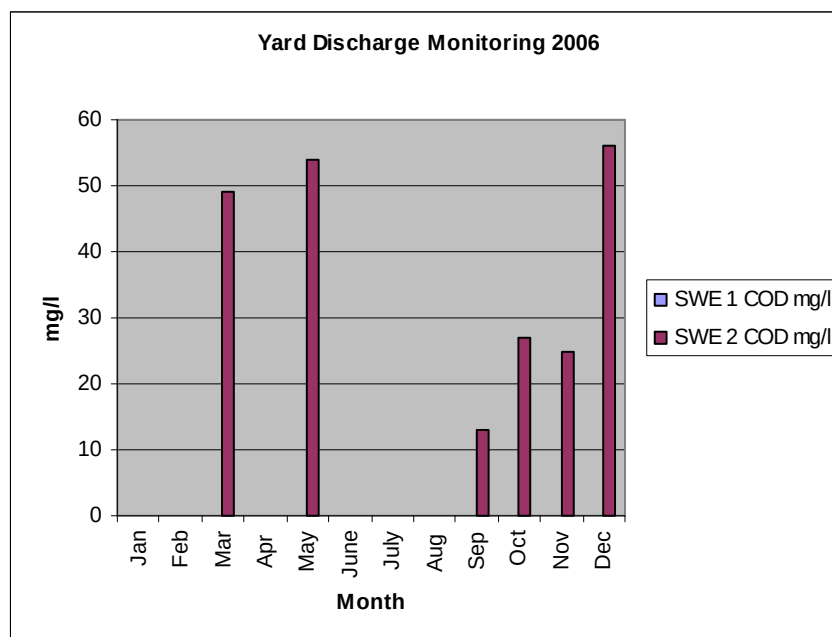




APPENDIX 2

Surface Water Discharge Monitoring Results Yards

Yard Discharge Results			
Licence: P0501-01			
Works: Derrygreenagh			
Month	SWE 1 COD mg/l	SWE 2 COD mg/l	
Jan	NF	NF	
Feb	NF	NF	
Mar	NF	49	
Apr	NF	NF	
May	NF	54	
June	NF	NF	
July	NF	NF	
Aug	NF	NF	
Sep	NF	13	
Oct	NF	27	
Nov	NF	25	
Dec	NF	56	



APPENDIX 3

Surface Water Discharge Monitoring Results Composite

APPENDIX 4

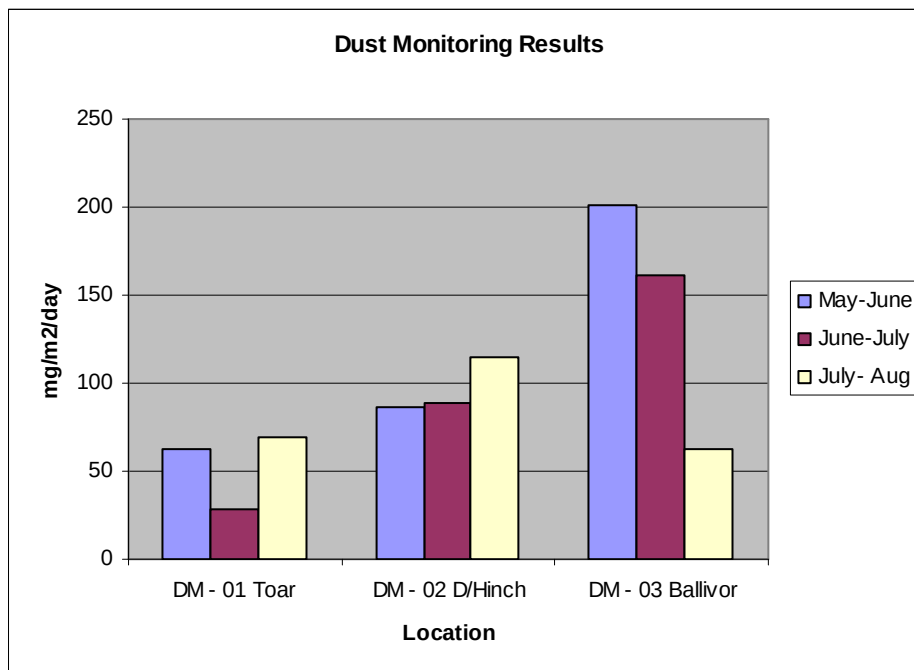
Dust Monitoring Results.

Dust Monitoring Results

Licence:P0501-01

Works: Derrygreenagh

Sample Period	DM - 01 Toar	DM - 02 D/Hinch	DM - 03 Ballivor
May-June	63	86	201
June-July	28	89	161
July- Aug	69	115	63



APPENDIX 5

Boiler Efficiency Results

APPENDIX 6

De-silting Programme Review.

Works:
Derrygreenagh

Bog Area & Nr Ponds	1 Cleaning	2 Cleanings	3 Cleanings	4 Cleanings
Derryhinch (4)	4			
Toar (6)	4			
Ballybeg (6)	6			
Drumman (6)	6			
Ballivor (10)	2	3	5	
Carranstown (5)	1	4		
Lisclogher (7)				
Bracklin West (6)			6	
Rossan (8)		6		

