



Annual Environmental Report 2007
P0501-01

March 2008

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1.0 Introduction

1.1 IPPC Licence No 501-01

1.2 Name & Location of Site

Name:	Bord na Mona Energy Limited.
Address:	Derrygreenagh Works, Rochfortbridge, Mullingar, Co. Westmeath
Telephone No:	044 9222181
Contact Name:	Eamonn Mulhall
Position:	Resource Manager
National Grid Reference:	E249450 N 238140

1.3 Description of Activities

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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 one of the following locations.

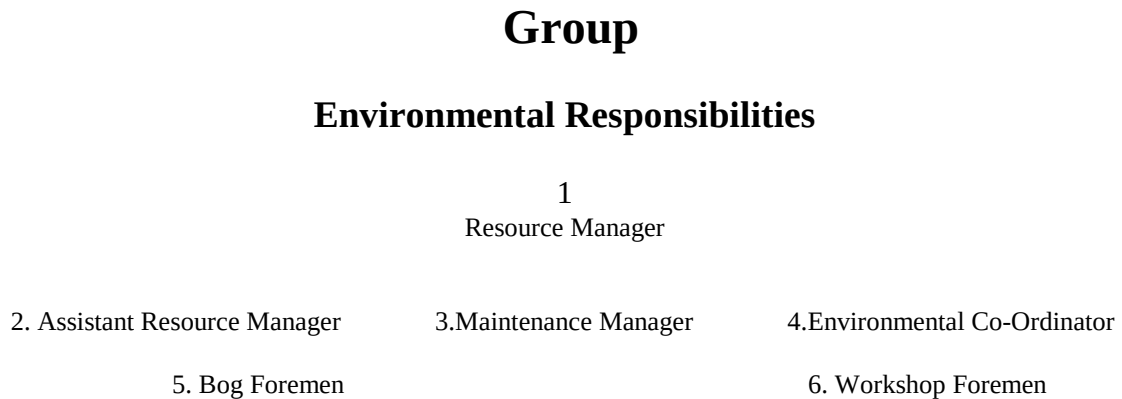
Power station

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 and transport related issues
- (3) Machine maintenance
- (4) Co-ordinating environmental affairs
- (5) Environmental issues relating to peatlands
- (6) 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.

- Discharge 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

Surface Waters

Comment

Surface water monitoring was carried out four times during the reporting period. In total analysis was carried out at six different locations. These locations are as follows, Derryhinch @ SW1, Drumman @ SW6, Toar @ SW14, 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.

July was the wettest month of 2007 with rainfall of 144.9mm being recorded, while April was the driest with 17.4mm recorded.

The quarterly grab sampling programme proved to be 100% compliant for the year as was the 2005 & 2006 regimes.

pH values were between 6.7 and 8.4, with 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 37mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. With the exception of location SW6, quarter 2, which did not constitute an actual non compliance, all other results were within the licence limit of 35mg/l.

Ammonia values ranged from 0.08 and 3.73. The I/PV for A3 waters is of the range 4mg/l. It is however not unusual for surface waters emanating from production peatlands to be slightly elevated.

COD readings were slightly elevated during the reporting period, with SW32 being consistently elevated as was the case in 2006. The I/PV for A3 waters is of the range 40mg/l. All locations will be watched closely and any continuing elevated COD trends will be investigated.

Flow rates were elevated in the first and third quarter monitoring events. The third quarter event can be expected as July was the wettest month in 2007 with 144.9mm of rainfall recorded. This elevated flow did not appear to have any impact on suspended solid analysis for the period.

Total Phosphorus results were slightly elevated at SW14 4th quarter 2007. Results at SW32 were markedly down on results for 2006.

Currently new sampling locations are being assessed for suitability. Once finalised, a proposal to change sampling locations will be submitted to the Agency for approval.

Surface Water Results are attached in Appendix 1.

2.1.2 Yard Discharges

Yard Runoff

Comment

Yard runoff monitoring took place at two locations during the reporting period. Sampling frequency was monthly and COD was the parameter requiring analysis. As is evident from the graph, the monitoring location at Rossan SWE-1 was newly included in the monitoring regime. Sampling will continue at the same locations during 2008.

Yard Emission Results are attached in Appendix 2.

2.1.3 Composite Sampler Report

Composite Sampling

Comment

The composite sampler has been operating at Toar Bog SW15 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). July was the wettest month of 2007 with rainfall of 144.9mm being recorded, while April was the driest with 17.4mm recorded.

Due to some technical faults flow records for November, December and part of October were not recorded.

In general results were satisfactory with one non-compliance being recorded for the period. The composite sampler will remain at this location for the foreseeable future.

Composite Sampler Results are contained in Appendix 3.

2.1.4 Emissions to Water Non-compliance's

There was one non-compliance at our composite sampler at Toar Bog. The Agency was informed.

Type	Non-Compliances	Location / SW Nr
Composite	1	Toar SW15
Quarterly Grab	0	N/A
Monthly Yard	N/A	N/A
Totals	1	N/A

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on three occasions between April and July. 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 exceeded once during the period, see below and the Agency was informed.

Sampling will continue at the same locations during 2008.

Dust monitoring results are contained in appendix 4.

2.2.2 Emissions to Air Non-compliance's

There was one non-compliance in relation to dust. This was recorded at Ballivor works. Following investigation it was discovered that an excavator was operating immediately adjacent to the dust gauge and was the probable cause of the elevated result. No complaint in relation to dust was received at that particular time.

Location / DM Nr	Non-Compliances
Ballivor DM-03	1
Total	1

2.3 Waste Arisings

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data

Licence: P0501-01

Works: Derrygreenagh

Type	Tonnes	EW Code	Contractor	Licence Nr
Municipal Waste	5.24	20 03 01	AES	053/OY/39/02
Municipal Waste	0.95	20 03 01	Wallace Recycling	031/OY/267/05
Municipal Waste	11.20	20 03 01	AES	053/OY/39/02
Polyethylene	282.91	02 01 04	Apec Plastics	205/2005
Scrap Steel	393.46	17 04 07	Hammond Lane	050/OY/162/04
Timber Pallets	11.36	15 01 02	Concrete Recycling Specialists	WCP 373/OY/317/06
Silt Pond Cleanings	715.88	01 01 02	Bord na Mona	IPPC P 0501
Totals	1421.00			

2.3.2 Hazardous Waste

Hazardous Waste Data**Licence: P0501-01****Works:
Derrygreenagh**

Type	Tonnes	EW Code	Contractor	Licence Nr	Destination
Waste Oil	28.15	13 02 05	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	0.75	16 01 07	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	0.75	15 02 02	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Waste Grease	0.00	13 08 99	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	3.00	16 06 01	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	1.2	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Asbestos	5.25	17 06 05	Rialta Environmentals	192-1	Dublin
Total	39.10				

2.4 Energy and Water Consumption

2.4.1 Energy

The table below shows energy consumption for the year. It does not include water as it is only used in offices, canteens and workshops on a domestic basis. It is not used as part of the production process. Diesel consumption was up on 2006 as there was increased production in 2007

Energy Consumption

Licence: P0501-01				
Works: Derrygreenagh				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	738,742.18	0	522048	10
MW Hours	7234.1	0	522.048	50
Total MW Hours	7806.1			

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

There were four incidents during the year three related to air and one to water in all cases the Agency was informed and corrective action taken.

Environmental Incidents	
	Number
Incidents	4
Requiring corrective action	4
Category	
Water	1
Air	3
Procedural	
Miscellaneous	
Total	4

2.5.2 Complaints

There were two complaints both related to dust nuisance. The Agency was informed and corrective action taken. Remediation work included the purchase of a water bauser which will be deployed to dust sensitive areas for dust suppression as required.

Environmental Complaints	
	Number
Complaints	2
Requiring corrective action	2
Category	
Water	
Air	2
Procedural	
Miscellaneous	
Total	2

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 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. Status The training video was successfully transferred onto DVD and distributed to all Licence holders. The DVD was also edited to include new improved poly stripping and rolling techniques. 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. Status No hydraulic harrows were introduced in 2007. 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. Status As the production season was greatly hampered by inclement weather, July 114.9mm and August 119.6mm of rainfall, headland peat dust was not an issue.
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. Status A comprehensive internal audit took place, which proved very successful. Follow up audits were subsequently carried out to ensure that initial findings were addressed and closed out.
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. Status In conjunction with the above, the fitter at each location audited was present to inspect the service train. Any repairs that were required were identified and rectified.

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. Status The fire prevention plan was 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. Status During the year a total of 282 tonnes of polythene has been sent for recycling to Apec Plastics Co. Kildare.
Project 6: Provision of measures to protect Dust Sensitive Areas.	Planting. Planting is ongoing as required, with areas in the periphery of production bogs that are being developed for housing being prioritised. Status No planting took place in 2007.

3.2 Environmental Management Programme Proposal 2008

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Hydraulic Harrows. Hydraulic harrows will be deployed at dust sensitive locations during the 2008 production season. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	On Site Inspections. A full programme of internal audits will be carried out as soon as production commences. This will be an annual exercise with the 2008 audit placing more emphasis on waste management.
Project 3: Minimisation of Suspended Solids.	Training. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. The identification and ultimately the introduction of mobile fuelling units which will enhance the spill / leak management of fuel oils. Increased bund provisions are planned for 2008, as well as one new fuel service wheeled wagon which contain banded tanks. In addition to this, one new rail operated Fuel Service Wagon will be introduced in Derrygreenagh.
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.

3.3 Environmental Expenditure

Environmental Expenditure	
Description	Cost €
Capital Costs	€ 14,500
Silt Control	€ 96,254.95
Analytical & Consultancy Costs	€ 8657.12
EPA Fees	€ 8,108.96
Bog Rehabilitation	€ 6,824
Total	€ 134,345.03

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

The Monitoring Locations will be changed in 2008 and the Agency will be informed.

4.2 Bunding Programme

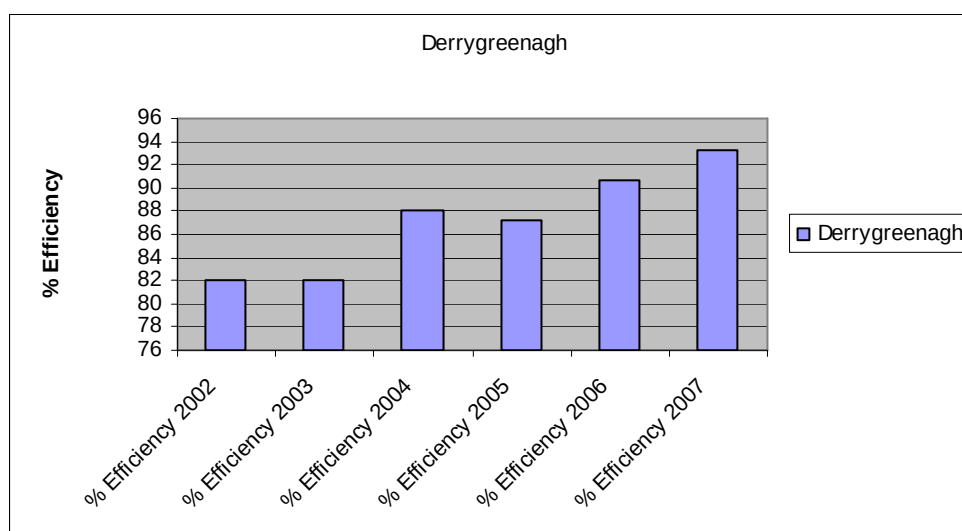
A bund integrity test was carried out on all bunds in the 501 Licence areas during February and March 2007. All bunds passed the test which included Derrygreenagh, Rossan/Kinnegad, and Ballivor. Results of which are retained on file.

4.3 Boiler Combustion Efficiency

In accordance with Condition 5.1 of the licence a boiler efficiency test was carried out on the only boiler in the licence area, Derrygreenagh. The results of which are retained on file.

Licence: P0501-01
Works: Derrygreenagh

Boiler Location	% Efficiency 2002	% Efficiency 2003	% Efficiency 2004	% Efficiency 2005	% Efficiency 2006	% Efficiency 2007
Derrygreenagh	82.1	82.1	88.1	87.2	90.71	93.3



As is evident from the graph, efficiencies have greatly improved in recent years. This can be attributed to the boiler being switched over from solid fuel to oil in 2006.

4.4 Resource consumption summary

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 ever possible silt ponds were cleaned twice during the year, however where there was no production some ponds did not need to be to be cleaned, as there was no silt present when inspected.

A table and graph of the cleaning schedule is attached in appendix 5.

4.6 Bog Development and Operational Programme

There was no development in the licence area during 2007.

4.7 Bog Rehabilitation Report

During 2007 bog rehabilitation took place in Drumman bog, works involved the levelling of redundant production piles and also the removal for recycling of obsolete machinery.

4.8 Archaeological Report

Derrygreenagh – Excavation of 8 sites in Kinnegad.

5.0 Summary

The Derrygreenagh Group of Bogs endeavour to comply with all environmental issues. In 2007 we had one non-compliance regarding dust where material was inadvertently deposited into the dust monitoring container. We also had two separate dust complaints which resulted in a water bauser been purchased. It is envisaged that a new Hydraulic Harrow will be purchased in the coming year.

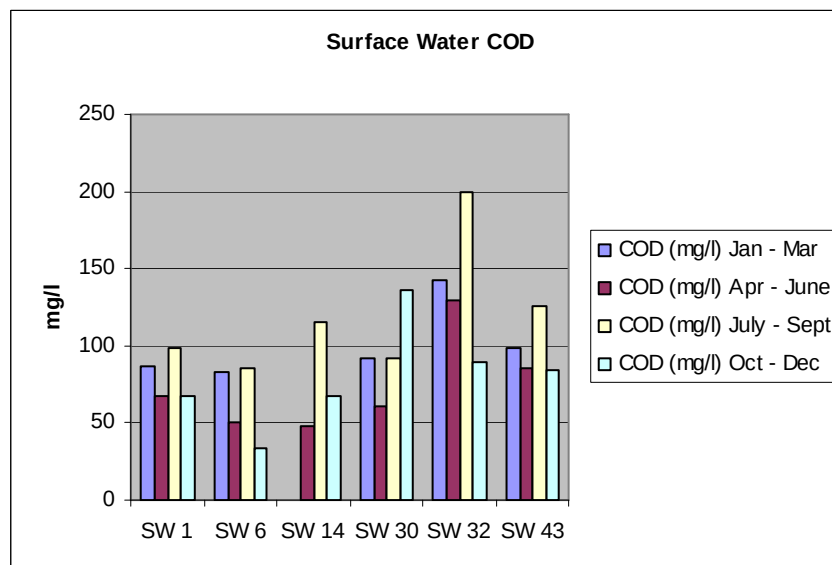
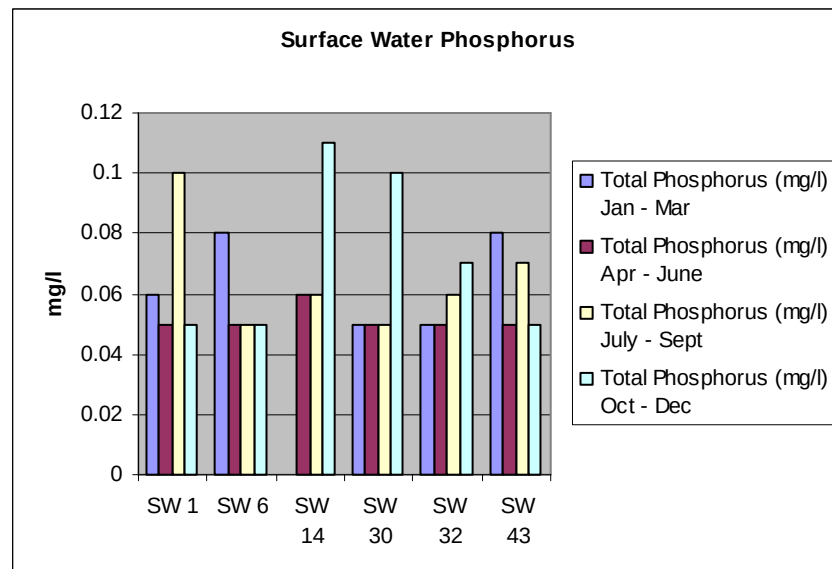
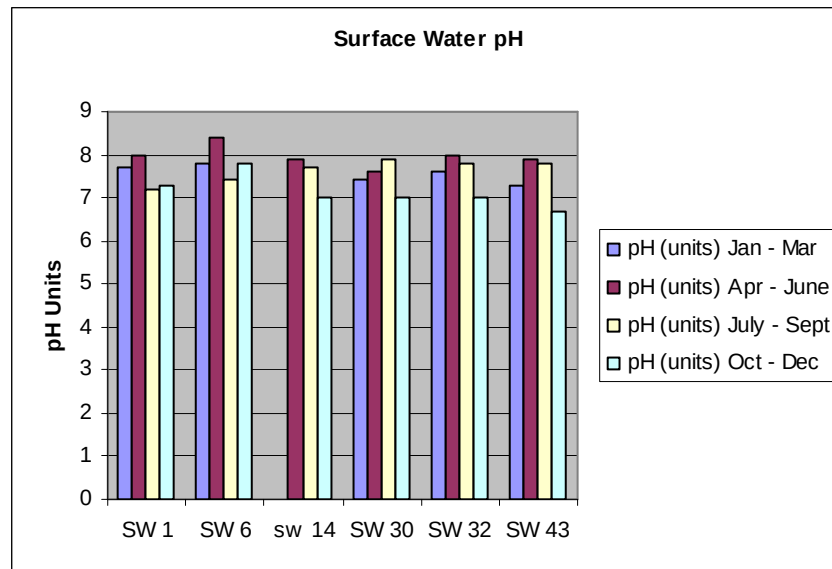
There was no non-compliance at the silt pond quarterly sampling events however there was one non-compliance at our composite sampler due to the exceptionally high rainfall. Even more emphasis will be put in ensuring silt pools will be cleaned regularly in the coming years

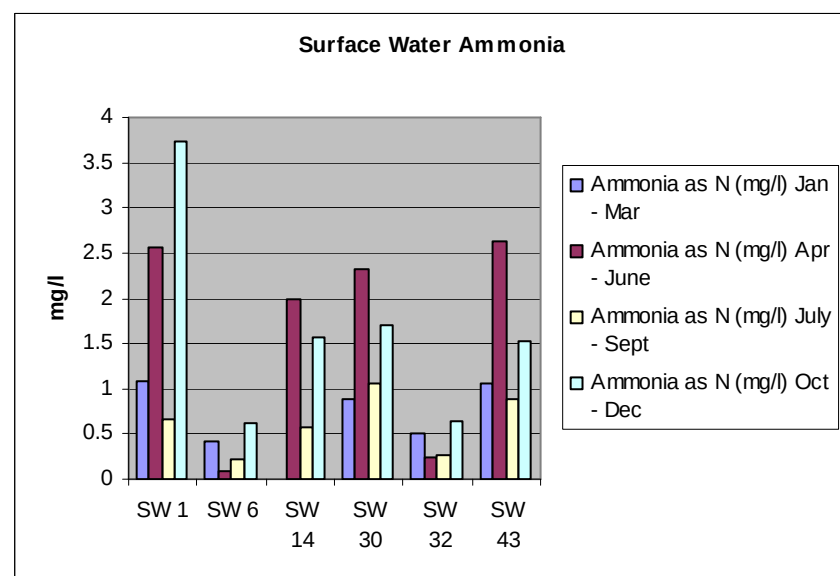
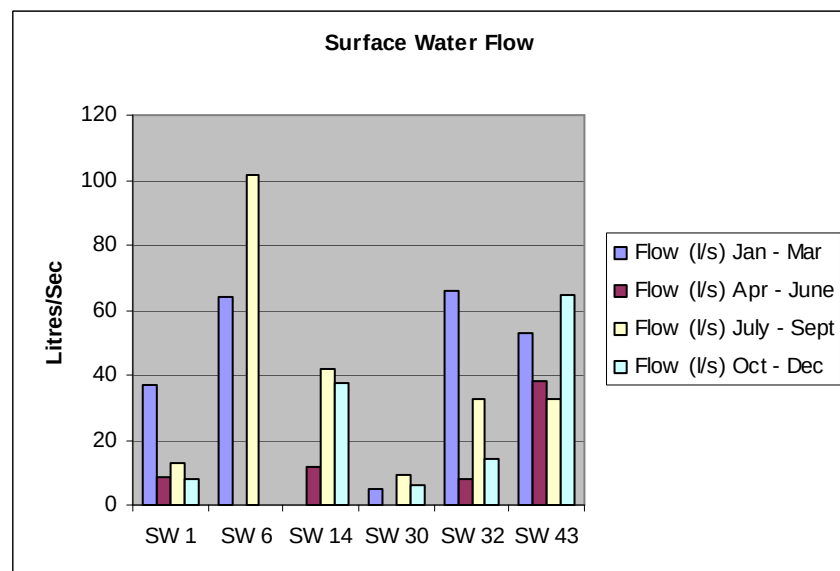
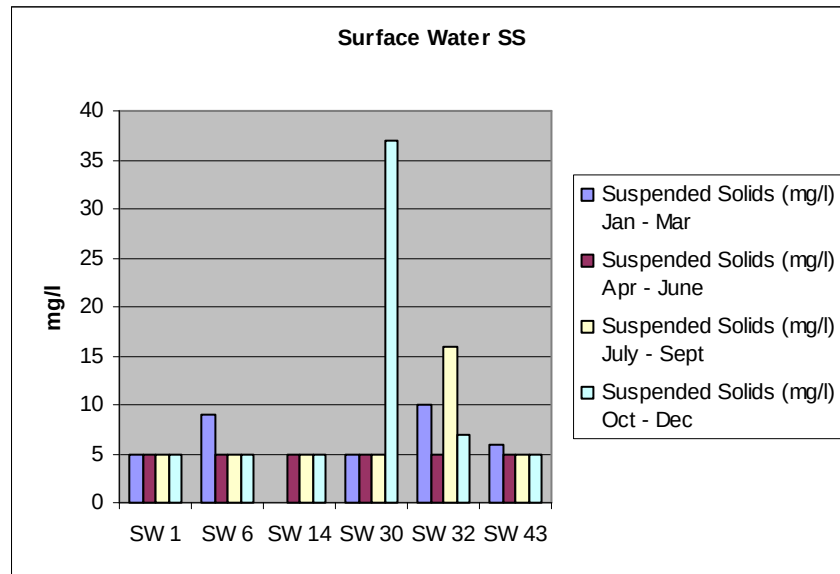
All staff both permanent and seasonal is due to be trained in 2008 and this is on going at present and will be completed before production begins.

Bord na Mona 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 methods.

APPENDIX 1

Surface Water Discharge Monitoring Results Bogs

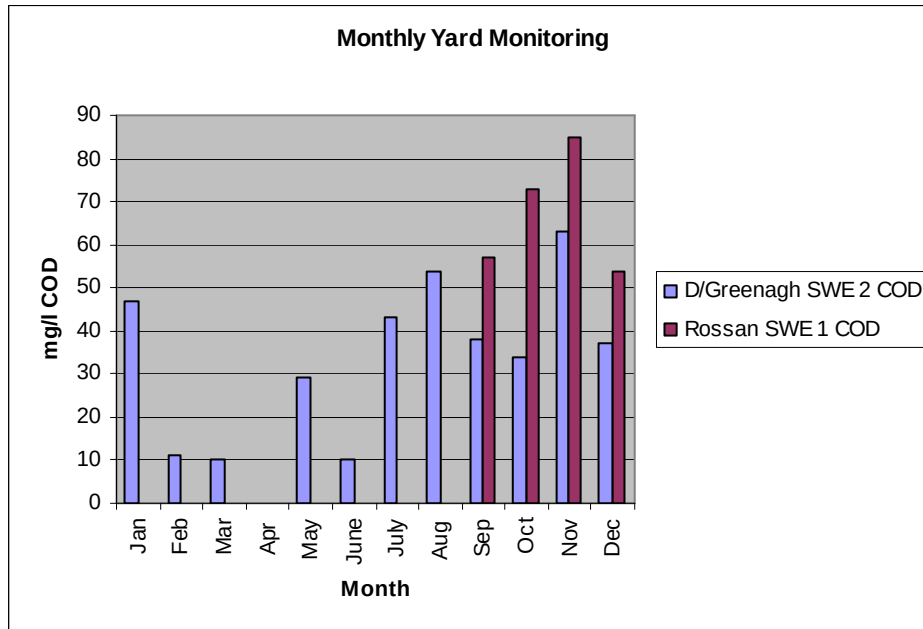




APPENDIX 2

Surface Water Discharge Monitoring Results

Yards



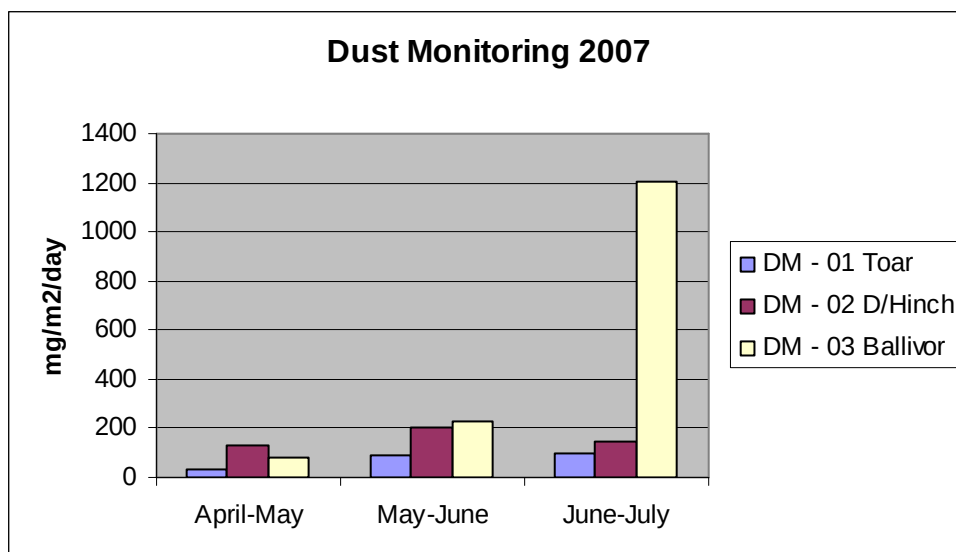
Note: Missing data relates to no sample available on the day of sampling at Derrygreenagh in April. While at Rossan sampling did not commence at that location until September 2007.

APPENDIX 3

Surface Water Discharge Monitoring Results Composite

APPENDIX 4

Dust Monitoring Results.



Note: The emission limit value for dust is 350 mg/m²/day. The non compliance at DM-03 Ballivor of 1205 mg/m²/day demonstrated above was investigated and reported to the Agency.

APPENDIX 5

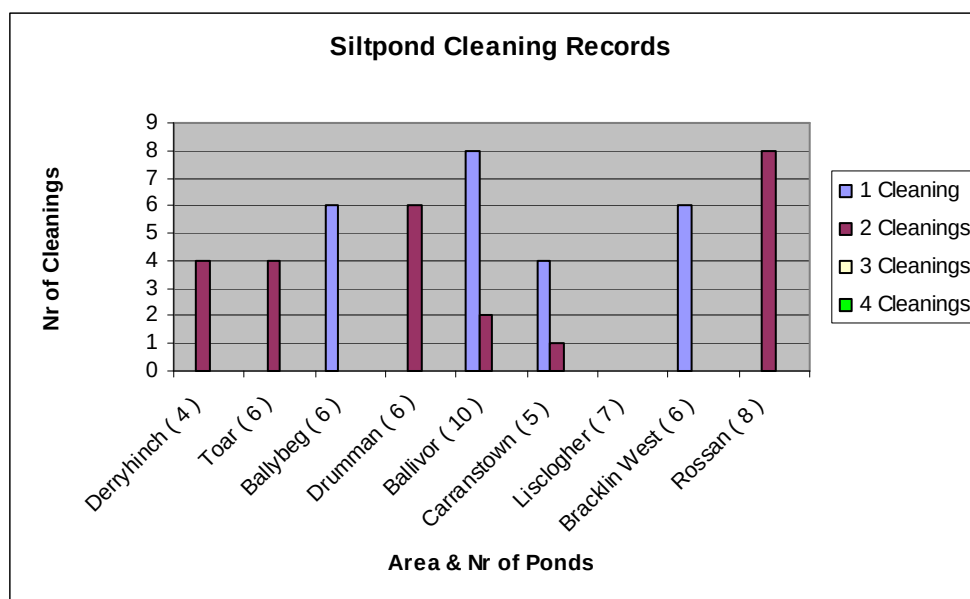
De-silting Programme Review.

Silt pond Cleaning Programme

IPPC Licence: P0501-01

**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)	8	2		
Carranstown (5)	4	1		
Lisclogher (7)				
Bracklin West (6)	6			
Rossan (8)		8		



Note: Lisclogher Bog is not in production or development with no activity taking place.

APPENDIX 6

AER & PRTR Data