



Annual Environmental Report 2011
P0501-01

March 2012

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 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

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 there 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.

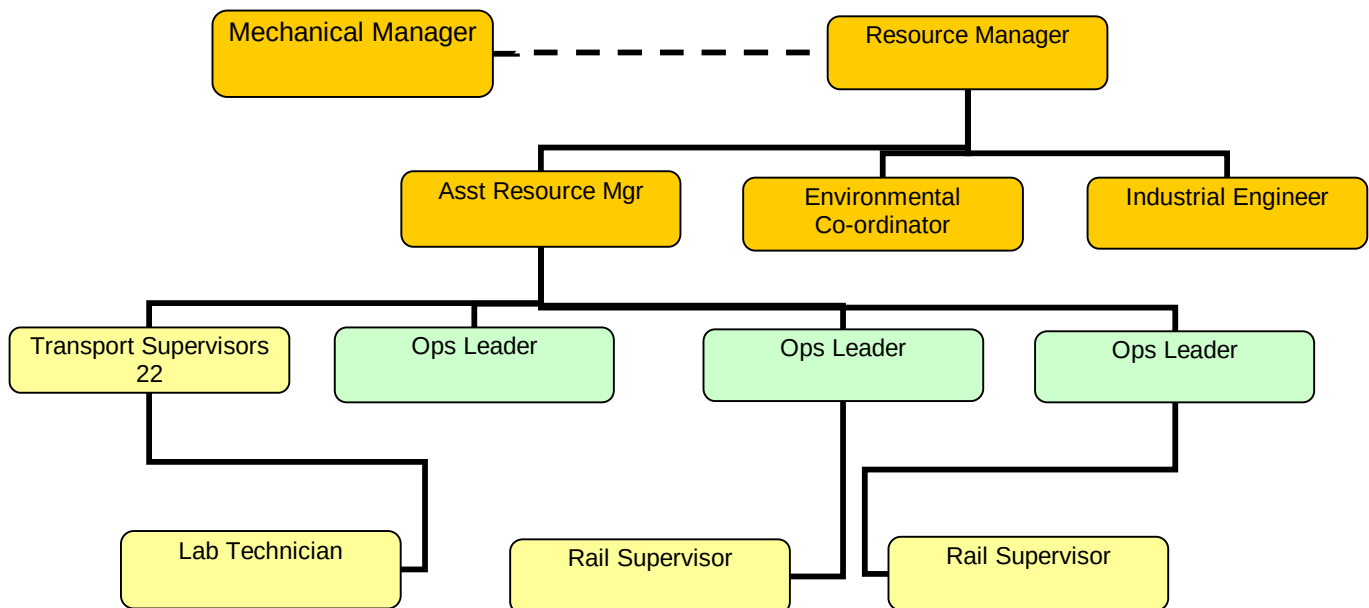
Briquette Factory.

1.4 Environmental Management of the Company

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

Group

Environmental Responsibilities



1.5 Environmental Policy

BORD NA MÓNA

BORD NA MÓNA ENERGY LIMITED
Derrygreenagh, Rochfortbridge, Mullingar, Co-Westmeath.

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 operates 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. The locations are as follows, Derryhinch @ SW4, Ballybeg @ SW13, Bracklin @ SW26, Carranstown @ SW31, Rossan @ SW46 and Carrick @ SW4A. 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. October was the wettest month with 123.5 mm of rainfall recorded and March the driest with 29.4 mm recorded. Flow rates appear to have had no adverse effect on suspended solids results.

The quarterly grab sampling programme was 100% compliant for the year, which is an improvement on 2010 which was 96% compliant.

pH values were between 6.6 and 8.1, with emission limit values being of the range 6 and 9. pH values of waters emanating from production peatlands appear to remain constant and in line with background levels. On average pH values were 0.05 pH units higher than 2010 levels.

Suspended solids varied from 5mg/l to 24mg/l and would depend on activities (piping, ditching) etc in the catchments at the time of sampling. The average range for suspended solids was 6.2mg/l which was down on the 2010 average.

Ammonia values ranged from 0.04 mg/l and 2.48 mg/l. 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. Overall ammonia levels are slightly down on 2010 figures with the average being 1.16 mg/l in 2011 as opposed to 1.6 mg/l in 2010.

COD values ranged from 30 mg/l to 123 mg/l. Overall COD results were below 2010 levels. The I/PV for A3 waters is of the range 40mg/l. Only one result was above the Bord na Mona set trigger level of 100 mg/l, however investigations showed no evidence of any contributory factors causing such result. That particular result was identified during the third quarter monitoring event in August, when reduced flow and increased temperature impinge on COD results.

Flow rates were slightly up on 2010 sampling events. This in part is dependent on the climatic conditions on the chosen day of sampling. However total rainfall for 2011 only varied by 9mm compared with 2010. March was the driest month with 29.4mm and October the wettest with 123.5mm of rainfall recorded.

Total Phosphorus results were consistently low and ranged from 0.05 mg/l to 0.49 mg/l. On average the total phosphorus result was higher than 2010, the difference being minute (0.00375 mg/l).

The sampling locations will remain the same during 2012.

At the request of the Agency, analysis results are now demonstrated in both tabular and graphical format.

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. Derrygreenagh @ SWE 2 and Rossan @ SWE 1. Sampling frequency was monthly and COD was the parameter requiring analysis. Results were very satisfactory for the period at both locations; with results consistently well below trigger levels with the exception of the February and August result at Rossan which exceeded trigger levels. Investigations found machinery had been washed down immediately prior to the February sampling event and rainwater had been evacuated from the main bund prior to the August sampling event, subsequent results were very satisfactory. Overall the average result at each location was slightly above those of 2010.

Although not having a specific licence emission limit value, a trigger level of 100 mg/l has been set in relation to COD results, along with the weekly visual inspections. Sampling will continue at the same locations during 2012.

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 of (35mg/l). The sampler worked well during the reporting period and was calibrated by an Water Technology Ltd during the reporting period. In general results were satisfactory with no non-compliance's being recorded for the period. Analysis of the 2010 results compared with the 2011 results indicate no great difference in results in relation to pH, Ammonia, Phosphorus, COD and Suspended Solids. The composite sampler was to be relocated during 2012 to another area as suggested by the Agency. A proposal outlining same was to be submitted to the Agency for approval, however this may change as intensive production is due to recommence at its current location.

Composite Sampler Results are contained in Appendix 3.

2.1.4 Emissions to Water Non-compliance's

Emissions to Water Non-Compliances 2011		
Licence: P0501-01		
Works: Derrygreenagh		
Type	Non-Compliances	Location / SW Nr
Composite	0	N/A
Quarterly Grab	0	N/A
Monthly Yard	0	N/A
Totals	0	

There were no non-compliance's in relation to emissions to water during the reporting period.

2.2 Emissions to Air

2.2.1 Dust Monitoring

Comment

Dust monitoring was carried out on five occasions between April and September. 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. There was one non-compliance during the May-June monitoring event at DM02 and the Agency was informed. That particular result being 406mg/m²/day against a licence limit of 350mg/m²/day.

Sampling will continue at the same locations during 2012.

Dust monitoring results are contained in appendix 4.

2.2.2 Emissions to Air Non-compliance's

Dust Non-Compliances 2011	
Licence:P0501-01	
Works: Derrygreenagh	
Location / DM Nr	Non-Compliances
DM-02	1
Total	1

There was one dust non-compliance during the reporting period and the Agency was informed. No complaints of a dust nature were received at the time.

2.3 Waste Arisings

2.3.1 Non-Hazardous Waste

Non Hazardous Waste Data 2011				
Licence: P0501-01				
Works: Derrygreenagh				
Type	Tonnes	EWC Code	Contractor	Licence Nr
Skips	73.59	20 03 01	AES	WP-OY-08-601-01
Wheelie Bins	6.27	20 03 01	AES	WP-OY-08-601-01
Polyethylene	120.10	02 01 04	Leinster Environmental	WP 2008/06
Scrap Steel	64.92	17 04 07	AES	WP-OY-08-601-01
Timber Pallets	10.20	15 01 03	AES	WP-OY-08-601-01
Silt Pond Cleanings	228.84	01 01 02	Bord na Mona	IPPC P0501-01
Totals	503.92			

Note: Polyethylene and Steel are recycled. Skips go to an AES Mixed Recycling Facility.

2.3.2 Hazardous Waste

Hazardous Waste Data 2011					
Licence: P0501-01					
Works: Derrygreenagh					
Type	Tonnes	EWC Code	Contractor	Licence Nr	Destination
Waste Oil	40.22	13 02 05	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oil Filters	1.15	16 01 07	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Oily Rags	1.50	15 02 02	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Lead Acid Batt	0.77	16 06 01	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Alkaline Batteries	0.045	20 01 33	KMK Metals Tullamore	W0113-03	Tullamore
Dry Solid Oily Waste	0.580	15 02 02	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Parts Wash	1.38	11 01 13	Safety Kleen, Tallaght, Dublin	99-1	Dublin
Waste Paint	0.31	08 01 11	Envia Ireland Ltd Portlaoise	184-1	Portlaoise
Total	45.95				

2.4 Energy and Water Consumption

2.4.1 Energy

Energy Consumption 2011				
Licence: P0501-01				
Works: Derrygreenagh				
Units	Diesel (Litres)	Petrol (Litres)	Electricity (Units)	Peat Briquettes (Tonnes)
Totals	904218.4	0	0	20
MW Hours	9187.8	0	0	103
Total MW Hours	9290.8			

Note: Due to issues with Electric Ireland's web site which is outside Bord Na Mona's control, accurate electrical consumption figures were not available. We are informed that this will be resolved in the coming weeks.

2.5 Environmental Incidents and Complaints

2.5.1 Incidents

Environmental Incidents 2011	
Licence: P0501-01	
Works: Derrygreenagh	
	Number
Incidents	2
Requiring corrective action	2
Category	
Water	
Air	2
Procedural	
Miscellaneous	
Total	2

There were two environmental incidents during the reporting period. One related to a dust complaint at Ballybeg bog in April and the other was the above mentioned dust non-compliance in June. On both occasions the Agency was informed.

2.5.2 Complaints

Environmental Complaints 2011	
Licence:P0501-01	
Works: Derrygreenagh	
	Number
Complaints	1
Requiring corrective action	1
Category	
Water	0
Air	1
Procedural	0
Miscellaneous	
Total	1

There was one complaint of an environmental nature during the reporting period and the Agency was informed.

3.0 Management of the Activity

3.1 Achievement of Objectives & Targets 2011

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. Status In total 165 employees received environmental training. Hydraulic Harrows. One Hydraulic harrow will be deployed at Derryhinch bog during the 2011 production season. Status New Hydraulic harrows were deployed at Derryhinch and Ballivor bogs during the 2011 production season. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations. Status Headland peat was collected as part of the peat lifting process and included in general peat return figures.
Project 2:	Waste Streamlining.

Waste Management	AES Ltd, a subsidiary of Bord na Mona handles all elements of Bord na Mona's waste. Key account managers dedicated to Bord na Mona are in place. Status Ongoing The service included the co-ordination of all waste streams ensuring the correct waste stream was dealt with by the appropriate waste provider. The service also included the issuing of quarterly reports.
Project 3: Minimisation of Suspended Solids.	On Site Inspections. Train all employees in environmental matters. Training will be by means of the screening of an environmental DVD, followed by a power point presentation. Status In total 165 employees received environmental training.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. Increased bund provisions where required, will be provided, in 2011. Status Addition barrel bunds were purchased and deployed at the waste oil tank in Derrygreenagh. In addition to this additional containment booms were purchased and are held in storage as backup to existing stocks.
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 In total 120.1 tonnes of polyethylene was sent for recycling in 2011.
Project 6: Energy Management	Review of Energy Aspects As part of an energy management process, a review of energy aspects will continue to take place identifying the significant energy users of the licensee. Status Energy management is ongoing with the energy standard EN 50001 currently being implemented at Bord na Mona Mountdillon. Should this be successful it will be extended to all Bord na Mona locations.

3.2 Environmental Management Programme Proposal 2012

Project	Description & Status
Project 1: Reduction of fugitive dust emissions.	Training. Continue to train all employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance – IPPC, Biodiversity, Archaeology and Energy Management. Hydraulic Harrows. Hydraulic harrows will be deployed at Derryhinch, Ballivor and Rossan bog during the 2011 production season. Headland Peat Collection. Continue with the collection of headland peat, particularly at dust sensitive locations.
Project 2: Waste Management	Waste Streamlining. Waste streamlining is a project we are particularly interested in pursuing and hope to reduce wastes in the future and be more efficient in dealing with all aspects of waste management
Project 3: Minimisation of Suspended Solids.	Training. Continue to train all employees in environmental matters. Training will be by means of a new four module training programme delivered by dedicated Bord na Mona Training Specialists. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.
Project 4: Effective spill leak management of mobile fuelling units.	Research and Development. Increased bund provisions where required will be provided in 2012.
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: Energy Management	Review of Energy Aspects As part of an energy management process, a review of energy aspects will take place identifying the significant energy users of the licensee.

3.3 Environmental Expenditure

Environmental Expenditure 2011	
Licence:P0501-01	
Works: Derrygreenagh	
Description	Cost €
Capital Costs	27,356.02
Silt Control	90,303.92
Analytical & Consultancy Costs	10,584.00
EPA Fees	11,473.60
Bog Rehabilitation	108,663.02
Waste Management	42,003.76
Total	290,384.32

4.0 Licence Specific Reports

4.1 Surface Water Discharge Monitoring Location Programme Review

It is proposed to continue monitoring at the same locations in 2012 as monitored in 2011. Should it be deemed necessary for any reason during the coming year additional monitoring will be initiated. Safe access to all monitoring locations will be maintained. Currently Bord na Mona are reviewing all silt ponds for upgrade, installation of weirs, flap valves etc in line with the requirements of the South Eastern & Eastern River Basin Management Plans.

4.2 Bunding Programme

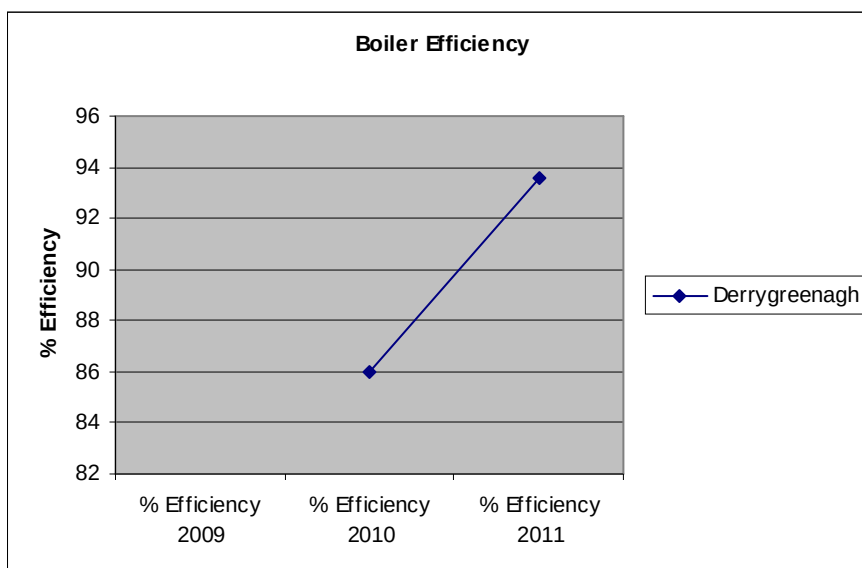
Bund Locations & Numbers Derrygreenagh Works					
IPPC Licence: P0501-01					
Location	Bund Number	Last Tested	Status Pass/Fail	Repair Date	Next Test Due
Derrygreenagh Main Bund	501-37-01	Jan-11	Pass	N/A	Jan-13
Derrygreenagh Waste Oil Bund	501-37-02	Jan-11	Pass	N/A	Jan-13
Ballivor Factory Bund	501-08-03	Sep-11	Pass	N/A	Sep-13
Rossan Tippler Bund	501-07-04	Nov-11	Pass	N/A	Nov-13

Bund integrity testing took place at all bund locations during the reporting period. As is evident from the table all bund structures passed.

4.3 Boiler Combustion Efficiency

As mentioned in the 2009 AER a new boiler had been fitted at Derrygreenagh which was not tested. Efficiency testing was subsequently carried out in 2010 and 2011, the results of which are attached below.

Boiler Efficiency 2011			
Licence: P0501-01			
Works: Derrygreenagh			
Boiler Location	% Efficiency 2009	% Efficiency 2010	% Efficiency 2011
Derrygreenagh	New Boiler fitted	86	93.6



4.4 Resource consumption summary

Resource Consumption 2011			
Licence: P0501-01			
Works: Derrygreenagh			
Product	Tonnes Produced	Tonnes Sold	Customer
Milled Peat	153,721	143,587	ESB
Moss	68,533	77,175	Horticulture
Turf	0	0	Fuels
Turf	81	0	Private
Totals	222,335	220,762	N/A

Proposed Production 2012	
Licence: P0501-01	
Works: Derrygreenagh	
Product	Proposed Target
Milled Peat	192,559
Moss	65,000
Turf Private	81
Turf Fuels	0
Totals	257,640

4.5 De-Silting Report

Silt pond cleaning went well during the reporting period with all ponds being cleaned twice.

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

4.6 Bog Development and Operational Programme

35 hectares of former sod bog were brought into production in Ballivor bog during the reporting period with a further 35 hectares scheduled to be brought in for the 2012 production season. There was 22 hectares of bog brought into production in Carranstown in 2011 and an additional 15 hectares in Rossan bog.

Bog Rehabilitation Report

- There are large areas of cutaway within the Derrygreenagh group. Derryarkin, parts of Drumman and Ballybeg that are largely cutaway although still with aspects of peat production and transport.
- The ecology survey of the Derrygreenagh Bogs is complete and habitat maps, ecology reports and draft rehabilitation plans for each of the sites have been developed.
- The Roadstone sand and gravel site takes up considerable parts of Drumman and Derryarkin bogs.
- Peat production ceased in Cavemount Bog in 2011 and the rehabilitation plan for the site will be reviewed in 2012.
- Consultation with Heritage groups, NPWS is ongoing.

The above is an overview of the ongoing rehabilitation plan associated with this licence. There is a fully prepared plan retained at the licence site office, which includes Land Use maps for each licensed area updated in January 2012 and the habitat maps, future maps and ecology reports for each site.

4.8 Archaeological Report

There was no archaeology work carried during the reporting period.

5.0 Summary

The Derrygreenagh Group of Bogs endeavour to comply with all environmental issues. In 2011 we had one non-compliance regarding dust. We also had a dust complaint in the Ballybeg area. Trees have been purchased to grow a shelter belt in this area to try and alleviate the problem. It is envisaged that a new Hydraulic Harrow will be purchased in the coming year.

There was no non-compliance from silt pond quarterly sampling events or from our composite sampler. Silt ponds were cleaned twice during the year, with more emphasis being put in ensuring silt ponds are cleaned regularly in the coming years. A new four module training programme delivered by dedicated Bord na Mona Training Specialists has also been developed during 2011/2012 and will be rolled out in the coming weeks. This new training programme includes Environmental Compliance - IPPC, Biodiversity, Archaeology and Energy Management.

A total of 165 staff, both permanent and seasonal were trained in 2011, with this being an ongoing process.

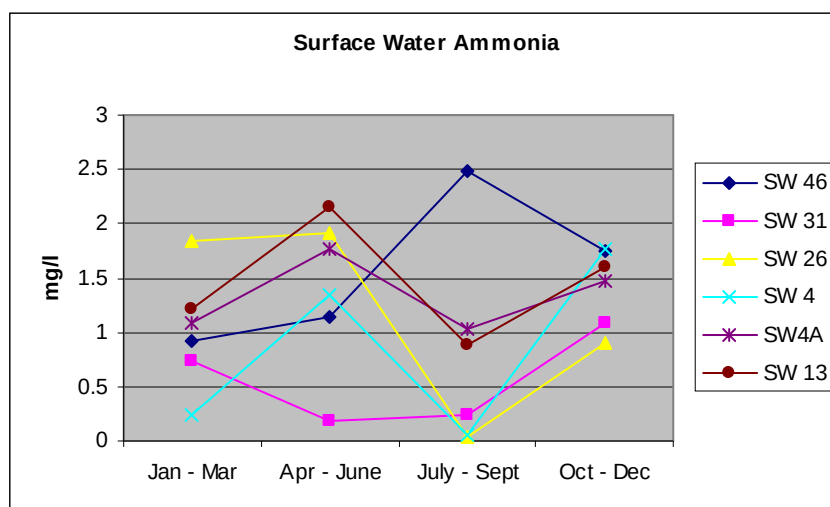
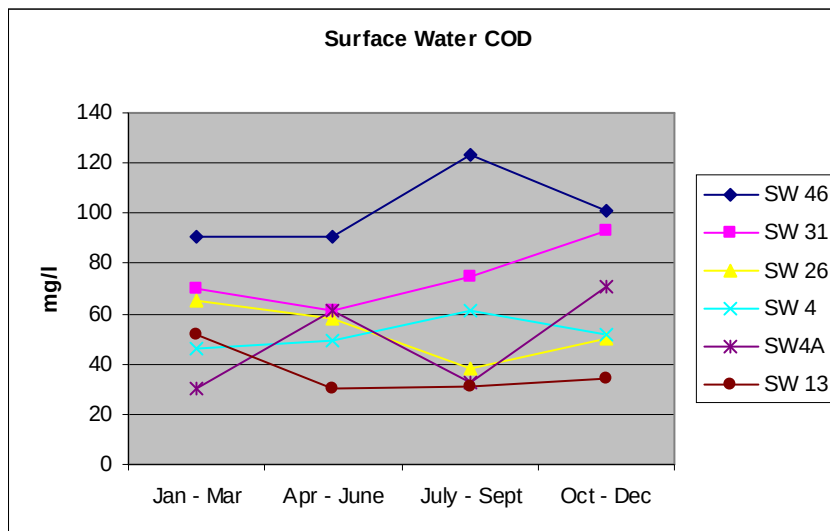
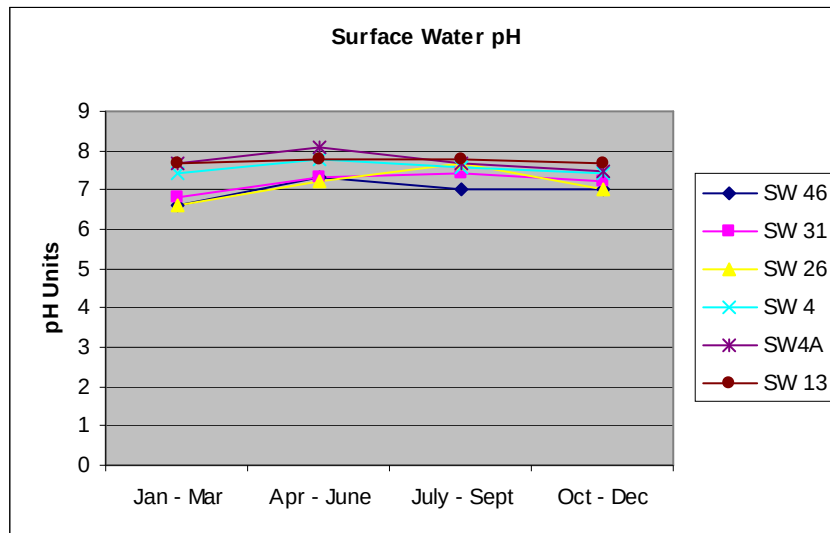
Bord na Mona Energy Ltd are represented as stakeholders on the Management Group of both the Shannon River and Eastern River Basin District Management Systems, set up under the Water Framework Directive, and on the Steering Group of the Catchment Management of the River Barrow.

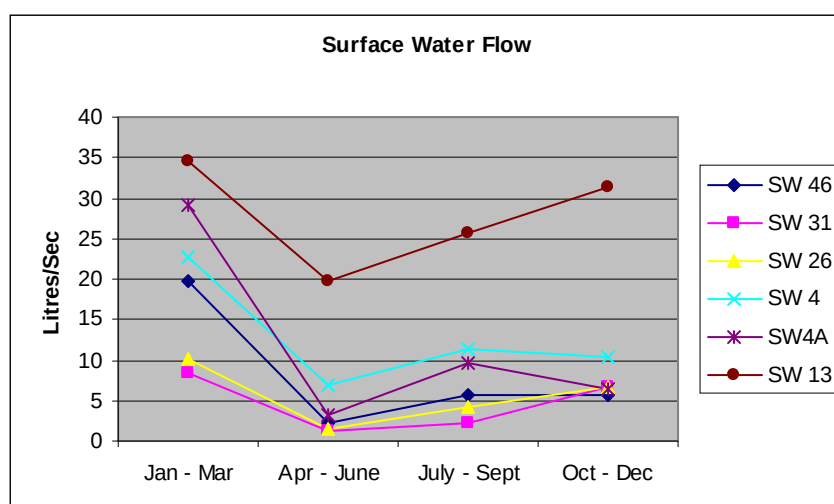
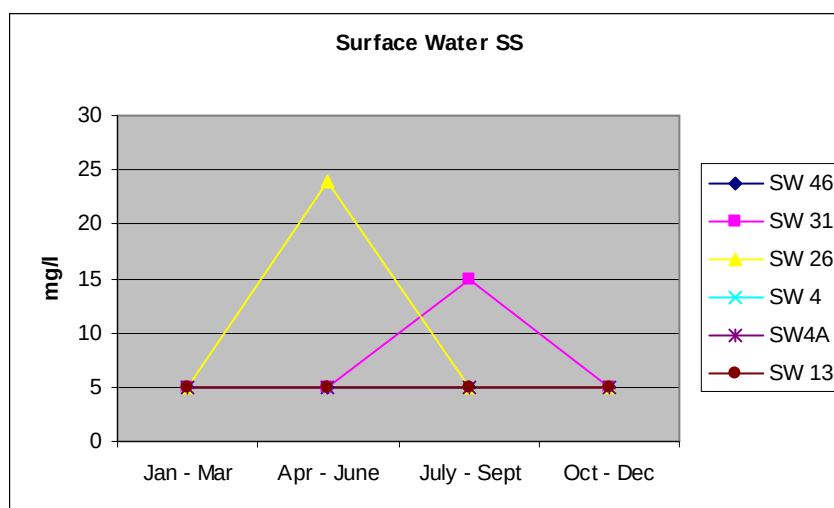
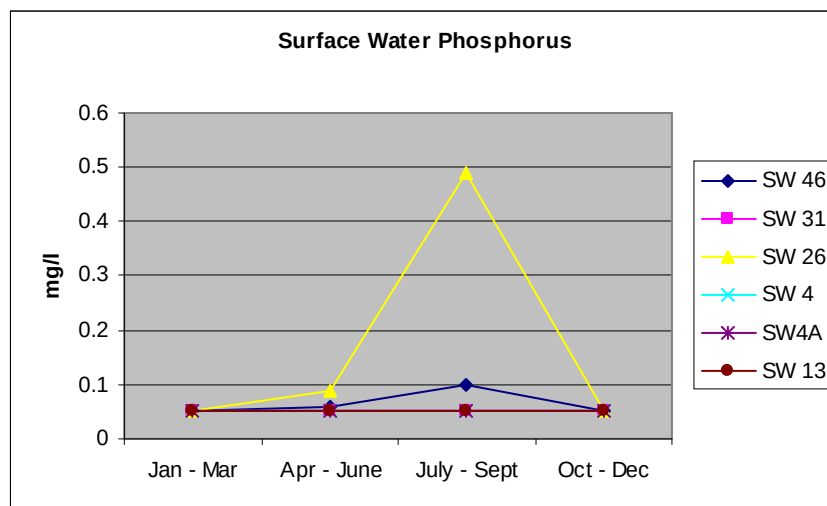
Bord na Mona would like to take this opportunity to advise the Environmental Protection Agency of its continued commitment to improving its environmental performance by adopting cleaner production methods and improving its environmental protection methods.

APPENDIX 1

Surface Water Discharge Monitoring Results Bogs

BNM Group:	Derrygreenagh		2011	
IPC Licence No.	501			
pH (units)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	6.6	7.3	7	7
SW 31	6.8	7.3	7.4	7.2
SW 26	6.6	7.2	7.7	7
SW 4	7.4	7.8	7.6	7.4
SW4A	7.7	8.1	7.7	7.5
SW 13	7.7	7.8	7.8	7.7
COD (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	91	91	123	101
SW 31	70	61	75	93
SW 26	65	58	38	50
SW 4	46	49	61	52
SW4A	30	61	33	71
SW 13	52	30	31	34
Ammonia as N (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	0.92	1.14	2.48	1.75
SW 31	0.74	0.19	0.24	1.08
SW 26	1.84	1.91	0.04	0.9
SW 4	0.24	1.35	0.06	1.76
SW4A	1.09	1.76	1.03	1.48
SW 13	1.22	2.16	0.88	1.6
Total Phosphorus (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	0.05	0.06	0.1	0.05
SW 31	0.05	0.05	0.05	0.05
SW 26	0.05	0.09	0.49	0.05
SW 4	0.05	0.05	0.05	0.05
SW4A	0.05	0.05	0.05	0.05
SW 13	0.05	0.05	0.05	0.05
Suspended Solids (mg/l)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	5	5	5	5
SW 31	5	5	15	5
SW 26	5	24	5	5
SW 4	5	5	5	5
SW4A	5	5	5	5
SW 13	5	5	5	5
Flow (l/s)				
	Jan - Mar	Apr - June	July - Sept	Oct - Dec
SW 46	19.8	2.2	5.8	5.6
SW 31	8.5	1.3	2.3	6.7
SW 26	10.2	1.6	4.3	6.7
SW 4	22.7	6.8	11.4	10.3
SW4A	29.2	3.2	9.6	6.3
SW 13	34.6	19.7	25.7	31.3



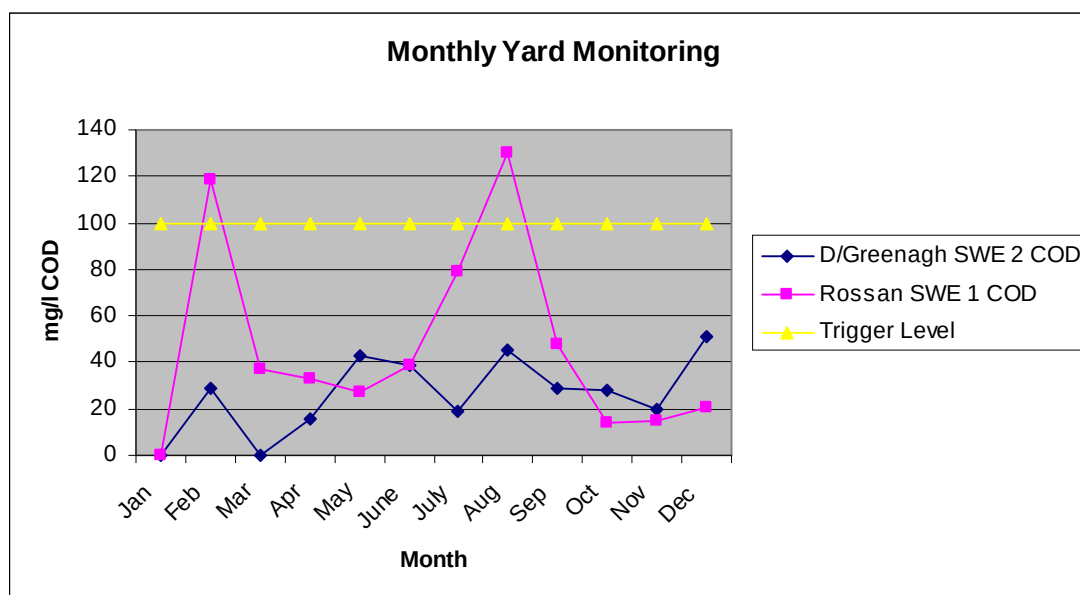


APPENDIX 2

Surface Water Discharge Monitoring Results Yards

Yard Discharge Results 2011		
Licence: P0501-01		
Works: Derrygreenagh		
Month	D/Greenagh SWE 2 COD	Rossan SWE 1 COD
Jan	0	0
Feb	29	119
Mar	0	37
Apr	16	33
May	43	27
June	39	39
July	19	79
Aug	45	130
Sep	29	48
Oct	28	14
Nov	20	15
Dec	51	21

Note: 0 denotes no flow at emission point on day of sampling



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
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	316		11779780				58.90	3722.41
2					5	306		10217660				51.09	3126.60
3					5	328		9478944				47.39	3109.09
4					5	340		7448285				37.24	2532.42
5	7.4	33	0.61	0.05	5	370	83	8228649	271.55	5.02	0.41	41.14	3044.60
6					7	410		7963834				55.75	3265.17
7					6	434		6921677				41.53	3004.01
8					5	410		6938352				34.69	2844.72
9					5	430		6672154				33.36	2869.03
10					5	418		6052147				30.26	2529.80
11					5	430		8666784				43.33	3726.72
12	7.7	56	0.56	0.05	5	452	211	11410850	639.01	6.39	0.57	57.05	5157.70
13					0	0		16435870				0.00	0.00
14					0	0		6440601				0.00	0.00
15					0	0		1144886				0.00	0.00
16					0	0		-275927				0.00	0.00
17					15	444		-226662				-3.40	-100.64
18					5	404		4362768				21.81	1762.56
19	7.5	42	0.61	0.05	7	416	86	9548928	401.05	5.82	0.48	66.84	3972.35
20					0	0		8086003				0.00	0.00
21					0	0		8082720				0.00	0.00
22					0	0		8125402				0.00	0.00
23					5	398		7788614				38.94	3099.87
24					5	404		7652189				38.26	3091.48
25					5	408		7532871				37.66	3073.41
26	7.3	47	0.61	0.05	5	408	91	7774186	365.39	4.74	0.39	38.87	3171.87
27					5	388		8005737				40.03	3106.23
28					5	298		8265715				41.33	2463.18
29					5	394		7026998				35.13	2768.64
30					6	392		8159875				48.96	3198.67
31					5	290		7740403				38.70	2244.72

Month				Parameters							Daily Totals		
Feb	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.7	40	0.65	0.05	5	206	96	7269869	290.79	4.73	0.36	36.35	1497.59
2					5	383		7266845				36.33	2783.20
3					5	388		7106918				35.53	2757.48
4					5	246		7190813				35.95	1768.94
5					5	142		12196220				60.98	1731.86
6					5	136		26520480				132.60	3606.79
7					5	140		40569120				202.85	5679.68
8	7.5	55	0.74	0.05	5	294	143	37895040	2084.23	28.04	1.89	189.48	11141.14
9					5	292		23066210				115.33	6735.33
10					5	284		20525180				102.63	5829.15
11					5	288		21639740				108.20	6232.25
12					5	282		17693860				88.47	4989.67
13					5	304		15472510				77.36	4703.64
14					5	286		19069340				95.35	5453.83
15	7.2	54	0.51	0.05	5	294	179	16541280	893.23	8.44	0.83	82.71	4863.14
16					5	352		13547520				67.74	4768.73
17					5	364		16079040				80.40	5852.77
18					5	356		10399970				52.00	3702.39
19					5	356		8914752				44.57	3173.65
20					5	354		9082368				45.41	3215.16
21					5	346		8568288				42.84	2964.63
22	7.3	44	0.5	0.05	5	344	111	7771248	341.93	3.89	0.39	38.86	2673.31
23					5	378		7252589				36.26	2741.48
24					5	390		8240486				41.20	3213.79
25					5	409		8678880				43.39	3549.66
26					5	412		8107257				40.54	3340.19
27					5	418		7238160				36.19	3025.55
28					5	422		7080826				35.40	2988.11

Month				Parameters							Daily Totals		
March	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.4	45	0.61	0.05	5	432	77	4987872	224.45	3.04	0.25	24.94	2154.76
2					5	430		5139245				25.70	2209.88
3					5	425		3986410				19.93	1694.22
4					5	428		598916				2.99	256.34
5					5	391		3210451				16.05	1255.29
6					5	266		2498774				12.49	664.67
7					5	348		1932682				9.66	672.57
8	7.7	49	0.56	0.05	5	428	75	5785603	283.49	3.24	0.29	28.93	2476.24
9					5	450		5756573				28.78	2590.46
10					5	448		4499712				22.50	2015.87
11					5	428		821258				4.11	351.50
12					5	416		1788480				8.94	744.01
13					5	414		2399587				12.00	993.43
14					5	390		5142010				25.71	2005.38
15	7.4	34	0.6	0.05	5	416	81	5141750	174.82	3.09	0.26	25.71	2138.97
16					5	430		4633459				23.17	1992.39
17					5	434		5016643				25.08	2177.22
18					5	430		4450637				22.25	1913.77
19					5	350		3035318				15.18	1062.36
20					5	416		2011997				10.06	836.99
21					5	422		3503520				17.52	1478.49
22	7.9	40	0.43	0.05	5	438	16	3936730	157.47	1.69	0.20	19.68	1724.29
23					15	421		3473885				52.11	1462.51
24					14	446		1040083				14.56	463.88
25					15	438		-2070749				-31.06	-906.99
26					13	430		-1402358				-18.23	-603.01
27					15	436		-1154909				-17.32	-503.54
28					8	450		-3638477				-29.11	-1637.31
29					14	456		-2557786				-35.81	-1166.35
30	7.7	52	0.56	0.05	12	440	69	-1333757	-69.36	-0.75	-0.07	-16.01	-586.85
31					7	440		-3433483				-24.03	-1510.73

Month				Parameters							Daily Totals		
April	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	470		2437070				12.19	1145.42
2					5	462		3119550				15.60	1441.23
3					6	454		3121140				18.73	1417.00
4					5	459		3012130				15.06	1382.57
5					6	434		3524190				21.15	1529.50
6	7.5	35	0.45	0.05	6	410	44	4117100	144.10	1.85	0.21	24.70	1688.01
7					8	392		2846110				22.77	1115.68
8					5	418		2092610				10.46	874.71
9					6	430		2012110				12.07	865.21
10					5	456		2772460				13.86	1264.24
11					5	432		2089760				10.45	902.78
12					5	428		2207600				11.04	944.85
13	7.6	43	0.48	0.05	5	440	66	2116490	91.01	1.02	0.11	10.58	931.26
14					14	436		576143				8.07	251.20
15					14	392		244135				3.42	95.70
16					9	0		-137564				-1.24	0.00
17					15	372		-69660.5				-1.04	-25.91
18					6	448		-51669.5				-0.31	-23.15
19					6	448		-48087.9				-0.29	-21.54
20	7.6	39	0.45	0.05	6	660	66	1939220	75.63	0.87	0.10	11.64	1279.89
21					6	442		2313840				13.88	1022.72
22					11	464		2124570				23.37	985.80
23					12	466		2834870				34.02	1321.05
24					8	428		2185310				17.48	935.31
25					5	470		1664080				8.32	782.12
26					5	476		1193240				5.97	567.98
27					6	472		1668040				10.01	787.31
28	8.1	26	0.42	0.05	7	476	43	1900310	49.41	0.80	0.10	13.30	904.55
29					12	456		1750330				21.00	798.15
30					8	460		1670220				13.36	768.30

Month				Parameters							Daily Totals		
May	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					7	456		446580				3.13	203.64
2					7	452		1111560				7.78	502.43
3					5	468		847955				4.24	396.84
4	7.5	26	0.53	0.05	5	460	30	891464	23.18	0.47	0.04	4.46	410.07
5					13	418		1693780				22.02	708.00
6					12	434		2135880				25.63	926.97
7					9	460		1297860				11.68	597.02
8					8	444		1625230				13.00	721.60
9					6	458		1880530				11.28	861.28
10					5	440		2091810				10.46	920.40
11	7.6	35	0.5	0.05	5	444	60	2241950	78.47	1.12	0.11	11.21	995.43
12					8	438		2148590				17.19	941.08
13					7	436		2591380				18.14	1129.84
14					5	340		2189170				10.95	744.32
15					5	436		1941720				9.71	846.59
16					5	448		1886410				9.43	845.11
17					5	414		1950660				9.75	807.57
18	7.6	36	0.5	0.05	5	454	63	1824530	65.68	0.91	0.09	9.12	828.34
19					13	442		1906250				24.78	842.56
20					11	452		1303210				14.34	589.05
21					5	382		1386430				6.93	529.62
22					7	408		1715100				12.01	699.76
23					7	420		1839470				12.88	772.58
24					8	448		1126590				9.01	504.71
25	7.6	35	0.37	0.05	5	466	63	925257	32.38	0.34	0.05	4.63	431.17
26					10	436		2276140				22.76	992.40
27					7	342		1327070				9.29	453.86
28					12	440		2441250				29.30	1074.15
29					8	408		2303740				18.43	939.93
30					8	426		1982940				15.86	844.73
31					5	446		1854080				9.27	826.92

Month				Parameters							Daily Totals		
June	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	8.1	29	0.47	0.05	6	390	72	1266970	36.74	0.60	0.06	7.60	494.12
2					19	416		1214150				23.07	505.09
3					20	438		1727790				34.56	756.77
4					17	426		501399				8.52	213.60
5					9	434		740966				6.67	321.58
6					5	454		1070410				5.35	485.97
7					6	454		2141970				12.85	972.45
8	8.2	26	0.5	0.05	23	409	62	1705130	44.33	0.85	0.09	39.22	697.40
9					13	420		1531950				19.92	643.42
10					12	386		1470190				17.64	567.49
11					7	424		1974750				13.82	837.29
12					9	420		1122580				10.10	471.48
13					16	412		1595330				25.53	657.28
14					10	428		1906410				19.06	815.94
15	7.6	22	0.46	0.07	6	452	63	1770210	38.94	0.81	0.12	10.62	800.13
16					9	424		1625280				14.63	689.12
17					14	436		2169480				30.37	945.89
18					7	414		2141070				14.99	886.40
19					6	438		1836020				11.02	804.18
20					5	418		1488750				7.44	622.30
21					6	372		1706090				10.24	634.67
22	7.4	48	0.43	0.05	5	442	68	1868730	89.70	0.80	0.09	9.34	825.98
23					16	348		1624900				26.00	565.47
24					9	426		2037080				18.33	867.80
25					10	426		2648960				26.49	1128.46
26					5	372		2188430				10.94	814.10
27					5	428		383030				1.92	163.94
28					5	436		1161360				5.81	506.35
29	8.1	23	0.55	0.05	5	436	60	1104720	25.41	0.61	0.06	5.52	481.66
30					9	409		672282				6.05	274.96

Month				Parameters							Daily Totals		
July	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					12	398		1123220				13.48	447.04
2					10	426		1766710				17.67	752.62
3					12	402		1462630				17.55	587.98
4					10	430		917997				9.18	394.74
5					6	460		1310990				7.87	603.06
6	7.4	78	0.21	2.08	5	454	78	1446910	112.86	0.30	3.01	7.23	656.90
7					17	432		2543650				43.24	1098.86
8					5	382		2655860				13.28	1014.54
9					5	364		4545750				22.73	1654.65
10					5	297		3490840				17.45	1036.78
11					6	390		2360970				14.17	920.78
12					5	424		1139790				5.70	483.27
13	7.4	30	0.4	0.12	5	470	86	2287870	68.64	0.92	0.27	11.44	1075.30
14					15	420		2458940				36.88	1032.75
15					13	440		2324850				30.22	1022.93
16					7	452		2282300				15.98	1031.60
17					5	466		2032970				10.16	947.36
18					5	374		3245930				16.23	1213.98
19					5	368		2809420				14.05	1033.87
20	7.5	31	0.43	0.13	5	388	163	2303670	71.41	0.99	0.30	11.52	893.82
21					5	468		1790810				8.95	838.10
22					5	412		2416770				12.08	995.71
23					14	426		2293360				32.11	976.97
24					19	414		2128830				40.45	881.34
25					16	450		1795880				28.73	808.15
26					8	424		2079170				16.63	881.57
27					5	440		2255700				11.28	992.51
28	7.5	42	0.21	0.05	5	466	66	1774940	74.55	0.37	0.09	8.87	827.12
29					14	378		1594450				22.32	602.70
30					13	406		1760270				22.88	714.67
31					6	426		1838290				11.03	783.11

Month				Parameters							Daily Totals		
August	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					8	430		1913380				15.31	822.75
2					5	433		1952780				9.76	845.55
3	7.4	19	0.49	0.06	5	450	66	1725540	32.79	0.85	0.10	8.63	776.49
4					11	406		2119570				23.32	860.55
5					11	400		1794870				19.74	717.95
6					11	406		2072010				22.79	841.24
7					10	422		1862130				18.62	785.82
8					6	418		2244460				13.47	938.18
9					5	412		1656900				8.28	682.64
10					6	436		2261680				13.57	986.09
11	8.1	33	0.58	0.07	5	420	67	1936870	63.92	1.12	0.14	9.68	813.49
12					12	352		1786240				21.43	628.76
13					7	386		1603950				11.23	619.12
14					8	392		1336100				10.69	523.75
15					9	399		1572450				14.15	627.41
16					7	432		1835740				12.85	793.04
17	7.5	35	0.04	0.1	7	428	68	1369660	47.94	0.05	0.14	9.59	586.21
18					0	0		1330990				0.00	0.00
19					0	0		1695350				0.00	0.00
20					0	0		1467510				0.00	0.00
21					0	0		2265670				0.00	0.00
22					0	0		1628020				0.00	0.00
23					0	0		1006970				0.00	0.00
24	7.4	41	0.15	0.05	5	434	60	1642310	67.33	0.25	0.08	8.21	712.76
25					13	358		731310				9.51	261.81
26					14	414		1133700				15.87	469.35
27					13	434		465915				6.06	202.21
28					8	428		647576				5.18	277.16
29					7	434		593550				4.15	257.60
30					9	448		582564				5.24	260.99
31	7.5	90	0.46	0.05	7	450	60	847504	76.28	0.39	0.04	5.93	381.38

Month				Parameters							Daily Totals		
Sept	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					17	422		1112040				18.90	469.28
2					16	424		1527150				24.43	647.51
3					7	428		1237520				8.66	529.66
4					5	408		1266270				6.33	516.64
5					5	410		1441460				7.21	591.00
6					5	412		1692160				8.46	697.17
7	7.6	29	0.23	0.05	5	402	111	1975250	57.28	0.45	0.10	9.88	794.05
8					9	354		1793090				16.14	634.75
9					12	410		1600840				19.21	656.34
10					5	374		508183				2.54	190.06
11					0	0		132266				0.00	0.00
12					0	0		113692				0.00	0.00
13					0	0		55529.1				0.00	0.00
14	7.6	16	0.17	0.1	5	472	74	65406.3	1.05	0.01	0.01	0.33	30.87
15					0	0		111824				0.00	0.00
16					0	0		759483				0.00	0.00
17					12	442		1137670				13.65	502.85
18					7	420		675703				4.73	283.80
19					6	436		704495				4.23	307.16
20					5	414		536334				2.68	222.04
21	7.6	27	0.12	0.05	5	444	78	1357050	36.64	0.16	0.07	6.79	602.53
22					0	0		-511568				0.00	0.00
23					0	0		-398958				0.00	0.00
24					0	0		-383828				0.00	0.00
25					0	0		-249091				0.00	0.00
26					0	0		-288078				0.00	0.00
27	7.4	59	0.41	0.05	5	443	91	525807	31.02	0.22	0.03	2.63	232.93
28					5	370		744232				3.72	275.37
29					0	0		990233				0.00	0.00
30					0	0		1504500				0.00	0.00

Month				Parameters							Daily Totals		
Oct	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	210		1391470	0.00	0.00	0.00	6.96	292.21
2					5	174		1391470	0.00	0.00	0.00	6.96	242.12
3					5	264		1391470	0.00	0.00	0.00	6.96	367.35
4					5	350		1391470	0.00	0.00	0.00	6.96	487.01
5	7.5	43	0.5	0.05	5	386	122	1391470	59.83	0.70	0.07	6.96	537.11
6					5	292		1391470	0.00	0.00	0.00	6.96	406.31
7					5	366		1391470	0.00	0.00	0.00	6.96	509.28
8					5	394		1391470	0.00	0.00	0.00	6.96	548.24
9					5	418		1391470	0.00	0.00	0.00	6.96	581.63
10					5	426		1391470	0.00	0.00	0.00	6.96	592.77
11					5	372		1391470	0.00	0.00	0.00	6.96	517.63
12	7.3	52	0.45	0.05	5	272	186	1391470	72.36	0.63	0.07	6.96	378.48
13					5	296		1391470	0.00	0.00	0.00	6.96	411.88
14					5	366		1391470	0.00	0.00	0.00	6.96	509.28
15					5	378		1391470	0.00	0.00	0.00	6.96	525.98
16					5	372		1391470	0.00	0.00	0.00	6.96	517.63
17					5	416		1391470	0.00	0.00	0.00	6.96	578.85
18					5	378		1391470	0.00	0.00	0.00	6.96	525.98
19	7.4	10	0.39	0.07	5	390	108	1391470	13.91	0.54	0.10	6.96	542.67
20					5	391		1391470	0.00	0.00	0.00	6.96	544.06
21					5	406		1391470	0.00	0.00	0.00	6.96	564.94
22					5	400		2916520	0.00	0.00	0.00	14.58	1166.61
23					5	416		8454410	0.00	0.00	0.00	42.27	3517.03
24					5	382		1629160	0.00	0.00	0.00	8.15	622.34
25					5	184		1100130	0.00	0.00	0.00	5.50	202.42
26	7.6	32	0.66	0.05	5	464	80	2403650	76.92	1.59	0.12	12.02	1115.29
27					5	474		2139180	0.00	0.00	0.00	10.70	1013.97
28					5	392		1994720	0.00	0.00	0.00	9.97	781.93
29					5	367		1927500	0.00	0.00	0.00	9.64	707.39
30					5	444		3294260	0.00	0.00	0.00	16.47	1462.65
31					5	440		3861990	0.00	0.00	0.00	19.31	1699.28

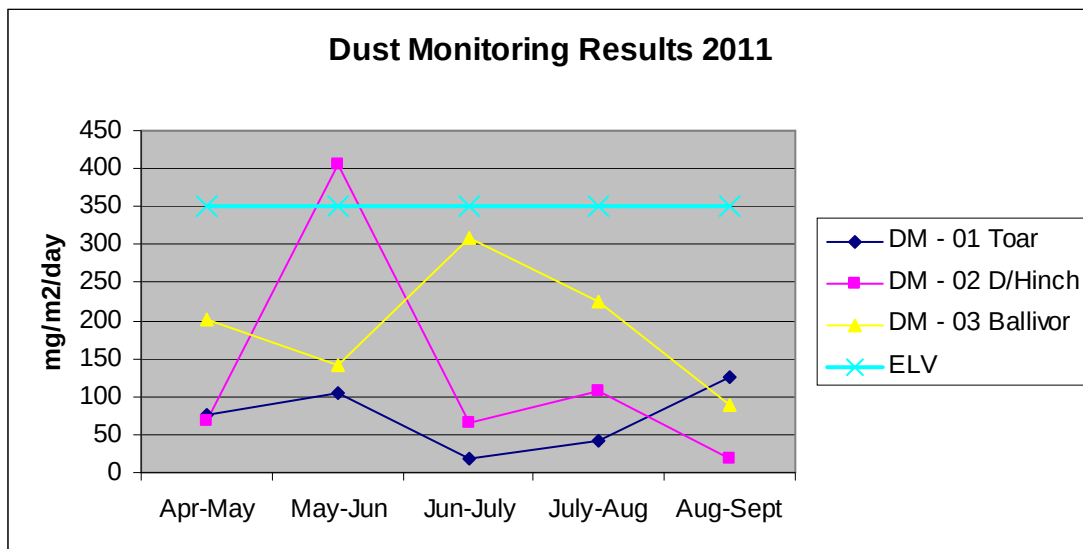
Month				Parameters							Daily Totals		
Nov	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1					5	278		2078870	0.00	0.00	0.00	10.39	577.93
2	8.3	30	0.36	0.05	5	374	80	3456690	103.70	1.24	0.17	17.28	1292.80
3					5	282		5900770	0.00	0.00	0.00	29.50	1664.02
4					5	306		3257970	0.00	0.00	0.00	16.29	996.94
5					5	390		2537480	0.00	0.00	0.00	12.69	989.62
6					5	422		1969920	0.00	0.00	0.00	9.85	831.31
7					5	446		1739490	0.00	0.00	0.00	8.70	775.81
8					5	418		1864860	0.00	0.00	0.00	9.32	779.51
9	7.2	24	0.38	0.05	5	440	97	1626390	39.03	0.62	0.08	8.13	715.61
10					5	442		1996100	0.00	0.00	0.00	9.98	882.28
11					5	446		3091050	0.00	0.00	0.00	15.46	1378.61
12					5	410		2243640	0.00	0.00	0.00	11.22	919.89
13					5	426		1760050	0.00	0.00	0.00	8.80	749.78
14					5	440		1549670	0.00	0.00	0.00	7.75	681.85
15					5	444		1480460	0.00	0.00	0.00	7.40	657.32
16					5	322		2414710	0.00	0.00	0.00	12.07	777.54
17	7.3	55	0.43	0.05	6	424	106	2650920	145.80	1.14	0.13	15.91	1123.99
18					5	384		2944250	0.00	0.00	0.00	14.72	1130.59
19					5	306		3397160	0.00	0.00	0.00	16.99	1039.53
20					5	356		3317330	0.00	0.00	0.00	16.59	1180.97
21					5	298		3256680	0.00	0.00	0.00	16.28	970.49
22					5	354		2678570	0.00	0.00	0.00	13.39	948.21
23					5	344		2289690	0.00	0.00	0.00	11.45	787.65
24	7.2	447	0.42	0.05	5	392	121	5395680	2411.87	2.27	0.27	26.98	2115.11
25					0	0		2690670	0.00	0.00	0.00	0.00	0.00
26					5	388		2925940	0.00	0.00	0.00	14.63	1135.26
27					5	220		2841700	0.00	0.00	0.00	14.21	625.17
28					5	312		5777050	0.00	0.00	0.00	28.89	1802.44
29					0	0		-1280360	0.00	0.00	0.00	0.00	0.00
30					0	0		-1039820	0.00	0.00	0.00	0.00	0.00

Month				Parameters							Daily Totals		
Dec	pH	COD	Ammonia as	Total	Suspended	Total	Colour	Flow	COD	Ammonia as	Total	Suspended	Total
2011		mg/l	N mg/l	Phosphorus	Solids	Solids	Pt Co	Daily	Kg/Day	Kg/Day	Phosphorus	Solids	Solids
SW15				mg/l	mg/l	mg/l	units	Total (litres)			Kg/Day	Kg/Day	Kg/Day
1	7.2	24	0.62	0.05	5	272	166	-840758	-20.18	-0.52	-0.04	-4.20	-228.69
2					0	0		-866592	0.00	0.00	0.00	0.00	0.00
3					0	0		-749952	0.00	0.00	0.00	0.00	0.00
4					0	0		-677808	0.00	0.00	0.00	0.00	0.00
5					0	0		-196560	0.00	0.00	0.00	0.00	0.00
6					0	0		1502580	0.00	0.00	0.00	0.00	0.00
7					0	0		4469210	0.00	0.00	0.00	0.00	0.00
8	7.4	52	0.46	0.05	5	372	129	4490810	233.52	2.07	0.22	22.45	1670.58
9					5	368		3645480	0.00	0.00	0.00	18.23	1341.54
10					5	370		3849470	0.00	0.00	0.00	19.25	1424.30
11					5	366		4305570	0.00	0.00	0.00	21.53	1575.84
12					5	390		6471270	0.00	0.00	0.00	32.36	2523.80
13					5	390		5691430	0.00	0.00	0.00	28.46	2219.66
14					5	366		5086450	0.00	0.00	0.00	25.43	1861.64
15	7.8	56	0.53	0.05	5	318	132	4001620	224.09	2.12	0.20	20.01	1272.52
16					5	224		3671910	0.00	0.00	0.00	18.36	822.51
17					5	346		3446150	0.00	0.00	0.00	17.23	1192.37
18					11	372		5619720	0.00	0.00	0.00	61.82	2090.54
19					5	419		6989760	0.00	0.00	0.00	34.95	2928.71
20					5	432		2728770	0.00	0.00	0.00	13.64	1178.83
21					5	414		446515	0.00	0.00	0.00	2.23	184.86
22	7.6	28	0.59	0.09	5	284	133	-21772.8	-0.61	-0.01	0.00	-0.11	-6.18
23					0	0		-397440	0.00	0.00	0.00	0.00	0.00
24					0	0		-60134.4	0.00	0.00	0.00	0.00	0.00
25					0	0		42076.8	0.00	0.00	0.00	0.00	0.00
26					10	339		2885850	0.00	0.00	0.00	28.86	978.30
27					5	370		157766	0.00	0.00	0.00	0.79	58.37
28					5	350		1574290	0.00	0.00	0.00	7.87	551.00
29					5	360		1208300	0.00	0.00	0.00	6.04	434.99
30	7.4	34	0.54	0.05	5	256	128	1795390	61.04	0.97	0.09	8.98	459.62
31					5	310		1277299	0.00	0.00	0.00	6.39	395.96

APPENDIX 4

Dust Monitoring Results.

Dust Monitoring Results 2011			
Licence:P0501-01			
Works: Derrygreenagh			
Sample Period	DM - 01 Toar	DM - 02 D/Hinch	DM - 03 Ballivor
Apr-May	75	69	201
May-Jun	105	406	141
Jun-July	18	65	309
July-Aug	42	107	226
Aug-Sep	125	18	89



APPENDIX 5

De-silting Programme Review.

Siltpond Cleaning Programme 2011				
IPPC Licence: P0501-01				
Works: Derrygreenagh				
Bog Area & Nr Ponds	1 Cleaning	2 Cleanings	3 Cleanings	4 Cleanings
Derryhinch (4)	4	4	1	
Toar (6)	6	6		
Ballybeg (6)	6	6		
Drumman (6)	6	6		
Ballivor (10)	10	9	1	
Carranstown (5)	5	5		
Lisclogher (7)	7	7		
Bracklin West (6)	6	6		
Rossan (8)	8	8	1	

