Monaghan County Council, Newbliss Waste Water Treatment Plant – Annual Environmental Report 2013

UISCE EIREANN : IRISH WATER **MONAGHAN COUNTY COUNCIL**

WASTE WATER DISCHARGE LICENCE REGISTER NUMBER: D0458 AGGLOMERATION: Newbliss Village ANNUAL ENVIRONMENTAL REPORT 1st JANUARY 2013 - 31st DECEMBER 2013

County Manager: E Cummins
Director of Services: D Treanor
Senior Engineer: C McCrossan

Newbliss Waste Water Treatment Plant – Annual Environmental Report 2013

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Section 1. Executive Summary and Introduction to the 2013 AER

1.1 Summary report on 2013

This is the first Annual Environmental Report (AER) for Newbliss Village Wastewater Treatment Plant.

The Environmental Protection Agency granted a Waste Water Discharge Licence (Register No. D0458) in respect of the agglomeration named, to Monaghan County Council on the 4th September 2013.

The purpose of this Annual Environmental Report (AER) is to provide a summary of activities relevant to the discharges from 1st January 2013 to the 31st December 2013 as required under Condition 6.8 of the discharge licence. The Annual Environmental Report (AER) for the Newbliss agglomeration includes the information specified in Schedule D of the Wastewater Discharge Licence D0458.

Newbliss is a village in County Monaghan and is located approximately 18km South West of Monaghan town. The Waste Water Works comprises of a gravity collection system with one pump station and associated rising main from a housing development in the village. The Waste water treatment plant (WWTP) design capacity is 1,000 P.E.
The plant provides secondary treatment with nutrient removal (phosphorus reduction) for the effluent. The WWTP comprises of primary settlement, high rate bio filters, clarifiers, phosphorus reduction (ferric dosing) and storm storage. There is one storm water overflow (SWO) from the storm tank at the WWTP, which discharges to the Newbliss river via the primary (gravity) or secondary (pumped) discharge points dependent on river level. The SWO would only activate during periods of prolonged rainfall or storm conditions at the plant. The WWTP is operating under capacity at 325 P.E. based on 2013 flow/load figures (refer to table 1.2, appendix 1).

There is a primary (SW001) and secondary (SW002) discharge point listed in the Newbliss discharge licence with the same Emission Limit Values (ELVs) applicable to both. Only one discharge occurs at any time from either the primary or secondary emission points depending on river flow conditions. The secondary point is a pumped discharge point that occurs when river levels are higher than the primary (gravity) discharge pipe. The primary and secondary locations are within a couple of meters of each other and discharge to the same water body. For the purpose of this AER, reference will be made to the primary discharge point emissions and ELVs, as this is the main emission point for the discharge, except during adverse weather conditions. One set of results is therefore reported for the primary discharge point and referred to throughout the AER.
The primary discharge from the WWTP is to the Newbliss river (at National Grid Reference 256277E 323714N) in the town land of Newbliss, Co. Monaghan. The Newbliss river is a tributary of the Finn river, the Finn river is not a designated river nor Salmonid water (under the European Communities

(Quality of Salmonid Waters) Regulations, 1988) nor designated as an SPA, SAC or NHA. The Newbliss river is in the North West River Basin District with overall status classified as 'Moderate' and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The 'point risk source' and potential for impact from the Newbliss WWTP discharge on the river is categorised as '1a – at risk' and the combined storm overflows (CSOs) categorised as '2b – not at risk' (ref: WFD Ireland maps/website & reports). The Erne East Water Management Unit Action Plan (WMU) identifies a risk associated with the WWTP of having insufficient assimilative capacity for BOD, however, the EPA have since granted a discharge licence for the WWTP with an Emission Limit Value (ELV) of 10mg/l for BOD. A measure identified in the WMU is also to ensure the capacity of the WWTP is not exceeded, from 2013 figures the WWTP is running well below design capacity.

The discharge from the Newbliss WWTP had four exceedances in 2013. Interpretation of the results is in accordance with the Urban Waste Water Treatment Regulations 2001 (UWWT Reg's) until the 4th September and in accordance with the discharge licence conditions from this date. Two allowable exceedances for BOD and suspended solids at 45mg/l and 57mg/l respectively occurred on 02/05/2013, (UWWT Reg's 2001, fifth schedule interpretation). Two reportable incident exceedances occurred for BOD and ammonia at 16mg/l and 12.62mg/l respectively on 24/09/2013 reported to the EPA under incident number INC002877. There was no cause identified for these exceedances at the Waste Water Treatment Plant (WWTP) and the trend prior to and after the exceedances for BOD and ammonia is under the Emission Limit Value (ELV) for the parameters.

The ambient monitoring results for 2013 indicate that the river already exceeds the Surface Water Quality Regulations 2009 Environmental Quality Standards (EQS) for the parameters BOD, MRP (Ortho P) and total ammonia upstream, as the averages are above the 'good status' mean figures of 1.5mg/l, 0.035mg/l and 0.065mg/l. The downstream average results are lower than the upstream averages, with upstream results generally higher than downstream results, thus indicating that there are other sources affecting the river water quality. These results concur with the designated 'moderate' status quality water in the river.

There is one specified improvement work under schedule C.1 of the discharge licence for the Newbliss WWTP to 'upgrade WWTP to ensure that ELVs are complied with', the completion date specified is 31/12/2019. Lower ELVs are specified in the licence for the parameters ammonia and orthophosphate from 31/12/2019 for the discharge.

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Monaghan County Council's summary on influent monitoring for Newbliss WWTP is tabulated in tables 1, 1.1 and 2.2 attached in appendix 1. As required under condition 4.13 of the licence, bi-monthly monitoring of the influent stream to the WWTP for cBOD and COD measuring mass loadings and removal efficiencies has been calculated and tabulated in table 1. A summary of the removal efficiencies for the WWTP is as follows:

BOD – range 76 -97%, average 94%
COD – range 35 – 94%, average 88%

The removal efficiencies for BOD and COD are considered adequate for the WWTP. There is one low influent result for COD on the 22/03/2013 at 91mg/l in comparison to the average influent COD of 571mg/l, hence the removal efficiency result on that date is only 35%. The average removal efficiency however, inclusive of this low percentage is considered adequate at 88%.

Table 1.1

Influent monitoring summary table

	BOD mg/l	COD mg/l	SS mg/l	TP mg/l	TN mg/l	Hydraulic Loading m3/day	Organic Loading PE/day
Number of samples	6	6	6	6	6	n/a	n/a
Maximum result	402.00	896.00	258.00	7.23	74.71	233	
Annual Mean	203.83	570.83	131.25	4.85	41.97	96	325

Table 1.2

Remaining Hydraulic & Organic treatment capacities summary table:	
Hydraulic Capacity - Design (M^3/day)	180
Hydraulic Capacity - Current loading (M^3/day)	96
Hydraulic Capacity - Remaining (M^3/day)	**84**
Organic Capacity - Design (PE)	1000
Organic Capacity - Current loading (PE)	325
Organic Capacity - Remaining (PE)	**675**
Will the capacity be exceeded in the next 3 years?	no

The influent monitoring summary table 1.1 above details the number of influent samples taken, the maximum and mean results for each parameter and the organic and hydraulic loading for the WWTP in 2013. The design capacity of the Newbliss WWTP is detailed in table 1.2 above, there is adequate hydraulic and organic capacity available at the WWTP from average flow/load figures for 2013. The hydraulic capacity was exceeded using the

maximum flow figures from the WWTP, the Newbliss sewerage network is a combined collection system thus experiences high inflows to the WWTP during prolonged periods of rainfall, however, there is a storm tank at the WWTP to contain excess inflows and return to the inlet works when flow conditions revert to normal.

2.2 Discharges from the agglomeration

As stated in the executive summary, there is a primary (SW001) and secondary (SW002) discharge point listed in the Newbliss discharge licence with the same Emission Limit Values (ELVs) applicable to both. Only one discharge occurs at any time from either the primary or secondary emission points depending on river flow conditions. The secondary point is a pumped discharge point that occurs when river levels are higher than the primary (gravity) discharge pipe. The primary and secondary locations are within a couple of meters of each other and discharge to the same water body. For the purpose of this AER, reference will be made to the primary discharge point emissions and ELVs, as this is the main emission point for the discharge except during adverse weather conditions. One set of results is therefore reported for the primary discharge point and referred to throughout the AER.

A summary presentation of monitoring results for the primary discharge (National Grid Reference 256277E, 323714N) are tabulated in table 2.1 attached in appendix 1. The Emission Limit Value's (ELVs) where applicable are included in the heading columns in red text in accordance with schedule A.1 of the licence. Six samples are required under schedule B of the licence, six samples were collected. pH monitoring is required bi monthly for the effluent also, this is recorded on site by the caretaker along with flow figures. One pH result is tabulated in table 2.1 for the effluent from the date of grant of the discharge licence (September 2013), bi monthly pH monitoring will be carried out from 2014.

The discharge from the Newbliss WWTP had four exceedances in 2013. Interpretation of the results is in accordance with the Urban Waste Water Treatment Regulations 2001 (UWWT Reg's) until the 4th September and in accordance with the discharge licence conditions from this date. Two allowable exceedances for BOD and suspended solids at 45mg/l and 57mg/l respectively occurred on 02/05/2013, (UWWT Reg's 2001, fifth schedule interpretation). Two reportable incident exceedances occurred for BOD and ammonia at 16mg/l and 12.62mg/l respectively on 24/09/2013 reported to the EPA under incident number INC002877. There was no cause identified for these exceedances at the WWTP and the trend prior to and after the exceedances for BOD and ammonia is under the Emission Limit Value (ELV) for the parameters. This incident is closed.

The removal efficiencies for the WWTP for BOD, and COD are tabulated in table 1 attached in appendix 1 and summarised in section 2.1 of this document.

Priority Substance Assessment

A priority substance assessment is required under condition 4.18 of the licence, by undertaking a *'risk based assessment of the discharge in accordance with the Guidance on the screening for Priority Substances for Waste Water Discharge Licences'*, to identify any priority substances or pollutants in the discharge. A desktop study is undertaken as follows:
The Newbliss WWTP catchment area serves a small rural village comprising primarily of domestic dwellings, along with a school, church and local shops. There are no industrial inputs to the waste water works or section 16 licenced companies discharging to the WWTP, or disposal of same at the waste water works. It can therefore be concluded from this desktop overview that there is no further screening necessary or required for organic compounds or metals. Furthermore, in 2009 when the initial discharge licence application for Newbliss was compiled, monitoring of the effluent discharges and upstream and downstream locations in the receiving Newbliss River was undertaken and analysed for dangerous substances and submitted with the application. There were no elevated levels of these compounds in the discharge as reported. It is therefore concluded that no further screening is required for Newbliss WWTP with regard to priority substances.

2.3 Ambient monitoring summary

A summary presentation of the ambient monitoring results for the upstream (National grid reference 256207E 323351N) and downstream (National grid reference 256274E 323809N) receiving waters are tabulated in tables 2.3 and 2.4 attached in appendix 1.
The primary discharge of the Waste Water Works is to the Newbliss river (at National Grid Reference 256277E 323714N) in the town land of Newbliss, Co. Monaghan. The Newbliss river is a tributary of the Finn river, the Finn river is not a designated river nor Salmonid water (under the European Communities (Quality of Salmonid Waters) Regulations, 1988) nor designated as an SPA, SAC or NHA. The Newbliss river is in the North West River Basin District with overall status classified as 'Moderate' and at risk of not meeting good status by 2015, with overall objective to restore its status by 2021. The 'point risk source' and potential for impact from the Newbliss WWTP discharge on the river is categorised as '1a – at risk' and the combined storm overflows (CSOs) categorised as '2b – not at risk' (ref: WFD Ireland maps/website & reports.). The Erne East Water Management Unit Action Plan (WMU) identifies a risk associated with the WWTP of having insufficient assimilative capacity for BOD, however, the EPA have granted a discharge licence for the WWTP since, with an Emission Limit Value (ELV) of 10mg/l specified for BOD. A measure also identified in the WMU is to ensure the capacity of the WWTP is not exceeded, from 2013 figures the WWTP is running well below design capacity.
Four samples per year are required under schedule B.2 of the discharge licence, six sample analyses carried out in 2013 for the ambient monitoring, both upstream and downstream of the primary discharge. pH and dissolved Oxygen (DO) results recorded are also required quarterly, the results since

the discharge licence was granted are tabulated in tables 2.3 and 2.4 attached in appendix 1. The ambient monitoring results for 2013 indicate that the river already exceeds the Surface Water Quality Regulations 2009 Environmental Quality Standards (EQS) for the parameters BOD, MRP (Ortho P) and total ammonia upstream, as the averages are above the 'good status' mean figures of 1.5mg/l, 0.035mg/l and 0.065mg/l. The downstream average results are lower than the upstream averages, with upstream results generally higher than downstream results, thus indicating that there are other sources affecting the river water quality. These results concur with the designated 'moderate' status quality water in the river.

2.4 Data Collection and reporting requirements under the UWWT Directive.

This information will be submitted separately to the EPA through EDEN.

2.5 Pollutant Release and Transfer Register (PRTR).

The PRTR is not required for the Newbliss agglomeration as the p.e. is less than 2,000.

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

Table 1.3

Treatment Efficiency Report Summary Table			
	cBOD mg/l (kg/day)	COD mg/l (kg/day)	Comment
Influent mass loading (kg/day)	111	291	
Effluent mass emission (kg/day)	6.86	36.43	
% Efficiency (% reduction of influent load)	93.79	87.50	

As required under condition 4.13 of the licence, bi-monthly monitoring of the influent stream to the WWTP for cBOD and COD measuring mass loadings and removal efficiencies has been calculated and tabulated in table 1, appendix 1. A summary of the removal efficiencies for the WWTP is as follows:

BOD – range 76 -97%, average 94%
COD – range 35 – 94%, average 88%

The removal efficiencies for BOD and COD are considered adequate for the WWTP. There is one low influent result for COD on the 22/03/2013 at 91mg/l in comparison to the average influent COD of 571mg/l, hence the removal efficiency result on that date is only 35%. The average removal efficiency however, inclusive of this low percentage is considered adequate at 88%.

3.2 Treatment Capacity Report

This assessment has been completed in section 2.1(table 1.2) of this report.

3.3 Complaints Summary

There were no complaints of an environmental nature related to the discharge to waters from the Newbliss WWTP in 2013.

3.4 Reported Incidents Summary

The discharge from the Newbliss WWTP had four exceedances in 2013. Interpretation of the results is in accordance with the Urban Waste Water Treatment Regulations 2001 (UWWT Reg's) until the 4th September and in accordance with the discharge licence conditions from this date. Two allowable exceedances for BOD and suspended solids at 45mg/l and 57mg/l respectively occurred on 02/05/2013, (UWWT Reg's 2001, fifth schedule

interpretation). Two reportable incident exceedances occurred for BOD and ammonia at 16mg/l and 12.62mg/l respectively on 24/09/2013 reported to the EPA under incident number INC002877. There was no cause identified for these exceedances at the Waste Water Treatment Plant (WWTP) and the trend prior to and after the exceedances for BOD and ammonia is under the Emission Limit Value (ELV) for the parameters. This incident is closed.

Summary of Incidents tables:

Incident Type	Incident description	Cause	No. of incidents	Corrective Action	Authorities Contacted	Reported to EPA	Closed
ELV exceedance	Ammonia 12.62mg/l and BOD 16mg/l ELV exceedances on 24/09/2013	No cause identified, normal WWTP activities	2	None, trend under ELVs prior to and after exceedance	No	Yes	Yes

Number of Incidents in 2013	2
No. Incidents reported to EPA via EDEN in 2013	2
Explanation of any discrepancies between the two numbers above	N/A

Section 4. Infrastructural Assessment & Programme of Improvements

4.1 Storm water overflow identification and inspection report

As per condition 4.11 of the licence, a report on the investigation for the identification and assessment of storm water overflows is required to be submitted as part of the second AER, including a determination of compliance with the criteria for storm water overflows as set out in the DoECLG document '*procedures and Criteria in Relation to Storm Water Overflows,*' 1995. An update is required for the years between reviews (e.g. years 3,4, 6 & 7etc.). As this is the first AER for Newbliss, a storm water overflow report is not required. A summary table is included as follows:

SWO Identification and Inspection Summary Report Table A:

WWDL Name/Code for Storm Water Overflow	SWO03
IGR	256277E, 323714N
Included in Schedule A3 of the WWDL	Yes
Compliance with DoEHLG Criteria	Not assessed – not required until 2nd AER.
No. of times activated in 2013	3
Total volume discharged (m3)	Unknown
Total volume discharged in 2013 (P.E.)	Unknown
Estimated/Measured Data	Estimated

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

As per condition 5.1 of the discharge licence, as part of the second AER, *'a programme of infrastructural improvements to maximise the efficiency and effectiveness of the waste water works shall be prepared and submitted'.* As this is the first AER for Newbliss, this report is not required until next year.

There is one specified improvement work under schedule C.1 of the discharge licence for the Newbliss WWTP to '*upgrade WWTP to ensure that ELVs are complied with'*, the completion date specified is 31/12/2019. Lower ELVs are specified in the licence for the parameters ammonia and orthophosphate from 31/12/2019 for the discharge.

One other individual improvement identified for the Newbliss WWTP is to supply and install a flow measurement device on the storm water overflow pipe to measure spills to the river when they occur.

Improvement Summary Table

Improvement Identifier	Improvement Description	Improvement Source	Progress (% completed)	Expected Completion Date
No record of SWO activating or measurement or flows.	Install SWO measurement/recorder device to measure flows/record no. times it activates	Part. 4.2 of this report	0%	Dependant on Irish Water approval and Funding

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in 2013 AER or outstanding from previous AER	Included in 2013 AER	Reference to relevant section of AER
Priority Substance Assessment	Yes	Yes	Section 2.2
Drinking Water Abstraction Point Risk Assessment	No	No	N/A
Habitats Impact Assessment	No	No	N/A
Shellfish Impact Assessment	No	No	N/A
Pearl Mussel Report	No	No	N/A
Toxicity/Leachate Management	No	No	N/A
Toxicity of Final Effluent Report	No	No	N/A

Section 6. Certification and Sign Off

Annual Statement of measures

Annual Statement of Measures

Risk /Description of issue	Risk Score	Mitigation Measure to be taken	Outcome	Action	Date for Completion	Owner/ Contact Person
No record of SWO activating or measurement or flows.		Install SWO measurement/recorder device to measure flows/record no. times it activates			Dependant on Irish Water approval and funding	C McCrossan

The above identified improvement measures will be undertaken subject to Irish Water approval and funding.

Signed: Con Mc Crossan **Job Title:** A/SE

Name: Con Mc Crossan **Date:** 28/2/2014

Certification and Sign Off

Does the AER include and executive summary	Yes
Does the AER include and assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements/EQS)	Yes
Is there a need to advise the EPA for consideration of a technical amendment/review of the licence?	No
List reason e.g. additional SWO identified	N/A
Is there a need to request/advise the EPA of any modifications to the existing WWDL? (ref. cond. 1.7 & cond. 4)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports	N/A

Signed by: Con H Lynch Date: 28/2/2014

Position in Organisation: A/SE

Appendix 1

Table 1 & 1.1	Influent monthly monitoring summary tables
Table 1.2	Remaining Hydraulic & Organic treatment capacities
Table 1.3	Treatment Efficiency Report Summary Table
Table 2	Monitoring results for Newbliss WWTP
Table 2.1	Effluent monitoring results
Table 2.2	Influent monitoring results
Table 2.3	Upstream monitoring results
Table 2.4	Downstream monitoring results

Table 1

Newbliss Influent monthly monitoring template - as per condition 4.13 of licence.

Location	Daily Flow M3	Influent/ Effluent	Date of Sampling	BOD mg/l	cBOD Loading (Kg/day)	cBOD Removal Efficiency %	COD mg/l	COD Loading (Kg/day)	COD Removal Efficiency %
Newbliss	87.00	Influent	22/03/2013	26.00	2.26		91.00	7.92	
Newbliss	87.00	Effluent	22/03/2013	5.00	0.44	80.77	59.00	5.13	35.16
Newbliss	47.00	Influent	02/05/2013	195.00	9.17		907.00	42.63	
Newbliss	47.00	Effluent	02/05/2013	45.00	2.12	76.92	84.00	3.95	90.74
Newbliss	97.00	Influent	11/06/2013	76.00	7.37		109.00	10.57	
Newbliss	97.00	Effluent	11/06/2013	6.00	0.58	92.11	50.00	4.85	54.13
Newbliss	95.75	Influent	21/08/2013	402.00	38.49		813.00	77.84	
Newbliss	95.75	Effluent	21/08/2013	12.00	1.15	97.01	82.00	7.85	89.91
Newbliss	95.75	Influent	24/09/2013	193.00	18.48		609.00	58.31	
Newbliss	95.75	Effluent	24/09/2013	16.00	1.53	91.71	97.00	9.29	84.07
Newbliss	105.00	Influent	10/12/2013	331.00	34.76		896.00	94.08	
Newbliss	105.00	Effluent	10/12/2013	10.00	1.05	96.98	51.00	5.36	94.31

Table 1.1

Influent monitoring summary table

	BOD mg/l	COD mg/l	SS mg/l	TP mg/l	TN mg/l	Hydraulic Loading m3/day	Organic Loading PE/day
Number of samples	6	6	6	6	6	n/a	n/a
Maximum result	402.00	896.00	258.00	7.23	74.71	233	
Annual Mean	203.83	570.83	131.25	4.85	41.97	96	325

Table 1.2

Remaining Hydraulic & Organic treatment capacities summary table:	
Hydraulic Capacity - Design (M^3/day)	180
Hydraulic Capacity - Current loading (M^3/day)	96
Hydraulic Capacity - Remaining (M^3/day)	**84**
Organic Capacity - Design (PE)	1000
Organic Capacity - Current loading (PE)	325
Organic Capacity - Remaining (PE)	**675**
Will the capacity be exceeded in the next 3 years?	no

Table 1.3

Treatment Efficiency Report Summary Table			
	cBOD mg/l (kg/day)	COD mg/l (kg/day)	Comment
Influent mass loading (kg/day)	111	291	
Effluent mass emission (kg/day)	6.86	36.43	
% Efficiency (% reduction of influent load)	93.79	87.50	

Table 2 Monitoring Results for Newbliss WWTP

Location	Flow M3/day	Location	Date of Sampling	Sample Type (C or G)	Temp	pH	cBOD mg/l	COD mg/l	Suspended Solids mg/l	Ortho Phosphorus (as P) mg/l	Ammonia (as N)	Total Nitrogen mg/l (as N)	Total Phosphorus mg/l (as P)	Dissolved Oxygen (DO)
Newbliss		Influent	22/03/2013	C			26.00	91.00	34.00			8.00	1.180	
Newbliss		Effluent	22/03/2013	C			5.00	59.00	3.00	2.580	1.000	28.82	2.760	
Newbliss		Up Stream Of Works	22/03/2013	G			2.00			0.024	0.051			
Newbliss		Down Stream of Works	22/03/2013	G			0.90			0.047	0.100			
Newbliss		Influent	02/05/2013	C			195.00	907.00	66.00			40.22	5.330	
Newbliss		Effluent	02/05/2013	C			45.00	84.00	57.00	2.080	8.121	27.60	4.250	
Newbliss		Up Stream Of Works	02/05/2013	G			2.00			0.040	0.121			
Newbliss		Down Stream of Works	02/05/2013	G			2.00			0.028	0.173			
Newbliss		Influent	11/06/2013	C			76.00	109.00	32.00			32.76	3.210	
Newbliss		Effluent	11/06/2013	C			6.00	50.00	9.00	3.563	2.433	38.20	3.840	
Newbliss		Up Stream Of Works	11/06/2013	G			3.00			0.019	0.106			
Newbliss		Down Stream of Works	11/06/2013	G			3.00			0.019	0.117			
Newbliss		Influent	21/08/2013	C			402.00	813.00	174.20			31.90	5.020	
Newbliss		Effluent	21/08/2013	C			12.00	82.00	30.00	0.669	0.095	41.20	1.300	
Newbliss		Up Stream Of Works	21/08/2013	G			0.90			0.137	3.394			
Newbliss		Down Stream of Works	21/08/2013	G			0.90			0.128	0.068			
Newbliss		Influent	24/09/2013	C			193.00	609.00	258.00			74.71	7.150	
Newbliss		Effluent	24/09/2013	C			16.00	97.00	29.00	0.556	12.620			
Newbliss		Up Stream Of Works	24/09/2013	G			0.90			0.087	0.047			
Newbliss		Down Stream of Works	24/09/2013	G			0.90			0.059	0.120			
Newbliss		Influent	10/12/2013	C			331.00	896.00	223.30			64.20	7.230	
Newbliss		Effluent	10/12/2013	C			10.00	51.00	20.00	0.918	8.010			
Newbliss		Up Stream Of Works	10/12/2013	G			0.90			0.059	0.110			
Newbliss		Down Stream of Works	10/12/2013	G			0.90			0.048	0.073			

Table 2.1

Effluent monitoring results: Note ELV's in red text from 4th September 2013

Location	Daily Flow M3/day	Effluent	Date of Sampling	Sample Type (C or G)	Temp	pH 6 - 9	cBOD mg/l 10mg/l	COD mg/l 100mg/l	Suspended Solids mg/l 35mg/l	Ortho Phosphate (as P) mg/l 1.5mg/l	Ammonia (as N) 8.0mg/l	Total Nitrogen mg/l	Total Phosphorus mg/l
Newbliss	87	Effluent	22/03/2013	C			5.00	59.00	3.00	2.580	1.000	28.82	2.760
Newbliss	47	Effluent	02/05/2013	C			45.00	84.00	57.00	2.080	8.121	27.60	4.250
Newbliss	97	Effluent	11/06/2013	C			6.00	50.00	9.00	3.563	2.433	38.20	3.840
Newbliss		Effluent	21/08/2013	C			12.00	82.00	30.00	0.669	0.095	41.20	1.300
Newbliss		Effluent	24/09/2013	C		8.29	16.00	97.00	29.00	0.556	12.620		
Newbliss	105	Effluent	10/12/2013	C			10.00	51.00	20.00	0.918	8.010		
Average	84						15.67	70.50	24.67	1.728	5.380		
Condition 2 Licence: Interpretation							45mg/l = 1st allow. Failure UWWT reg's <50mg/l. 2nd failure 16mg/l (>20mg/l) =reported incident to EPA under INCI002877		57mg/l = 1st allow. Failure UWWT reg's <150% (87.5mg/l)		12.62mg/l = reportable incident >9.6mg/l INCI002877	N/A	N/A
Condition 2 Licence: Interpretation						No allowable failures. No deviation allowed	1 allowable failure provided under 100% of ELV (20mg/l)	1 allowable failure provided under 100% of ELV (200mg/l)	1 allowable failure provided under 150% of ELV (87.5mg/l)	Eight out of ten consecutive samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (1.60mg/l)	Eight out of ten consecutive samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (9.6mg/l)		
Total incidents:							1	0	0	0	1	N/A	N/A

Effluent Monitoring Summary Table

	BOD mg/l	COD mg/l	SS mg/l	Ammonia mg/l	Total P mg/l	Ortho P mg/l	Total Nitrogen mg/l	Comments
WWDL ELV (schedule A)	10	100	35	8	N/A	1.5	N/A	
ELV with Cond. 2 interpretation	1 allowable failure provided under 100% of ELV (20mg/l)	1 allowable failure provided under 100% of ELV (200mg/l)	1 allowable failure provided under 150% of ELV (87.5mg/l)	Eight out of ten consecutive samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (9.6mg/l)	N/A	Eight out of ten consecutive samples shall not exceed ELV. No individual result shall exceed ELV by more than 20% = (1.60mg/l)	N/A	6 samples taken, therefore 1 'allowable' failure
Number of sample results	6	6	6	6	6	6	6	
Number of sample results above WWDL ELV	2	0	1	1	N/A	0	N/A	
Annual Mean (for parameters where a mean ELV applies)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Overall compliance (Pass/Fail)	Fail	Pass	Pass	Fail	N/A	Pass	N/A	

Table 2.2
Influent monitoring results

Location	Flow M3/day	Location	Date of Sampling	Sample Type (C or G)	Temp	pH	cBOD mg/l	COD mg/l	Suspended Solids mg/l	Ortho Phosphorus (as P) mg/l	Ammonia (as N)	Total Nitrogen mg/l (as N)	Total Phosphorus mg/l (as P)	
Newbliss		Influent	22/03/2013	C			26.00	91.00	34.00			8.00	1.180	
Newbliss		Influent	02/05/2013	C			195.00	907.00	66.00			40.22	5.330	
Newbliss		Influent	11/06/2013	C			76.00	109.00	32.00			32.76	3.210	
Newbliss		Influent	21/08/2013	C			402.00	813.00	174.20			31.90	5.020	
Newbliss		Influent	24/09/2013	C			193.00	609.00	258.00			74.71	7.150	
Newbliss		Influent	10/12/2013	C			331.00	896.00	223.30			64.20	7.230	
Average							203.83	570.83	131.25			41.97	4.85	

Table 2.3
Upstream monitoring results

Location	Flow M3/day	Location	Date of Sampling	Sample Type (C or G)	Temp	pH	cBOD mg/l	COD mg/l	Suspended Solids mg/l	Ortho Phosphorus (as P) mg/l	Ammonia (as N)	Total Nitrogen mg/l (as N)	Total Phosphorus mg/l (as P)	Dissolved Oxygen (DO)
Newbliss		Up Stream Of Works	22/03/2013	G			2.00			0.024	0.051			
Newbliss		Up Stream Of Works	02/05/2013	G			2.00			0.040	0.121			
Newbliss		Up Stream Of Works	11/06/2013	G			3.00			0.019	0.106			
Newbliss		Up Stream Of Works	21/08/2013	G			0.90			0.137	3.394			
Newbliss		Up Stream Of Works	24/09/2013	G		7.82	0.90			0.087	0.047			8.27
Newbliss		Up Stream Of Works	26/10/2013	G		9.32								11.24
Newbliss		Up Stream Of Works	10/12/2013	G			0.90			0.059	0.110			
Average							1.62			0.061	0.638			

Table 2.4
Downstream monitoring results

Location	Flow M3/day	Location	Date of Sampling	Sample Type (C or G)	Temp	pH	cBOD mg/l	COD mg/l	Suspended Solids mg/l	Ortho Phosphorus (as P) mg/l	Ammonia (as N)	Total Nitrogen mg/l (as N)	Total Phosphorus mg/l (as P)	Dissolved Oxygen (DO)
Newbliss		Down Stream of Works	22/03/2013	G			0.90			0.047	0.100			
Newbliss		Down Stream of Works	02/05/2013	G			2.00			0.028	0.173			
Newbliss		Down Stream of Works	11/06/2013	G			3.00			0.019	0.117			
Newbliss		Down Stream of Works	21/08/2013	G			0.90			0.128	0.068			
Newbliss		Down Stream of Works	24/09/2013	G		7.64	0.90			0.059	0.120			9.97
Newbliss		Down Stream of Works	26/10/2013	G		9.74								11.17
Newbliss		Down Stream of Works	10/12/2013	G			0.90			0.048	0.073			
Average							1.43			0.055	0.109			