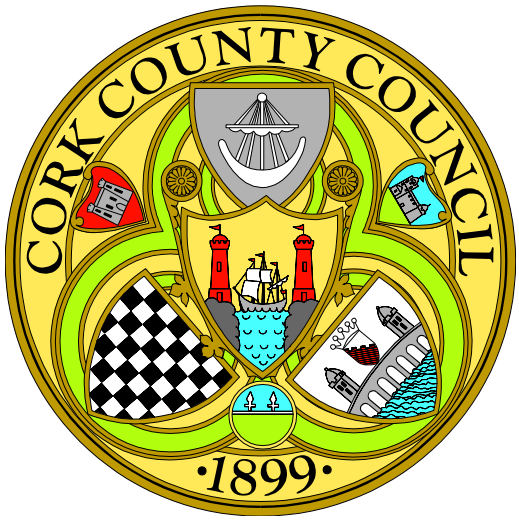

CHARLEVILLE AND ENVIRONS AGGLOMERATION ANNUAL ENVIRONMENTAL REPORT

14th MARCH 2011 – 31st DECEMBER 2011

CORK COUNTY COUNCIL – WATER SERVICES

ORIGINAL

Environmental Protection Agency
P.O. Box. 3000, Johnstown Castle Estate, County Wexford
Telephone : 053- 60600 Fax : 053 – 60699

Licence Reg. No.	**D0204-01**

Table of Contents

Revision Control Table

Rev. Nr:	Description of Changes:	Prepared by:	Checked by:	Approved by:	Date:
0	Issue to EPA	PB	BOS	BOS	24/02/11

1.0 Introduction and Background to 2011 AER

1.1 Summary Report on 2011

Cork County Council holds a Waste Water Discharge Licence (Register No. D0204-01) in respect of the Charleville and Environs Agglomeration. This licence was granted on 14th March 2011. The aim of this Annual Environmental Report (AER) is to provide a review of activities relevant to the discharge from the 14th March to the 31st December 2011.

The required scope of the report is outlined in Schedule D (Annual Environmental Report Content) of the Waste Water Discharge Licence.

1.2 Charleville Agglomeration

1.2.1 General

The wastewater from Charleville town and environs is collected through a pipe network and flows by gravity to the wastewater treatment plant in the townland of Ballincolly north–east of the town centre. The main source of emissions is the 600mm diameter discharge e pipe carrying the treated effluent from the wastewater treatment plant to Charleville Stream. Charleville Stream flows along the eastern boundary of the treatment plant. The maximum flow to the treatment plant is 12,300m3/day. Flows in excess of this are discharged via a 600mm diameter overflow pipe from the inlet flume directly to the Charleville Stream.

Charleville WWTP is currently operated by Cork County Council staff. The plant is manned during the working week 8.30am - 5.00pm (Monday - Friday) and the curator is also on site for a number of hours both Saturday and Sunday. 2 no Wastewater Curators and a general operative maintain the plant and network.

1.2.2 Existing Collection System

The wastewater from Charleville town and environs is collected through a pipe network and flows by gravity to the wastewater treatment plant in the townland of Ballincolly north–east of the town centre. The maximum flow to the treatment plant is 12,300m3/day. Flows in excess of this are discharged via a 600mm diameter overflow pipe from the inlet flume directly to the Charleville Stream. There are two overflow manholes located within the pipe network. A 225mm diameter pipe is located at a manhole on Glen Bridge, which allows overflows directly into Charleville Stream. There is also a 600mm diameter overflow pipe from a manhole located in the fire station, which overflows to the Old Mill Race.

1.2.3 Wastewater Treatment Plant

Charleville Wastewater Treatment Works was constructed on a green field site in the townland of Ballincolly, to the north east of Charleville. The area of the site is approximately 3.6 hectares. The plant is manned 08.30 to 17.00 from Monday to Friday.

The treatment plant is designed to cater for a population equivalent (p.e.) of up to 15,000. The design dry weather flow (DWF) for the plant is 2,050 m3/day. This equates to an average flow of

85 m3/hr. The p.e. and DWF are based on measured foul flows (1973). A provision has been made in the design of the plant to allow for expansion to 30,000 p.e. should it be required in the future.

Flows to the treatment plant are discharged into the inlet flume, which contains screens and flow controls. Following screening, the inlet flume allows 510 m3/hr(6DWF) to pass into the splitter chamber. At present the plant is capable of handling 6DWF. Flows in excess of this overflow directly to Charleville Stream from the inlet flume of the treatment plant. In the intended design, influent flows to the splitter chamber, and is divided evenly between two oxidation ditches as the design of the treatment plant is such that two separate process streams are provided. The design ensures that each stream can be operated in isolation, allowing the continuous treatment of wastewater while also enabling maintenance and repair work of the plant to be carried out. Given that the loading on the treatment plant is far less than it is designed for, the plant usually only operates one stream at a given time.

In each oxidation ditch, 4 no. 7m rotors are used to ensure that sludge remains in suspension at all times. From the ditches, the flow passes to the two clarifiers for the purpose of settling sludge. The sludge from the clarifier tanks is drawn off and passed to a picket fence thickener and then to the sludge dewatering building. Storage in bins is provided on site and the sludge is removed once a week. During times of year when spreading is restricted, the sludge is taken to from the picket fence thickener and transported to the sludge storage lagoon at Kanturk Wastewater Treatment Plant.

The effluent from the clarifiers is passed to the 600mm treatment plant outlet pipe and to Charleville Stream. Final effluent sampling and measurement takes place in the outlet flume.

1.2.4 Quality of Effluent

The Waste Water Discharge Licence dictates the standards to which the plant must treat effluent.

Table 1.2.4.1 Primary Wastewater Discharge Limits

Parameter	Emission Limit Value	
pH	**6-9**	
Unit	**mg/L**	
CBOD	6.5	
COD	80	
Suspended Solids	15	
Ammonia(as N)	2 **Note 1**	0.35 **Note 2**
Orthophosphate (as P)	1 **Note 1**	0.19 **Note 2**

Note 1: Emission limit values shall until the 31st December 2019
Note 2: Emission limit values shall from the 1st January 2020

1.2.5 Sources of Emissions from the Waste Water Works

The wastewater from Charleville town and environs is collected through a pipe network and flows by gravity to the wastewater treatment plant in the townland of Ballincolly north-east of the town centre. The main source of emissions is the 600mm diameter discharge pipe carrying the treated effluent from the wastewater treatment plant to Charleville Stream. Charleville Stream flows along the eastern boundary of the treatment plant.

The maximum flow to the treatment plant is 12,300m3/day. Flows in excess of this are discharged via a 600mm diameter overflow pipe from the inlet flume directly to Charleville Stream

There are 2 no overflow manholes located within the pipe network. A 225 mm diameter pipe is located at a manhole on Glen Bridge, which allows overflows directly to Charleville Stream. There is also a 600mm diameter overflow pipe from a manhole located in the fire station, which overflows to the Old Mill Race

The population of Charleville is given as 4008 persons in the preliminary figures from the 2011 Census, up from the 3,368 quoted for the previous census in 2006.

The sewerage system in Charleville is a primarily a separate storm and foul system. The industries which exist in Charleville have separate wastewater treatment plants and for the most part do not contribute to the flow in the foul sewer system

1.2.6 Present Capacities of the Plant

Biological Capacity of the Treatment Works

The capacity of the plant for carbonaceous BOD removal is ~15,000 PE (60g/h/d)

Hydraulic Capacity of the Treatment Works

The hydraulic capacity of the plant is stated as 12,300 m3/day (6DWF). Assuming 225 litres/person/day, the hydraulic capacity of the plant is ~54,000 PE

1.2.7 Brief Summary of 2012 Operations

- **ELV Exceedences**

The only ELV exceedence was for an Ammonia Level of 3.7mg/l on 16th Nov 2011

- **Improvement Works**

Major Improvements works included the installation of variable speed drives on the rotors on the oxidation ditch, pre installation of ferric dosing systems, and the installation of fixed gas monitors in the dry well.

- **Flows**

Flows recorded appear high for the agglomeration being served. Seperate flow testing in early 2012 found a discrepancy of approx 19% over recording. Therefore the reliability of the flows recorded in 2011 are questionable. Further investigation of flow measurement at the plant will be undertaken in 2012. Further details in Section 2.1.4

2.0 Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Condition 4.14 states that;

"The licensee shall carry out monitoring of the influent stream to the waste water treatment plant for BOD, COD, Total Nitrogen and Total Phosphorus in order to measure the mass loadings and removal efficiencies within the treatment plant".

2.1.1 Influent Monitoring

During 2011 influent monitoring was carried out by the Wastewater laboratory of Cork County Councils Environment Section. The Wastewater laboratory is INAB accredited.

The summary of results of the influent monitoring carried out by the Wastewater Laboratory is detailed in **Table 2.1.1**. The full results of the influent monitoring carried out by the Wastewater Laboratory is detailed in **Appendix A**

Table 2.1.1.1: Wastewater Laboratory Influent Testing

	BOD (mg/l)	COD (mg/l)	SS(mg/l)	TP (mg/l)	TN(mg/l)	Loading (m3/day)	Loading (PE/day)
Number of Samples	9	9	0	9	9	8	8
Maximum Result	440	497	-------	5.05	34.13	10300	27889
Annual Mean	129.67	253.89	--------	2.49	21.49	5842.87	12626

2.1.2 Mass Loading Measurement

The Average Daily Flow into the WWTP on the days BOD samples were taken was 5842.87m^3/day.

The Average Daily Strength of the Influent in terms of BOD was 129.67 mg/L.

The UWWT Regs define 1 Population Equivalent (PE) as the load resulting from 60g of BOD. Assume 225L per person per day.

2.1.2.1 BOD Loading

$$PE = \frac{(5842.87 \times 1000) \times 129.67}{60 \times 1000}$$

PE = 12,626 PE

2.1.2.2 Hydraulic Loading

$$PE = \frac{(5842.57 \times 1000)}{225}$$

PE = 25,966 PE

The Mass Loading on the WWTP in terms of BOD is 12,626 PE.
The Mass Loading on the WWTP in hydraulic terms is 25,966 PE.

2.1.3 Removal Efficiencies

The Urban Waste Water Treatment Regulations 2001 (as amended in 2004), specifies in the Second Schedule the percentage reductions required. These are detailed in **Table 3.1**, together with the percentage reductions achieved. To be deemed efficient the WWTP should meet or exceed the required percentage reductions.

Table 2.1.3.1: Removal Efficiencies

Parameter	Influent (Average)	Effluent (Average)	Required UWWT Percentage Reduction	Actual Percentage Reduction
BOD	130	3.41	70-90%	97.4%
COD	254	16	75%	93.8%
NH3-N	21.5	0.83	70-80%	96.2%
TP	2.49	0.86	80%	65.5%

All of the required percentage reductions are met except for TP.

2.1.4 Interpretation of significance of results of influent monitoring

The provisional 2011 Census figures for Charleville (Rathluirc) indicate a population of 4,008 persons. In this context, the recorded mass loading in terms of BOD at 12,626 PE appears high, as does the mass loading in hydraulic terms of 25,966 BOD.

There were question marks about the reliability of the flows being recorded at the inlet works during the course of the year, as the figures appear high given the relative size of the agglomeration. Flowmeters (inlet and outlet) were calibrated on 27th May 2011. Inlet and outlet flows recorded are reasonably consistent with each other. However flow rates recorded after calibration were still found to be higher than expected.

In late 2011, Cork Co Council Zone 4 purchased a portable flow meter. Water Technology Ltd set up a test on the 14th February 2012 on the inlet works at Charleville WWTP, which continued until 20th February 2012. This test showed that flows recorded by the existing flowmeter were over recorded by an average of 18.86%. If this correction is applied, then

The Mass Loading on the WWTP in terms of BOD would be 10,624 PE.
The Mass Loading on the WWTP in hydraulic terms would be 21,846 PE

Further review of site records show that the lowest inflow recorded during the summer of 2011 was of the order 29.7 l/s (uncorrected)on August 7th. Corrected by the 18.86% over recording, this equates to 2158.9 m3/day. This indicates that approximately 9595 PE of the Mass Loading on the WWTP in Hydraulic Terms relates to infiltration.

These discrepancies will be investigated further in 2012, and it is expected that the Annual Environmental Report for 2012 will be able to determine flows to the Wastewater Treatment Plant in a more definitive fashion.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring

During 2011 effluent monitoring was carried out by the Wastewater Laboratory of Cork County Council's Environmental Section. The Wastewater Laboratory is INAB accredited.

The results of the effluent monitoring carried out by the Wastewater Laboratory are summarised below in **Table 2.2.1.1.** The full results of the effluent monitoring carried out by the Wastewater Laboratory is detailed in **Appendix B**

Table 2.2.1.1: Wastewater Laboratory Effluent Monitoring Summary Table

	BOD (mg/l)	**COD (mg/l)**	**TSS (mg/l)**	**Total P (mg/l)**	**Total N (mg/l)**	**O-PO4-P (mg/l)**	**Comment**
WWDL ELV (Schedule A)	6.5	80	15	No ELV	2	1	
ELV with Condition 2 Interpretation included	13	160	37.5	No ELV	2.4	1.2	
Number of Sample Results	9	9	9	18	9	9	
Number of Sample Results above WWDL ELV	1	0	0	n/a	1	2	
Number of Sample Results above ELV with Condition 2 Interpretation included	0	0	0	n/a	1	0	EPA notified of Exceedence
Annual Mean (for parameters where a mean ELV applies)	3.5636	17.833	4.068	0.8633	0.8277	0.7666	
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	n/a	Fail	Pass	

2.3 Ambient monitoring summary

Ambient monitoring was carried out upstream Cork County Council water quality section as part of the Licence condition. Upstream monitoring is conducted 50m upstream of the WWTP Primary Discharge Point, while the downstream moitoring is conducted 200m from the WWTP primary discharge point.

The Ambient Monitoring Results indicate that the Receiving Water Up-stream of the Primary Discharge is non compliant with both the Mean and 95%ile Environmental Quality Standards for 'Good Status' for BOD, Ammonia and Phosphorous as per the Surface Water Regulations.

The Ambient Monitoring Results Down-Stream illustrate the impact of the Primary Discharge on the Receiving Water. At the Down-Stream Monitoring Point, the Receiving Water is also non compliant with both the Mean and 95%ile Standard for 'Good Status' BOD, Ammonia, and Phosphorus.

Given that the river is moderately polluted before reaching the WWTP, it is clear that other upstream sources of pollution are negatively impacting on the streams water quality. The Maigue WMU action plan requires measures to be taken to restore the water quality to good status by 2021. From 2021 the ELVs for Ammonia and Orthophosphate will reduce to 0.35mg/l and 0.19mg/l respectively. At present the plant is not capable of meeting such stringent limits, and it will be necessary to provide tertiary treatment/nutrient removal at the WWTP, or relocation of the outfall in due course.

All of the ambient monitoring data are included in **Appendix C**.

2.4 Data collection and reporting requirements under the Urban Waste Water Treatment Directive

The effluent monitoring carried out by Cork County Council's Wastewater Laboratory included the Data Collection and Reporting Requirements under the UWWT Directive. The Data collected by the Wastewater Laboratory under the UWWT Directive was submitted online as required by the EPA. Cork County Council's internal Laboratory Test Report for these results is included in **Appendices A &B**

2.5 Pollutant Release and Transfer Register (PRTR) – report for previous year

The PRTR Report has been submitted online. A printout of the data submitted has been included in **Appendix D**.

3.0 Complaints and Incident Reports

3.1 Complaints Summary

Condition 6.4 states that:

"The licensee shall record all complaints of an environmental nature related to the discharge(s) to waters from the waste water works in accordance with the national environmental complaints procedure. Each such record shall give details of the date and time of the complaint, the name of the complainant (if provided), and the nature of the complaint. A record shall also be kept of the response made in the case of each complaint".

No complaints were received in 2011 relating to the discharge(s) to water from the wastewater works.

3.2 Reported Incidents Summary

Condition 6.1 states that;

"The licensee, shall notify the Agency by both telephone and facsimile, to the Agency's headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as is practicable after the occurrence of any incident (as defined in this licence). The licensee shall include as part of the notification, date and time of the incident, summary details of the occurrence, and where available, the steps taken to minimise any discharges".

Condition 6.3 states that;

"The licensee shall make a record of any incident. This record shall include details of the nature, extent, and impact of, and circumstances giving rise to the incident. The record shall include all corrective actions taken to manage the incident, to minimise the effect on the environment, and to avoid recurrence. The licensee shall as soon as practicable following incident notification, submit to the Agency the incident record including clean up and recurrence prevention measures".

There was 1 no reportable incident during 2011, which related to a breach of ELV for ammonia on 16th Nov 2011. This notable incident was reported to the appropriate agencies.

The Incident Report Log and the Notifications are Included in **Table 3.1.1**, and are summarised as required in **Table 3.1.2**

Table 3.1.1: Incident Log and Notification Table

Date & Time	Incident Description	Cause	Corrective Action	Authorities Contacted	Reported to EPA (Yes/No)	Closed (Y/N)
16/11/11	Breach Of ELV (Ammonia 3.7mg/l)	Possible Shock Loading	Installation of diffused air in oxidation ditch subject to funding	Fisheries Ireland	Yes	Yes

Table 3.1.2 Incident Summary

Number of Incidents in 2011	1
Number of Incidents Reported to EPA in 2011	1
Explanation of any discrepancies between the two numbers above	n/a

4.0 Infrastructural Assessments and Programme of Improvements

4.1 Treatment Capacity

Condition 1.7.1 states that;

"The licensee shall, on an annual basis undertake an assessment of the remaining organic and hydraulic treatment capacities within the waste water works (design capacity of the plant, less flow load calculation for representative period)".

Charleville WWTP is designed to cater for a population equivalent (p.e.) of up to 15,000. The design dry weather flow (DWF) for the plant is 2,050 m3/day. Provision has been made in the design of the plant to allow for expansion to 30,000 p.e. should it be required in the future.

Biological Capacity of the Treatment Works

The capacity of the plant for carbonaceous BOD removal is 15,000 PE (60g/h/d)

Hydraulic Capacity of the Treatment Works

The hydraulic capacity of the plant is stated as 12,300 m3/day (6DWF). Assuming 225 litres/person/day, the hydraulic capacity of the plant is 54,667 PE

Current Loadings on the Treatment Works

In Section 2.1.2 of this report, The current Mass Loading on the WWTP in terms of BOD was determined to be 12,626 PE, while the Mass Loading in hydraulic terms was deemed to be 26,559 PE.

The Treatment Capacity Report is summarised in **Table 4.1.1**

Table 4.1.1 Treatment Capacity Report Summary Table

Hydraulic Capacity – Design / As Constructed (m^3/day)	54,667
Hydraulic Capacity – Current Loading (m^3/day)	25,966
Hydraulic Capacity – Remaining (m^3/day)	**28,701**
Organic Capacity – Design / As Constructed (P.E.)	15,000
Organic Capacity – Current Loading (P.E.)	12,626
Organic Capacity – Remaining (P.E.)	**2,374**
Will the Capacity be Exceeded in the next 3 Years?	No

4.2 Storm water overflow identification and inspection report

Condition 4.11.1 states that;

"The licensee shall…..carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflow shall be submitted to the Agency as part of the second AER. The assessment shall include a determination of compliance with the criteria for storm water overflows as set out in the DoEHLG "Procedures and Criteria in Relation to Storm Water Overflows", 1995 and any other guidance as may be specified by the Agency".

Condition 4.11.2 states that;

"The licensee shall carry out an assessment of storm water overflows at least once every three years thereafter and report to the Agency on each occasion as part of the AER. The assessment shall include a determination of compliance with the criteria for storm water overflows as set out in the DoEHLG "Procedures and Criteria in Relation to Storm Water Overflows", 1995 and any other guidance as may be specified by the Agency. The licensee shall maintain a written record of all assessments and remedial measures arising from the assessment".

Not Applicable in this AER.

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

Condition 5.1 states that;

"The licensee shall, as a part of the second AER .....prepare and submit to the Agency a programme of infrastructural improvements…..".

Not Applicable in this AER.

5.0 Environmental Liability and Financial Provisions

5.1 Statement of Measures

Condition 7.2.1 of the licence states that;

"The licensee shall a part of the AER provide an annual statement as to the measures taken or adopted in relation to the prevention of environmental damage and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events or accidents/incidents, as may be associated with discharges or overflows from the waste water works".

The Statement of Measures forms part of the ELRA which is not required for this AER.

Cork County Council are in the process of assembling and collating data on all of its relevant sites in order that it can present its proposal to Irish Public Bodies Mutual Insurances Ltd. CCC at this stage has no indication of the cost of this type of cover for all of the relevant facilities in the county and is not in a position to indicate when it expects to have the matter resolved.

5.2 Environmental Liabilities Risk Assesment

Condition 7.2.2 of the License states

'The licensee shall arrange for the completion, by an independent and appropriately qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from present or planned discharges. A report on this assessment shall be submitted to the Agency for agreement as part of the second AER (required under Condition 6.10). The ELRA shall be reviewed as necessary to reflect any significant change to the volume or character of effluent discharged, and in any case every three years following initial agreement (the results of the review shall be notified as part of the AER).

Not applicable in this AER

6.0 Licence Specific Reports

Table 6.1 Licence Specific Reports Summary Table

Licence Specific Report	Required in 2011 AER	Included in 2011 AER	Location in 2011 AER
Priority Substances Assessment	Yes	Yes	Full report included in Appendix E.
Drinking Water Abstraction Point Risk Assessment	No	No	n/a
Habitats Impact Assessment	No	No	n/a
Shellfish Impact Assessment	No	No	n/a
Toxicity / Leachate Management	No	No	n/a

6.1 Priority Substances Assessment

Condition 4.10.1 of the Licence states '*A representative sample of effluent from the primary discharge point shall be screened for the presence of organic compounds and metals within twelve months of the date of grant of this licence. The list of parameters for analysis shall include, as a minimum, those organic compounds and metals identified as relevant having regard to the Water Policy Regulations 2003 and amendments (S.I. No. 722 of 2003 and amendments) and any other relevant legislation. Such screening shall be repeated at intervals as requested by the Agency thereafter.*'

Condition 4.10.2 of the Licence states '*The licensee, shall within twelve months of the date of grant of this licence, investigate the sources of dangerous substances detected during the monitoring of discharges and take such measures as are necessary to reduce or eliminate these substances in the primary discharge. A report on the investigation and measures identified, including timeframe for implementation, shall be included in the AER.*'

Priority Substances Assessment was undertaken by Fitz Scientific on behalf of Cork County Council. Full details of the analysis completed are included in **Appendix E**. (attached).

6.2 Drinking Water Abstraction Point Risk Assessment

Not applicable to the WWDL for this agglomeration

6.3 Habitats Impact Assessment Report

Not applicable to the WWDL for this agglomeration

6.4 Shellfish Impact Assessment Report

Not applicable to the WWDL for this agglomeration

6.5 Toxicity / Leachate Management

Not applicable to the WWDL for this agglomeration

.

7.0 Certification and Sign Off

Does the AER include an executive summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works i.e. have the results of assessments been interpreted against WWDL requirements and / or Environmental Quality Standards?	Yes
Is there a need to advise the EPA for consideration of a technical amendment / review of the licence?	No
List reason	n/a
Is there a need to request / advise the EPA of any modifications to the existing WWDL? See Condition 1.7 (changes to works / discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason	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 a Appendix to this AER?	n/a

I hereby submit Annual Environmental Report for the Charleville Agglomeration, Waste Water Licence No. D0204-01 for 2011.

I hereby certify that the information contained within this Report is truthful, accurate and complete.

Signed by : _____ **Date :** _____

Print signature name : _____

Position in organisation : _____

8.0 Appendix

Appendix A Influent Monitoring

Charleville Influent D0204-01										
DATE	20/04/2011	26/05/2011	23/06/2011	21/07/2011	25/08/2011	21/09/2011	19/10/2011	16/11/2011	14/12/2011	Mean Value
Sample	Influent	Influent	Influent	Influent	Influent	Influent	Influent	Influent	Influent	
Sample Code	GV296	GV422	GV498	GV625	GV782	GV881	GV1014	GV1088	GV1219	
BOD mg/L	205	440	42	102	106	101	111	33	27	129.666667
COD mg/L	349	497	125	276	391	208	273	122	44	253.888889
TN-N mg/L	3.79	18.89	15.27	29.36	28.55	34.13	22.07	28.59	12.74	21.4877778
TP-P mg/L	5.05	3.35	1.36	2.79	1.56	3.64	2.48	1.26	0.88	2.48555556

Appendix B Effluent Monitoring

Sample Date	10/02/2011	10/03/2011	20/04/2011	26/04/2011	17/05/2011	26/05/2011	07/06/2011
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
Sample Type	composite	composite	composite	composite	grab	composite	grab
Sample Code	GV079	GV192	GV297	GV334	GV394	GV423	GV450
Flow M^3/Day	12297	*	10573	*	*	3803	*
pH	*	*	8.2	*	*	8.1	*
Conductivity uS/cm 20°C	*	*	594	570	612	562	622
Suspended Solids mg/L	14	4.0	4.0	*	*	3.0	*
Ammonia-N mg/L	*	*	0.2	*	*	0.05	*
BOD mg/L	5.8	2.7	3.3	*	*	3.5	*
COD mg/L	23	31	28	*	*	23	*
TP-P mg/L	*	*	1.04	1.43	1.19	1.1	1.82
O-PO4-P mg/L	*	*	0.95	*	*	0.97	*

Sample Date	23/06/2011	07/07/2011	21/07/2011	10/08/2011	25/08/2011	08/09/2011	21/09/2011
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
Sample Type	composite	grab	composite	Composite	Composite	Composite	Composite
Sample Code	GV499	GV565	GV626	GV687	GV783	GV856	GV882
Flow M^3/Day	3261		3897	*	3336	3302	3523
pH	8.0		8.1	*	8.2	*	8.1
Conductivity uS/cm 20°C	620	472	584	552	553	544	568
Suspended Solids mg/L	3.0		4.0	*	1.25	*	1.25
Ammonia-N mg/L	0.05		1.0	*	1.7	*	0.05
BOD mg/L	2.9		4.1	*	2.9	*	1.6
COD mg/L	10.5		10.5	*	10.5	23	10.5
TP-P mg/L	1.02	0.62	0.7	0.77	0.65	0.45	0.56
O-PO4-P mg/L	1.14		0.7	*	0.77	*	0.51

Sample Date	06/10/2011	19/10/2011	01/11/2010	16/11/2011	06/12/2011	14/12/2011
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
Sample Type	Composite	Grab	Composite		Composite	Composite
Sample Code	GV942	GV1015	GV1046	GV1089	GV1176	GV1220
Flow M^3/Day	4682	4417	4568	4140	8371	*
pH	*	7.5	*	8		7.7
Conductivity uS/cm 20°C	573	485	533	681	524	567
Suspended Solids mg/L	*	6	*	1.25		3
Ammonia-N mg/L	*	0.5	*	3.7		0.2
BOD mg/L	*	7.9	*	2.2		2.3
COD mg/L	*	10.5	*	23		10.5
TP-P mg/L	0.91	1.22	0.79	0.42	0.74	0.11
O-PO4-P mg/L	*	1.18	*	0.36		0.32

Sample Date / **Sample** / **Sample Type** / **Sample Code**	**Mean Value**	**Limit Value**	**% Compliance with ELV Limits Schedule A.1**	**% Compliance with Condition 2.1**	**% Compliance with Schedule B1**
Flow M^3/Day	**5397.692308**				
pH	**7.988888889**	**6.0-9.0**	100	100	n/a
Conductivity uS/cm 20°C	**567.5555556**	**no ELV**	100	100	90
Suspended Solids mg/L	**4.0682**	**15**	100	100	100
Ammonia-N mg/L	**0.827777778**	**2**	89	0**	100
BOD mg/L	**3.5636**	**6.5**	91	100	100
COD mg/L	**17.8333**	**80**	100	100	100
TP-P mg/L	**0.863333333**	**no ELV**			90
O-PO4-P mg/L	**0.766666667**	**1**	78	100	82

Appendix C Ambient Monitoring

Charleville D0204-01Upstream and Downstream rivers

Sample Date	20/04/2011	26/05/2011	23/06/2011	21/07/2011	25/08/2011	21/09/2011	19/10/2011	16/11/2011	14/12/2011						
Sample	River	River	River	River	River	River	River	River	River						
Sample Code	GV298	GV424	GV500	GV627	GV784	GV883	GV1017	GV1091	GV1221						
Location	Upstream	Upstream	Upstream	Upstream	Upstream	Upstream	Upstream	Upstream	Upstream	Mean value	EQS Std Mean *	EQS Std Mean Compliance 2011	95% Percentile	EQS Std 95 Percentile *	EQS Std 95 % Compliance 2011
pH	8.3	8.4	8.3	8.4	8.4	8.3	8	8.4	8.1	8.288889	6.0 -9.0	yes	no value	no value	no value
Dissolved Oxygen (m	10.6	9.6	9.22	9.3	9.24	10.09	10.1	9.93	11.59	9.963333	no value	no value	no value	no value	no value
Temperature °C	11.1	14.0	14.7	15.0	11.4	12.2	15.1	12.3	5.8	12.4	no value	no value	no value	no value	no value
Ammonia-N mg/L	0.029	0.06	0.316	0.0494	0.0257	0.023	0.047	0.174	0.0705	0.088289	≤0.065	no	0.2663	≤0.140	no
BOD mg/L	2.9	2.3	3.0	8.0	1.4	1.3	2	0.5	1	2.488889	≤1.5	no	6.0	≤2.6	no
TN-N mg/L	3.0	2.29	3.47	2.35	2.85	2.54	2.33	2.61	4.46	2.9	no value	no value	no value	no value	no value
O-PO4-P mg/L	0.0264	0.04	0.084	0.042	0.095	0.0733	0.085	0.135	0.0737	0.072711	≤0.035	no	0.119	≤0.075	no
COD mg/L		<21		<21		*	<21	*	*	<21	no value	no value	no value	no value	no value

Sample Date	20/04/2011	26/05/2011	23/06/2011	21/07/2011	25/08/2011	21/09/2011	19/10/2011	16/11/2011	14/12/2011						
Sample	River	River	River	River	River	River	River	River	River						
Sample Code	GV299	GV425	GV501	GV628	GV785	GV884	GV1016	GV1090	GV1222						
Location	Downstream	Downstream	Downstream	Downstream	Downstream	Downstream	Downstream	Downstream	Downstream	Mean value	EQS Std Mean *	EQS Std Mean Compliance 2011	95% Percentile	EQS Std 95 Percentile *	EQS Std 95 % Compliance 2011
pH	8.2	8.1	8.2	8.1	8.1	8.1	7.9	8.1	8	8.088889	6.0 -9.0	yes	no value	no value	no value
Dissolved Oxygen (m	9.31	8.9	9.01	8.93	8.82	8.61	9.2	8.84	10.96	9.175556	no value	no value	no value	no value	no value
Temperature °C	11.9	14.0	14.4	15.3	11.7	12.8	15.3	12.1	6	12.61111	no value	no value	no value	no value	no value
Ammonia-N mg/L	0.025	0.05	0.241	0.199	0.315	0.0455	0.252	1.127	0.217	0.274611	≤0.065	no	0.8	≤0.140	no
BOD mg/L	2.4	1.3	2.9	3.2	3.5	1.2	6.8	5	3.3	3.288889	≤1.5	no	6.08	≤2.6	no
TN-N mg/L	6.55	6.62	5.32	3.91	5.39	5.53	4.7	9.5	6.39	5.99	no value	no value	no value	no value	no value
O-PO4-P mg/L	0.248	0.4	0.271	0.245	0.127	0.222	0.198	0.201	0.299	0.245444	≤0.035	no	0.3596	≤0.075	no
COD mg/L		<21		<21		*	<21	*	*	<21	no value	no value	no value	no value	no value

Appendix D PRTR

| PRTR# : D0204 | Facility Name : No treatment plant | Filename : D0204_2011.xls | Return Year : 2011 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011

1. FACILITY IDENTIFICATION

Parent Company Name	Cork County Council Northern Division
Facility Name	No treatment plant
PRTR Identification Number	D0204
Licence Number	D0204-01

Waste or IPPC Classes of Activity

No.	class_name
30.4	General

Address 1	William O'Brien Buildings
Address 2	Annabella
Address 3	Mallow
Address 4	Co. Cork
	Cork
Country	Ireland
Coordinates of Location	-8.67455 52.36944
River Basin District	IEGBNISH
NACE Code	3700
Main Economic Activity	Sewerage
AER Returns Contact Name	Gillian Vaughan
AER Returns Contact Email Address	CCCwastewater@corkcoco.ie
AER Returns Contact Position	Gillian Vaughan
AER Returns Contact Telephone Number	021 4276891
AER Returns Contact Mobile Phone Number	087 9091464
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(f)	Urban waste-water treatment plants

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4.1 RELEASES TO AIR

Link to previous years emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
01	Methane (CH4)	E	ESTIMATE		0.0	0.0	0.0	0.0
02	Carbon monoxide (CO)	E	ESTIMATE		0.0	0.1	0.0	0.1
03	Carbon dioxide (CO2)	E	ESTIMATE		0.0	65696.96	0.0	65696.96
05	Nitrous oxide (N2O)	E	ESTIMATE		0.0	0.6	0.0	0.6
07	Non-methane volatile organic compounds (NMVOC)	E	ESTIMATE		0.0	0.0	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	E	ESTIMATE		0.0	0.3	0.0	0.3
11	Sulphur oxides (SOx/SO2)	E	ESTIMATE		0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD				QUANTITY		
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: No treatment plant

Please enter summary data on the quantities of methane flared and / or utilised

	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	0.0				N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A	

Sheet: Releases to Waters

AER Returns Workbook

4.2 RELEASES TO WATERS Link to previous year's emissions data

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in Kilo			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
34	1,2-dichloroethane (EDC)	M	OTH	GC/MS	0.326507	0.365507	0.0	0.374
28	Aether	E		EPA WWTP Tool V4.0	0.022	0.022	0.0	0.001
91	Anthracene	E		EPA WWTP Tool V4.0	0.023	0.024	0.0	0.001
17	Arsenic and compounds (as As)	M	ALT	ICP-MS	0.667125	0.748125	0.069	0.033
27	Atrazine	E	OTH	LC-MS-MS	0.000507	0.000507	0.0	0.0
91	Benzo(g,h,i)perylene	M	OTH	HPLC	0.005069	0.005069	0.0	0.0
16	Cadmium and compounds (as Cd)	M	OTH	ICP-MS	0.143959	0.150959	0.0	0.007
26	Chlordane	E		EPA WWTP Tool V4.0	0.004	0.004	0.0	0.0
30	Chlorfenvinphos	E		EPA WWTP Tool V4.0	0.002	0.002	0.0	0.0
79	Chlorides (as Cl)	M	OTH	Colorimetry	22883.0	24027.15	0.0	1144.15
31	Chloroalkanes, C10-C13	E		EPA WWTP Tool V4.0	0.446	0.47	0.0	0.022
18	Chromium and compounds (as Cr)	M	OTH	ICP-MS	0.145441	0.149441	0.0	0.007
20	Copper and compounds (as Cu)	M	OTH	ICP-MS	9.824579	10.315579	0.0	0.491
42	Cyanides (as total CN)	M	OTH	Colorimetry	2.53467	2.66167	0.0	0.127
83	DDT	E		EPA WWTP Tool V4.0	0.023	0.024	0.0	0.001
72	Di-(2-ethyl hexyl) phthalate (DEHP)	M	OTH	LC-MS-MS	0.005069	0.005069	0.0	0.0
84	Diedrin	M	OTH	LC-MS-MS	0.005507	0.005507	0.0	0.0
87	Diuron	M	OTH	LC-MS-MS	0.012166	0.012166	0.0	0.0
88	Endosulphan	E		EPA WWTP Tool V4.0	0.013	0.014	0.0	0.001
89	Ethyl benzene	M	OTH	GC/MS	0.22812	0.23812	0.0	0.011
89	Fluoranthene	M	OTH	HPLC	0.005069	0.005069	0.0	0.0
83	Fluorides (as total F)	M	OTH	Colorimetry	868.3267	898.7307	0.0	30.41
90	Halogenated organic compounds (as AOX)	E		EPA WWTP Tool V4.0	5.09	5.345	0.0	0.255
42	Hexachlorobenzene (HCB)	E		EPA WWTP Tool V4.0	0.003	0.003	0.0	0.0
43	Hexachlorobutadiene (HCBD)	E		EPA WWTP Tool V4.0	0.002	0.002	0.0	0.0
89	Isodrin	M	OTH	LC-MS-MS	0.000507	0.000507	0.0	0.0
20	Lead and compounds (as Pb)	E	OTH	ICP-MS	0.694569	0.754569	0.0	0.060
46	Lindane	E		EPA WWTP Tool V4.0	0.005	0.005	0.0	0.0
21	Mercury and compounds (as Hg)	M	OTH	ICP-MS	0.020277	0.021277	0.0	0.001
90	Naphthalene	M	OTH	HPLC	0.005069	0.005069	0.0	0.0
22	Nickel and compounds (as Ni)	M	OTH	ICP-MS	0.526681	0.578681	0.0	0.027
64	Nonylphenol and Nonylphenol ethoxylates (NP/NPEOs)	E		EPA WWTP Tool V4.0	0.141	0.148	0.0	0.007
59	Organotin compounds (as total Sn)	E		EPA WWTP Tool V4.0	0.021	0.022	0.0	0.001
48	Pentachlorobenzene	E		EPA WWTP Tool V4.0	0.002	0.002	0.0	0.0
71	Phenols (as total C)	M	OTH	GC/MS	0.050943	0.052593	0.0	0.002
53	Polychlorinated biphenyls (PCBs)	M	OTH	GC/MS	0.025347	0.026347	0.0	0.001
72	Polycyclic aromatic hydrocarbons (PAHs)	E		EPA WWTP Tool V4.0	1.721	1.807	0.0	0.086
52	Tetrachloroethylene (PER)	M	OTH	GC/MS	0.197704	0.207704	0.0	0.01
73	Toluene	M	OTH	GC/MS	0.273744	0.286744	0.0	0.013
12	Total nitrogen	E		EPA WWTP Tool V4.0	13046.15	14460.01	0.0	1411.45
76	Total organic carbon (TOC) (as total C or COD/3)	M	OTH	TOC analyser (NPOC)	4833.376	4985.0448	0.0	201.6688
13	Total phosphorus	E		EPA WWTP Tool V4.0	5027.58	5406.07	0.0	380.49
51	Trichloroethylene	M	OTH	GC/MS	1.2645	1.2645	0.0	0.06
71	Tributyltin	E		EPA WWTP Tool V4.0	0.004	0.004	0.0	0.0
75	Triphenyltin and compounds	E		EPA WWTP Tool V4.0	0.004	0.004	0.0	0.0
80	Vinyl chloride	E		EPA WWTP Tool V4.0	0.107	0.112	0.0	0.005
79	Xylenes	M	OTH	GC/MS	0.243539	0.255539	0.0	0.012
24	Zinc and compounds (as Zn)	M	OTH	ICP-MS	19.11141	20.08641	0.0	0.955
54	Trichlorobenzenes (TCB)(all isomers)	M	OTH	GC/MS	0.2403539	0.2728539	0.0175	0.012
82	Benzene	M	OTH	GC/MS	0.236539	0.248239	0.0	0.011
85	Dichloromethane (DCM)	M	OTH	GC/MS	2.53467	2.66167	0.0	0.127
47	Isoproturon	M	OTH	LC-MS-MS	0.000507	0.000507	0.0	0.0
91	Simazine	M	OTH	LC-MS-MS	0.000507	0.000507	0.0	0.0
44	1,2,3,4,5,6-Hexachlorocyclohexane(HCH)	E		EPA WWTP Tool V4.0	0.035	0.037	0.0	0.001

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in Kilo			
POLLUTANT		Method Used			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in Kilo			
POLLUTANT		Method Used			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
305	COD	M	OTH	electrochemical	31342.09	32901.564	0.0	1559.504
303	BOD	M	OTH	electrochemical	6273.082	6586.7361	0.0	313.6541
245	Suspended Solids	M	OTH	gravimetric	7191.339	7519.2979	0.0	358.0919
236	Ammonia (as N)	M	OTH	colourimetric	1457.14	1529.997	0.0	72.857
302	Ortho-phosphate (as PO4)	M	OTH	ICP-MS	1349.588	1417.044	0.0	67.479

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE | PRTR# : D0204 | Facility Name : No treatment plant | Filename : D0204_2011.xls | Return Year : 2011 | 22/02/2012 15:18

Please enter all quantities on this sheet in Tonnes 7

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	19 08 01	No	2.0	screenings	D2	M	Volume Calculation	Offsite in Ireland	Abbeyross Manufacturing Co Ltd t/a Munster Waste Management,WCP-CK-08-0603-02 & WFP-CK-09-0032-02	Spa Road,"","Mallow,Co Cork,Ireland		
Within the Country	19 08 05	No	258.24	sludges from treatment of urban waste water	R3	M	Weighed	Offsite in Ireland	McGill Ireland,EPA Licence W0180-1 EPA LicenceW0245-01 or Waste Facility Permit WFP-CK-09-011-02	Coom,"","Glenville,"","Ireland		
Within the Country	**19 08 05**	**No**	3320.0	sludges from treatment of urban waste water	D2	M	Volume Calculation	Offsite in Ireland	Abbeyross Manufacturing Co Ltd t/a Munster Waste Management,WCP-CK-08-0603-02	Kanturk WWTP (Lagoon),Cork County Council,Kanturk WWTP (Lagoon),Co Cork,Ireland		

* Select a row by double-clicking the Description of Waste then click the delete button

Appendix E Priority Substances

Report Details				
Lab Report Ref No.:	1128/034/07			
Date of Receipt:	01/07/2011			
Date Testing Commenced:	01/07/2011			
Received or Collected:	Courier : TPN			
Condition on Receipt:	Acceptable			
Client Ref:	Charleville GV544			
Sample Type:	Trade Effluent			
Test Parameter	**SOP**	**Analytical Technique**	**Result**	**Units**
1,2,4-Trichlorobenzene (Industrial Eff.)		GCMS	<0.48	ug/L
1,2-Dichloroethane (Industrial Eff.)		GCMS	<0.65	ug/L
2, 4-Dichlorophenol*		GCMS	<0.001	ug/L
2,6-Dichlorobenzamide*		LC-MS-MS	<0.01	ug/L
Antimony (Industrial Eff.)		ICPMS	<2.06	ug/L
Arsenic (Industrial Eff.)		ICPMS	0.658	ug/L
Atrazine (TF)*		LC-MS-MS	<0.0010	ug/L
Barium (Industrial Eff.)		ICPMS	224	ug/L
Benzene (Industrial Eff.)		GCMS	<0.47	ug/L
Benzo(a)pyrene HPLC		HPLC	<0.01	ug/L
Benzo(b)fluoranthene HPLC		HPLC	<0.01	ug/L
Benzo(g,h,i)perylene HPLC		HPLC	<0.01	ug/L
Benzo(k)fluoranthene HPLC		HPLC	<0.01	ug/L
Boron (Industrial Eff.)		ICPMS	764	ug/L
Cadmium (Industrial Eff.)		ICPMS	0.142	ug/L
Carbon tetrachloride (Industrial Eff.)		GCMS	<5.00	ug/L
Chloride (Industrial Eff.)		Colorimetry	45.14	mg/L
Chromium (Industrial Eff.)		ICPMS	<0.28	ug/L
Cobalt (Industrial Eff.)		ICPMS	<0.12	ug/L
Copper (Industrial Eff.)		ICPMS	9.69	ug/L
Cyanide		Colorimetry	<5	ug/L
DEHP*		LC-MS-MS	<0.01	ug/L
Dichlobenil (OC)*		LC-MS-MS	<0.0010	ug/L
Dichloromethane (Industrial Eff.)		GCMS	<5.00	ug/L
Dieldrin (OC)*		LC-MS-MS	<0.0010	ug/L
Diuron (SU)*		LC-MS-MS	0.012	ug/L
Ethylbenzene (Industrial Eff.)		GCMS	<0.45	ug/L
Fluoranthene HPLC		HPLC	<0.010	ug/L
Fluoride (Industrial Eff.)		Colorimetry	0.6	mg/L
Glyphosate*		LCMS/MS With	<0.05	ug/L

		Derivitisation		
Indeno(1,2,3-cd)pyrene HPLC		HPLC	<0.01	ug/L
Isodrin (OC)*		LC-MS-MS	<0.001	ug/L
Isoproturon* (SU)		LC-MS-MS	<0.0010	ug/L
Lead (Industrial Eff.)		ICPMS	0.69	ug/L
Linuron (SU)*		LC-MS-MS	<0.0010	ug/L
m- + p-Xylene (Industrial Eff.)		GCMS	<0.70	ug/L
MCPA (AH)*		LC-MS-MS	<0.05	ug/L
Mecoprop Total (AH)*		LC-MS-MS	0.092	ug/L
Mercury (Ind Effluent)		ICPMS	<0.04	ug/L
Molybdenum		ICPMS	<5	ug/L
Napthalene HPLC		HPLC	<0.01	ug/L
Nickel (Industrial Eff.)		ICPMS	<2.29	ug/L
o-Xylene (Industrial Eff.)		GCMS	<0.48	ug/L
Phenols (Total)		GCMS	<0.10	ug/L
Polychlorinated Biphenyls		GCMS	<0.05	ug/L
Selenium (Industrial Eff.)		ICPMS	<2.12	ug/L
Simazine (TF)*		LC-MS-MS	<0.0010	ug/L
Tetrachloroethene (Industrial Eff.)		GCMS	<0.39	ug/L
Tin		ICPMS	<2.8	ug/L
Toluene (Industrial Eff.)		GCMS	<0.54	ug/L
Total Organic Carbon		TOC analyser (NPOC)	4.57	mg/L
Trichloroethene (Industrial Eff)		GCMS	<5.00	ug/L
Vanadium (Industrial Eff.)		ICPMS	1.215	ug/L
Zinc (Industrial Eff.)		ICPMS	18.85	ug/L