SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)

Advice on completing this section is provided in the accompanying Guidance Note.

Detailed information is required to enable the Agency to assess the existing receiving environment. This section requires the provision of information on the ambient environmental conditions within the receiving water(s) upstream and downstream of any discharge(s).

Where development is proposed to be carried out, being development which is of a class for the time being specified under Article 24 (First Schedule) of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. **In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.**

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F.1. Assessment of Impact on Receiving Surface or Ground Water

- Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

- Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.

- For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.

- Provide details of the extent and type of ground emissions at the works. For larger discharges to groundwaters, e.g., from Integrated Constructed Wetlands, large scale percolation areas, etc., a comprehensive report must be completed which should include, inter alia, topography, meteorological data, water quality, geology, hydrology, and hydrogeology. The latter must in particular present the aquifer classification and vulnerability. The Geological Survey of Ireland Groundwater Protection Scheme Dept of the Environment and Local Government, Geological Survey of Ireland, EPA (1999) methodology should be used for any such classification. This report should also identify all surface water bodies and water wells that may be at risk as a result of the ground discharge.

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- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.

- Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.

- In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

  (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) —

  (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

  (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

  (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

  (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC[1] in accordance with the procedures laid down in Article 21 of that Directive,

  (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

  (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC[2];

[1]Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

[2]Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

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- Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.
- This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

Attachment included	Yes	No
	x	

F.2 Tabular Data on Drinking Water Abstraction Point(s)

not applicable

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
Abstraction Code	Agglomeration served	Abstraction Volume in m^3/day	Point Code Provide label ID's	Distance Downstream in meters from Emission Point to Abstraction Point	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

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Note: Attach any risk assessment that may have been carried out in relation to the abstraction point(s) listed.

An individual record (i.e. row) is required for each abstraction point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and E.3.

Attachment F.2 ***should contain any supporting information.***

not applicable

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations) (Secondary Discharge Point)

Discharge Point Code: ***SW 1 Fermoy Primary Discharge***

MONITORING POINT CODE: ***SW01Fermoy***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
pH	7.5	7.3	7.3	7.4		2	Electrochemical
Temperature	*	*	*			*	*
Electrical Conductivity (@25°C)	*	*	*	565		0.5 µmhos/cm	Electrochemical
Suspended Solids	7	4	6	4		0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	<0.1		0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	2.2	1.6	1.43	1.73		0.06 mg/L	Electrochemical
Chemical Oxygen Demand	<21	<21	<21	<21		8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*		*	*
Hardness (as $CaCo_3$)	*	*	*	*		*	*
Total Nitrogen (as N)	11.9	1.2	12.2	51		0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*		*	*
Nitrate (as N)	*	*	*	0.43		0.5 mg/L	Colorimetric
Total Phosphorus (as P)	1.44	0.97	1.79	1.5		0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	1.66	1.04		0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	<30	<30		30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	<0.1		0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent. **Note *= Not available**

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code:_____SW 1 Fermoy
MONITORING POINT CODE: ___*SW01Fermoy*_____

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
Atrazine	*	*	*	<0.01	Composite	0.96 µg/L	HPLC
Dichloromethane	*	*	*	<1	Composite	1 µg/L	GC-MS 1
Simazine	*	*	*	<0.01	Composite	0.01 µg/L	HPLC
Toluene	*	*	*	<0.01	Composite	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	Composite	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	<0.01	Composite	1 µg/L	GC-MS 1
Arsenic	*	*	*	10	Composite	0.96 µg/L	ICP-MS
Chromium	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Copper	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Cyanide	*	*	*	<5	Composite	5 µg/L	Colorimetric
Fluoride	*	*	*	<0.1	Composite	100 µg/L	ISE
Lead	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Nickel	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Zinc	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Boron	*	*	*	<20	Composite	20 µg/L	ICP-OES
Cadmium	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES
Mercury	*	*	*	<0.2	Composite	0.2 µg/L	ICP-MS
Selenium	*	*	*	4	Composite	0.74 µg/L	ICP-MS
Barium	<20	<20	<20	<20	Composite	20 µg/L	ICP-OES

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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: ***SW01 Fermoy (u)***

MONITORING POINT CODE: ***aSW01 Fermoy (u)***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
pH	*	8.0	7.8	7.6	Grab	2	Electrochemical
Temperature	*	*	*	*		*	*
Electrical Conductivity (@25°C)	*	*	*	180	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	<2.5	6	15	13	Grab	0.5 mg/L	Gravimetric
Ammonia (as N)	<0.1	<0.1	<0.1	0.1	Grab	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	6.1	3.56	1.6	3.62	Grab	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	38	Grab	8 mg/L	Digestion + Colorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	4.8	*	3	0.6	Grab	0.5 mg/L	Digestion + Colorimetric
Nitrite (as N)	*	*	*	0.0152	Grab	*	*
Nitrate (as N)	*	*	*	1.1	Grab	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	<0.2	<0.2	<0.2	<0.2	Grab	0.2 mg/L	Digestion + Colorimetric
Orthophosphate (as P) - unfiltered	*	*	<0.05	<0.05	Grab	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	<30	<30	Grab	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	<0.1	Grab	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)

Discharge Point Code: ***SW01 Fermoy (u)***

MONITORING POINT CODE: ***aSW01 Fermoy (u)***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
Atrazine	*	*	*	<0.01	Grab	0.96 µg/L	HPLC
Dichloromethane	*	*	*	<1	Grab	1 µg/L	GC-MS 1
Simazine	*	*	*	<0.01	Grab	0.01 µg/L	HPLC
Toluene	*	*	*	<0.01	Grab	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	<1.0	Grab	1 µg/L	GC-MS 1
Arsenic	*	*	*	11	Grab	0.96 µg/L	ICP-MS
Chromium	*	*	*	<20	Grab	20 µg/L	ICP-OES
Copper	*	*	*	<20	Grab	20 µg/L	ICP-OES
Cyanide	*	*	*	<5	Grab	5 µg/L	Colorimetric
Fluoride	*	*	*	<100	Grab	100 µg/L	ISE
Lead	*	*	*	<20	Grab	20 µg/L	ICP-OES
Nickel	*	*	*	<20	Grab	20 µg/L	ICP-OES
Zinc	*	*	*	<20	Grab	20 µg/L	ICP-OES
Boron	*	*	*	<20	Grab	20 µg/L	ICP-OES
Cadmium	*	*	*	<20	Grab	20 µg/L	ICP-OES
Mercury	*	*	*	<0.2	Grab	0.2 µg/L	ICP-MS
Selenium	*	*	*	4	Grab	0.74 µg/L	ICP-MS
Barium	*	*	*	<20	Grab	20 µg/L	ICP-OES

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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING
(Primary Discharge Point – one table per upstream and downstream location)

Discharge Point Code: ***SW01 Fermoy (d)***

MONITORING POINT CODE: ***aSW01 Fermoy (d)***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
pH	*	7.9	7.8	7.6	Grab	2	Electrochemical
Temperature	*	*	*	*		*	*
Electrical Conductivity (@25°C)	*	*	*	182	Grab	0.5 µmhos/cm	Electrochemical
Suspended Solids	<2.5	*	*	13	Grab	0.5 mg/L	Gravimetric
Ammonia (as N)	<0.1	<0.1	<0.1	<0.1	Grab	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	1.2	2.4	<1	3.58	Grab	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	<21	Grab	8 mg/L	Digestion + Colorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	4.5	*	3.6	35	Grab	0.5 mg/L	Digestion + Colorimetric
Nitrite (as N)	*	*	*	*	Grab	*	*
Nitrate (as N)	*	*	*	0.63	Grab	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	<0.2	<0.2	<0.2	<0.2	Grab	0.2 mg/L	Digestion + Colorimetric
Orthophosphate (as P) - unfiltered	*	*	0.05	0.05	Grab	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	<30	<30	Grab	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	<0.1	Grab	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)
(Primary Discharge Point - one table per upstream and downstream location)

Discharge Point Code: ***SW01 Fermoy (d)***

MONITORING POINT CODE: ***aSW01 Fermoy (d)***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	03/05/ 2007	28/06/ 2007	03/10/ 2007	24/10/ 2007			
Atrazine	*	*	*	<0.01	Grab	0.96 µg/L	HPLC
Dichloromethane	*	*	*	<1	Grab	1 µg/L	GC-MS 1
Simazine	*	*	*	<0.01	Grab	0.01 µg/L	HPLC
Toluene	*	*	*	<0.01	Grab	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	<1.0	Grab	1 µg/L	GC-MS 1
Arsenic	*	*	*	6	Grab	0.96 µg/L	ICP-MS
Chromium	*	*	*	<20	Grab	20 µg/L	ICP-OES
Copper	*	*	*	<20	Grab	20 µg/L	ICP-OES
Cyanide	*	*	*	<5	Grab	5 µg/L	Colorimetric
Fluoride	*	*	*	*	Grab	100 µg/L	ISE
Lead	*	*	*	<20	Grab	20 µg/L	ICP-OES
Nickel	*	*	*	<20	Grab	20 µg/L	ICP-OES
Zinc	*	*	*	<20	Grab	20 µg/L	ICP-OES
Boron	*	*	*	<20	Grab	20 µg/L	ICP-OES
Cadmium	*	*	*	<20	Grab	20 µg/L	ICP-OES
Mercury	*	*	*	1.5	Grab	0.2 µg/L	ICP-MS
Selenium	*	*	*	6	Grab	0.74 µg/L	ICP-MS
Barium	*	*	*	<20	Grab	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 2 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 2 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 3 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: Sw 3 Fermoy Upstream/Downstream

MONITORING POINT CODE: _____

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 4 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: SW 4 Fermoy Upstream/Downstream

MONITORING POINT CODE: _____

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 5 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***Sw 5 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 6 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: SW 6 Fermoy Upstream/Downstream

MONITORING POINT CODE: _____

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 7 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 7 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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TABLE F.1(ii)(a): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 8 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (mg/l[Note 1])				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
pH	*	*	*	*	*	2	Electrochemical
Temperature	*	*	*	*	*	*	*
Electrical Conductivity (@25°C)	*	*	*	*	*	0.5 µmhos/cm	Electrochemical
Suspended Solids	*	*	*	*	*	0.5 mg/L	Gravimetric
Ammonia (as N)	*	*	*	*	*	0.02 mg/L	Colorimetric
Biochemical Oxygen Demand	*	*	*	*	*	0.06 mg/L	Electrochemical
Chemical Oxygen Demand	*	*	*	*	*	8 mg/L	Digestion + Calorimetric
Dissolved Oxygen	*	*	*	*	*	*	*
Hardness (as $CaCo_3$)	*	*	*	*	*	*	*
Total Nitrogen (as N)	*	*	*	*	*	0.5 mg/L	Digestion + Calorimetric
Nitrite (as N)	*	*	*	*	*	*	*
Nitrate (as N)	*	*	*	*	*	0.5 mg/L	Colorimetric
Total Phosphorus (as P)	*	*	*	*	*	0.2 mg/L	Digestion + Calorimetric
Orthophosphate (as P) - unfiltered	*	*	*	*	*	0.02 mg/L	Colorimetric
Sulphate (SO_4)	*	*	*	*	*	30 mg/L	Turbidimetric
Phenols (sum) [Note 2] (ug/l)	*	*	*	*	*	0.1 µg/L	GC-MS 2

Note 1: Or other unit as appropriate – please specify.
Note 2: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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TABLE F.1(ii)(b): SURFACE/GROUND WATER MONITORING - (1 table per discharge point upstream and downstream locations)
(Secondary Discharge Point)

Discharge Point Code: ***SW 8 Fermoy Upstream/Downstream***

MONITORING POINT CODE: ***Not Available***

Parameter	Results (µg/l)				Sampling method (grab, drift etc.)	Limit of Quantitation	Analysis method / technique
	Date	Date	Date	Date			
Atrazine	*	*	*	*	*	0.96 µg/L	HPLC
Dichloromethane	*	*	*	*	*	1 µg/L	GC-MS 1
Simazine	*	*	*	*	*	0.01 µg/L	HPLC
Toluene	*	*	*	*	*	0.02 µg/L	GC-MS 1
Tributyltin	*	*	*	*	*	0.02 µg/L as Sn	GC-MS 1
Xylenes	*	*	*	*	*	1 µg/L	GC-MS 1
Arsenic	*	*	*	*	*	0.96 µg/L	ICP-MS
Chromium	*	*	*	*	*	20 µg/L	ICP-OES
Copper	*	*	*	*	*	20 µg/L	ICP-OES
Cyanide	*	*	*	*	*	5 µg/L	Colorimetric
Fluoride	*	*	*	*	*	100 µg/L	ISE
Lead	*	*	*	*	*	20 µg/L	ICP-OES
Nickel	*	*	*	*	*	20 µg/L	ICP-OES
Zinc	*	*	*	*	*	20 µg/L	ICP-OES
Boron	*	*	*	*	*	20 µg/L	ICP-OES
Cadmium	*	*	*	*	*	20 µg/L	ICP-OES
Mercury	*	*	*	*	*	0.2 µg/L	ICP-MS
Selenium	*	*	*	*	*	0.74 µg/L	ICP-MS
Barium	*	*	*	*	*	20 µg/L	ICP-OES

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