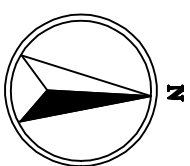


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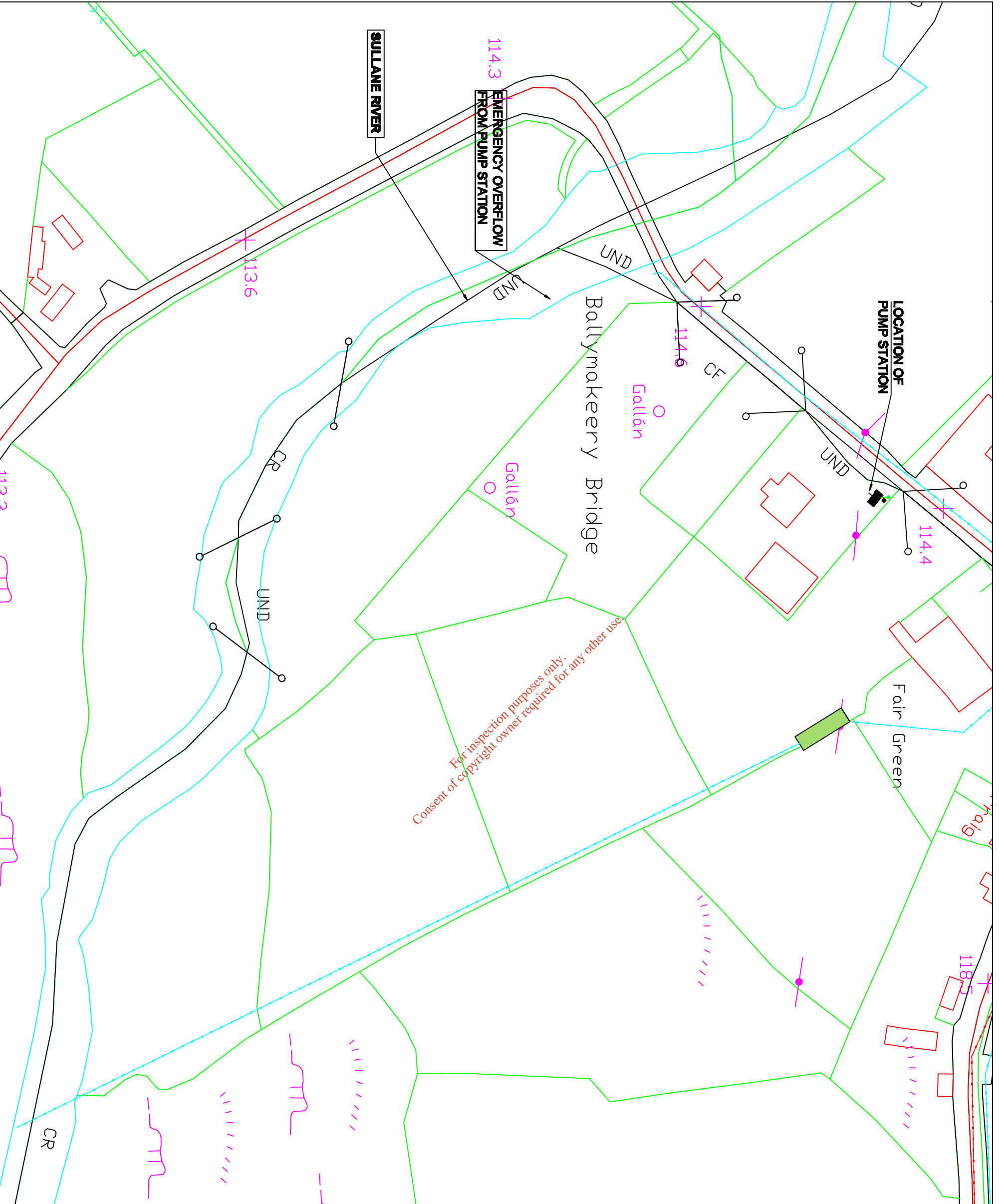
Rev.	Date	By	Description


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**Project:** BALLYMOURNEY / BALLYMAKERRY  
 WWTP WASTE WATER  
 DISCHARGE LICENCE APPLICATION

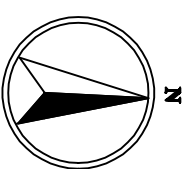
**Title:** APPLICATION FORM  
 ATTACHMENT C1 Map9  
 OPERATION INFORMATION REQUIREMENTS

Drawn	Checked	Approved	Date	Scale	Sheet	Total
ER	MH	MH	NOV 08	1:1000 @ A3	C1_Map9	1
SD	MH	MH	NOV 08	1:1000 @ A3	C1_Map9	1



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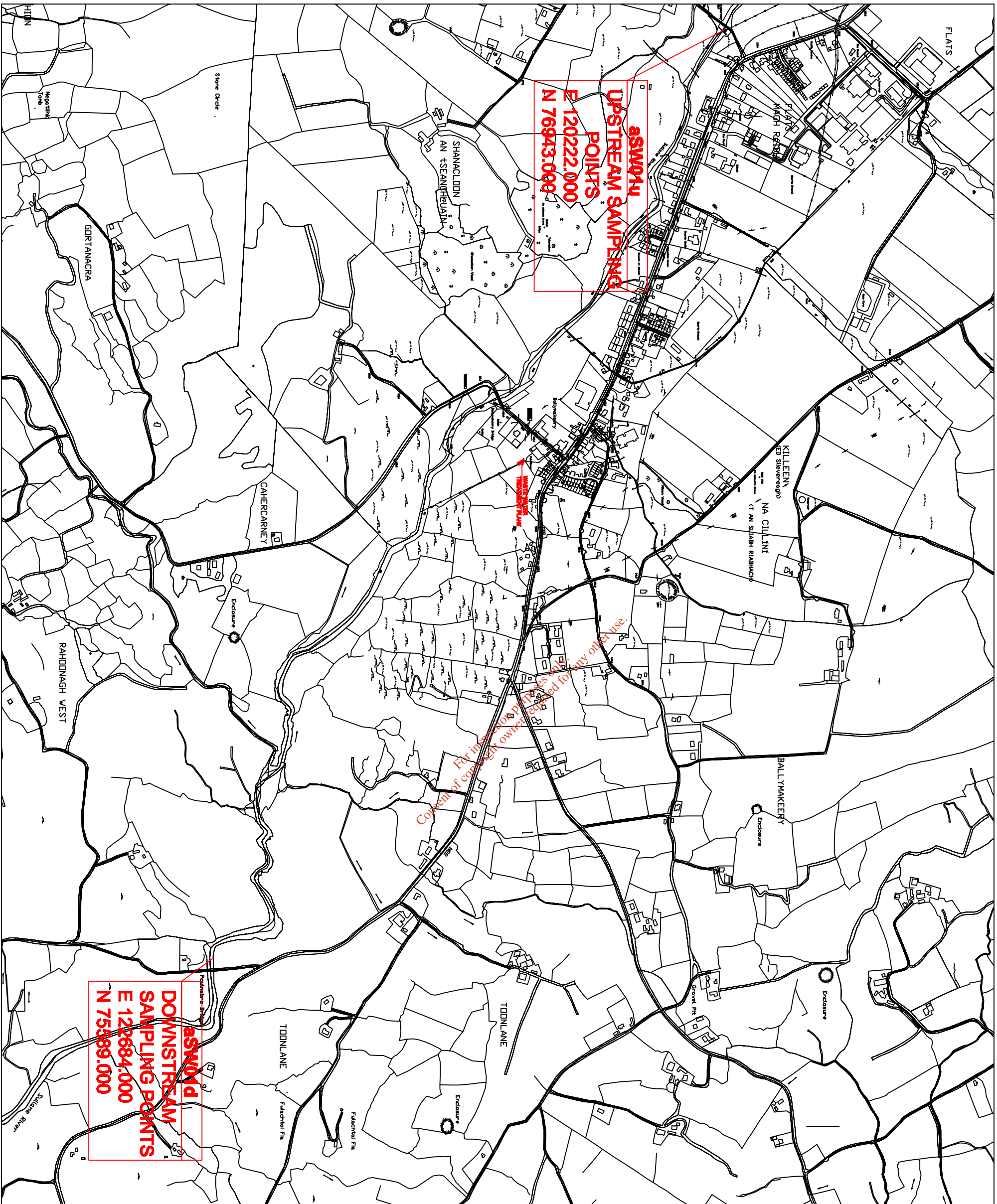
  
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<b>Project</b>			
BALLYVOURNEY / BALLYMAKEERRY WWTW WASTE WATER DISCHARGE LICENCE APPLICATION			
<b>Title</b>			
APPLICATION FORM ATTACHMENT C1.2, Map10 PUMP STATION OUTFALL			
<b>Designed</b>	<b>Checked</b>	<b>Scale</b>	<b>Drawing No.</b>
ER	MH	1:250 @ A3	C1.2_Map10
<b>Drawn</b>	<b>Approved</b>	<b>Date</b>	<b>Sheet</b>
SD	MH	NOV '08	1 of 1
<b>Rev</b>	<b>Rev</b>	<b>Rev</b>	<b>Rev</b>



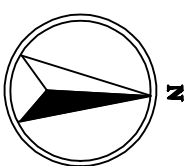






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**Project:** BALLVOURNEY / BALLYMAKERRY  
WWTP WASTE WATER  
DISCHARGE LICENCE APPLICATION

**Title:** APPLICATION FORM  
ATTACHMENT E2 Map11  
LOCATION OF UPSTREAM & DOWNSTREAM  
MONITORING POINTS

Drawn	Checked	Approved	Date	Scale	Sheet
ER	MH	MH	NOV 08	1:10,000 @ A3	E2_Map11
SD					







## Attachment E4 Ballymakeera Inlet Table E4

Sample Date	27/11/2008			
Sample	Influent	average	average	Average
Sample Code	GS1266	mg/l	kg/day	kg/year
Flow M <sup>3</sup> /Day	*	1485		
pH	7.2	7.2		
Temperature °C	*			
Cond 20°C	912	912		
SS mg/L	51	51	75.735	27643.275
NH <sub>3</sub> mg/L	7.4	7.4	10.989	4010.985
BOD mg/L	119	119	176.715	64500.975
COD mg/L	201	201	298.485	108947.025
TN mg/L	14	14	20.79	7588.35
Nitrite mg/L	<0.004	<0.004	<0.00594	<2.1681
Nitrate mg/L	<0.405	<0.405	<0.601425	<219.520125
TP mg/L	2.2	2.2	3.267	1192.455
O-PO <sub>4</sub> -P mg/L	0.89	0.89	1.32165	482.40225
SO <sub>4</sub> mg/L	165.2	165.2	245.322	89542.53
Phenols µg/L	<0.10	<0.0001	<0.0001485	<0.0542025
Atrazine µg/L	<0.01	<0.00001	<0.00001485	<0.00542025
Dichloromethane µg/L	<1	<0.001	<0.001485	<0.542025
Simazine µg/L	<0.01	<0.00001	<0.00001485	<0.00542025
Toluene µg/L	<1	<0.001	<0.001485	<0.542025
Tributyltin µg/L	*		0	0
Xylenes µg/L	<1	<0.001	<0.001485	<0.542025
Arsenic µg/L	1.3	0.0013	0.0019305	0.7046325
Chromium mg/L	<0.02	<0.02	<0.0297	<10.8405
Copper mg/L	<0.02	<0.02	<0.0297	<10.8405
Cyanide µg/L	<5	<0.005	<0.007425	<2.710125
Fluoride µg/L	395	0.395	0.586575	214.099875
Lead mg/L	<0.02	<0.02	<0.0297	<10.8405
Nickel mg/L	<0.02	<0.02	<0.0297	<10.8405
Zinc mg/L	<0.02	<0.02	<0.0297	<10.8405
Boron mg/L	0.136	0.136	0.20196	73.7154
Cadmium mg/L	<0.02	<0.02	<0.0297	<10.8405
Mercury µg/L	<0.2	<0.0002	<0.000297	<0.108405
Selenium µg/L	5.3	0.0053	0.0078705	2.8727325

Maximum Flow

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Barium mg/L	<0.02	<0.02	<0.0297	<10.8405
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## Attachment E4 Ballymakeera Discharge Outlet Table E4

Sample Date	18/10/2006	24/09/2008	09/10/2008	30/10/2008	27/11/2008				
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Average	Kg/Day	Kg/year	
Sample Code		GS998	GS1031	GS1171	GS1264	mg/l			
Flow M <sup>3</sup> /Day	*	*	*	*	*	1485			
pH	6.7	*	6.8	7.3	6.7	6.875			
Temperature °C	*	*	*	*	*				
Cond 20°C	*	*	*	494	422	458			
SS mg/L	3	100	114	73	83	74.6			
NH <sub>3</sub> mg/L	*	*	17.9	3.2	7.6	9.56666667	14.2065	5185.3725	
BOD mg/L	1.1	255	274	51.4	120	140.3	208.3455	76046.1075	
COD mg/L	<21	203	421	134	271	208	308.88	112741.2	
TN mg/L	8	*	23	11	16	14.5	21.5325	7859.3625	
Nitrite mg/L	*	*	*	*	<0.004	<0.004	<0.00594	<2.1681	
Nitrate mg/L	*	*	*	*	<0.405	<0.405	<0.601425	<219.520125	
TP mg/L	<0.2	*	4.4	1.1	4.3	2.475	3.675375	1341.511875	
O-PO <sub>4</sub> -P mg/L	*	*	1.6	0.12	0.7	0.80666667	1.1979	437.2335	
SO <sub>4</sub> mg/L	*	*	84.7	83.3	34.9	67.63333333	100.4355	36658.9575	
Phenols µg/L	*	*	*	*	<0.10	<0.0001	<0.0001485	<0.0542025	
Atrazine µg/L	*	*	*	*	<0.01	<0.0001	<0.0001485	<0.0542025	
Dichloromethane	*	*	*	*	<1	<0.001	<0.001485	<0.542025	
Simazine µg/L	*	*	*	*	<0.01	<0.00001	<0.00001485	<0.00542025	
Toluene µg/L	*	*	*	*	<1	<0.001	<0.001485	<0.542025	
Tributyltin µg/L	*	*	*	*	*	*	*	*	
Xylenes µg/L	*	*	*	*	<1	<0.001	<0.001485	<0.542025	
Arsenic µg/L	*	*	*	*	<0.96	<0.00096	<0.0014256	<0.520344	
Chromium mg/L	*	*	0.06	<0.02	<0.02	0.0267	0.0396495	14.4720675	
Copper mg/L	*	*	0.076	0.027	<0.02	0.0377	0.0559845	20.4343425	
Cyanide µg/L	*	*	*	*	<5	<0.005	<0.007425	<2.710125	
Fluoride µg/L	*	*	*	*	103	0.103	0.152955	55.828575	
Lead mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.0297	<10.8405	
Nickel mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.0297	<10.8405	
Zinc mg/L	*	*	0.027	0.03	0.061	0.0393	0.0583605	21.3015825	
Boron mg/L	*	*	0.636	0.287	<0.02	0.311	0.461835	168.569775	
Cadmium mg/L	*	*	<0.02	<0.02	<0.02	<0.02	<0.0297	<10.8405	
Mercury µg/L	*	*	*	*	<0.2	<0.0002	<0.000297	<0.108405	
Selenium µg/L	*	*	*	*	1	0.001	0.001485	0.542025	
Barium mg/L	*	*	0.034	0.034	<0.02	0.026	0.03861	14.09265	

Maximum Flow

## Attachment E4 Ballymakeera Upstream Table E4

Sample Date	24/09/2008	09/10/2008	30/10/2008	27/11/2008			
Sample	River	River	River	River	Average		
Sample Code	GS997	GS1032	GS1172	GS1265			
Flow M <sup>3</sup> /Day	*	*	*	*			
pH	*	*	7.3	7.4	7.35		
Temperature °C	*	*	*	*			
Cond 20°C	*	*	65	92	78.5		
SS mg/L	*	*	<2.5	4	3.75		
NH <sub>3</sub> mg/L	*	*	<0.1	<0.1	<0.1		
BOD mg/L	*	*	<1.0	<1.0	<1.0		
COD mg/L	*	*	21	<21	15.75		
TN mg/L	*	*	4	5	4.5		
Nitrite mg/L	*	*	*	<0.004	<0.004		
Nitrate mg/L	*	*	*	<0.405	<0.405		
TP mg/L	*	*	<0.20	<0.2	<0.20		
O-PO <sub>4</sub> -P mg/L	<0.05	<0.06	<0.05	<0.05	<0.05		
SO <sub>4</sub> mg/L	*	*	<30.0	<30	<30		
Phenols µg/L	*	*	*	<0.10	<0.10		
Atrazine µg/L	*	*	*	<0.01	<0.01		
Dichloromethane	*	*	*	<1	<1		
Simazine µg/L	*	*	*	<0.01	<0.01		
Toluene µg/L	*	*	*	<1	<1		
Tributyltin µg/L	*	*	*	*			
Xylenes µg/L	*	*	*	<1	<1		
Arsenic µg/L	*	*	*	<0.96	<0.96		
Chromium mg/L	*	*	<0.02	<0.02	<0.02		
Copper mg/L	*	*	<0.02	<0.02	<0.02		
Cyanide µg/L	*	*	*	<5	<5		
Fluoride µg/L	*	*	*	21	21		
Lead mg/L	*	*	<0.02	<0.02	<0.02		
Nickel mg/L	*	*	<0.02	<0.02	<0.02		
Zinc mg/L	*	*	<0.02	<0.02	<0.02		
Boron mg/L	*	*	<0.02	<0.02	<0.02		
Cadmium mg/L	*	*	<0.02	<0.02	<0.02		
Mercury µg/L	*	*	*	<0.2	<0.2		
Selenium µg/L	*	*	*	<0.74	<0.74		
Barium mg/L	*	*	0.095	0.047	0.071		

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## Attachment E4 Ballymakeera Downstream Table E4

Sample Date	24/09/2008	09/10/2008	30/10/2008	27/11/2008		
Sample	River	River	River	River	average	
Sample Code	GS999	GS1034	GS1173	GS1263		
Flow M <sup>3</sup> /Day	*	*	*	*		
pH	*	*	7.2	7	7.1	
Temperature °C	*	*	*	*		
Cond 20°C	*	*	74	102	88	
SS mg/L	*	*	<2.5	3	3.75	
NH <sub>3</sub> mg/L	*	*	<0.1	<0.1	<0.1	
BOD mg/L	*	*	<1.0	<1.0	<1.0	
COD mg/L	*	*	<21	<21	<21	
TN mg/L	*	*	5	4	4.5	
Nitrite mg/L	*	*	*	<0.004	<0.004	
Nitrate mg/L	*	*	*	0.574	0.574	
TP mg/L	*	*	<0.20	<0.2	<0.2	
O-PO <sub>4</sub> -P mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
SO <sub>4</sub> mg/L	*	*	<30.0	<30	<30	
Phenols µg/L	*	*	*	<0.10	<0.10	
Atrazine µg/L	*	*	*	<0.01	<0.01	
Dichloromethane	*	*	*	<1	<1	
Simazine µg/L	*	*	*	<0.01	<0.01	
Toluene µg/L	*	*	*	<1	<1	
Tributyltin µg/L	*	*	*	*		
Xylenes µg/L	*	*	*	<1	<1	
Arsenic µg/L	*	*	*	<0.96	<0.96	
Chromium mg/L	*	*	<0.02	<0.02	<0.02	
Copper mg/L	*	*	<0.02	<0.02	<0.02	
Cyanide µg/L	*	*	*	<5	<5	
Fluoride µg/L	*	*	*	25	25	
Lead mg/L	*	*	<0.02	<0.02	<0.02	
Nickel mg/L	*	*	<0.02	<0.02	<0.02	
Zinc mg/L	*	*	<0.02	<0.02	<0.02	
Boron mg/L	*	*	<0.02	<0.02	<0.02	
Cadmium mg/L	*	*	<0.02	<0.02	<0.02	
Mercury µg/L	*	*	*	<0.2	<0.2	
Selenium µg/L	*	*	*	1.3	1.3	

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Barium mg/L	*	*	#DIV/0!	0.045			
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Project	Location	Location Reference	Location E	Location N	Sample Template	Sample Re	Sample Da	Sample Time	Comments	Parameter	Temperatu	Dissolved	pH	BOD	Nitrite	Molybdate	Ammonium
										Degrees C	mg/l	mg/l	pH units	mg/l	mg/l	mg/l	mg/l
Sullane	Br. d/s Ballymakeera		121195.7	76361.6	Phosphate Regs	2008/3295	04-Dec-08	12:35									
										6.3	11.9			< 0.013	0.009	0.031	
									Sample Coun	1	1	0	0	1	1	1	
									Maximum	6.3	11.9			< 0.013	0.009	0.031	
									Minimum	6.3	11.9			< 0.013	0.009	0.031	
									Mean	6.3	11.9			0.006	0.009	0.031	
									Median	6.3	11.9			<0.013	0.009	0.031	
									Std. Deviator	0	0			0	0	0	
Sullane	first Br.d/s Ballyvourney Br.	19S020170	120196	76960	WFD Operational	2008/0416	12-Mar-08	12:40					7.3	< 0.1	< 0.013	0.008	0.038
Sullane	first Br.d/s Ballyvourney Br.	19S020170	120196	76960	WFD Operational	2008/1180	11-Jun-08	13:00		19.1	9.2		7.7	< 0.1	< 0.013	0.006	0.045
Sullane	first Br.d/s Ballyvourney Br.	19S020170	120196	76960	WFD Operational	2008/1861	13-Aug-08	12:40		12.8	9.9		7	0.02	0.013	0.05	
Sullane	first Br.d/s Ballyvourney Br.	19S020170	120196	76960	WFD Operational	2008/3293	04-Dec-08	12:45		6.2	11.9		7.1	< 0.013	0.01	0.042	
									Sample Coun	3	3	4	4	4	4	4	
									Maximum	19.1	11.9	7.7	1.1	0.02	0.013	0.05	
									Minimum	6.2	9.2	7	< 0.1	< 0.013	0.006	0.038	
									Mean	12.7	10.3	7.28	0.338	0.01	0.009	0.044	
									Median	12.8	9.9	7.2	0.1	0.006	0.009	0.044	
									Std. Deviator	6.45	1.4	0.31	0.509	0.007	0.003	0.005	
Sullane	Ford u/s Laney river confluence	19S020480	135041	72776	WFD Operational	2008/0417	12-Mar-08	13:25					7.5	< 0.1	< 0.013	0.011	0.059
Sullane	Ford u/s Laney river confluence	19S020480	135041	72776	WFD Operational	2008/1181	11-Jun-08	14:00		21.4	9.5		7.5	< 0.1	0.02	0.013	< 0.026
Sullane	Ford u/s Laney river confluence	19S020480	135041	72776	WFD Operational	2008/3024	12-Nov-08	15:20		8.7	11.5		7.4	< 0.013	0.01	0.032	
Sullane	Ford u/s Laney river confluence	19S020480	135041	72776	WFD Operational	2008/3294	04-Dec-08	13:25		6.2	11.8		7.2	0.014	0.018	0.04	
									Sample Coun	3	3	4	4	4	4	4	
									Maximum	21.4	11.8	7.5	0.7	0.02	0.018	0.059	
									Minimum	6.2	9.5	7.2	< 0.1	< 0.013	0.01	< 0.026	
									Mean	12.1	10.9	7.4	0.25	0.012	0.013	0.036	
									Median	8.7	11.5	7.45	0.125	0.01	0.012	0.036	
									Std. Deviator	8.15	1.25	0.141	0.308	0.007	0.004	0.019	
Sullane	Macroon Br.		133833.1	73014.4	Phosphate Regs	2008/1182	11-Jun-08	13:30		20	8.6			0.023	0.012		
									Sample Coun	1	1	0	0	1	1	0	
									Maximum	20	8.6			0.023	0.012		
									Minimum	20	8.6			0.023	0.012		
									Mean	20	8.6			0.023	0.012		
									Median	20	8.6			0.023	0.012		
									Std. Deviator	0	0			0	0		
Sullane	Poul nabro Br.		122720.6	75583.2	Phosphate Regs	2008/3296	04-Dec-08	12:30		6.3	11.7			< 0.013	0.01	0.034	
									Sample Coun	1	1	0	0	1	1	1	
									Maximum	6.3	11.7			< 0.013	0.01	0.034	
									Minimum	6.3	11.7			< 0.013	0.01	0.034	
									Mean	6.3	11.7			0.006	0.01	0.034	
									Median	6.3	11.7			<0.013	0.01	0.034	
									Std. Deviator	0	0			0	0	0	

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Nitrate	Hardness	Alkalinity	Appearance	Chloride	Dissolved O2	Colour	Conductivity	Mg	Ca	Copper (D)	Odour	Total Zinc
NO3	CaCO3	CaCO3		Cl	% O2	Hz	µS/cm	Mg	Ca	Diss. Cu.		
Varies	--	--	--	--	150	Varies	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	50	--	--	--	--	--	--	--
mg/l	mg/l	mg/l	Descriptive	mg/l	% O2	Hazen	µS/cm	mg/l	mg/l	mg/l	Descriptive	mg/l
< 1.77			Clear		101							
1	0	0	-	0	1	0	0	0	0	0	-	0
< 1.77			-		101						-	
< 1.77			-		101						-	
0.885			-		101						-	
<1.77			-		101						-	
0			-		0						-	
3.1	26			22.8		29	107					
< 1.8	37	58	clear	14.3	98		105					
3.5	19	18		8.4	96		49					
< 1.8	17	24	Clear	10.8	101	63	68					
4	4	3	-	4	3	2	4	0	0	0	-	0
3.5	37	58	-	22.8	101	63	107				-	
< 1.8	17	18	-	8.4	96	29	49				-	
2.1	24.8	33.3	-	14.1	98.3	46	82.2				-	
2	22.5	24	-	12.6	98	46	86.5				-	
1.4	9.03	21.6	-	6.3	2.52	24	28.5				-	
6.3	40	28		22.2		41	131					
6.4	53	52	clear	16.2	107		149					
4.8	39	34		12.5	98		112					
2.4	31	24		10.9	101	82	78					
4	4	4	-	4	3	2	4	0	0	0	-	0
6.4	53	52	-	22.2	107	82	149				-	
2.4	31	24	-	10.9	98	41	78				-	
4.97	40.8	34.5	-	15.4	102	61.5	118				-	
5.55	39.5	31	-	14.4	101	61.5	122				-	
1.87	9.11	12.4	-	5.02	4.58	29	30.4				-	
			clear		94							
0	0	0	-	0	1	0	0	0	0	0	-	0
			-		94						-	
			-		94						-	
			-		94						-	
			-		94						-	
			-		0						-	
< 1.77			Clear		99							
1	0	0	-	0	1	0	0	0	0	0	-	0
< 1.77			-		99						-	
< 1.77			-		99						-	
0.885			-		99						-	
<1.77			-		99						-	
0			-		0						-	

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**SURFACE WATER - Macroom**

Scores should be inserted (where appropriate) into the blue boxes in Sections 1 to 10. The scores for each section will be automatically totalled (in the yellow box) and a summary of the scores for each section will appear on this sheet. The section scores will be totalled automatically on this summary sheet. The population of supply should be entered into the blue box below on this page and the overall Cryptosporidium Risk Assessment Score will be automatically calculated for the supply.

<b>Surface Water Catchment Risk Scores</b>	<b>Section Score</b>	<b>Total Score</b>
Section 1 - Animals within the Catchment	21	21
Section 2 - Agricultural Practices within the Catchment	26	26
Section 3 - Discharges to the Catchment/Water Source	13	13
Section 4 - Water Source Type	8	8
Section 5 - Catchment Inspections	3	3
Section 6 - Raw Water Intake Management for Abstractions	2	2
<b>Total Surface Water Catchment Risk Score</b>		<b>73</b>

**Surface Water - Treatment and Supply Risk Score**

Section 7 - Water Treatment Processes		-10
Section 8a - Treatment Works Monitoring of Coagulation and Filtration		5
Section 8b - Treatment Works Monitoring of Coagulation and Filtration		0
Section 8c - Treatment Works Monitoring of Coagulation and Filtration		8
Section 8d - Treatment Works Monitoring of Coagulation and Filtration		0
Section 8e - Treatment Works Monitoring of Coagulation and Filtration		0
Section 8f - Treatment Works Monitoring of Coagulation and Filtration		0
Section 9 - Rapid Gravity and Pressure Filter Works Performance		-2
Section 10 - Treatment Works Operation		-4
<b>Total Surface Water - Treatment and Supply Risk Score</b>		<b>-3</b>

Surface Water Risk Assessment Score	<b>70</b>
Population	<b>3500</b>
Population Weighting Factor (0.4 x log <sub>10</sub> (population))	1.4176272
<b>Final Weighted Risk Assessment Score</b>	<b>99.233905</b>
<b>Water Supply Risk Classification</b>	<b>Very High F</b>

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**risk**

## Section 1 - Animals Within the Catchment

Section No.	Pressure Risk Factor	RA Score	Actual Score
1.1	Cattle/calves at less than or equal to one livestock unit per hectare of forage area *	5	5
	Cattle/calves at more than one one livestock unit per hectare of forage area*	10	
	No cattle/calves in the catchment	0	
1.2	Sheep/lambs at less than or equal to one one livestock unit per hectare of forage area *	5	10
	Sheep/lambs at more than one one livestock unit per hectare of forage area *	10	
	No sheep/lambs in the catchment	0	
1.3	Wild or farmed deer in the catchment	2	2
	No wild or farmed deer in the catchment	0	
1.4	Pig farms in the catchment	2	0
	No pig farms in the catchment	0	
1.5	Animals have direct access to water sources including feeder streams	4	4
	Fencing prevents access to water sources including feeder streams	-4	
1.6	High numbers of birds	2	0
1.7	Any other farmed animals or birds	1	0
<b>Total for Section 1</b>			<b>21</b>

## Section 2 - Agricultural Practices Within the Catchment

Section No.	Risk Factor	RA Score	Actual Score
2.1	Slurry spraying within the catchment	6	6
2.2	Dung spreading within the catchment	3	3
2.3	Slurry <b>or</b> dung stores	3	3
2.4	Sheep pens <b>or</b> cattle sheds	6	6
2.5	Lambing <b>or</b> calving on the catchment	8	8
2.6	Full compliance with the Good Agricultural Practice Regulations verified by catchment inspection	-6	0
<b>Total for Section 2</b>			<b>26</b>

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### Section 3 - Discharges to the Catchment/Water Source

Section No.	Risk Factor	RA Score	Actual Score
3.1	Population equivalent served by individual on-site wastewater treatment systems < 100 PE	4	6
	Population equivalent served by individual on-site wastewater treatment systems > 100 PE	6	
3.2	On-site wastewater treatment systems all known to be functioning properly	-2	0
3.3	Flooding of septic tanks on flood plains	4	0
3.4	Population equivalent served by all wastewater works <500	4	5
	Population equivalent served by all wastewater works 500 to 5,000	5	
	Population equivalent served by all wastewater works 5,001 to 20,000	6	
	Population equivalent served by all wastewater works 20,001 to 50,000	7	
	Population equivalent served by all wastewater works > 50,000	8	
3.5	Storm water overflows	2	2
3.6	Section 4 or Integrated Pollution Prevention Control (IPPC) Licence discharge from intensive agricultural activity or agriculturally related discharge	2	0
3.7	All wastewater treatment plants complying with the UWWT Regulations quality standards	-1	0
3.8	UV inactivation at outlet of wastewater treatment plants	-2	0
<b>Total for Section 3</b>			<b>13</b>

## Section 4 - Water Source Type

Section No.	Risk Factor	RA Score	Actual Score
4.1	Upland reservoir/lake	2	8
	Lowland long term storage reservoir/lake	4	
	Upland river or stream - bankside storage	5	
	Upland river or stream – direct abstraction	6	
	Lowland river or stream – direct abstraction or bankside storage	8	
<b>Total for Section 4</b>			<b>8</b>

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## Section 5 - Catchment Inspections

Section No.	Risk Factor	RA Score	Actual Score
5.1	Catchment inspections carried out at least monthly	-3	6
	Catchment inspections carried out less frequently	6	
5.2	Procedures in place to deal with irregularities on the catchment	-3	-3
<b>Total for Section 5</b>			<b>3</b>

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## Section 6 - Raw Water Intake Management for Abstractions

Section No.	Risk Factor	RA Score	Actual Score
6.1	No appropriate water quality monitor on intake	3	3
	Appropriate water quality monitor on intake that is alarmed and connected to telemetry	-2	
6.2	Automatic intake shut down when poor water quality	-4	-1
	Manual intake shut down when poor water quality	-1	
	No intake shut down when poor water quality	3	
<b>Total for Section 6</b>			<b>2</b>

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## Section 7 - Water Treatment Processes

Section No.	Risk Factor	RA Score	Actual Score
7.1	Simple sand filtration (not slow sand filtration)	8	-10
	Simple sand filtration ( <b>not</b> slow sand filtration) with UV treatment	6	
	Coagulation followed by DAF/sedimentation and filtration	-10	
	Coagulation followed by DAF/sedimentation and filtration followed by UV treatment	-16	
	Coagulation followed by rapid gravity or pressure filtration (no flotation or sedimentation)	-7	
	Coagulation followed by rapid gravity or pressure filtration (no flotation or sedimentation) followed by UV treatment	-13	
	Slow sand filtration	-9	
	Slow sand filtration followed by UV treatment	-15	
	Membrane Filtration (DWI approved)	-16	
	Membrane filtration (Not DWI approved)	-2	
<b>Total for Section 7</b>			<b>-10</b>

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## Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Coagulation			
Section No. 8a	Risk Management Factor	RA Score	Actual Score
8.1	Manual coagulant dose control – not flow proportional	5	5
	Manual coagulant pH control	5	
	Coagulant pH monitored and alarmed	-5	
<b>Total for Section 8a</b>			<b>5</b>

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## Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Clarification			
Section No. 8b	Risk Management Factor	RA Score	Actual Score
8.2	Clarified water turbidity monitor/particle counters	-1	
	Clarified water turbidity monitor/particle counters with alarm	-2	
<b>Total for Section 8b</b>			<b>0</b>

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## Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Rapid gravity and pressure filters			
Section No. 8c	Risk Management Factor	RA Score	Actual Score
8.3	Turbidity meter/particle counter on each filter with alarm on telemetry	-5	0
	Turbidity meter/particle counter on each filter but no alarm on telemetry	0	
	One turbidity meter/particle counter shared by more than one filter with alarm on telemetry	-2	
	One turbidity meter/particle counter shared by more than one filter but no alarm on telemetry	2	
	No turbidity meters/particle counters monitoring filter performance	10	
8.4	Final water turbidity meter/particle counter with alarm on telemetry	-2	5
	Final water turbidity meter/particle counter but no alarm on telemetry	2	
	No final water turbidity meter/particle counter	5	
8.5	Continuous residual coagulant monitor on combined filtrate or works outlet with alarm	-5	5
	Continuous residual coagulant monitor on combined filtrate or works outlet but no alarm	-1	
	No continuous residual coagulant monitor on combined filtrate or works outlet	5	
8.6	Routine discrete monitoring of treated water for turbidity/residual coagulant	-2	-2
	No routine discrete monitoring of treated water for turbidity/residual coagulant	2	
8.7	Turbidity of backwash supernatant monitored when recycled	-2	0
	Turbidity of backwash supernatant not monitored when recycled	2	
<b>Total for Section 8c</b>			<b>8</b>

## Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Slow Sand Filters			
Section No. 8d	Risk Management Factor	RA Score	Actual Score
8.8	Turbidity meter/particle counter on each filter with alarm on telemetry	-5	
	Turbidity meter/particle counter on each filter but no alarm on telemetry	0	
	One turbidity meter/particle counter shared by more than one filter with alarm on telemetry	-2	
	One turbidity meter/particle counter shared by more than one filter but no alarm on telemetry	2	
	No turbidity meters/particle counters monitoring filter performance	10	
8.9	Final water turbidity meter/particle counter with alarm on telemetry	-2	
	Final water turbidity meter/particle counter but no alarm on telemetry	2	
	No final water turbidity meter/particle counter	5	
8.1	Filters matured and filtrate analysed for turbidity, coliforms and <i>Cryptosporidium</i> during maturation	-4	
	Filters matured but no analysis carried out on filtrate	5	
	Filters not matured	15	
<b>Total for Section 8d</b>			<b>0</b>

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## Section 8 - Treatment Works Monitoring of Coagulation and Filtration

Membrane Filtration			
Section No. 8e	Risk Management Factor	RA Score	Actual Score
8.11	Plant monitored and alarmed for integrity	-10	
	Plant monitored for integrity but not alarmed	0	
	Plant not monitored for integrity	10	
8.12	Particle counter used continuously to monitor filter performance	-5	
<b>Total for Section 8e</b>			<b>0</b>

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## Section 8 - Treatment Works Monitoring of Coagulation and Filtra

UV Inactivation		
Section No. 8f	Risk Management Factor	RA Score
8.13	Plant monitored for integrity and correct UV dosage	0
	Plant monitored and alarmed for integrity and correct UV dosage	-10
	Plant neither monitored nor alarmed	10
8.14	Influent turbidity consistently < 0.2 NTU	-6
	Influent turbidity consistently < 1.0 NTU	-3
	Influent turbidity consistently > 1.0 NTU	-1
<b>Total for Section 8f</b>		

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ition

Actual Score
0

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## Section 9 - Rapid Gravity and Pressure Filter Works Performance

Item No.	Risk Factor	RA Score	Actual Score
9.1	Final water turbidity increases by more than 50%, excluding normal backwash period or turbidity in the final water >1.0 NTU	4	0
	Treated water turbidity increases by less than 50%, excluding normal backwash period and turbidity in the final water <1.0 NTU	0	
9.2	Media loss from any filter has brought media depth below design level	6	0
	Media depth above minimum design level with audit trail maintained	-2	
9.3	Signs of media cracking on any filter	4	0
9.4	All filters have been drained, inspected and any necessary remedial action taken within last year	-2	0
9.5	Air scour and backwash maintained and operating efficiently as per maintenance manual	-2	-2
<b>Total for Section 9</b>			<b>-2</b>

Note: DAF system in Macroom. Not ordinary RGF. Therefore score zero for 9.2, 9.3 and 9.4

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## Section 10 - Treatment Works Operation

Item No.	Risk Factor	RA Score	Actual Score
10.1	Plant with documented management systems that includes procedures and process control manuals	-2	0
	Process control manuals specific to works available	-1	
	Process control manuals specific to works not available	1	
10.2	Auditable action plans available for dealing with deviations in quality and evidence of implementation of the plan	-1	1
	Auditable action plans not available for dealing with deviations in quality	1	
10.3	Slow start facility on filters operational	-4	0
	No slow start facility on filters, or slow start facility not operational	4	
10.4	Filters run to waste for appropriate period after backwash	-6	0
	Filters run to head of works for a period following backwash	-4	
	Filters not run to waste or head of works for a period following backwash	4	
10.5	Backwash water and/or sludge supernatant <b>has</b> to be recycled	2	-2
	Other disposal route available for backwash water and sludge supernatant	-2	
10.6	Water flow through works when operating has not increased by >10% in <30 minutes in last 12 months	-2	-2
	Water flow through works when operating has increased by >10% in <30 minutes in last 12 months	2	
10.7	Flow through works above design flow for >10% of time in last 12 months	4	0
	Flow through works above design flow for ≤10% of time in last 12 months	0	
	Flow through works >130% above design flow for >50% of time in last 12 months	6	
10.8	Filters bypassed during the year	6	0
<b>Total for Section 10</b>			<b>-4</b>

DAF

DAF

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## **1. BALLYMAKEERA / BALLYVOURNEY SEWERAGE SCHEME**

### **1.1 Summary of Brief**

The brief for Ballymakeera/Ballyvourney is to review the existing Preliminary Report prepared by Malachy Walsh and Partners and to develop and include the wastewater treatment plant in a design, build and operate contract for the Western Bundle Scheme.

### **1.2 Existing Situation**

Ballymakeery and Ballyvourney are two contiguous settlements located approximately 15 kilometres northwest of Macroom on the main N22 Cork to Killarney road and are the largest settlements located within the Muskerry Gaeltacht region.

Currently a sewer network serves only the eastern part of the combined area and discharges to a septic tank which has an outfall discharge to the River Sullane. The existing sewers have inadequate capacity and some of the older pipelines have been laid at a relatively flat fall and so cannot achieve self cleansing velocities.

### **1.3 Existing Reports**

A Preliminary Report on the Ballymakeery/Ballyvourney Sewerage Scheme was first prepared in October 1994 by Malachy Walsh and Partners and subsequently revised and re-issued in July 2000. It was noted in the report that the River Sullane floods on occasions, the highest recorded flood level being 117.8m O.D. (Poolbeg). The flow to the proposed WWTP has a variety of contributors comprising:

1. A domestic load based on the 1996 CSO census of 294 people in the Ballymakeery village and 53 people from Ballyvourney.
2. A primary and vocational school contributing a population equivalence of 87 in the winter. However, the vocational school is used as a summer school in the months of July and August. It will contribute a population equivalence of 137 in the summer.
3. The Mills Inn and Abbey hotels contribute a population equivalence of 120 in the summer which is expected to reduce by 50% in the winter.

4. Ossian Ltd. has a licence for discharging the flow and load generated from their premises. However, the effluent constituents may have an impact on sludge disposal based on metal concentrations in the effluent. The PR recommended that further testing be carried out on the Ossian effluent.
5. Udaras Na Gaeltachta have provided the following projected flows for the industrial park as indicated in Table 7.1 overleaf. The organic load calculated at 28.70 kg/day results in an equivalent PE of 478.
6. Future Housing is based on the available land of 6 ha (15 acres), allowing 10 houses/ha and 4 persons per household would result in an additional population of 240 persons.
7. Additional future housing at the eastern end of Ballymakeery consisting of 12 ha would contribute 480 persons.

**Table 7.1 Industrial Flows (Udaras Na Gaeltachta)**

Source	Flow (m <sup>3</sup> /day)	Effluent Strength (mg/l BOD)
Ballyvourney Ind. Est. (existing)	8.7	
Ballyvourney Ind. Est. (optioned sites)	9.72	
Ballyvourney Ind. Est. (future sites)	10.56	
Colaiste Iosagain Site	18	
Ballymakeery Industrial Estate	13.34	
Sub-Total	60.32	
Add 50% for unexpected increases	30.16	
<b>TOTAL FLOW</b>	<b>90.5</b>	<b>Domestic</b>
<b>Future Eel Hatchery</b>	<b>60</b>	<b>76</b>

The report bases the design for the treatment plant on the following parameters:

**Table 7.2 Load Variation on Proposed WWTW**

Parameter	Current Winter p.e.	Current Summer p.e.	Future Winter p.e.	Future Summer p.e.	Ultimate Flow (m <sup>3</sup> /day)	Total Organic Load BOD (kg/day)
Current p.e	347	347	347	347	78.75	21
Schools	87	137	87	137	30.83	8.22
Hotels	60	120	60	120	27	7.2
Udaras na Gaeltachta	147	147	402	402	90.5	24.14
Eel Hatchery (UnG)				76	60	4.56
Ossian Ltd				267	80	16
Future Housing			370	370	83.25	22.2

Additional Development			480	480	108	28.8
<b>TOTAL</b>	<b>641</b>	<b>751</b>	<b>1,746</b>	<b>2,200</b>	<b>558.33</b>	<b>132.12</b>

The report recommends that the new Waste Water Treatment Plant is designed to cater for a maximum dry weather flow of 560 m<sup>3</sup>/day and a maximum BOD load of 133 kg/day and will treat the effluent to a required standard of 20mg/l BOD, 30mg/l SS and 2 mg/l P. However, consideration in the design should be given to the seasonal variations, the current conditions while also accommodating the future requirements.

The report states that Cork County Council have purchased the site for the new Waste Water Treatment Plant. The site was previously owned by Dairygold and used as a milk intake. The ground level on this site is at 117m O.D. and the maximum flood level assessed for this area is 117.80m O.D. The site has a three phase electrical supply but the maximum import capacity will need to be verified and checked for the new load. The site measures 40m frontage, 59m depth, 0.583 acres, rectangular, flat and mostly a concrete slab hardstanding. The site also fronts the road. The site is in the vicinity of the existing septic tank, has "rights-of-way" for pipes to both the septic tank and the Sullane river. All flows from the Scheme can gravitate to this site. There are no houses within the immediate vicinity of the site. As an existing "commercial/industrial" site, it is unlikely there will be any problems in regard to Natural Heritage.

The report reviews three treatment options namely Extended Aeration, Sequencing Batch Reactor (SBR) and Membrane Bioreactor (MBR). A conventional extended aeration system is proposed in the Preliminary Report. It is proposed that nitrification/denitrification and phosphorous removal be included. The plant includes:

- Inlet Pump Sump c/w Storm Overflow Screen
- Storm Holding tank, submersible duty / standby storm return pumps and Overflow equipment
- Inlet screen, screenings washing compaction, skip and grit removal
- Aeration basins with mixers – oxidation ditches or aeration basin with Fine Bubble Diffused Aeration
- Final Clarifiers
- Waste Activated Sludge (WAS) Pumps
- Phosphorous Removal – Storage tank and metering pumps
- Sludge Holding Tanks (4 day storage) with Gravity Thickening



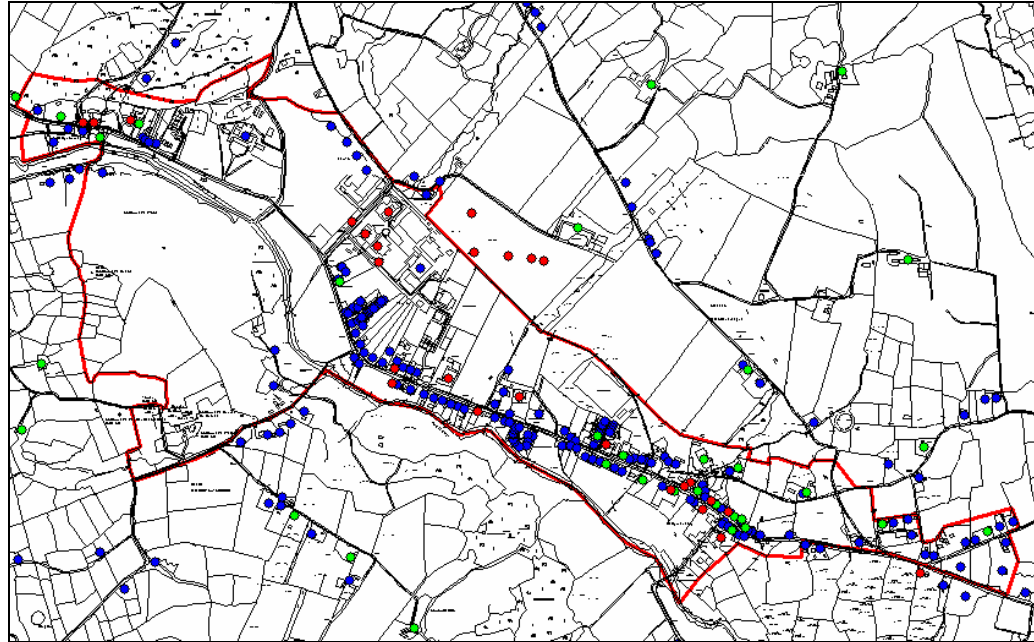
- Sludge Dewatering – Belt Filter press and ancillaries
- Control House for welfare, electrical controls, services, scada etc.
- Inflow and Outflow Measurement Facilities

The estimated "Total Capital Cost" of the proposed WWTP and Collection System as set out in the report in July 2000 is £1,706,912.00 (€2,167,336.67) including VAT @ 12.5% and overheads.

The Preliminary Report was approved by the DOEHLG on 13<sup>th</sup> December 2004 recommending that the treatment plant be constructed in a single phase and that sludge dewatering should be incorporated into the treatment plant design.

#### **1.4 Population Projections**

To determine the existing population for Ballymakeera/Ballyvourney and use it as a comparison against original projections, the Geodirectory was examined and it was determined that the number of residential premises within the local area plan boundary (Macroom Electoral Area Local Area Plan, September 2005) is 191 units as shown in Figure 2.1. The 2006 Census indicated that the average occupancy rate for town areas in Cork County was approximately 2.81 persons per household. It is assumed that all houses counted within the development boundary are to be included in the existing population estimate. Therefore the residential population of the town is calculated as 537 p.e. The 2006 Census indicates that the existing residential population of Baile Mhic Ire is 413 p.e. but does not list the population for Ballyvourney.



**Figure 7.1 Ballymakeery/Ballyvourney LAP 2005 and Geodirectory**

The Local Area Plan has zoned land within the development boundary up to the year 2011. Approximately half of zoned region of R-02 (6.7ha) has already built on although these houses are not yet occupied. These zoned residential areas could contribute approximately 643 p.e. to the future population of the two settlements.

An assessment of the existing non domestic contribution has also been determined by examining the Geodirectory and is summarised in Table 7.3.

**Table 7.3 Non Domestic Contribution**

Description	No.	PE loading per unit	PE
Shops and Commercial	36	1	36
Offices	2	5	10
Public House	1	2	2
Church	1	40	40
Mills Inn	1	80	80
Abbey Hotel	1	3	3
Garda Station	1	6	6
GAA Club	1	3	3
Community Centre	1	8	8
Café (An Cruiscin Lan)	1	478	211
Udaras Na Gaeltachta*	1	267	267
Ossian Ltd.**	1		
<b>Total</b>			<b>666</b>

\* Based on findings from Preliminary Report (only existing flows)

\*\* Based on Discharge Licence

The current educational loading in the settlement is provided from a Primary and Post-Primary School and will contribute approximately 140 p.e. Zoned commercial areas within the development boundary could contribute approximately 586 p.e. to the future population of the settlement.

A summary of the population estimate is as follows:

Current Residential Population (within development boundary)	537
Future Domestic (allowing only half of zoned lands developed)	321
Current Non-Domestic	666
Current Educational	140
Future Non-Domestic	586
<b>Design Population</b>	<b>2,250</b>

The Preliminary Report recommended that a design of 2,200 p.e would be implemented for the treatment plant at Ballymakeera/Ballyvourney. With an existing population of 450 p.e (including Ballyvourney) estimated by the last census, it would be recommended that the 2 treatment streams of 1,100 p.e. each should be constructed to deal with the current and potential future development.

## 1.5 Water Quality Assessment

The main considerations that determine the effluent standards to set are derived from the following:

- The statutory requirement to meet the effluent standards as set out in S.I. 254 of 2001.
- The statutory requirement to meet the water quality standards as set out in S.I. 293 of 1998.
- The requirement as set out in the Phosphorus Regulations to improve the Biological Quality Rating of the receiving waters.
- The assimilative capacity of the river in relation to effluent parameters.

For the purposes of this report, the Salmonid Regulations have been applied to the River Sullane, so there are limits imposed on the amount of Ammonia and BOD which can be discharged. Additionally, there are limits

on Phosphorus under the Phosphorus Regulations. The assessment of the receiving waters is based on a Dry Weather Flow of 225l/h/d. The Preliminary Report recommended that the treatment plant outfall discharged into the River Sullane at a location just downstream from the Ballymakeery Bridge. The Biological Q Rating for the River Sullane upstream of the discharge location at Aghafantaun Bridge is Q4 for sampling carried out between 1995 to 1997. Hydrometric Station No. 19042 located at the Ballyvourney Bridge has recorded a 95% flow of 0.09 m<sup>3</sup>/s. Calculations for the WAC can be found in Appendix A of this report.

### **BOD**

Sullane Bridge is the closest location downstream of the discharge point which has recorded chemical analysis. This sampling location recorded a maximum background value of 1.4 mg/l BOD in 2000 and 1.9 mg/l in 1997 based on 5 grab samples taken by Cork County Council. An allowable downstream concentration of 4mg/l is used (i.e. compliant with Salmonid Regulations, with a safety factor of 1 mg/l).

**Table 7.4 Allowable BOD Concentrations to River**

<b>WWTP DWF</b>	<b>Allowable BOD Concentration (mg/l)</b>
Current	94.72
1,100 p.e.	64.48
2,200 p.e.	34.24

### **Nitrogen**

#### **Total Nitrogen**

Total Nitrogen comprises Ammonia, Organic Nitrogen and Oxidised Nitrogen. The UWWTR specify a target effluent total nitrogen concentration of 15 mg/l should the local conditions require it. However, the limiting nutrient is usually Phosphorus in freshwaters rather than Nitrogen, and therefore a Total Nitrogen effluent standard should not be required.

#### **Ammonia**

To comply with the Salmonid Regulations, a target downstream Ammonia concentration of 1 mg/l would be the upper allowable limit. This indicates an allowable effluent NH<sub>4</sub> concentration as follows:

**Table 7.5 Allowable NH<sub>4</sub> Concentrations to River**

<b>WWTP DWF</b>	<b>Allowable NH<sub>4</sub> Concentration (mg/l)</b>
-----------------	--

Current	42.04
1,100 p.e.	28.36
2,200 p.e.	14.68

It is felt that an ammonia standard should be adopted as it is easily achievable in a conventional activated sludge plant.

### Phosphorus

The median upstream value for Ortho Phosphate upstream of Ballymakeera Bridge is 0.012 mg/l. As stated, the current biological Q Rating for the Sullane is Q4 (0.03mg/l). Under the Phosphorus Regulations, the river has to maintain its current quality and therefore the downstream concentration cannot be any greater than 0.03 mg/l. This indicates an allowable ortho phosphate concentration as follows:

**Table 7.6 Allowable Ortho Phosphate Concentrations to River**

WWTP DWF	Allowable Ortho P Concentration (mg/l)
Current	10.57
1,100 p.e.	7.06
2,200 p.e.	3.54

The appropriate standards for Ballymakeera/Ballyvourney are therefore unchanged from those proposed in the Preliminary Report with the exception of a proposed standard for ammonia.

**Table 7.7 Effluent Quality Standards**

Parameter	Concentration (mg/l)
BOD	20
Suspended Solids	30
Total P	2
Ammonia	10

## 1.6 Phasing

The Preliminary Report did not consider the phasing of the construction of the Wastewater Treatment Plant but this was considered in the subsequent Addendum prepared by Cork County Council which recommended that the plant be constructed in a single phase. This Addendum was later approved by the DOEHLG on the 13<sup>th</sup> December 2004. It will be a requirement that independent treatment streams of

1,100 p.e. each are implemented into the design of the plant in order to ensure that the treatment plant is not underloaded if the future development is not realised.

## 1.7 Design Parameters

The basis design parameters for the wastewater treatment plant can be summarised as follows:

**Table 7.8 Design Parameters for Ballymakeera/Ballyvourney WWTW**

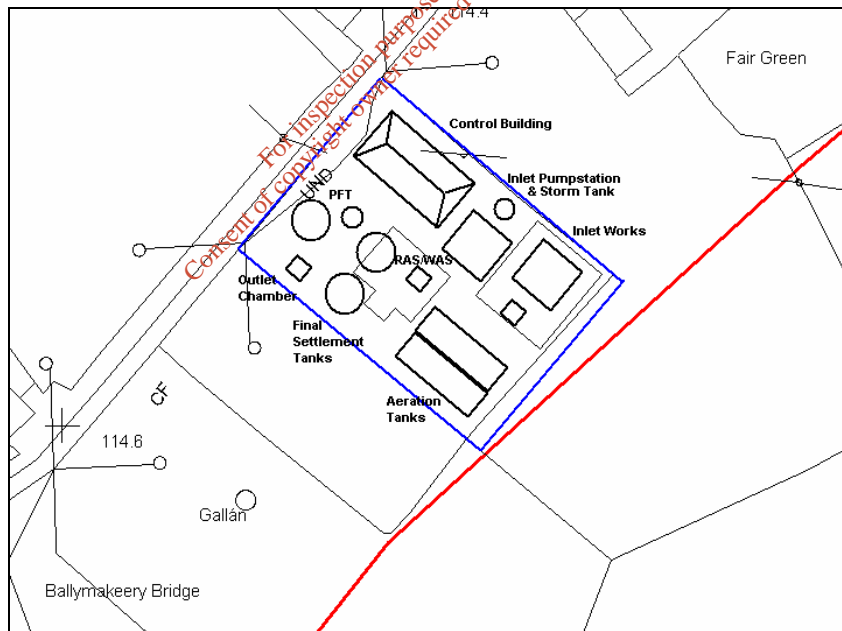
Parameter	Value
Population Equivalent	2,200
Wastewater flow l/h/d	225
DWF m <sup>3</sup> /d	495 m <sup>3</sup> /d
l/s	5.73 l/s
Flow to Full Treatment (3DWF) m <sup>3</sup> /d	1,485 m <sup>3</sup> /d
l/s	17.19 l/s
Average BOD Load	132 kg/day
Average Total Nitrogen Load	24.20 kg/day
Average Phosphorus Load	3.96 kg/day
Average SS Load	154 kg/day
Storm Tank Volume Required (3DWF for 2 hours)	123.75 m <sup>3</sup>
Storm Tank Volume Provided	155 m <sup>3</sup>
Retention Time at Peak Flow	2.51 hours

As a minimum, the construction of the works shall have the following units:

- New Inlet Pumpstation c/w Storm Overflow Screen
- New Inlet Works shall be provided c/w 6mm screen, bypass screen, screenings handling and grit removal.
- Flow Dividing Chamber to split treatment flows
- 2 No. Aeration Tanks c/w Anoxic Zones and FBDA system (volume of approx 330m<sup>3</sup> each)
- 2 No. Final Settlement Tanks (6.8m internal diameter with sidewall liquid depth of 2.5m)
- Return and Waste Sludge Pumping Facilities
- Sludge Thickening and Storage facilities (4m internal diameter picket fence thickener with liquid depth of 3.5m)
- Sludge Dewatering Facility
- Phosphorus Dosing Facility
- Stormwater Holding Tank (volume of approx 155m<sup>3</sup>)

- Instrumentation and Control Equipment
- Treated Effluent Outfall Pipeline
- Site Roads and Fencing, Landscaping, Process and Drainage pipework, Telemetry and SCADA control system
- Administration and Control Building including Sludge Dewatering facility

Cork County Council have already purchased a site of approximately 0.583 acres for the proposed location of the treatment plant. The maximum flood level is above the existing ground level so all equipment will have to be raised above this level of 117.80 mOD. The Council are proposing to utilise an existing galvanised warehouse on the site as part of the Treatment Works. This will require to be examined further in terms of the risk analysis assessment for the overall Western Bundle. A schematic has been shown in Figure 7.2 indicating an appropriate treatment plant layout for a conventional extended aeration treatment plant. The sketch indicates that the proposed site will accommodate a treatment plant sized for 2,200 p.e. but that the site is quite compact and additional land would be required for any future expansion of the treatment works.



**Figure 7.2 Layout Schematic of Ballymakeery/Ballyvourney WWTW**

## 1.8 Collection Network

As part of the 2000 Preliminary Report, Malachy Walsh reviewed the existing collection network at Ballymakeera/Ballyvourney and proposed the following:

- The existing networks are to be generally abandoned for conveying foul flows with a few minor exceptions. The majority of the existing system is to be kept in place to cater for surface water.
- A new 225mm partially combined gravity sewer on the N22 from Ballyvourney village to be constructed and laid to fall to the WWTW in Ballymakeera. It will increase to 375mm at the Udaras Na Gaeltacha Industrial Estate discharge point.
- An eastern section of 225mm gravity sewer will be laid from the eastern boundary of the development plan to a point located at the junction to the Ballymakeery Bridge where the western and eastern sewer will meet.

### **1.9 Conclusions and Recommendations**

It is proposed to install a new 2,200 p.e. treatment facility on an existing site bought by Cork County Council to accommodate the future flows and loads for the settlements of Ballymakeera and Ballyvourney. The new works will be required to treat the effluent to a 20:30 (BOD:SS) standard with an Total P concentration of 2mg/l and Total Ammonia concentration of 10 mg/l.

It is proposed that the treatment works be constructed as a single phase in line with the DOEHLG recommendations and that the upgrades to the collection network are carried out after the construction of the treatment works. The current status of the network contract is unknown but it could be included in the bundled network contract.

This review is based on the July 2000 Report. The Brief refers to an Addendum to the Preliminary Report in 2003 which was requested but not submitted during the course of the review. Until this addendum and any other such relevant information are made available it will be difficult to finalise and complete a detailed design review. Nevertheless, we feel that the plant is suitable for inclusion in the proposed bundled wastewater upgrade and operate scheme. The exact procurement methodology will be



addressed in a separate Public Private Partnership (PPP) Applicability Report. Further investigation is recommended for input to the Contract Documents in order to properly collate data for inclusion in any scheme and a flow and load survey at the septic tank in Ballymakeera will provide details on the incoming load and the effluent standards being achieved at the plant.

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# Cork County

## Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
<b>Cork North</b>			<b>Cork South</b>		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
<b>Cork South</b>			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	<b>Cork West</b>		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		<b>41,274,000</b>	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
<b>Schemes to start 2007</b>			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					<b>164,629,000</b>
<b>Cork North</b>			<b>Serviced Land Initiative</b>		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	<b>Cork North</b>		
<b>Cork West</b>			Ballycough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballyhooley Improvement Scheme	W/S	139,000
		<b>25,150,000</b>	Broghill-Rathgoggin Sewerage Scheme	S	406,000
<b>Schemes to start 2008</b>			Bweeng Water Supply Scheme	W	115,000
<b>Cork North</b>			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H) W		8,662,000	Clondulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	3,408,000	Freemount Sewerage Scheme	S	150,000
<b>Cork South</b>			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Ballingeary Sewerage Scheme	S	1,296,000	Spa Glen Sewerage Scheme	S	736,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	153,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	<b>Cork South</b>		
Coachford Water Supply Scheme	W	1,318,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Blamey Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
<b>Cork West</b>			Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glounthane Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Innishannon Sewerage Scheme	S	277,000
		<b>61,137,000</b>	Innishannon Wastewater Treatment Plant	S	694,000
<b>Schemes to start 2009</b>			Kerrypike Sewerage Scheme	S	832,000
<b>Cork North</b>			Kerrypike Water Supply Scheme	W	416,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Killeens Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,050,000

# Cork County contd.

## Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
<b>Cork South contd.</b>			<b>Cork South</b>		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
<b>Cork West</b>			<b>Cork West</b>		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		<b>50,797,000</b>	Cape Clear Water Supply Scheme	W	1,679,000
<b>Rural Towns &amp; Villages Initiative</b>			<b>Rural Towns &amp; Villages Initiative</b>		
<b>Cork North</b>			<b>Cork North</b>		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					<b>95,646,000</b>
<b>Cork South</b>			<b>Water Conservation Allocation</b>		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Asset Management Study		<b>300,000</b>
<b>Cork West</b>			<b>South Western River Basin District (WFD) Project<sup>1</sup></b>		
Ballylicky Sewerage Scheme	S	2,158,000			<b>9,400,000</b>
Baltimore Sewerage Scheme	S	3,162,000			
Castletownbere Sewerage Scheme	S	3,202,000			
Schull Sewerage Scheme	S	3,523,000			
		<b>24,950,000</b>	<b>Programme Total</b>		<b>485,489,000</b>
<b>Schemes to Advance through Planning</b>					
<b>Cork North</b>					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

<sup>1</sup> This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Ballymakeera
Population Equivalent	1600
Level of Treatment	Secondary
Treatment plant address	Ballymakeera WWTP
Grid Ref (12 digits, 6E, 6N)	121370 / 076407
EPA Reference No:	

Contact details

Contact Name:	Patricia Power
Contact Address:	Water Services South, Cork County Council, County Hall, Carrigrohane Road, Co. Cork
Contact Number:	021 4285285
Contact Fax:	021 4276321
Contact Email:	patricia.power@corkcoco.ie

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Table D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS (Primary Discharge Point)

Discharge Point Code: SW-1

Local Authority Ref No:	SW01BLVNY	
Source of Emission:	Primary Discharge	
Location:	Fair Green, Ballymakeera	
Grid Ref (12 digits, 6E, 6N)	121490 / 076158	
Name of Receiving waters:	Sullane River	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	u/s of Salmonid river	
Flow Rate in Receiving Waters:	0.04	m <sup>3</sup> .sec <sup>-1</sup> Dry Weather Flow
	0.09	m <sup>3</sup> .sec <sup>-1</sup> 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The volumes entered are for the proposed upgrade to the treatment plant as the system does not allow for the entry of the quantities from the current treatment plant. The quantity of waste water discharged per annum is based on the dry weather flow.	

Emission Details:

(i) Volume emitted			
Normal/day	495 m <sup>3</sup>	Maximum/day	1485 m <sup>3</sup>
Maximum rate/hour	62 m <sup>3</sup>	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.006 m <sup>3</sup> /sec		

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Table D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	Grab	= 6.7	
Temperature	°C	Grab	= 25	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 422	
Suspended Solids	mg/l	Grab	= 83	123.26
Ammonia (as N)	mg/l	Grab	= 7.6	11.29
Biochemical Oxygen Demand	mg/l	Grab	= 120	178.2
Chemical Oxygen Demand	mg/l	Grab	= 271	402.44
Total Nitrogen (as N)	mg/l	Grab	= 16	23.76
Nitrite (as N)	mg/l	Grab	= 0	0
Nitrate (as N)	mg/l	Grab	= 0	0
Total Phosphorous (as P)	mg/l	Grab	= 4.3	6.39
OrthoPhosphate (as P)	mg/l	Grab	= 0.7	1.04
Sulphate (SO <sub>4</sub> )	mg/l	Grab	= 34.9	51.83
Phenols (Sum)	µg/l	Grab	< 0.1	0.15

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper  
 For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

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Table D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
Atrazine	µg/l	Grab	= 0	0
Dichloromethane	µg/l	Grab	= 0	0
Simazine	µg/l	Grab	= 0	0
Toluene	µg/l	Grab	= 0	0
Tributyltin	µg/l	Grab	= 0	0
Xylenes	µg/l	Grab	= 0	0
Arsenic	µg/l	Grab	= 0	0
Chromium	µg/l	Grab	= 0	0
Copper	µg/l	Grab	= 0	0
Cyanide	µg/l	Grab	= 0	0
Flouride	µg/l	Grab	= 0	0
Lead	µg/l	Grab	= 0	0
Nickel	µg/l	Grab	= 0	0
Zinc	µg/l	Grab	= 0	0
Boron	µg/l	Grab	= 0	0
Cadmium	µg/l	Grab	= 0	0
Mercury	µg/l	Grab	= 0	0
Selenium	µg/l	Grab	= 0	0
Barium	µg/l	Grab	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6246, or equivalent.

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TABLE E.1(i): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Primary and Secondary Discharge Points

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m <sup>3</sup> /annum)
SW-1	365	180675

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TABLE E.1(ii): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Storm Water Overflows

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m <sup>3</sup> /annum)	Complies with Definition of Storm Water Overflow
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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	122684 / 075589

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	24/09/08	09/10/08	30/10/08	27/11/08			
pH			= 7.2	= 7	Grab	2	Electrochemical
Temperature					Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)			= 74	= 102	Grab	0.5	Electrochemical
Suspended Solids			< 2.5	= 3	Grab	0.5	Gravimetric
Ammonia (as N)			< 0.1	< 0.1	Grab	0.02	Colorimetric
Biochemical Oxygen Demand			< 1	< 1	Grab	0.06	Electrochemical
Chemical Oxygen Demand			< 21	< 21	Grab	8	Digestion & Colorimetric
Dissolved Oxygen					Grab	0	ISE
Hardness (as CaCO <sub>3</sub> )					Grab	0	titrimetric
Total Nitrogen (as N)			= 5	= 4	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)				< 0.004	Grab	0.001	Colorimetric
Nitrate (as N)				= 0.574	Grab	0.5	Colorimetric
Total Phosphorous (as P)			< 0.2	< 0.2	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	< 0.05	< 0.05	< 0.05	< 0.05	Grab	0.02	Colorimetric
Sulphate (SO <sub>4</sub> )			< 30	< 30	Grab	30	Turbidimetric
Phenols (Sum)				< 0.1	Grab	0.1	GC-MS 2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	
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WWD Licence Application Annex I

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09						
pH					Grab	2	Electrochemical
Temperature	= 0				Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)					Grab	0.5	Electrochemical
Suspended Solids					Grab	0.5	Gravimetric
Ammonia (as N)					Grab	0.02	Colorimetric
Biochemical Oxygen Demand					Grab	0.06	Electrochemical
Chemical Oxygen Demand					Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as CaCO <sub>3</sub> )	= 0				Grab	0	titrimetric
Total Nitrogen (as N)					Grab	0.5	Digestion & Colorimetric
Nitrite (as N)					Grab	0.001	Colorimetric
Nitrate (as N)					Grab	0.5	Colorimetric
Total Phosphorous (as P)					Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)					Grab	0.02	Colorimetric
Sulphate (SO <sub>4</sub> )					Grab	30	Turbidimetric
Phenols (Sum)					Grab	0.1	GC-MS 2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper  
 For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	
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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	122684 / 075589

Parameter	Results (µg/l)			Sampling method	Limit of Quantitation	Analysis method / technique
	30/10/08	27/11/08	01/01/09			
Atrazine		< 0.01		Grab	0.96	HPLC
Dichloromethane		< 1		Grab	1	GC-MS1
Simazine		< 0.01		Grab	0.01	HPLC
Toluene		< 1		Grab	0.02	GC-MS1
Tributyltin			= 0	Grab	0.02	GC-MS1
Xylenes		< 1		Grab	1	GC-MS1
Arsenic		< 0.96		Grab	0.96	ICP-MS
Chromium	< 20	< 20		Grab	20	ICP-OES
Copper	< 20	< 20		Grab	20	ICP-OES
Cyanide		< 5		Grab	5	Colorimetric
Flouride		= 25		Grab	100	ISE
Lead	< 20	< 20		Grab	20	ICP-OES
Nickel	< 20	< 20		Grab	20	ICP-OES
Zinc	< 20	< 20		Grab	20	ICP-OES
Boron	< 20	< 20		Grab	20	ICP-OES
Cadmium	< 20	< 20		Grab	20	ICP-OES
Mercury		< 0.2		Grab	0.2	ICP-MS
Selenium		= 1.3		Grab	0.74	ICP-MS
Barium	< 20	= 45		Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn Discharge to freshwaters-no requirement for TBT analysis
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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	120222 / 076943

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	24/09/08	09/10/08	30/10/08	27/11/08			
pH			= 7.3	= 7.4	Grab	2	Electrochemical
Temperature					Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)			= 65	= 92	Grab	0.5	Electrochemical
Suspended Solids			< 2.5	= 4	Grab	0.5	Gravimetric
Ammonia (as N)			< 0.1	< 0.1	Grab	0.02	Colorimetric
Biochemical Oxygen Demand			< 1	< 1	Grab	0.06	Electrochemical
Chemical Oxygen Demand			= 21	< 21	Grab	8	Digestion & Colorimetric
Dissolved Oxygen					Grab	0	ISE
Hardness (as CaCO <sub>3</sub> )					Grab	0	titrimetric
Total Nitrogen (as N)			= 4	= 5	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)				< 0.004	Grab	0	Colorimetric
Nitrate (as N)				< 0.405	Grab	0.5	Colorimetric
Total Phosphorous (as P)			< 0.2	< 0.2	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	< 0.05	< 0.05	< 0.05	< 0.05	Grab	0.02	Colorimetric
Sulphate (SO <sub>4</sub> )			< 30	< 30	Grab	30	Turbidimetric
Phenols (Sum)				< 0.1	Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	
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Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09						
pH					Grab	2	Electrochemical
Temperature	= 0				Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)					Grab	0.5	Electrochemical
Suspended Solids					Grab	0.5	Gravimetric
Ammonia (as N)					Grab	0.02	Colorimetric
Biochemical Oxygen Demand					Grab	0.06	Electrochemical
Chemical Oxygen Demand					Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as CaCO <sub>3</sub> )	= 0				Grab	0	titrimetric
Total Nitrogen (as N)					Grab	0.5	Digestion & Colorimetric
Nitrite (as N)					Grab	0	Colorimetric
Nitrate (as N)					Grab	0.5	Colorimetric
Total Phosphorous (as P)					Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)					Grab	0.02	Colorimetric
Sulphate (SO <sub>4</sub> )					Grab	30	Turbidimetric
Phenols (Sum)					Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper  
 For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	
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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

## Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	120222 / 076943

Parameter	Results (µg/l)			Sampling method	Limit of Quantitation	Analysis method / technique
	30/10/08	27/11/08	01/01/09			
Atrazine		< 0.01		Grab	0.96	HPLC
Dichloromethane		< 1		Grab	1	GC-MS1
Simazine		< 0.01		Grab	0.01	HPLC
Toluene		< 1		Grab	0.02	GC-MS1
Tributyltin			= 0	Grab	0.02	GC-MS1
Xylenes		< 1		Grab	1	GC-MS1
Arsenic		< 0.96		Grab	0.96	ICP-MS
Chromium	< 20	< 20		Grab	20	ICP-OES
Copper	< 20	< 20		Grab	20	ICP-OES
Cyanide		< 5		Grab	5	Colorimetric
Flouride		= 21		Grab	100	ISE
Lead	< 20	< 20		Grab	20	ICP-OES
Nickel	< 20	< 20		Grab	20	ICP-OES
Zinc	< 20	< 20		Grab	20	ICP-OES
Boron	< 20	< 20		Grab	20	ICP-OES
Cadmium	< 20	< 20		Grab	20	ICP-OES
Mercury		< 0.2		Grab	0.2	ICP-MS
Selenium		< 0.74		Grab	0.74	ICP-MS
Barium	= 95	= 47		Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn discharge to freshwaters-no requirement for TBT analysis
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**Annex 2: Check List For Regulation 16 Compliance**

Regulation 16 of the waste water discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007) sets out the information which must, in all cases, accompany a discharge licence application. In order to ensure that the application fully complies with the legal requirements of regulation 16 of the 2007 Regulations, all applicants should complete the following.

In each case, refer to the attachment number(s), of your application which contains(s) the information requested in the appropriate sub-article.

<b>Regulation 16(1)</b> <b>In the case of an application for a waste water discharge licence, the application shall -</b>		<b>Attachment Number</b>	<b>Checked by Applicant</b>
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	B1	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	Not applicable	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	B2	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	B9	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	C,D	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	D2, F	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	E3	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	E4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	G3	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	F2	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	F1	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	F1, G	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	G	Yes
(n)	Any other information as may be stipulated by the Agency.	Not applicable	No
<b>Regulation 16(3)</b> <b>Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -</b>		<b>Attachment Number</b>	<b>Checked by Applicant</b>
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	B8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	Not applicable	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	B, C, E	Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	B3	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	E3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	B9(ii)	Yes



<b>Regulation 16(4)</b> An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		<b>Attachment Number</b>	<b>Checked by Applicant</b>
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agency.		Yes
<b>Regulation 16(5)</b> For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.		<b>Attachment Number</b>	<b>Checked by Applicant</b>
1	Signed original.		
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		
3	1 CD of geo-referenced digital files provided.		
<b>Regulation 17</b> Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency		<b>Attachment Number</b>	<b>Checked by Applicant</b>
1	EIA provided if applicable		
2	2 hardcopies of EIS provided if applicable.		
3	2 CD versions of EIS, as PDF files, provided.		

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