

SECTION D – DISCHARGES TO THE AQUATIC ENVIRONMENT

Attachment D1: Discharges to Surface Waters

- Table D.1(i)(a): Emissions to Surface/Ground Waters (Primary Discharge Point)
- Table D.1(i)(b): Emissions to Surface/Ground Waters – Characteristics of the Emission (Primary Discharge Point)
- Table D.1(i)(c): Dangerous Substance Emissions to Surface/Ground Waters – Characteristics of the Emission (Primary Discharge Point)
- Table D.1(iii)(a): Emissions to Surface/Ground Waters (Storm Overflow)
(NOTE: No Information on Quantity of Waste Water discharged available for Storm Water Overflow, as flows are not continuous or consistent)
- Monitoring Information for the 'Influent' to the WWTP
- Statement on Annex X of the Water Framework Directive (2000/60/EC) & Annex VIII of the Water Framework Directive (2000/60/EC)

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

Discharge Point Code: SW-1

Local Authority Ref No:	Carlanstown SW-1
Source of Emission:	Waste Water Treatment Plant - Treated Effluent
Location:	Carlanstown Waste Water Treatment Plant
Grid Ref (12 digits, 6E, 6N)	276742 / 279164
Name of Receiving waters:	Moynalty River
Water Body:	River Water Body
River Basin District	Eastern RBD
Designation of Receiving Waters:	No Designation
Flow Rate in Receiving Waters:	0.059 m ³ .sec ⁻¹ Dry Weather Flow
	0.124 m ³ .sec ⁻¹ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	Moynalty River DWF and 95 percentile flow rates are based on flow measurements taken at hydrometric station no. 07006. 50 percentile flow rate (based on continuous records) is 1.19m ³ /s.

Emission Details:

(i) Volume emitted			
Normal/day	110 m ³	Maximum/day	175 m ³
Maximum rate/hour	0 m ³	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.00126 m ³ /sec		

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	= 8.08	
Temperature	°C	Grab	= 0	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 583	
Suspended Solids	mg/l	Grab	= 13.5	1.467
Ammonia (as N)	mg/l	Grab	= 1.19	0.129
Biochemical Oxygen Demand	mg/l	Grab	= 13.4	1.457
Chemical Oxygen Demand	mg/l	Grab	= 100	10.87
Total Nitrogen (as N)	mg/l	Grab	= 10	1.087
Nitrite (as N)	mg/l	Grab	= 0.202	0.022
Nitrate (as N)	mg/l	Grab	= 8.64	0.939
Total Phosphorous (as P)	mg/l	Grab	= 3.58	0.389
OrthoPhosphate (as P)	mg/l	Grab	= 1.63	0.177
Sulphate (SO ₄)	mg/l	Grab	= 81.5	8.859
Phenols (Sum)	µg/l	Grab	< 2	0.000217

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	< 0.07	0.000008
Dichloromethane	µg/l	Grab	< 3	0.000326
Simazine	µg/l	Grab	< 0.04	0.000004
Toluene	µg/l	Grab	< 1	0.000109
Tributyltin	µg/l	Grab	< 0.02	0.000002
Xylenes	µg/l	Grab	< 1	0.000109
Arsenic	µg/l	Grab	< 0.75	0.000082
Chromium	µg/l	Grab	< 0.7	0.000076
Copper	µg/l	Grab	= 4.32	0.00047
Cyanide	µg/l	Grab	< 5	0.000544
Flouride	µg/l	Grab	= 666	0.072394
Lead	µg/l	Grab	< 0.4	0.000043
Nickel	µg/l	Grab	< 1.5	0.000163
Zinc	µg/l	Grab	= 19.5	0.00212
Boron	µg/l	Grab	= 28.9	0.003141
Cadmium	µg/l	Grab	< 0.22	0.000024
Mercury	µg/l	Grab	< 0.01	0.000001
Selenium	µg/l	Grab	< 1	0.000109
Barium	µg/l	Grab	= 7.11	0.000773

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.

Table D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS (Storm Overflow)

Discharge Point Code: SW-2

Local Authority Ref No:	Carlanstown SW-2
Source of Emission:	Waste W Treatment Plant - Storm Water Holding Tank
Location:	Carlanstown Waste Water Treatment Plant
Grid Ref (12 digits, 6E, 6N)	276742 / 279164
Name of Receiving waters:	Moynalty River
Water Body:	River Water Body
River Basin District	Eastern RBD
Designation of Receiving Waters:	No Designation
Flow Rate in Receiving Waters:	0.059 m ³ .sec ⁻¹ Dry Weather Flow
	0.124 m ³ .sec ⁻¹ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	Moynalty River DWF and 95 percentile flow rates are based on flow measurements taken at hydrometric station no. 07006. 50 percentile flow rate (based on continuous records) is 1.19m ³ /s.

Emission Details:

(i) Volume emitted			
Normal/day	m ³	Maximum/day	m ³
Maximum rate/hour	m ³	Period of emission (avg)	min/hr hr/day day/yr
Dry Weather Flow	m ³ /sec		

MONITORING INFORMATION FOR THE 'INFLUENT' TO THE WWTP

Monitoring data on the 'Influent' accepted at the Waste Water Treatment Plant for 2007 and 2008 is attached overleaf.

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CARLANSTOWN 'INFLUENT' MONITORING 2007										
Plant Name	Sample	Date of Sampling	Sample Type	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l	Prtho P mg/l	Total N mg/l	NH3-N mg/l
Carlanstown	Influent	22/02/2007	G	180.5	582	120	8.77	-	103	
	Influent	06/03/2007	G	87.5	247	93	5.3	-	421.1	
	Influent	30/05/2007	G	-	-	-	-	-	-	
	Influent	12/07/2007	G	-	-	-	-	-	-	
	Influent	19/09/2007	G	285.5	621	334	11.2	-	60.6	no sample
	Influent	04/10/2007	G	391	1105	335	14.3	-	84.8	no sample
	Influent	11/10/2007	G	410	793	171	12.8	-	96.4	no sample
	Influent	25/10/2007	G	308.5	699	179	9.88	-	94.1	no sample
	Influent	13/11/2007	G	301	712	191	11.6	-	69.5	-

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CARLANSTOWN 'INFLUENT' MONITORING 2008						
	03-Jan-08	20-Feb-08	23-Apr-08	06-Jun-08	06-Aug-08	02-Oct-08
Parameter	Inf	Inf	Inf	Inf	Inf	Inf
BOD mg/l	236	233	183	316.35	1480	180.5
COD mg/l	379	397	560	573	2345	415
TSS mg/l	75	104	218		3221	103
Tot P mg/l	6.6	8.16	11.8	10.2	31.9	5.44
Tot N mg/l	51.2	64.1	93	75.3	106	31.1

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STATEMENT ON:
ANNEX X OF THE WATER FRAMEWORK DIRECTIVE (2000/60/EC)
&
ANNEX VIII OF THE WATER FRAMEWORK DIRECTIVE (2000/60/EC)

Based on the once-off analysis of Effluent (Primary Discharge Point) Analysis presented on Table D.1(i)(c), it is concluded that Fluoride alone and none of the other substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the effluent from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001). Fluoride concentrations in the treated effluent were recorded at 666ug/l, which is above the standard of <500ug/l set by the above regulations (where the hardness of the water measured in mg/l CaCo3 is >100mg/l).

Based on the analysis of water upstream and downstream of the Primary Discharge Point (Tables F.1(i)(a) & F.1(i)(b)), it is concluded that none of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are seen to be present in the receiving water environment upstream or downstream of the discharge from the works, at concentrations above the standards set in the Water Quality (Dangerous Substances) Regulations, 2001 (S.I. 12 of 2001).

Therefore, although an elevated concentrations of Fluoride was identified in the treated effluent from Carlanstown WWTP on the date of the once-off sampling event (carried out as part of this licence application), the surface water sampled within the receiving water (Moynalty River) downstream of the discharge point had a concentration of <500mg/l on that same date, indicating that the elevated Fluoride concentrations from the WWTP were not having a negative affect on the receiving water quality in the Moynalty River.

The source of the increased fluoride concentrations in the treated effluent may be related to fluorinated drinking water sources or may be naturally occurring in the surrounding groundwater that may be infiltrating the sewer network. Meath County Council will continue to monitor for 'Fluoride' in the treated effluent from the WWTP on a monthly basis, to examine if it is a persistent issue. If it is proven to be a persistent issue, Meath County Council will investigate further.

SECTION D – DISCHARGES TO THE AQUATIC ENVIRONMENT

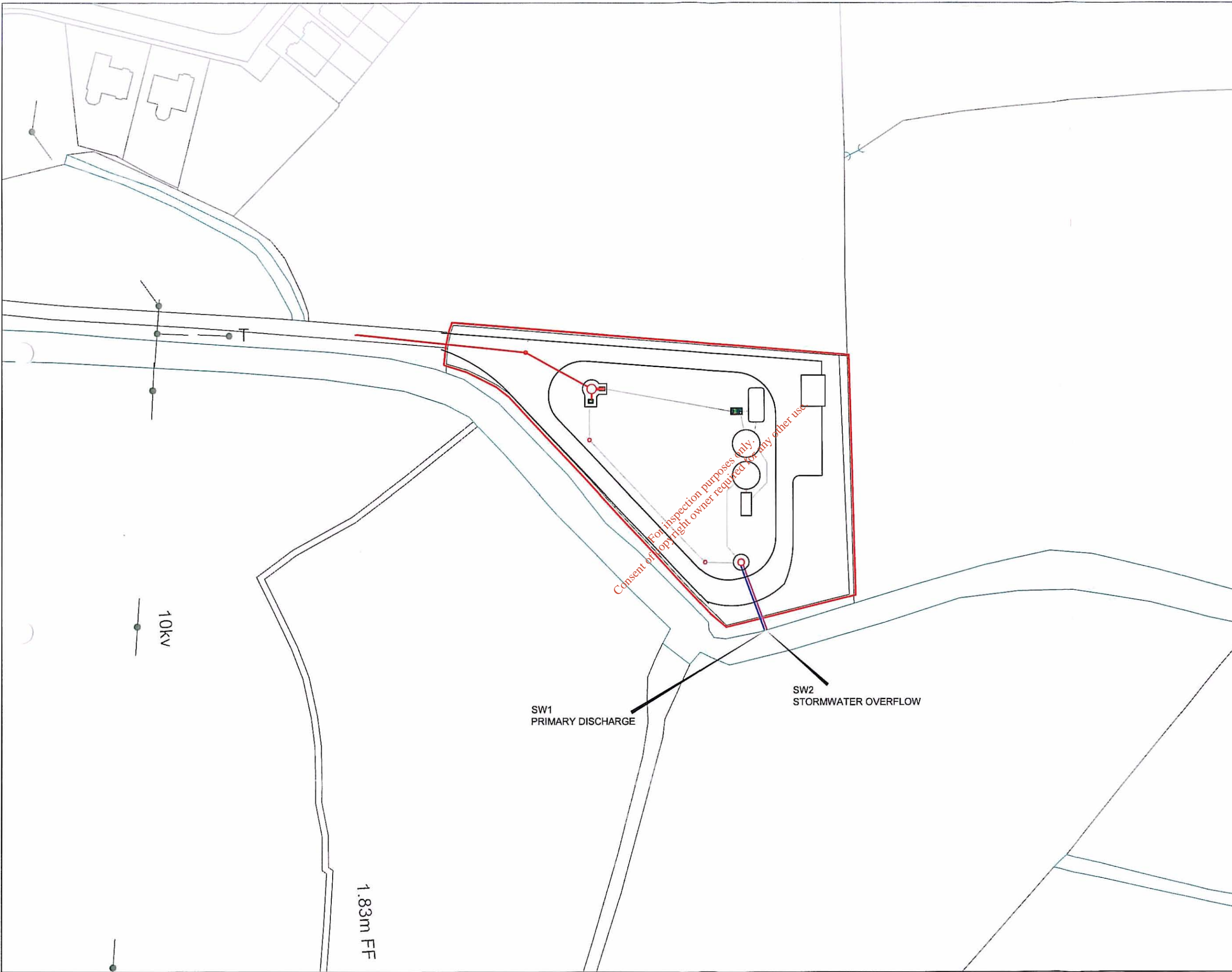
Attachment D2: Tabular Data on Discharge Points

- Table D.2: Tabular Data on Discharge Points
- Drawing No. 5270-2794

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Table D2

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LEGEND

WWTP SITE BOUNDARY

PRIMARY DISCHARGE

STORMWATER OVERFLOW

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING

2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE

3. ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES

4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd
A	18 05 09	ISSUE TO MEATH CO. CO.	R.K.	M.H.

Client:

MEATH COUNTY COUNCIL

Project:

CARLANSTOWN WASTE WATER DISCHARGE LICENCE APPLICATION

Title:

ALL DISCHARGE POINTS

(SECTION / ATTACHMENT D.2)

Scale @ A3: 1 : 10,000

Prepared by: R.K. Checked: M.H. Date: MAY 09

Project Director: M.F.G.

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