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CONSENT NO.	CG0351401
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Environment  
Agency Wales

**WATER RESOURCES ACT 1991**

**SECTION 88 - SCHEDULE 10**

**(AS AMENDED BY THE ENVIRONMENT ACT 1995)**

**NOTICE OF MODIFICATION OF CONSENT TO DISCHARGE**

**TO:** Environment Quality Scientist  
Dŵr Cymru Cyf.  
Pentwyn Road  
Nelson  
Treharris  
Mid Glamorgan CF46 6LY



**CG0351401\_2006\_03\_03**

Following a review of the conditions of its consent, the **ENVIRONMENT AGENCY** ("The Agency") in pursuance of its powers under the Water Resources Act 1991 **HEREBY MODIFIES ITS CONSENT** to the making of a discharge **OF SEWAGE EFFLUENT**, as follows:

Secondary Treated Sewage Effluent with Ultraviolet Disinfection, incorporating the requirements of the Urban Wastewater Treatment Regulations 1994  
with respect to Modification of Consent No. CG0351401 issued on the 19<sup>th</sup> day of December 2002 and subsequent Modification Notice issued on the 6<sup>th</sup> day of February 2003

**FROM: TYWYN WASTEWATER TREATMENT WORKS**

**AT: TYWYN, GWYNEDD**

**TO: COASTAL WATERS OF CARDIGAN BAY**


**HEREAFTER SUBJECT TO** the conditions set out in the following schedule(s):

Secondary Treated Sewage Effluent with ultraviolet disinfection      Schedule No. CG0351401 01

Urban Wastewater Treatment Regulations 1994      Schedule No. CG0351401 01/U

Subject to the provisions of Paragraphs 7 and 8 of Schedule 10 of the Water Resources Act 1991, no notice shall be served by the Agency, which alters the effect of modifications made by this notice, without the agreement in writing of the consent holder, during a period of 4 years from the date this notice is served.

Dated this 31<sup>st</sup> day of December 2005

Signed.....  
**IWAN WILIAMS**  
**Regulatory Water Quality Team Leader**

Asiantaeth yr Amgylchedd  
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DATED	31 <sup>st</sup> December 2005

### CONDITIONS OF CONSENT TO DISCHARGE

**Secondary treated sewage effluent with ultraviolet disinfection ("the Discharge")**

**FROM: Tywyn Wastewater Treatment Works**

#### NATURE

1. (a) The Discharge shall consist solely of secondary treated sewage effluent which, during the periods specified in condition 1 (b) of this consent, has been disinfected by means of ultra violet (UV) irradiation. For the purpose of this consent, "disinfection" is defined as the use of a process designed specifically to reduce the number of viable, potentially infectious micro-organisms in the effluent.
- (b) The disinfection of the effluent by means of UV irradiation is required for the period 30<sup>th</sup> April to 30<sup>th</sup> September inclusive each year.
- (c) The discharge shall be disinfected by means of UV irradiation from an artificial source with at least 85% of the available radiation emitted in the wavelength range 250 to 260 nm. An applied UV dose of 32 mJ/cm<sup>2</sup> (calculated at UV transmittance of 45%) must be exceeded subject to conditions 1 (d) and 1 (e) during the period specified in condition 1 (b) above of this consent.
- (d) The applied UV dose must exceed the limit set out in condition 1 (c) for at least 99% of the measurements as required by condition 18 (b) 1 b) in the time period specified in condition 1 (b).
- (e) No more than 10% of measurements taken consecutively during any 24 hour period from midnight to midnight should fall below 16 mJ/cm<sup>2</sup>.
- (f) The period(s) when the applied UV dose limit is less than the limit set out in condition 1 (c) shall not be used by the Consent Holder for the maintenance of the UV plant. Maintenance is defined in the UV Code of Practice attached to this Consent.





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## FAILURE OF UV MEASUREMENT SYSTEMS

2. In the event of failure of the flow monitor used in the control of the UV dosing system:
  - (a) the maximum available number of duty banks of UV lamps shall be automatically activated;
  - (b) the minimum applied UV dose at maximum effluent flow rates at a calculated UV transmittance (at 254nm) of 45 %, shall not be less than 32 mJ/cm<sup>2</sup>

## LOCATION

3. The Discharge shall be made in the manner and at the place specified as:
  - (a) discharging via a 350 millimetre diameter long sea outfall pipe, 500 metres in length, terminating in a four part diffuser at the seabed 6.4 metres below Ordnance Datum;
  - (b) discharging to the coastal waters of Cardigan Bay;
  - (c) at National Grid Reference SH 56880 01320;
  - (d) shown marked 'Consent Point' on Plan No. CG0351401 attached as Annex 3.

## SAMPLE POINT

4. An appropriately labelled sample point shall be provided and maintained at National Grid Reference SH 57250 01760, as shown marked 'Discharge Sample point' on the Plan CG0351401 attached as Annex 3, or some other point as agreed in writing with the Agency, so that a representative sample of the Discharge may be obtained. The Consent Holder shall ensure that all constituents of the Discharge pass through the said sampling point at all times and in any legal proceedings it shall, for the purposes of Section 10 of the Rivers (Prevention of Pollution) Act 1961, be presumed, until the contrary is shown, that any sample of the Discharge taken at the said sampling point is a sample of what was being discharged into controlled waters.





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## VOLUME

5. The volume of the Discharge shall not exceed 5011 cubic metres per day.
6. The Dry Weather Flow of the Discharge shall not exceed 1670 cubic metres per day.

For the purpose of this condition Dry Weather Flow shall mean the average daily flow to the treatment works during seven consecutive days without rain (excluding a period which includes public holidays) following seven days during which the rainfall did not exceed 0.25 millimetres on any one day.

7. The rate of discharge shall not exceed 58 litres per second.

## FLOW MEASUREMENT

8. A continuous flow measurement and recording system, to a specification provided by the Agency, shall be provided and operated to record the total daily volume, and the instantaneous or 15-minute integrated flow every 15 minutes of the discharge. An on-site visual display from which instantaneous or 15-minute integrated flow readings can be readily obtained by the Agency shall be provided and operated. The Consent Holder shall hold records of the flow readings.
9. As soon as practicable after completion of the flow system installation and subsequently on the expiry of any certificate issued, the Consent Holder shall employ an independent expert to certify that the installation and its quality management system complies with the Agency's specification. The independent expert shall be accredited to a competency scheme approved by the Agency. A copy of the certificate shall be sent to the Agency and the certifier's report shall be provided to the Agency on request. If a certificate issued for a flow system has no expiry date included then the certificate shall be deemed to expire five years after the issue date of the certificate.
10. The Consent Holder shall produce and maintain a documented quality management system, approved by the independent expert and to the satisfaction of the Agency, specifying procedures for the calibration, operation and maintenance of the flow measurement equipment. The flow measurement equipment shall be calibrated, operated and maintained by the Consent Holder in accordance with the provisions of the QMS. The Consent Holder shall keep a record of these procedures available for inspection by the Agency and provide a copy to the Agency on request.





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11. The Consent Holder shall record all failures of the continuous flow measurement system and any other breaks in the flow record. The reasons for all significant failures and breaks, which lead to missing or suspect data, and all steps taken to prevent a re-occurrence shall be recorded and details shall be provided to the Agency on request. A failure or break is significant for the purposes of this condition if it prevents the calculation of the total daily volume to the required level of uncertainty. The Consent Holder shall ensure that as far as possible the recorder remains fully operational at all times. Any failures shall be remedied as soon as possible.
12. Records of the flow readings or the reasons for any breaks in the record, as described in condition 11 above, shall be provided to the Agency when requested, in a format specified by the Agency.
13. Flows of the discharge shall be measured at location NGR SH 57351 01832, or such other point as is agreed by the Agency.

## COMPOSITION

14. (a) Subject to paragraph (b) below, the Discharge shall not contain more than;
  - (i) 50 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20<sup>0</sup> C with nitrification suppressed by the addition of allyl-thiourea)
  - (ii) 60 milligrammes per litre of suspended solids (measured after drying at 105<sup>0</sup>C);
- (b) The limit for any of the relevant parameters set out in paragraph (a) above may be exceeded where, in any series of samples of the Discharge taken at regular but randomised intervals in any period of twelve consecutive months as listed in Column 1 of the table at Annex 1 to this consent, no more than the relevant number of samples, as listed in Column 2 of the said table, exceed the applicable limit for that relevant parameter.





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## WORKS OPERATION

15. The works shall be operated and the effluent shall be treated in a manner which, so far as reasonably practicable, minimises the polluting effects of the discharge made from the works on controlled waters.

This condition does not require -

- (a) any higher standard to be achieved in relation to any characteristic of the discharge which is specifically regulated by condition 14 than is required by that condition;
- (b) any alteration of the works or a change in the type of treatment used.

## MAINTENANCE

16. (a) The Consent Holder shall maintain the outfall pipe and diffusers in an efficient operational condition, so as to minimise the probability of blockages or other failures, and shall implement periodic inspections of the integrity and performance of the diffusers and outfall pipe.
- (b) On request the Consent Holder shall supply the Agency with a written report on the maintenance and all non-routine actions undertaken.

## UNUSUAL WEATHER CONDITIONS

17. (a) No sample of the discharge, taken at a time when unusual weather conditions are adversely affecting the operation of the sewage treatment works, shall be taken into account in deciding whether or not conditions 14 and 15 of this consent schedule have been complied with.
- (b) For the purpose of this condition "unusual weather conditions" shall include:
- (i) low ambient temperatures as evidenced by effluent temperatures of 5°C or less, or by the freezing of mechanical equipment in the works;
  - (ii) significant snow deposits;





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- (iii) tidal or fluvial flooding;
- (iv) weather conditions causing unforeseen loss of power supply to the sewage treatment which could not be ameliorated by the reasonable provision and operation of standby generation facilities.
- (c) On any occasion where unusual weather conditions adversely affect the operation of the sewage treatment works, the Consent Holder shall use its best endeavours to mitigate that adverse affect.
- (d) For a sample of the discharge to be considered for the purposes of (a) above, the Consent Holder shall notify the Agency by telefax or telephone as soon as unusual weather conditions are known to have adversely affected operations and shall confirm the circumstances in writing as soon as possible thereafter (and in any event within 14 days of the occurrence of such conditions). That notification shall include a full description of the unusual weather conditions and their impact on the operation of the works.

## RECORDING AND REPORTING

### 18. (a) MAINTENANCE PROGRAMME

- I. The Consent Holder shall establish and operate a documented maintenance programme including the method and frequency of cleaning and replacement of UV lamps and flow meters, and record all non-routine actions undertaken that may have adversely affected effluent quality. Details of the maintenance programme shall be provided to the Agency for agreement. Copies of the programme shall be made available for inspection by the Agency's officers at all reasonable times.
- II. The Consent Holder shall keep records of the maintenance undertaken (both routine and non-routine). Copies of these records shall be maintained by the Consent Holder and kept available for inspection by the Agency's officers at all reasonable times.
- III. On request, the Consent Holder shall supply the Agency with a written report on the maintenance, and all non-routine actions that may have adversely affected effluent quality.





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(b) UV PROCESS MONITORING AND REPORTING

- I. Continuous recorders, with on-site visual display from which readings may be readily obtained, shall be provided and maintained by the Consent Holder enabling the following to be measured and recorded at 15 minute intervals:
  - a) the instantaneous flow rate through each UV irradiation channel
  - b) the instantaneous applied UV dose for each UV irradiation channel
  - c) any other parameters used in calculating the UV dose
- II. Copies of the records shall be maintained by the Consent Holder for a minimum of 2 years or such longer time as the Agency may from time to time specify and be kept at a nominated place available for inspection by the Agency's officers at all reasonable times.
- III. The Consent Holder shall supply to the Agency, 2 months in arrears, in a format specified by the Agency, on a three-monthly basis, the records of the readings specified in condition 18 (b) I.

(c) EXCEPTION REPORTS

The Consent Holder shall supply to the Agency at three monthly intervals, or upon request, a written report, detailing all occurrences where, at any time during the preceding disinfection period, as specified in condition 1 (b) above:

- I. there were any failures of any measurement system used to control the UV dosing system
- II. the external power supply to the UV disinfection system was interrupted
- III. a Discharge of sewage effluent was made which had not been subjected to the required UV dose as specified in conditions 1 (e) and 2 of this consent.







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- IV. The report shall detail the reasons why the situation occurred, and the actions taken by the Consent Holder. The report shall include an assessment of what measures can be adopted in the future to minimise such occurrences.
- V. The Agency, if satisfied that the cause is an emergency and outside the control of the Consent Holder, and that all possible measures were taken to minimise the impact of the discharge on controlled waters, shall exclude the measurements for the period for compliance purposes with condition 1 (e).

(d) DISINFECTION EFFICACY MONITORING

The Consent Holder shall carry out the monitoring programme as detailed below, unless otherwise notified in writing by the Agency. The results of the monitoring programme are to be supplied to the Agency in a format specified by the Agency, on a three-monthly basis, two months in arrears.

- I. SAMPLE POINTS AS SHOWN ON ATTACHED PLAN CG0351401:
- A Crude influent to sewage treatment works at NGR SH 57190 01930
  - B Secondary treated sewage effluent before UV disinfection at NGR SH 57200 01860.
  - C Secondary treated sewage effluent after UV disinfection (prior to mixing with storm flows) at NGR SH 57200 01840.
- II. Microbiological determinands and frequencies (Agency Standard Analytical Methods to be employed, including AQC):
- 1) **Faecal Coliforms** – weekly, at sample points A, B and C;
  - 2) **Total Coliforms** – weekly, at sample points A, B and C;
  - 3) **Faecal Streptococci** – weekly, at sample points A, B and C;
  - 4) **Salmonella** – weekly, at sample points B and C;
  - 5) **Representative enteroviruses** – weekly, at sample points B and C;
  - 6) **F-specific bacteriophage** - weekly, at sample points B and C.

Following two consecutive years of full consent compliance, the Agency will review the data annually and notify in writing the Consent Holder of any resulting change to the monitoring regime.





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### III. Other determinands and frequencies

The measurement of all determinands below shall coincide with the measurement of microbial determinands. At each sample point, samples for analysis should be sub-sampled from a single bulk sample. Where this cannot be achieved, the sampling regime shall be clearly recorded.

- a) The flow through each UV irradiation channel shall be measured.
- b) The applied dose shall be recorded in each UV irradiation channel.
- c) The measured UV transmittance at 254nm in the channel shall be measured by laboratory analysis of samples collected from sample point B or C.
- d) Suspended solids shall be measured at sample point B or C.
- e) BOD (ATU) shall be measured at sample point B or C.

19. The Consent Holder shall notify the Agency in writing if any known or planned introduction or material change in respect of discharges from trade premises to the sewerage system occurs, that may increase or introduce into the effluent any "dangerous substance" (set out in Annex 2 to this notice as updated from time to time and notified to the Consent Holder in writing), and any other substance considered by the Consent Holder as having or likely to have a significant effect on the receiving waters.

### SUBSTANTIAL CHANGE

20. (a) A discharge shall not be made from the works if it would cause a significant increase in the polluting effects of the discharge on controlled waters as a result of a new or altered discharge of trade effluent into the works.
- (b) A discharge of trade effluent into the works is new if -
- (i) it is made by the sewerage undertaker and is of a kind not made into the works by the undertaker immediately before the date of effect of this consent; or
  - (ii) it is made by a third party and the discharge is authorised on or after that date.





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- (c) A discharge of trade effluent into the works is altered if -
- (i) it is made by the sewerage undertaker and its composition or quantity changes significantly on or after the date of modification of this consent; or
  - (ii) it is made by a third party and the alteration of the discharge is authorised on or after that date.
- (d) An increase in the polluting effects of the discharge on controlled waters is not significant for the purposes of this condition if it relates to any characteristics of the discharge which are specifically regulated by condition 14 of this consent schedule but it may be significant if it is caused by a change in some other characteristic of the discharge.
- (e) For the purposes of this condition “trade effluent” means -
- (i) any discharge by the sewerage undertaker other than
    - (1) domestic sewage from premises connected directly or indirectly to the works; or
    - (2) surface water run-off;
  - (ii) any discharge by a third party which is authorised under Chapter III of Part IV of the Water Industry Act 1991 or which is only accepted as a result of a contract with the sewerage undertaker.

## UNAUTHORISED DISCHARGES

22. (a) A discharge made from the works shall not contain any poisonous, noxious or polluting matter or solid waste matter which is attributable to any unauthorised discharge into the works.
- (b) A discharge into the works is unauthorised if it is made by a third party and either there is no obligation to receive it or conditions subject to which there is an obligation to receive it are not observed.
- (c) Nothing in this, or any other, condition of this consent prevents anyone from relying on any defence available to them under Section 87 of the Water Resources Act 1991.





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## TELEMETRY

23. A telemetry alarm system connected to a 24-hour manned station shall be provided and maintained by the Consent Holder to provide a warning in the event that:
- (a) the external power supply to the UV disinfection system has been interrupted;
  - (b) failure of any measurement system used to control the UV dosing system has occurred;
  - (c) a Discharge of sewage effluent has occurred which has not been subjected to the required UV dose as specified in conditions 1(d) and 2 of this consent.

## EMERGENCY NOTIFICATION

24. The Consent Holder shall notify the Agency in the event of a Discharge of sewage effluent which has not been subjected to the required UV dose as specified in conditions 1(e) and 2 of this consent, or of power failure causing loss of secondary treatment. Such notification must be made as soon as practicable and no later than 24 hours after the event, and shall detail the reasons why the situation occurred, and the actions taken by the Consent Holder.

## POWER

25. Full stand-by power generation facilities shall be provided and maintained by the Consent Holder in good working order to enable automatic resumption of power to the UV disinfection system in the event of external power supply failure to the UV disinfection plant.





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<b>DATED</b>	<b>31<sup>st</sup> December 2005</b>

### CONDITIONS OF CONSENT TO DISCHARGE

**Urban Wastewater Treatment Regulations 1994, as applied to:**

**Secondary treated sewage effluent with ultraviolet disinfection ("the Discharge")**

**FROM: Tywyn Wastewater Treatment Works**

- U0** (a) The Consent Holder shall comply with the Urban Waste Water Treatment (England and Wales) Regulations 1994 ('the Regulations')
- (b) For the purpose of condition U1 below, interpretations and references to a numbered regulation of Schedule shall have the meaning as in the Regulations, unless otherwise indicated.
- U1** (a) The Discharge derives from an agglomeration with a population equivalent of less than 10,000 discharging to coastal waters.
- (b) The Consent Holder shall inform the Agency in writing of any change, or proposed change, to the population equivalent such as would make a material change to the application of the Regulations and shall, on request, inform the Agency in writing of the actual population equivalent.
- (c) The Discharge shall be subject to Regulation 5(7) and shall satisfy the requirements of Regulation 5(8)(a).



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Annex 1

‘LOOK UP TABLE’

<u>Column 1</u>	<u>Column 2</u>
Number of samples taken in any period of 12 months	Maximum number of samples permitted to exceed limit for given determinand
4-7	1
8-16	2
17-28	3
29-40	4
41-53	5
54-67	6
68-81	7
82-95	8
96-110	9
111-125	10
126-140	11
141-155	12
156-171	13
172-187	14
188-203	15
204-219	16
220-235	17
236-251	18
252-268	19
269-284	20
285-300	21
301-317	22
318-334	23
335-350	24
351-365	25



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#### Annex 2

- |  |                              |
|--|------------------------------|
| 1. Mercury and its compounds   | 2. Cadmium and its compounds |
| 3. Hexachlorocyclohexane<br>(lindane and related compounds)            | 4. Carbon tetrachloride      |
| 5. DDT (the isomers of 1,1,1-trichloro-2,2 bis(p-chlorophenyl) ethane) |                              |
| 6. Pentachlorophenol (PCP)   | 7. Aldrin                    |
| 8. Dieldrin  | 9. Endrin                    |
| 10. Isodrin  | 11. Hexachlorobenzene (HCB)  |
| 12. Hexachlorobutadiene (HCBd)   | 13. Chloroform               |
| 14. Polychlorinated biphenyls  | 15. Dichlorvos               |
| 16. 1,2-Dichloroethane   | 17. Trichlorobenzene         |
| 18. Atrazine   | 19. Simazine                 |
| 20. Tributyltin compounds  | 21. Triphenyltin compounds   |
| 22. Trifluralin  | 23. Fenitrothion             |
| 24. Azinphos-methyl  | 25. Malathion                |
| 26. Endosulfan   | 27. Lead                     |
| 28. Chromium   | 29. Zinc                     |
| 30. Copper   | 31. Nickel                   |
| 32. Arsenic  | 33. *Iron                    |
| 34. *pH if outside the range 5.5 to 9.0                                | 35. *Boron                   |
| 36. Vanadium   | 37. PCSD'S                   |
| 38. Cyfluthrin   | 39. Sulcofuron               |
| 40. Flucifuron   | 41. Permethrin               |
| 42. 4-Chloro-3-methyl-phenol   | 43. 2-Chlorophenol           |
| 44. 2,4-Dichlorophenol   | 45. 2,4-D (ester)            |
| 46. 2,4-D (non ester)  | 47. 1,1,1-Trichloroethane    |
| 48. 1,1,2-Trichloroethane  | 49. Bentazone                |
| 50. Benzene  | 51. Biphenyl                 |
| 52. Chloronitrotoluenes  | 53. Demeton                  |
| 54. Dimethoate   | 55. Linuron                  |
| 56. MCPA   | 57. Mecoprop                 |
| 58. Mevinphos  | 59. Napthalene               |
| 60. Omethoate  | 61. Toluene                  |
| 62. Triazophos   | 63. Xylene                   |
| 64. Cyanide  | 65. Azinphos-ethyl           |
| 66. Fenthion   | 67. Parathion                |
| 68. Parathion-methyl   | 69. Trichloroethylene        |
| 70. Tetrachloroethylene  | 71. Dioxins                  |
| 72. PAHs   | 73. Nonyl phenol             |
| 74. Nonyl phenyl ethoxylate  | 75. Di-ethylhexyl phthalate  |
| 76. Bisphenol-A  | 77. Diazinon                 |
| 78. Chlorfenvinphos  | 79. Chlorotoluron            |
| 80. Isoproturon  | 81. Diuron                   |
| 82. Propetamphos   | 83. Flumethrin               |
| 84. Amitraz  | 85. High-Cis Cypermethrin    |
| 86. Cyromazine   | 87. Deltamethrin             |
| 88. Cypermethrin   |                              |

This list is applicable as at 1 December 1998 and will be updated as and when changes to the relevant legislative requirements occur.

\*Notification to the Agency by the Consent holder is only required in respect of changes to trade effluents likely to cause significant changes to the pH value, and/or iron or boron concentrations, of the crude sewage.



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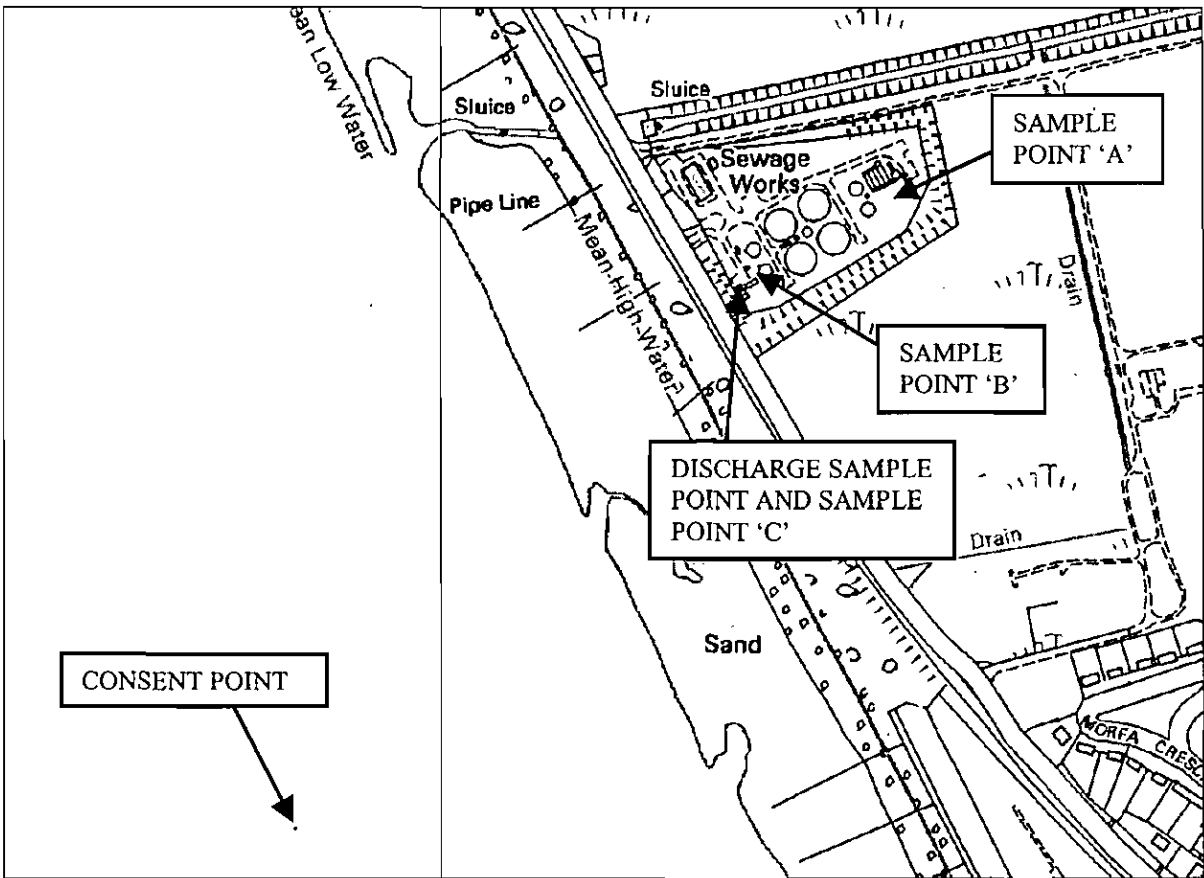


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Annex 3

Plan No. CG0351401



NOT TO SCALE







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## APPENDIX

### UV code of practice

The UV disinfection system shall be provided and maintained to ensure that its hydraulic characteristics and the path length of UV irradiation are such that, during the required period of disinfection, the effluent is subjected to the UV dose rate specified in the consent.

The UV disinfection system and stand-by power facilities shall be operated so as to minimise the frequency and duration of an emergency discharge of sewage effluent which has not been subjected to the required UV dose (as specified in the consent).

The applied and received UV dose (as defined in the Calculation of UV dose) shall be determined from:

- 1) the flow rate of effluent through the UV disinfection system (l/s),
- 2) the reactor volume,
- 3) the theoretical UV intensity at end of lamp life at an assumed transmittance for the effluent (at 254 nm) of 45%

### Maintenance

- a) A maintenance programme, including the method and frequency of cleaning and replacement of the UV lamps/ UV radiation monitors, shall be undertaken by the Consent Holder as agreed in writing with the Agency.
- b) Any failure to meet the requirements of the agreed maintenance programme shall be advised to the Agency as soon as practicable and a report providing an explanation of the circumstances provided to the Agency within 2 weeks.
- c) The Consent Holder shall keep records of the maintenance undertaken (both programmed and un-programmed) and shall include the measured UV intensity readings immediately before and immediately after each UV lamp / UV monitor cleaning or replacement. Copies of these records shall be maintained by the Consent Holder and kept available for inspection by the Agency's officers at all reasonable times.



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## APPENDIX

### Definitions

For each bank of UV lamps, UV dose is defined as the product of UV light intensity (impacting on wastewater passing through the bank) and the retention time (of wastewater passing through the bank).

For the purposes of consent, the following terms are defined for each UV irradiation bank:

**“reactor volume”**

is the volume of wastewater in the bank at any given time;

**“adjusted retention time”**

is the reactor volume divided by the measured rate of flow through the UV bank;

**“measured UV intensity”**

is the average UV intensity (at 254 nm) for the effluent measured (at positions within the reactors agreed with the Agency in writing) for each operating bank of UV lamps.

**“theoretical UV intensity”**

is the predicted average UV intensity across the reactor volumes, being delivered by the operating lamps at the UV transmittance of 45% (as agreed with the Agency in writing) for the effluent (at 254nm - predicted from the rated output (mW) of the UV lamps at end of lamp life (cleaned) which are energised);

### Calculations

$$\text{i. Received UV Dose per bank (mJ/cm}^2\text{)} = \text{Measured UV intensity (mW/cm}^2\text{)} \times \text{Adjusted retention time (s)}$$

$$\text{ii. Applied UV Dose per bank (mJ/cm}^2\text{)} = \text{Theoretical UV Intensity (mW/cm}^2\text{)} \times \text{Adjusted Retention Time (s)}$$

The UV dose (Applied or Received) for each channel is the sum of the UV doses for each operational bank in the channel.

The method of measuring / estimating UV intensity at this site must be clearly defined.





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Web site: [www.dwrcymru.com](http://www.dwrcymru.com)

Heol Pentwyn  
Nelson  
Morgannwg Ganol  
Trehamis CF46 6LY

Ffôn: +44 (0)1443 452300  
Ffacs: +44 (0)1443 452323  
Safle gwe: [www.dwrcymru.com](http://www.dwrcymru.com)

Mr Iwan Hughes  
Water Quality  
Environment Agency  
Chester Road  
Buckley  
Flintshire  
CH7 4AJ

Dyddiad/Date:  
22 December 2005

Ymboldiadu/Enquiries:  
JP Edwards  
Tel: 01244 661628

Ein Cyf/Our Ref:  
Dinas WwTW  
Eich Cyf/Your Ref:

Dear Iwan

Just to confirm that DCWW agree to waive the Hands off period to enable the EA to modify the following consents as discussed in the meeting of 22 December 2005

Many I take this opportunity to thank you for spending time with Nina Jones and myself to go through the draft consent mods in such detail.

CG0144801 Abersoch WwTW  
CG0341601 Criccieth WwTW  
CM0058401 Flint WwTW  
CG0377601 Ganol WwTW  
CM0014201 Heswall WwTW  
CM0055401 Llanasa WwTW  
CM0069001 Neston WwTW  
CG0051701 Porthmadog WwTW  
CG0362401 Pwllhelli WwTW  
CM0082201 Queensferry WwTW  
CG014401 Rhosneigr WwTW  
CM0082501 Rhuddlan WwTW  
CM0078101 St Asaph WwTW  
CG0366001 Treborth WwTW  
CG0351401 Tywyn WwTW

Yours sincerely

**JP EDWARDS**  
Environmental Performance Manager

**glas**  
Glas Cymru Cyfyngedig

Welsh Water is owned by Glas Cymru - a 'not-for-profit' company  
Mae Dŵr Cymru yn eiddo i Glas Cymru - cwmni nad yd'n gwneud oir

We welcome correspondence in Welsh and English  
Rydym yn croeseu gohebiaeth yn y Gymraeg neu yn Saesneg

Dŵr Cymru Cyl, a limited company registered in  
Wales no. 2368777. Registered office: Pentwyn Road,  
Nelson, Trehamis, Mid Glamorgan CF46 6LY

Dŵr Cymru Cyl, cwmni cyfyngedig wedi'i gofrestru yng  
Nghymru rhif 2368777. Swyddfa gofrestrig: Heol Pentwyn,  
Nelson, Trehamis, Morgannwg Ganol CF46 6LY

creu lle gwell  
creating a better place



Asiantaeth yr  
Amgylchedd Cymru  
Environment  
Agency Wales

Dwr Cymru Cyfyngedig  
Pentwyn Road  
Nelson  
Treharris  
Mid Glamorgan  
CF46 6LY

Ein cyf/Our ref: IH/LA/various231205

Eich cyf/Your ref:

Dyddiad/Date: 23<sup>rd</sup> December 2005

**FAO MS JAN EDWARDS  
ENVIRONMENTAL QUALITY SCIENTIST**

Dear Ms Edwards,

**WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE  
ENVIRONMENT ACT 1995) CONSENT TO DISCHARGE SEWAGE EFFLUENT  
FROM THE FOLLOWING LOCATIONS:**

Abersoch - CG0144801  
Criccieth - CG0341601  
Flint - CM0058401  
Ganol - CG0377601  
Heswall - CM0014201  
Llanasa - CM0055401  
Neston - CM0069001  
Porthmadog - CG0051701

Pwllheli - CG0362401  
Queensferry - CM0082201  
Rhosneigr - CG0144401  
Rhuddlan - CM0082501  
St Asaph - CM0078101  
Treborrh - CG0366001  
Tywyn - CG0351401

I enclose the Agency's formal consent to discharge sewage effluent from the locations listed above.

Under the present Scheme of Charges for Discharges to Controlled Waters an annual charge will be made for all consents to discharge, except where the discharge is of sewage effluent of five cubic metres or less per day. The charge is based on information derived from the conditions attached to the consent to discharge, as outlined in the enclosed leaflet.

If you consider that the conditions imposed by the consent are unreasonable you have a right of appeal to National Assembly for Wales at Cathays Park, Cardiff CF10 3NQ.

Notice of an appeal must be given in writing within three months of this notification and must be accompanied by a statement of the grounds of appeal.

If granted, a consent under Schedule 10 of the Act, covers water quality considerations only. It does not alter the need to obtain any other consents or



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Amgylchedd Cymru  
Environment  
Agency Wales

approvals which might be required in connection with your proposal under other legislation. For example it does not give any right or permission to discharge where land is not owned by the applicant.

Please take careful note that if the holder of the consent changes, you must inform the Agency IN WRITING as soon as possible of the name of the new holder. This is to ensure that the rights and charges associated with the Consent are transferred to the new holder. A Certificate of Holder notice will be sent to you shortly which is designed for this purpose, and should be kept safely with the Consent until required.

If you have any queries regarding the enforcement of this consent, please do not hesitate to contact Iwan Williams, Regulatory Team Leader (Water Quality), Environment Agency Wales, Chester Road, Buckley, Flintshire, CH7 3AJ.

Yours sincerely,

*V. Matthews*

**VICKY MATTHEWS**  
**CUSTOMER CONTACT & AUTHORISATIONS OFFICER**

Llinell uniongyrchol/Direct dial: 01244 894502

Ffacs uniongyrchol/Direct fax: 01244 550144

E-bost uniongyrchol/Direct e-mail: [vicky.matthews@environment-agency.gov.uk](mailto:vicky.matthews@environment-agency.gov.uk)





# ENVIRONMENT AGENCY WALES NORTHERN AREA CONSENT REVIEW 2004

## UWWTD

## [URBAN WASTE WATER TREATMENT DIRECTIVE 1991]

# FILE NOTE

A snapshot of WRA 91 Discharge Consents qualifying for review under UWWTD was extracted from WIMS (EA electronic Public Register) on the 21<sup>st</sup> April 2004. All details shown on this file note are based on the permission extant as of this date.

CONSENT REF :	CG0351401	VERSION :	3
OPERATOR :	DWR CYMRU CYFYNGEDIG		
DISCHARGE SITE :	TYWYN STW MORFA GWYLLT TYWYN		
EXTANT CONSENT ISSUE DATE :	06/02/2003	EFFECTIVE DATE :	07/02/2003
DWF (m <sup>3</sup> /day) :	1670	MAX DAILY VOL. (m <sup>3</sup> /day) :	5011
		RATE (l/s) :	58

Records held on WIMS show TYWYN STW MORFA GWYLLT TYWYN (CG0351401) to be extant under version 3 issued 06/02/2003 with numeric consent conditions, effective 07/02/2003. The works is currently consented to discharge a max daily volume of 5011m<sup>3</sup>/day effluent to the COASTAL WATERS OF CARDIGAN BAY at NGR SH5688001320.

UWWTD directive aims to deliver a standard level of sewage treatment throughout EC member states. This has been interpreted as prescribing a minimum of secondary biological treatment (package plant or equivalent) on all discharges made to a controlled surface water; or a minimum of primary (septic tank or equivalent) treatment on all discharges made to ground.

The discharge of 5011m<sup>3</sup>/day effluent to 'COASTAL WATERS OF CARDIGAN BAY', for the purposes of this review, is described as 'secondary treated effluent to coastal waters'. This treatment / receiving water combination has been assessed\* as APPROPRIATE under the UWWTD review. This consent is reviewed as APPROPRIATE under UWWTD as of 01/09/2005.

\* NB: the assessment of this Discharge Consent to meet UWWTD 'appropriate treatment' criteria is based solely on provision of the appropriate 'threshold' level of minimum treatment for the receiving medium. This review does not assess appropriateness in terms of the specific river needs of the receiving water stretch.

Iwan Williams  
Regulatory Team Leader (Water Quality)

# Water Resources Act 1991

as amended by the Environment Act 1995



ASiantaeth Yr  
Amgylchedd Cymru  
Environment  
Agency Wales

## Consents to Discharge

### Certificate of Holder

#### Part A

To: DWR CYMRU CYFYNGEDIG  
PENTWYN ROAD  
NELSON  
TREHARRIS  
MID GLAMORGAN CF46 6LY

NB: For a body corporate the job title is a point of contact.

Holder Start Date : 06 February 2003

The Environment Agency ("the Agency") hereby confirm that the above named person (or organisation) is a / the registered Holder of the Consent : CG0351401 Consent Issued : 06 February 2003

Nature of Discharge(s) STEC Sewage effluent

at SH5688001320 TYWYN STW MORFA GWYLLT TYWYN,

*Note : This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else, you must pass the consent to them and tell the Agency within 21 days. Responsibility for the consent cannot be disclaimed by the Holder but the registration of Holder may be transferred to a successor. To do this, please complete the form below (Part B), then tear it off and return it to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you will still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries, please contact your local Environment Agency office, quoting the Consent Reference.*

#### Part B

Please complete in block capitals or type

To: Water Resources Act 1991 : Notice of transfer of Consent to Discharge

Consent Reference : CG0351401

Name : DWR CYMRU CYFYNGEDIG

Consent Issued : 06 February 2003

Address : PENTWYN ROAD

NELSON

TREHARRIS

MID GLAMORGAN CF46 6LY

I / We\* hereby serve notice on the Agency that I / we\* am / are\* no longer a / the\* Holder of the above consent which will be / was\* transferred to :

\* delete as appropriate

Name(s) of the new Holder(s) :

Post Code :

Date of Transfer to new Holder(s) \_\_\_\_\_

Signed : \_\_\_\_\_

Dated : \_\_\_\_\_

Name (block capitals) : \_\_\_\_\_

Position (if appropriate) : \_\_\_\_\_

(to be completed when signing on behalf of corporate bodies)

## Deddf Adnoddau Dwr 1991

fel y'i diwygiwyd gan Ddeddfyr Amgylchedd 1995



ASiantaeth yr  
AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES

## Caniatâd Gollwng

Tystysgrif Daliwr

### Rhan A

At: DWR CYMRU CYFYNGEDIG

PENTWYN ROAD

NELSON

TREHARRIS

MID GLAMORGAN CF46 6LY

DS: I gorfforaeth gorfforedig mae teitl y swydd yn bwynt cysylltu.

Dyddiad Cychwyn y Daliwr : 6 Chwefror 2003

Mae Asiantaeth yr Amgylchedd ("yr Asiantaeth") yn cadarnhau drwy hyn mai / bod y sawl (neu sefydliad) a enwyd uchod yw / yn ddaliwr cofrestredig y caniatâd : CG0351401 Cyhoeddwyd y Caniatâd : 6 Chwefror 2003

Natur y Gollyngiad(au) : STEC Carthffrwd

yn SH5688001320 TYWYN STW MORFA GWYLLT TYWYN,

Noder : Dylid cadw'r dystysgrif hon gyda'r ddogfen ganiatâd i gyfeirio ati yn y dyfodol. Os byddwch yn trosglwyddo cyfrifoldeb am y gollyngiad i rywun arall, rhaid i chi drosglwyddo'r caniatâd iddo ef neu hi a dweud wrth yr Asiantaeth cyn pen 21 diwrnod. Ni all y Daliwr wadu cyfrifoldeb am y caniatâd, ond gall cofrestriad y Daliwr gael ei drosglwyddo i olynnydd. I wneud hynny, byddwch gystal â llenwi'r ffurflen isod (Rhan B), yna'i dychwelyd i'r cyfeiriad a nodir. Os fethwch â throsglwyddo'r caniatâd, hyd yn oed os nad ydych ar y safle mwyach, gallwch gael eich erlyn am achosi llygredd. Os trosglwyddwch y caniatâd ond heb ddweud wrthym, yna byddwch yn cyflawni trosedd. Os bydd gennych unrhyw ymholiadau a fydddech gystal â chysylltu â'ch swyddfa Asiantaeth yr Amgylchedd lleol, gan ddyfynnu Cyfeirnod y Caniatâd.

----- torrwch yma -----

### Rhan B

Llenwch mewn priflythrennau bras neu deipio

At: Deddf Adnoddau Dwr 1991 : Hysbysiad am drosglwyddo Caniatâd Gollwng

Cyfeirnod y Caniatâd : CG0351401

Enw : DWR CYMRU CYFYNGEDIG

Cyhoeddwyd y 6 Chwefror 2003

Cyfeiriad : PENTWYN ROAD

Caniatâd :

NELSON

TREHARRIS

MID GLAMORGAN CF46 6LY

Yr wyf fi / Yr ydym ni\* drwy hyn yn hysbysu'r Asiantaeth nad fi / ni mwyach yw\* Daliwr / Deiliaid y caniatâd uchod a fydd yn cael / cafodd ei drosglwyddo i

\* dilêr fel yn briodol

Enw(au) y Daliwr / Deiliaid newydd :

Côd Post :

Dyddiad Trosglwyddo i'r Daliwr / Deiliaid newydd :

Llofnodwyd :

Dyddiedig :

Enw (priflythrennau bras) :

Swydd (os yn briodol) :

(i'w llenwi pan yn llofnodi ar ran corfforaethau corfforedig)





DŴR CYMRU  
WELSH WATER

Dinas  
Llanwnda  
Caernarfon  
Gwynedd LL54 5UD

Ffôn: 0800 052 0130  
Ffacs: +44(0)1286 832227  
Safle gwe: [www.dwrcymru.com](http://www.dwrcymru.com)

Dinas  
Llanwnda  
Caernarfon  
Gwynedd LL54 5UD

Tel: 0800 052 0130  
Fax: +44(0)1286 832227  
Web site: [www.dwrcymru.com](http://www.dwrcymru.com)

Ms Sian Owens  
Team Leader (Water Quality)  
Environment Agency  
Chester Road  
Buckley  
Flintshire  
CH7 4AJ

Dyddiad/Date:  
24 January 2003

Ymholiadau/Enquiries:  
JP Edwards  
Tel: 01244 661628

Eir Cyf./Our Ref:  
UV Consent modifications  
Eich Cyf./Your Ref:

Dear Sian

**Re: Agreement to modify UV Consents within the 4 year hands off period**

I hereby write to inform you that Dwr Cymru Cyf are agreeable to you modifying the UV Consent in situ clause as detailed in the e-mail from Wendy Price dated 24 January (16:03 hrs).

The proposed condition being as follows:

*The measured UV transmittance at 254 nm at the inlet shall be measured by laboratory analysis of samples collected from sample point B.*

Yours sincerely

JP EDWARDS  
Area Regulation Scientist

RECEIVED  
29 JAN 2003

BUCKLEY

glas

Glas Cymru Cyfyngedig

Welsh Water is owned by Glas Cymru - a "not-for-profit" company  
Mae Dŵr Cymru yn eddio i Glas Cymru - cwmni nad yw'n gneud elw.

We welcome correspondence in Welsh and English  
Rydym yn croesawu gohebiaeth yn y Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, a limited company registered in  
Wales no. 2366777. Registered office: Pentwyn Road,  
Nelson, Treham, Mid Glamorgan CF46 6LY

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng  
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn,  
Nelson, Treham, Morgannwg Ganol CF46 6LY

PR

Ein cyf/Our ref. WP/SH/CG0351401

Dyddiad/Date: 23<sup>rd</sup> December 2002

COPY

Environment Quality Scientist  
Dwr Cymru Cyf  
Pentwyn Road  
Nelson  
Treharris  
Mid Glamorgan  
CF46 6LY

Dear Sir/Madam,

**RE: WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) MODIFICATION OF CONSENT TO DISCHARGE NO.CG0351401.**

Further to our recent correspondence concerning the consent to discharge Sewage Effluent from Tywyn Waste Water Treatment Works, I enclose the Agency's formal notice of the modifications made to the conditions of the consent.

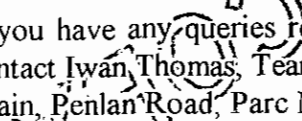
Under the present Scheme of Charges for Discharges to Controlled Waters an annual charge will be made for all consents to discharge, except where the discharge is of sewage effluent of five cubic metres or less per day. The charge is based on information derived from the conditions attached to the consent to discharge, as outlined in the enclosed leaflet. A change in conditions may therefore result in a change in annual charge, you may therefore receive a revised bill in due course.

If you are not satisfied with the new conditions of the consent you may appeal against the decision to The National Assembly for Wales at Cathays Park, Cardiff CF10 3NQ.

Please take careful note that if the holder of the consent changes, you must inform the Agency IN WRITING as soon as possible of the name of the new holder. This is to ensure that the rights and charges associated with the Consent are transferred to the holder. A Certificate of Holder notice will be sent to you shortly which is designed for this purpose, and should be kept safely with the Consent until required.

Asiantaeth yr Amgylchedd Cymru  
Ffordd Caer, Bwcle, Sir y Fflint CH7 3AJ  
Ffon 01244 550124 Ffacs 01244 550144

Environment Agency Wales  
Chester Road, Buckley, Flintshire CH7 3AJ  
Tel 01244 550124 Fax 01244 550144

If you have any queries regarding the enforcement of this consent, please do not hesitate to contact Iwan Thomas, Team Leader Environment Protection, Environment Agency Wales, Llwyn Brain, Penlan Road, Parc Menai, Bangor, Gwynedd, LL57 4DE.

Yours sincerely,

*P. Stella Hammond*

**Kelvin Graham**  
**Team Leader Customer Contact & Authorisations**

Asiantaeth yr Amgylchedd Cymru  
Ffordd Caer, Bwcle, Sir y Fflint CH7 3AJ  
Ffon 01244 550124 Ffacs 01244 550144

Environment Agency Wales  
Chester Road, Buckley, Flintshire CH7 3AJ  
Tel 01244 550124 Fax 01244 550144

# Water Resources Act 1991

as amended by the Environment Act 1995

## Consents to Discharge

### Certificate of Holder



ASiantaeth Yr  
AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES

#### Part A

To: DWR CYMRU CYFYNGEDIG  
PENTWYN ROAD  
NELSON  
TREHARRIS  
MID GLAMORGAN CF46 6LY

NB: For a body corporate the job title is a point of contact.

Holder Start Date : 19 December 2002

The Environment Agency ("the Agency") hereby confirm that the above named person (or organisation) is a / the registered Holder of the Consent : CG0351401 Consent Issued : 19 December 2002

Nature of Discharge(s) STEC Treated sewage Effluent - Continuous

at SH5688001320 TYWYN STW MORFA GWYLLT TYWYN ,

*Note : This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else, you must pass the consent to them and tell the Agency within 21 days. Responsibility for the consent cannot be disclaimed by the Holder but the registration of Holder may be transferred to a successor. To do this, please complete the form below (Part B), then tear it off and return it to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you will still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries, please contact your local Environment Agency office, quoting the Consent Reference.*

#### Part B

Please complete in block capitals or type

To: Water Resources Act 1991 : Notice of transfer of Consent to Discharge

Consent Reference : CG0351401

Name : DWR CYMRU CYFYNGEDIG

Consent Issued : 19 December 2002

Address : PENTWYN ROAD

NELSON

TREHARRIS

MID GLAMORGAN CF46 6LY

I / We\* hereby serve notice on the Agency that I / we\* am / are\* no longer a / the\* Holder of the above consent which will be / was\* transferred to :

\* delete as appropriate

Name(s) of the new Holder(s) :

Post Code :

Date of Transfer to new Holder(s) .....

Signed : .....

Dated : .....

Name (block capitals) : .....

Postion (if appropriate) : .....

(to be completed when signing on behalf of corporate bodies)

**Deddf Adnoddau Dwr 1991**  
*fel y'i diwygiwyd gan Ddeddf yr Amgylchedd 1995*



**ASiantaeth yr  
AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES**

**Caniatâd Gollwng**

Tystysgrif Daliwr

**Rhan A**

**At : DWR CYMRU CYFYNGEDIG  
PENTWYN ROAD  
NELSON  
TREHARRIS  
MID GLAMORGAN CF46 6LY**

*DS: I gorfforaeth gorfforedig mae teitl y swydd yn bwynt cysylltu.*

**Dyddiad Cychwyn y Daliwr : 19 December 2002**

*Mae Asiantaeth yr Amgylchedd ("yr Asiantaeth") yn cadarnhau drwy hyn mai / bod y sawl (neu sefydliad) a enwyd uchod yw / yn ddaliwr cofrestredig y caniatâd : CG0351401*

**Cyhoeddwyd y Caniatâd : 19 December 2002**

**Natur y Gollyngiad(au) : STEC Treated sewage Effluent - Continuous  
yn SH5688001320 TYWYN STW MORFA GWYLLT TYWYN ,**

*Noder : Dylid cadw'r dystysgrif hon gyda'r ddogfen ganiatâd i gyfeirio ati yn y dyfodol. Os byddwch yn trosglwyddo cyfrifoldeb am y gollyngiad i rywun arall, rhaid i chi drosglwyddo'r caniatâd iddo ef neu hi a dweud wrth yr Asiantaeth cyn pen 21 diwrnod. Ni all y Daliwr wadu cyfrifoldeb am y caniatâd, ond gall cofrestriad y Daliwr gael ei drosglwyddo i olynnydd. I wneud hynny, byddwch gystal â llenwi'r ffurflen isod (Rhan B), yna'i dychwelyd i'r cyfeiriad a nodir. Os fethwch â throsglwyddo'r caniatâd, hyd yn oed os nad ydych ar y safle mwyach, gallwch gael eich erlyn am achosi llygredd. Os trosglwyddwch y caniatâd ond heb ddweud wrthym, yna byddwch yn cyflawni trosedd. Os bydd gennych unrhyw ymholiadau a fydddech gystal â chysylltu â'ch swyddfa Asiantaeth yr Amgylchedd lleol, gan ddyfynnu Cyfeirnod y Caniatâd.*

**Rhan B**

*Llenwch mewn priflythrennau bras neu deipio*

**At : Deddf Adnoddau Dwr 1991 : Hysbysiad am drosglwyddo Caniatâd Gollwng**

**Cyfeirnod y Caniatâd : CG0351401**

**Enw : DWR CYMRU CYFYNGEDIG**

**Cyhoeddwyd y 19 December 2002**

**Cyfeiriad : PENTWYN ROAD**

**Caniatâd :**

**NELSON**

**TREHARRIS**

**MID GLAMORGAN CF46 6LY**

*Yr wyf fi / Yr ydym ni\* drwy hyn yn hysbysu'r Asiantaeth nad fi / ni mwyach yw\* Daliwr / Deiliaid y caniatâd uchod a fydd yn cael / cafodd ei drosglwyddo i*

*\* dilêr fel yn briodol*

**Enw(au) y Daliwr / Deiliaid newydd :**

**Côd Post :**

**Dyddiad Trosglwyddo i'r Daliwr / Deiliaid newydd :** .....

**Llofnodwyd :** .....

**Dyddiedig :** .....

**Enw (priflythrennau bras) :** .....

**Swydd (os yn briodol) :** .....

*(i'w lenwi pan yn llofnodi ar ran corfforaethau corfforedig)*

Your ref.: various  
Our ref.: N/WQConsents/DSAnnex

Date: 14<sup>th</sup> March 2000



ASiantaeth Yr  
Amgylchedd Cymru  
ENVIRONMENT  
AGENCY WALES

Mr A. Andrews  
Dŵr Cymru cyf.  
Plas Y Fynnon  
Cambrian Way  
Brecon  
LD3 7HP

RECEIVED  
5 APR 2000  
BUCKLEY

Dear Sir

### DISCHARGE CONSENTS - NOTIFICATION OF CHANGE TO DANGEROUS SUBSTANCES ANNEX

According to our records, you have a Consent to discharge trade or sewage effluent. The Discharge Consent contains the following condition or one that is similar: -

*"The discharger shall notify the Agency in writing if any known introduction or material change in respect of discharges from trade premises...occurs that may increase or introduce into the effluent any "dangerous substance" included on List I, List II, or Red List (set out in Annex ...to this notice as updated from time to time and notified to the discharger in writing)..."*

Owing to Regulations issued by DETR, the Environment Agency has reviewed the listing of substances in the Annex to this condition.

The Surface Waters (Dangerous Substances) (Classification) Regulations (SI No 2560 (1997) and SI No 389 (1998)) have made some substances, which had previously been identified in Government circular 7/89, statutory and have added 20 new substances to this list. The Annex listing has also been revised to reflect the additional substances in the Regulations and to include other substances that have become a cause for concern since 1989 when the listing was first issued.

**This letter and the attached revised listing serves as the required Notification, referred to in the Consent condition. The change takes immediate effect. Please replace the old list with the new one. Please contact your local Environment Agency office and write or speak to Alun Davies if you have any queries about this letter.**

Thank you for your help in this important matter.

Yours faithfully

*B. Williams*

PP  
**KEVIN THOMAS**  
**WATER QUALITY MANAGER WALES**

Asiantaeth yr Amgylchedd Cymru  
Plas-yr-Afon, Parc Busnes Llancirwg, Llancirwg, Caerdydd, CF3 0EY  
Ffon: 029 20770088 Ffacs: 029 20798555

Environment Agency Wales  
Rivers House, St Mellons Business Park, St Mellons, Cardiff, CF3 0EY  
Tel 029 20770088 Fax 029 20798555

CONSENT NO.	CG0351401
SCHEDULE NO.	

# ANNEX

- |  |                              |
|--|------------------------------|
| 1. Mercury and its compounds   | 2. Cadmium and its compounds |
| 3. Hexachlorocyclohexane (lindane and related compounds)               | 4. Carbon tetrachloride      |
| 5. DDT (the isomers of 1,1,1-trichloro-2,2 bis(p-chlorophenyl) ethane) |                              |
| 6. Pentachlorophenol (PCP)   | 7. Aldrin                    |
| 8. Dieldrin  | 9. Endrin                    |
| 10. Isodrin  | 11. Hexachlorobenzene (HCB)  |
| 12. Hexachlorobutadiene (HCBd)   | 13. Chloroform               |
| 14. Polychlorinated biphenyls  | 15. Dichlorvos               |
| 16. 1,2-Dichloroethane   | 17. Trichlorobenzene         |
| 18. Atrazine   | 19. Simazine                 |
| 20. Tributyltin compounds  | 21. Triphenyltin compounds   |
| 22. Trifluralin  | 23. Fenitrothion             |
| 24. Azinphos-methyl  | 25. Malathion                |
| 26. Endosulfan   | 27. Lead                     |
| 28. Chromium   | 29. Zinc                     |
| 30. Copper   | 31. Nickel                   |
| 32. Arsenic  | 33. *Iron                    |
| 34. *pH outside range 5.5 to 9.0                                       | 35. *Boron                   |
| 36. Vanadium   | 37. PCSD'S                   |
| 38. Cyfluthrin   | 39. Sulcofuron               |
| 40. Flucifuron   | 41. Permethrin               |
| 42. 4-Chloro-3-methyl-phenol   | 43. 2-Chlorophenol           |
| 44. 2,4-Dichlorophenol   | 45. 2,4-D (ester)            |
| 46. 2,4-D (non ester)  | 47. 1,1,1-Trichloroethane    |
| 48. 1,1,2-Trichloroethane  | 49. Bentazone                |
| 50. Benzene  | 51. Biphenyl                 |
| 52. Chloronitrotoluenes  | 53. Demeton                  |
| 54. Dimethoate   | 55. Linuron                  |
| 56. MCPA   | 57. Mecoprop                 |
| 58. Mevinphos  | 59. Napthalene               |
| 60. Omethoate  | 61. Toluene                  |
| 62. Triazophos   | 63. Xylene                   |
| 64. Cyanide  | 65. Azinphos-ethyl           |
| 66. Fenthion   | 67. Parathion                |
| 68. Parathion-methyl   | 69. Trichloroethylene        |
| 70. Tetrachloroethylene  | 71. Dioxins                  |
| 72. PAHs   | 73. Nonyl phenol             |
| 74. Nonyl phenyl ethoxylate  | 75. Di-ethylhexyl phthalate  |
| 76. Bisphenol-A  | 77. Diazinon                 |
| 78. Chlorfenvinphos  | 79. Chlorotoluron            |
| 80. Isoproturon  | 81. Diuron                   |
| 82. Propetamphos   | 83. Flumethrin               |
| 84. Amitraz  | 85. High-Cis Cypermethrin    |
| 86. Cyromazine   | 87. Deltamethrin             |
| 88. Cypermethrin   |                              |

This list is applicable as at 1 December 1998 and will be updated as and when changes to the relevant legislative requirements occur.

\*Notification to the Agency by the Consent holder is only required in respect of changes to trade effluents likely to cause significant changes to the pH value, and/or iron or boron concentrations, of the crude sewage.

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AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES

Ein cyf/Our ref. RP/WP/CG0351401

Dyddiad/Date: 6<sup>th</sup> February 2003

Environment quality Scientist  
Dwr Cymru Cyfyngedig  
Pentwyn Road  
Nelson  
Treharris  
Mid Glamorgan  
CF46 6LY

Dear Sir/Madam,

**RE: WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) MODIFICATION OF CONSENT TO DISCHARGE NO: CG0351401.**

Further to our recent correspondence concerning the consent to discharge sewage effluent from Tywyn Waste Water Treatment Works, I enclose the Agency's formal notice of the modifications made to the conditions of the consent.

Under the present Scheme of Charges for Discharges to Controlled Waters an annual charge will be made for all consents to discharge, except where the discharge is of sewage effluent of five cubic metres or less per day. The charge is based on information derived from the conditions attached to the consent to discharge, as outlined in the enclosed leaflet. A change in conditions may therefore result in a change in annual charge, you may therefore receive a revised bill in due course.

If you are not satisfied with the new conditions of the consent you may appeal against the decision to The National Assembly for Wales at Cathays Park, Cardiff CF10 3NQ.

Please take careful note that if the holder of the consent changes, you must inform the Agency IN WRITING as soon as possible of the name of the new holder. This is to ensure that the rights and charges associated with the Consent are transferred to the holder. A Certificate of Holder notice will be sent to you shortly which is designed for this purpose, and should be kept safely with the Consent until required.

Asiantaeth yr Amgylchedd Cymru  
Ffordd Caer, Bwcle, Sir y Fflint CH7 3AJ  
Ffon 01244 550124 Ffacs 01244 550144

Environment Agency Wales  
Chester Road, Buckley, Flintshire CH7 3AJ  
Tel 01244 550124 Fax 01244 550144







ASiantaeth yr  
AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES

If you have any queries regarding the enforcement of this consent, please do not hesitate to contact Iwan Thomas, Team Leader Environment Protection, Environment Agency Wales, Chester Road, Buckley, Flintshire, CH7 3AJ.

Yours sincerely,

*P. Philard*

**Kelvin Graham**  
Team Leader Customer Contact & Authorisations



COPY

22

CONSENT NO.

G0351401



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AGENCY WALES

ENVIRONMENT AGENCY

WATER RESOURCES ACT 1991

(As amended by the Environment Act 1995)

NOTICE OF MODIFICATION OF CONSENT TO DISCHARGE

**TO:** Environment Quality Scientist  
Dwr Cymru Cyfyngedig  
Pentwyn Road  
Nelson  
Treharris  
Mid Glamorgan CF46 6LY

**WHEREAS** the Agency in pursuance of its powers under the Water Resources Act 1991 (as amended by the Environment Act 1995) **MODIFIED ITS CONSENT** to the making of a discharge of **SEWAGE EFFLUENT** on the 19th day of December 2002

**FROM** Tywyn Waste Water Treatment Works

the Agency in pursuance of its powers under the Water Resources Act 1991 (as amended by the Environment Act 1995) hereby **GIVES NOTICE** that **CONSENT** CG0351401 is hereby modified as follows:

Secondary Treated Sewage Effluent with Ultraviolet Disinfection

**FROM:** Tywyn Waste Water Treatment Works

**AT:** Tywyn

**TO:** coastal waters of Cardigan Bay

**The conditions of Consent number CG0351401 dated 19<sup>th</sup> day of December 2002 are modified as detailed in this notice.**

Subject to the provisions of Paragraphs 7 and 8 of Schedule 10 of the Water Resources Act 1991, no notice shall be served by the Agency which alters the effect of modifications made by this notice, without the agreement in writing of the Consent Holder, during a period of 4 years from the date this notice is served.

Dated this 6<sup>th</sup> day of February 2003

Signed .....

**IWAN THOMAS**

**Environment Management Team Leader**





ASiantaeth yr  
AMGYLCHEDD CYMRU  
ENVIRONMENT  
AGENCY WALES

CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01
DATED	6th February 2003

### Conditions to be modified

Annex 4, Condition C (c) is hereby modified to read as follows:

The measured UV transmittance (at 254 nm) at the inlet shall be measured by laboratory analysis of samples collected from sample point B .

### Other conditions of the consent

All other conditions of the consent remain in force. Consent CG0351401 is updated accordingly.







CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01
DATED	19th December 2002

## CONDITIONS OF CONSENT TO DISCHARGE

**Secondary treated sewage effluent with ultra violet disinfection ("the Discharge")**

**FROM: Tywyn Waste Water Treatment Works**

### NATURE

1. (a) The Discharge shall consist solely of secondary treated sewage effluent, which during the periods specified in condition 1(b) of this consent has been disinfected by means of ultra violet (UV) irradiation.

For the purpose of this consent, "disinfection" is defined as the use of a process designed specifically to reduce the number of viable, potentially infectious micro-organisms in the effluent.

- (b) The disinfection of the effluent by means of UV irradiation is required for the period 30<sup>th</sup> April to 30th September inclusive each year.
- (c) The Discharge shall be disinfected by means of UV irradiation from an artificial source with at least 85% of the available UV radiation emitted in the wavelength range 250-260nm. An applied UV dose of 32 mJ/cm<sup>2</sup> (calculated at a UV transmittance of 45%) must be exceeded subject to conditions 1 (d) and 1 (e) during the period specified in condition 1 (b) of this consent
- (d) The applied UV dose must exceed the limit set out in condition 1 (c) for at least 99% of the measurements (as required by condition 28 (a)(ii)) during the time period specified in condition 1 (b)
- (e) No more than 10 % of measurements taken consecutively during any 24 hour period from midnight to midnight should fall below 16mJ/cm<sup>2</sup>
- (f) The period when the applied UV dose limit is less than the limit set out in condition 1(c) shall not be used by the Consent Holder for the maintenance of the UV plant. Maintenance is defined in the UV Code of Practice attached.





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### FAILURE OF UV MEASUREMENT SYSTEMS

- 2 In the event of failure of the flow monitor or UV meter used in the control of the UV dosing system:
- (a) the maximum available number of duty banks of UV lamps shall be automatically activated;
  - (b) the minimum applied UV dose, at maximum effluent flow rates at a calculated UV transmittance (at 254nm) of 45 % shall not be less than 32 mJ/cm<sup>2</sup>.

### LOCATION

- 3 The Discharge shall be made in the manner and at the place specified as:
- (a) discharging via a 350 millimetre diameter long sea outfall pipe, 500 metres in length, terminating in a four part diffuser at the seabed 6.4 metres below Ordnance Datum;
  - (b) discharging to the coastal waters of Cardigan Bay;
  - (c) at National Grid Reference SH 56880 01320;
  - (d) shown marked "Discharge Point" on Plan CG0351401 attached as Annex 3.

### SAMPLE POINT

- 4 An appropriately labelled sample point shall be provided and maintained at National Grid Reference SH 57200 01840 (as shown marked "Sample Point" on Plan CG0351401) so that a representative sample of the Discharge may be obtained. The consent holder shall ensure that all constituents of the Discharge pass through the said sampling point at all times and in any legal proceedings it shall, for the purposes of Section 10 of the Rivers (Prevention of Pollution) Act 1961, be presumed, until the contrary is shown that any sample of the Discharge taken at the said sampling point is a sample of what was discharging into controlled waters.





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## VOLUME

- 5 The volume of the Discharge shall not exceed 5011 cubic metres per day.
- 6 The Dry Weather Flow of the Discharge shall not exceed 1670 cubic metres per day.

For the purpose of this condition Dry Weather Flow shall mean the average daily flow to the treatment works during seven consecutive days without rain (excluding a period which includes public holidays) following seven days during which the rainfall did not exceed 0.25 millimetres on any one day.

- 7 The rate of discharge shall not exceed 58 litres per second.

## FLOW MONITORING

- 8 A continuous flow monitoring and recording system, to a specification provided by the Agency, with on-site visual display from which readings can be readily obtained by the Agency, shall be provided and operated to record the daily volume and instantaneous flow of the discharge.
- 9 As soon as practicable after completion of the flow system installation the Consent Holder shall employ an independent expert to certify that the installation complies with the Agency's specification. The Consent Holder shall satisfy himself as to the professional competence of the expert. A copy of the certifier's report shall be provided to the Agency when it is available.
- 10 Records of the flow readings shall be maintained by the Consent Holder and shall be provided to the Agency when requested, in a format specified by the Agency.
- 11 The Consent Holder shall produce and maintain a quality control manual approved by the independent expert and, to the satisfaction of the Agency, specifying procedures for the calibration, operation and maintenance of the flow monitoring system. The flow system shall be calibrated, operated and maintained by the Consent Holder in accordance with the provisions of the manual. The Consent Holder shall keep a record of these procedures available for inspection by the Agency and provide a copy to the Agency on request.
- 12 The Consent Holder shall record all failures of the continuous flow system and any other breaks in the flow record. The reasons for these failures and breaks shall be recorded and all steps taken to prevent a re-occurrence. The Consent Holder shall ensure that as far as possible the recorder remains fully operational at all times. Any failures shall be remedied as soon as possible.





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- 13 Flows of the discharge shall be measured before the UV monitoring point, at NGR SH 57351 01832, or such other point as is agreed by the Agency.

## COMPOSITION

- 14 (a) Subject to paragraph (b) below, the Discharge shall not contain more than;
- (i) 50 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
  - (ii) 60 milligrammes per litre of suspended solids (measured after drying at 105°C).
- (b) The limit for any of the relevant parameters set out in paragraph (a) above may be exceeded where, in any series of samples of the Discharge taken at regular but randomised intervals in any period of twelve consecutive months as listed in Column 1 of the table at Annex 1 to this consent, no more than the relevant number of samples, as listed in Column 2 of the said table, exceed the applicable limit for that relevant parameter

## WORKS OPERATION

- 15 The works shall be operated and the effluent shall be treated in a manner which, so far as reasonably practicable, minimises the polluting effects of the Discharge made from the works on controlled waters.

This condition does not require -

- (a) any higher standard to be achieved in relation to any characteristic of the Discharge which is specifically regulated by condition 14 than is required by that condition;
- (b) any alteration of the works or a change in the type of treatment used.







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## MAINTENANCE

- 16 The works shall be operated and maintained in accordance with good operational practice such that:
- (a) it remains fully operational except at times of unavoidable mechanical or electrical breakdown which shall be attended to, and the Agency informed of the failure, as soon as practicable after the failure;
  - (b) following a failure all equipment shall be returned to normal operation as soon as practicable;
  - (c) tanks shall be desludged at sufficient frequency and in such a manner to prevent excessive carryover of suspended solids.
- 17
- (a) The consent holder shall maintain the outfall pipe and diffusers in an efficient operational condition, so as to minimise the probability of blockages or other failures, and shall implement periodic inspections of the integrity and performance of the diffusers and outfall pipe.
  - (b) On request the consent holder shall supply the Agency with a written report on the maintenance and all non-routine actions undertaken.

## UNUSUAL WEATHER CONDITIONS

- 18
- (a) No sample of the Discharge, taken at a time when unusual weather conditions are adversely affecting the operation of the sewage treatment works, shall be taken into account in deciding whether or not the conditions contained in conditions 14 and 15 of this consent have been complied with.
  - (b) For the purpose of this condition "unusual weather conditions" shall include:
    - (i) low ambient temperatures as evidenced by effluent temperatures of 5°C or less, or by the freezing of mechanical equipment in the works;
    - (ii) significant snow deposits;
    - (iii) tidal or fluvial flooding;
    - (iv) weather conditions causing unforeseen loss of power supply to the sewage treatment which could not be ameliorated by the reasonable provision and operation of standby generation facilities.





CONSENT NO.	CG0351401
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- (c) On any occasion where unusual weather conditions adversely affect the operation of the sewage treatment works, the consent holder shall use its best endeavours to mitigate that adverse effect.
- (d) For a sample of the Discharge to be considered for the purposes of (a) above, the consent holder shall notify the Agency by telefax or telephone as soon as unusual weather conditions are known to have adversely affected operations and shall confirm the circumstances in writing as soon as possible thereafter (and in any event within 14 days of the occurrence of such conditions). That notification shall include a full description of the unusual weather conditions and their impact on the operation of the works.

## RECORDING AND REPORTING

- 19 (a) The consent holder shall establish and operate a documented maintenance programme and record all non-routine actions undertaken that may have adversely affected effluent quality. Copies of the programme shall be made available for inspection by the Agency's officers at all reasonable times.
- (b) On request the consent holder shall supply the Agency with a written report on the maintenance and all non-routine actions that may have adversely affected effluent quality.
- 20 The consent holder shall notify the Agency in writing if any known introduction or material change, in respect of discharges from trade premises to the sewerage system, occurs that may increase or introduce into the effluent any "dangerous substance" included on Lists I, II or Red List (set out in Annex 2 to this notice as updated by the Agency from time to time, and notified to the consent holder in writing), or any other substance considered by the consent holder as having or likely to have a significant effect on the receiving waters.

## SUBSTANTIAL CHANGE

- 21 A discharge shall not be made from the works if it would cause a significant increase in the polluting effects of the Discharge on controlled waters as a result of a new or altered discharge of trade effluent into the works.





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- 22 A discharge of trade effluent into the works is new if -
- (a) it is made by the sewerage undertaker and is of a kind not made into the works by the undertaker immediately before the date of effect of this consent; or
  - (b) it is made by a third party and the discharge is authorised on or after that date.
- 23 A discharge of trade effluent into the works is altered if -
- (a) it is made by the sewerage undertaker and its composition or quantity changes significantly on or after the date of effect of this consent; or
  - (b) it is made by a third party and the alteration of the discharge is authorised on or after that date.
24. An increase in the polluting effects of the Discharge on controlled waters is not significant for the purposes of this condition if it relates to any characteristic of the Discharge which is specifically regulated by condition 14 of this consent but it may be significant if it is caused by a change in some other characteristic of the Discharge.
25. For the purposes of this condition “trade effluent” means -
- (a) any discharge by the sewerage undertaker other than
    - (i) domestic sewage from premises connected directly or indirectly to the works; or
    - (ii) surface water run-off;
  - (b) any discharge by a third party which is authorised under Chapter III of Part IV of the Water Industry Act 1991 or which is only accepted as a result of a contract with the sewerage undertaker.





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## UNAUTHORISED DISCHARGES

- 26 A discharge made from the works shall not contain any poisonous, noxious or polluting matter or solid waste matter which is attributable to any unauthorised discharge into the works.
- (a) A discharge into the works is unauthorised if it is made by a third party and either there is no obligation to receive it or conditions subject to which there is an obligation to receive it are not observed.
  - (b) Nothing in this, or any other, condition of this consent prevents anyone from relying on any defence available to them under section 87 of the Water Resources Act 1991.

## REGULATION OF DISINFECTION MAINTENANCE PROGRAMME

27. (a) The Consent Holder shall establish and operate a documented maintenance programme including the method and frequency of cleaning and replacement of UV lamps and flow meters, and record all non-routine actions undertaken that may have adversely affected effluent quality. Details of the maintenance programme shall be provided to the Agency for agreement. Copies of the programme shall be made available for inspection by the Agency's officers at all reasonable times.
- (b) The Consent Holder shall keep records of the maintenance undertaken (both routine and non-routine). Copies of these records shall be maintained by the Consent Holder and kept available for inspection by the Agency's officers at all reasonable times.
- (c) On request, the Consent Holder shall supply the Agency with a written report on the maintenance, and all non-routine actions that may have adversely affected effluent quality.

## UV PROCESS MONITORING AND REPORTING

- 28 (a) Continuous recorders, with on-site visual display from which readings may be readily obtained, shall be provided and maintained by the Consent Holder enabling the following to be measured and recorded at 30 minute intervals:





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- i) the instantaneous flow rate through each UV irradiation channel
  - ii) the instantaneous applied UV dose for each UV irradiation channel
  - iii) any other parameters used in calculating the UV dose
- (b) Copies of the records shall be maintained by the Consent Holder for a minimum of 2 years or such longer time as the Agency may from time to time specify and be kept at a nominated place available for inspection by the Agency's officers at all reasonable times.
- (c) The consent holder shall supply to the Agency, 1 month in arrears, in a format specified by the Agency on a monthly basis, the records of the readings specified in condition 28 (a) above

#### EXCEPTION REPORTS

- 29 The Consent Holder shall supply to the Agency at monthly intervals, or upon request, a written report, detailing all occurrences where at any time during the preceding disinfection period as specified in condition 1(b) above:
- (a) there were any failures of any measurement system used to control the UV dosing ;
  - (b) the external power supply to the UV disinfection system was interrupted;
  - (c) a discharge of sewage effluent was made which had not been subject to the required UV dose as specified in conditions 1(e) and 2 of this consent;
  - (d) The Report shall detail the reasons why the situation occurred, and the actions taken by the Consent Holder. The report shall include an assessment of what measures can be adopted in the future to minimise such occurrences;
  - (e) The Agency, if satisfied that the cause is an emergency and outside the control of the Consent Holder, and that all possible measures were taken to minimise the impact of the discharge on controlled waters, shall exclude the measurements for the period for compliance purposes with condition 1(e).





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### DISINFECTION EFFICACY MONITORING

- 30 The Consent Holder shall carry out the monitoring programme as detailed in Appendix 4, unless otherwise notified in writing by the Agency for the duration of the period as specified in condition 1(b) of this consent. The results of the monitoring programme are to be supplied to the Agency in a format specified by the Agency, on a monthly basis, two months in arrears.

### TELEMETRY

- 31 A telemetry alarm system connected to a 24-hour manned station shall be provided and maintained by the consent holder to provide a warning in the event that:
- (a) the external power supply to the UV disinfection system has been interrupted;
  - (b) failure of any measurement system used to control the UV dosing system has occurred;
  - (c) a discharge of sewage effluent has occurred which has not been subjected to the required UV dose as specified in conditions 1(e) and 2 of this consent.

### EMERGENCY NOTIFICATION

- 32 The consent holder shall notify the Agency in the event of a Discharge of sewage effluent which has not been subjected to the required UV dose as specified in conditions 1(e) and 2 of this consent, or of power failure causing loss of secondary treatment. Such notification must be made as soon as practicable and no later than 24 hours after the event, and shall detail the reasons why the situation occurred, and the actions taken by the Consent Holder.

### POWER

33. Full stand-by power generation facilities shall be provided and maintained by the Consent Holder in good working order to enable automatic resumption of power to the UV disinfection system in the event of external power supply failure to the UV disinfection plant.

### HABITATS DIRECTIVE "EARLY REVIEW" CONDITION

34. The Agency may alter any of the conditions of this Consent at any time within 4 years of the date of issue for the purposes of the Conservation (Natural Habitats & c.) Regulations 1994 as amended.





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Agency Wales

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## ANNEX 1

### TABLE

<u>Column 1</u>	<u>Column 2</u>
Number of samples taken in any period of 12 months	Maximum number of samples permitted to exceed limit for given determinand
4-7	1
8-16	2
17-28	3
29-40	4
41-53	5
54-67	6
68-81	7
82-95	8
96-110	9
111-125	10
126-140	11
141-155	12
156-171	13
172-187	14
188-203	15
204-219	16
220-235	17
236-251	18
252-268	19
269-284	20
285-300	21
301-317	22
318-334	23
335-350	24
351-365	25





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## ANNEX 2

- |  |                              |
|--|------------------------------|
| 1. Mercury and its compounds   | 2. Cadmium and its compounds |
| 3. Hexachlorocyclohexane<br>(lindane and related compounds)            | 4. Carbon tetrachloride      |
| 5. DDT (the isomers of 1,1,1-trichloro-2,2 bis{p-chlorophenyl} ethane) |                              |
| 6. Pentachlorophenol (PCP)   | 7. Aldrin                    |
| 8. Dieldrin  | 9. Endrin                    |
| 10. Isodrin  | 11. Hexachlorobenzene (HCB)  |
| 12. Hexachlorobutadiene (HCBd)   | 13. Chloroform               |
| 14. Polychlorinated biphenyls  | 15. Dichlorvos               |
| 16. 1,2-Dichloroethane   | 17. Trichlorobenzene         |
| 18. Atrazine   | 19. Simazine                 |
| 20. Tributyltin compounds  | 21. Triphenyltin compounds   |
| 22. Trifluralin  | 23. Fenitrothion             |
| 24. Azinphos-methyl  | 25. Malathion                |
| 26. Endosulfan   | 27. Lead                     |
| 28. Chromium   | 29. Zinc                     |
| 30. Copper   | 31. Nickel                   |
| 32. Arsenic  | 33. *Iron                    |
| 34. *pH outside range 5.5 to 9.0                                       | 35. *Boron                   |
| 36. Vanadium   | 37. PCSD'S                   |
| 38. Cyfluthrin   | 39. Sulcofuron               |
| 40. Flucifuron   | 41. Permethrin               |
| 42. 4-Chloro-3-methyl-phenol   | 43. 2-Chlorophenol           |
| 44. 2,4-Dichlorophenol   | 45. 2,4-D (ester)            |
| 46. 2,4-D (non ester)  | 47. 1,1,1-Trichloroethane    |
| 48. 1,1,2-Trichloroethane  | 49. Bentazone                |
| 50. Benzene  | 51. Biphenyl                 |
| 52. Chloronitrotoluenes  | 53. Demeton                  |
| 54. Dimethoate   | 55. Linuron                  |
| 56. MCPA   | 57. Mecoprop                 |
| 58. Mevinphos  | 59. Napthalene               |
| 60. Omethoate  | 61. Toluene                  |
| 62. Triazophos   | 63. Xylene                   |
| 64. Cyanide  | 65. Azinphos-ethyl           |
| 66. Fenthion   | 67. Parathion                |
| 68. Parathion-methyl   | 69. Trichloroethylene        |
| 70. Tetrachloroethylene  | 71. Dioxins                  |
| 72. PAHs   | 73. Nonyl phenol             |
| 74. Nonyl phenyl ethoxylate  | 75. Di-ethylhexyl phthalate  |
| 76. Bisphenol-A  | 77. Diazinon                 |
| 78. Chlorfenvinphos  | 79. Chlorotoluron            |
| 80. Isoproturon  | 81. Diuron                   |
| 82. Propetamphos   | 83. Flumethrin               |
| 84. Amitraz  | 85. High-Cis Cypermethrin    |
| 86. Cyromazine   | 87. Deltamethrin             |
| 88. Cypermethrin   |                              |

This list is applicable as at 1 December 1998 and will be updated as and when changes to the relevant legislative requirements occur.

\*Notification to the Agency by the Consent holder is only required in respect of changes to trade effluents likely to cause significant changes to the pH value, and/or iron or boron concentrations, of the crude sewage.



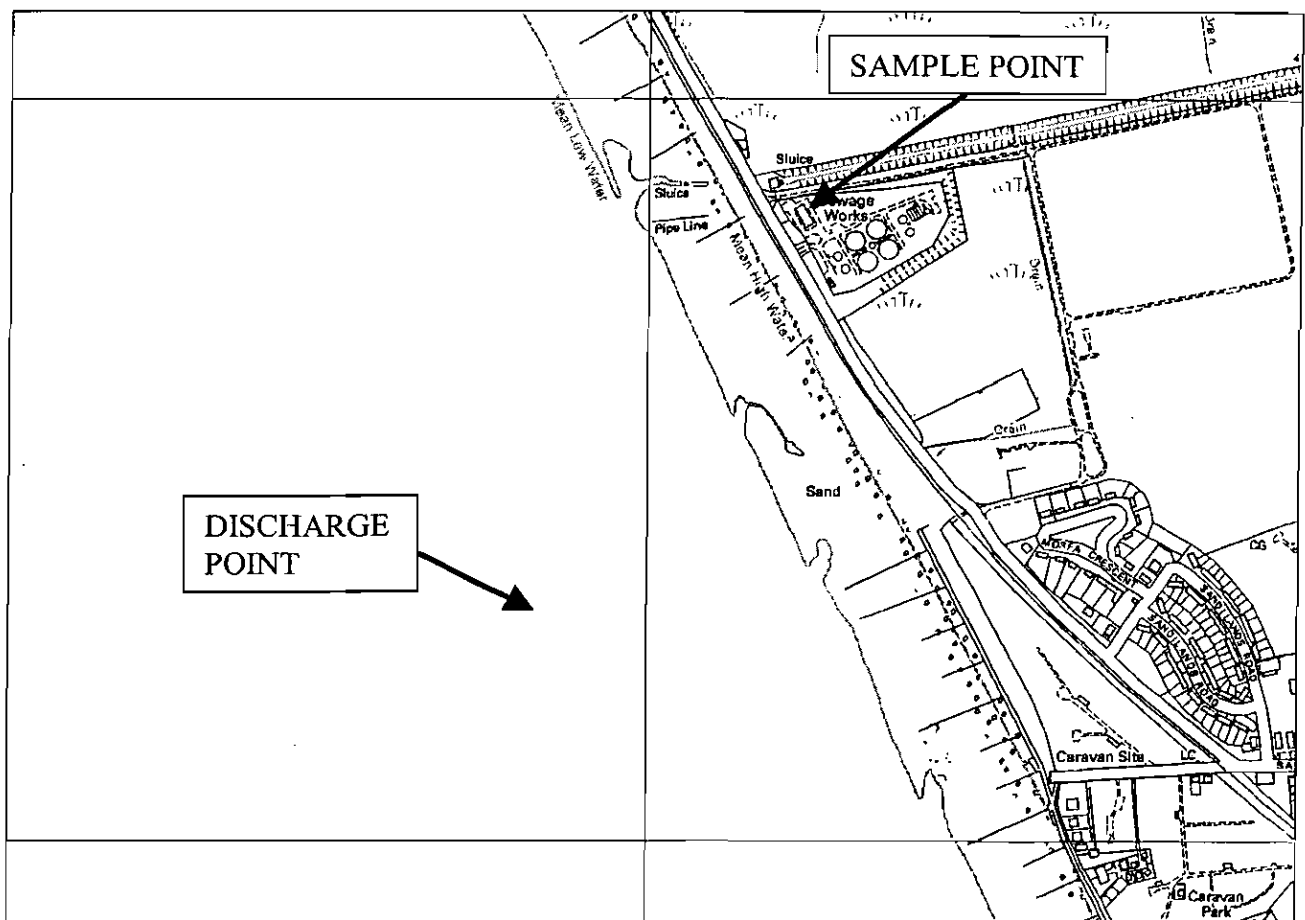


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Agency Wales

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ANNEX 3

PLAN CG0351401



NOT TO SCALE

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**ANNEX 4**  
**MONITORING PROGRAMME**

**A SAMPLE POINTS (see attached plan)**

- A Crude influent (screened) to sewage treatment works NGR SH 57190 01930
- B Secondary treated sewage effluent before UV disinfection NGR SH 57200 01860
- C Secondary treated sewage effluent after UV disinfection (prior to mixing with storm flows) NGR SH 57200 01840

**B MICROBIOLOGICAL DETERMINANDS AND FREQUENCIES**

(Agency Standard Analytical Methods to be employed, including AQC)

- (i) Faecal Coliforms – weekly, at sample points A, B and C;
- (ii) Total Coliforms – weekly, at sample points A, B and C;
- (iii) Faecal Streptococci – weekly, at sample points A, B and C;
- (iv) Salmonella – weekly, at sample points B and C;
- (v) Representative enteroviruses – weekly, at sample points B and C;
- (vi) F-specific bacteriophage – weekly, at sample points B and C.

**C OTHER DETERMINANDS AND FREQUENCIES**

The measurement of all determinands below shall coincide with the measurement of microbial determinands. At each sample point, samples for analysis should be sub-sampled from a single bulk sample. Where this cannot be achieved, the sampling regime shall be clearly recorded.



ASiantaeth yr  
Amgylchedd Cymru  
ENVIRONMENT  
AGENCY WALES

CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01

- a) The flow through each UV irradiation channel shall be measured
- b) The applied dose shall be recorded in each UV irradiation channel
- c) The measured UV transmittance (at 254 nm) at the inlet shall be measured by both in-situ meter and by laboratory analysis of samples collected from sample point B
- d) Suspended solids shall be measured at sample point B or C
- e) BOD (ATU) shall be measured at sample point B or C.

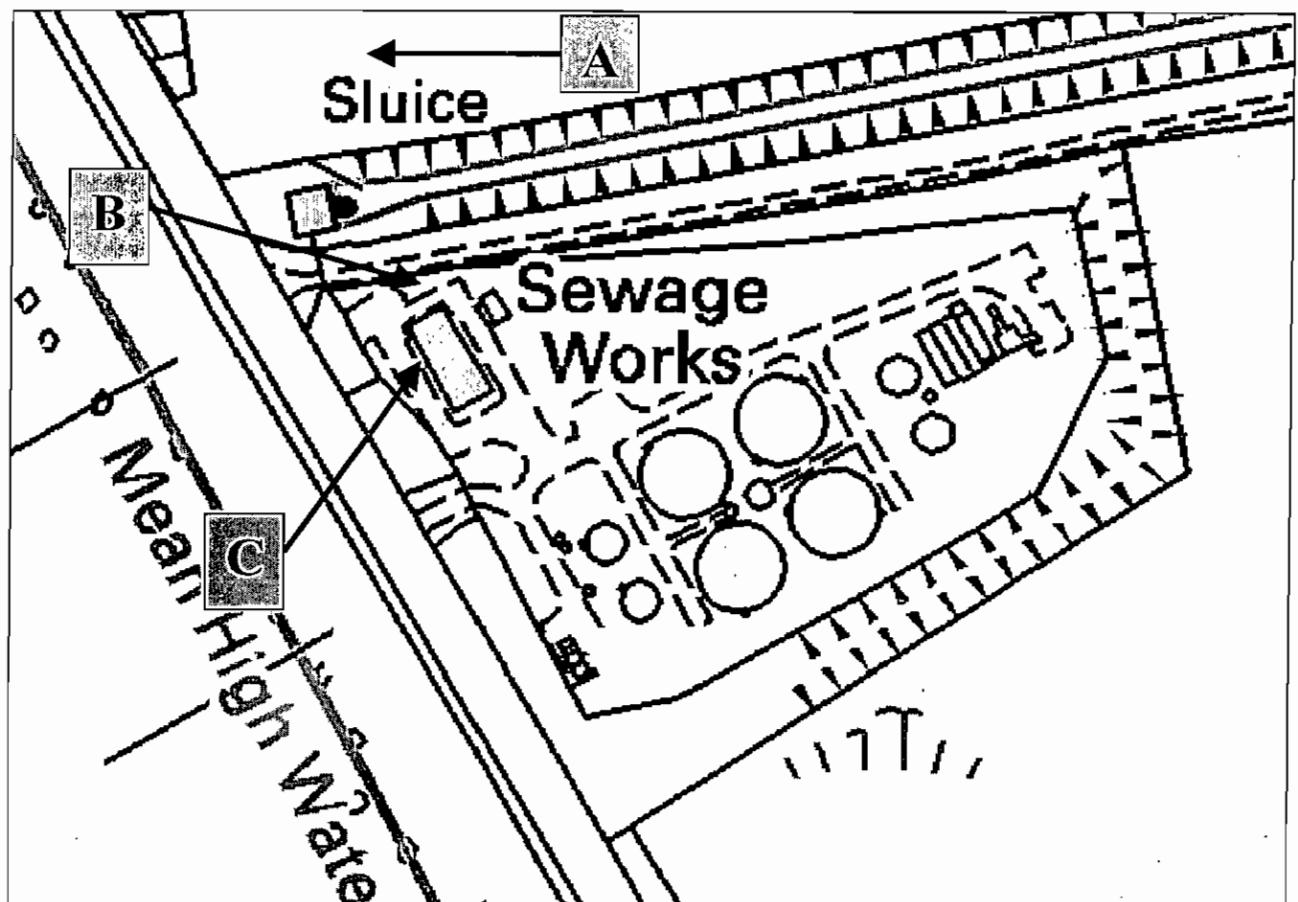




ASiantaeth yr  
Amgylchedd Cymru  
Environment  
Agency Wales

CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01

ANNEX 4  
Location Plan



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CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01

### UV CODE OF PRACTICE

1. The UV disinfection system shall be provided and maintained to ensure that its hydraulic characteristics and the path length of UV irradiation are such that, during the required period of disinfection, the effluent is subjected to the UV dose rate specified in the consent.
2. The UV disinfection system and stand-by power facilities shall be operated so as to minimise the frequency and duration of an emergency discharge of sewage effluent which has not been subjected to the required UV dose (as specified in the consent).
3. The applied and received UV doses (as defined in the Calculation of UV dose) shall be determined from
  - (i) the flow rate of effluent through the UV disinfection system (l/s)
  - (ii) the reactor volume
  - (iii) the theoretical UV intensity at end of lamp life at an assumed UV transmittance for the effluent (at 254 nm) of 45%
4.
  - (a) A maintenance programme, including the method and frequency of cleaning and replacement of the UV lamps / UV radiation monitors, shall be undertaken by the Consent Holder as agreed in writing with the Agency.
  - (b) Any failure to meet the requirements of the agreed maintenance programme shall be advised to the Agency as soon as practicable and a report providing an explanation of the circumstances provided to the Agency within 2 weeks.
  - (c) The Consent Holder shall keep records of the maintenance undertaken (both programmed and un-programmed) and shall include the measured UV intensity readings immediately before and immediately after each UV lamp / UV monitor cleaning or replacement. Copies of these records shall be maintained by the Consent Holder and kept available for inspection by the Agency's officers at all reasonable times.



CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01

### CALCULATION OF UV DOSE

#### **Definitions**

For each bank of UV lamps, UV dose is defined as the product of UV light intensity (impacting on wastewater passing through the bank) and the retention time (of wastewater passing through the bank).

For the purposes of consent, the following terms are defined for each UV irradiation bank.

#### **“reactor volume”**

is the volume of wastewater in the bank at any given time;.

#### **“adjusted retention time”**

is the reactor volume divided by the measured rate of flow through the UV bank;

#### **“measured UV intensity”**

is the average UV intensity @ 254 nm for the effluent measured (at positions within the reactors agreed with the Agency in writing) for each operating bank of UV lamps;

#### **“theoretical UV intensity”**

is the predicted average UV intensity across the reactor volumes, being delivered by the operating lamps at the UV transmittance of 45% for the effluent (as agreed with the Agency in writing) for the effluent (at 254 nm) (predicted from the rated output (mW) of the UV lamps at end of lamp life (cleaned) which are energised;

#### Calculations

$$\begin{array}{lcl} \text{Received UV dose} & = & \text{Measured UV} \\ \text{Per Bank (mJ/cm}^2\text{)} & & \text{Intensity} \\ & & \text{(mW/cm}^2\text{)} \end{array} \quad \times \quad \begin{array}{l} \text{Adjusted retention} \\ \text{time (s)} \end{array}$$

$$\begin{array}{lcl} \text{Applied UV Dose} & = & \text{Theoretical UV intensity} \\ \text{Per bank (mJ/cm}^2\text{)} & & \text{(mW/cm}^2\text{)} \end{array} \quad \times \quad \begin{array}{l} \text{Adjusted} \\ \text{Retention time (s)} \end{array}$$

The UV dose (Applied or Received) for each channel is the sum of the UV doses for each operational bank in that channel.

The method of measuring / estimating UV intensity at this site must be clearly defined.



CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01/U

## CONDITIONS OF CONSENT TO DISCHARGE

### Urban Waste Water Treatment Regulations 1994

#### AS APPLIED TO: Tywyn Waste Water Treatment Works

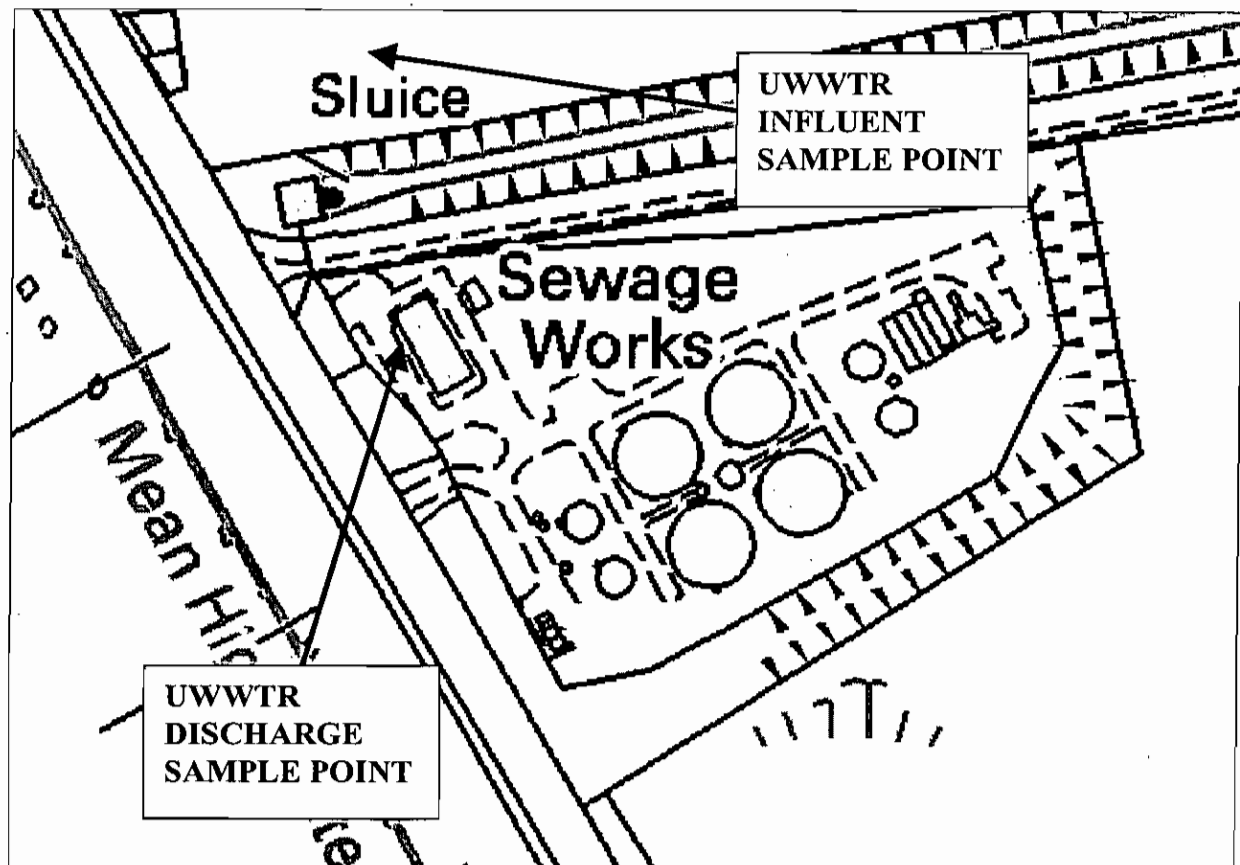
- U0 (a) The Consent Holder shall comply with the Urban Waste Water Treatment (England and Wales) Regulations 1994 ("the Regulations").
- (b) For the purpose of condition U1 below, interpretations and references to a numbered regulation or Schedule shall have the meaning as in the Regulations, unless otherwise indicated.
- U1 (a) The Discharge derives from an agglomeration with a population equivalent of less than 10,000 discharging to coastal waters.
- (b) The Consent Holder shall inform the Agency in writing of any change, or proposed change, to the population equivalent such as would make a material change to the application of the Regulations and shall, on request, inform the Agency in writing of the actual population equivalent.
- (c) The Discharge shall be subject to Regulation 5(7) and satisfy the requirements of Regulation 5 (8) (a).
- U4 (a) An appropriately labelled sample point shall be provided and maintained at National Grid Reference SH 57190 01930 as shown marked 'UWWTR Influent Sample point' on the attached Plan numbered CG0351401 01/U1, or some other point as agreed in writing with the Agency, so that a representative sample of the Influent may be obtained.
- (b) An appropriately labelled sample point shall be provided and maintained at National Grid Reference SH 57200 01840, as shown marked 'UWWTR Discharge Sample point' on the attached Plan numbered CG0351401 01/U1, or some other point as agreed in writing with the Agency, so that a representative sample of the Discharge may be obtained.



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Amgylchedd Cymru  
Environment  
Agency Wales

CONSENT NO.	CG0351401
SCHEDULE NO.	CG0351401 01/U

Location Plan CG0351401 01/U1



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## WATER RESOURCES ACT 1991

Consent No. CG0351401

Under Section 88 and Schedule 10 of the Water Resources Act 1991 and all other enabling powers the National Rivers Authority hereby gives this

## C O N S E N T

Page 1 of 10

To: Dŵr Cymru Cyfyngedig

Of: Plas-Y-Ffynnon, Cambrian Way, Brecon, Powys LD3 7HP

For: A discharge of treated sewage effluent

To: Cardigan Bay

From: Tywyn Sewage Treatment Works

This consent shall not be taken as providing a statutory defence against a charge of pollution in respect of any poisonous, noxious or polluting constituents not specified herein.

## CONDITIONS OF CONSENT

1. The discharge shall consist solely of biologically treated sewage effluent which during periods specified in this consent, has received ultraviolet (UV) light disinfection.

For the purpose of this consent, disinfection is defined as the use of a process designed specifically to reduce the number of viable, potentially infectious micro-organisms in the effluent.

2. The discharge shall be made from a 350mm diameter pipe which extends 500 metres terminating in a four port diffuser at the seabed 6.4 metres below Ordnance Datum at National Grid Reference SH 5688 0132 into Cardigan Bay, as shown marked "Discharge Point" on the attached plan number CG0351401.
3. A sample point, as shown marked "Sampling Point" on the attached plan number CG0351401, shall be constructed, maintained and appropriately labelled to that a sample of the treated sewage effluent discharged may be obtained.

Dr JOHN STONER Rheolwr Cyffredinol Rhanbarthol / Regional General Manager

Awdurdod Afonydd Cenedlaethol, Rhanbarth Cymru / National Rivers Authority, Welsh Region

Highfield, Ffordd Priestley, Caernarfon, Gwynedd, LL55 1HR. Ffôn: (0286) 672247, Ffacs: (0286) 674451

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WATER RESOURCES ACT 1991  
 Continuation Sheet

Consent No. CG0351401

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4. The volume of effluent under dry weather flow conditions shall not exceed 1670 cubic metres per day. The rate of discharge shall not exceed 58 litres per second.
5. The volume of effluent discharged shall not exceed 5011 cubic metres in any period of 24 consecutive hours. The rate of discharge shall not exceed 58 litres per second.
6. For the purpose of this consent dry weather flow shall mean the average daily flow to the treatment works during seven consecutive days without rain (excluding a period which includes public holidays) following seven days during which the rainfall did not exceed 0.25 millimetres on any one day.
7. Flow measurement structures shall be provided and maintained to enable the daily volume and instantaneous flow rate of the discharge to be measured or determined as required.
8. (a) In addition to the basic measurement structure, a continuous flow recorder, to an agreed specification, with on-site visual display from which readings can be readily obtained, shall be provided and maintained to enable the daily volume and instantaneous flow of the treated sewage effluent to be recorded.  
 (b) Copies of the readings shall be maintained by the discharger and kept available for inspection by the Authority.  
 (c) The recorder shall be calibrated and maintained on a regular basis to ensure that it is reading to an agreed standard. The discharger shall keep a record of the calibration results available for inspection by the Authority.
9. (a) Subject to paragraph 9. (b) below, no sample of the discharge shall contain more than;
  - (i) 50 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20 degrees Celsius with nitrification suppressed by the addition of allyl-thiourea)

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 Continuation Sheet

Consent No. CG0351401

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- (ii) 60 milligrammes per litre of suspended solids (measured after drying at 105 degrees Celsius)
- (b) The limit for any of the relevant parameters set out in paragraph 9.(a) may be exceeded where, in any series of samples of the discharge taken at regular but randomised intervals in any period of 12 consecutive months, as listed in Column 1 of the table at Annex 1 to this Consent, no more than the relevant number of samples, as listed in Column 2 of the said table, exceed the applicable limit for that relevant parameter
10. (a) i) No samples of sewage effluent taken at a time when Sections 87(2) or 89(1) of the Water Resources Act 1991 apply, and the operation of the sewage treatment works is consequently adversely affected, shall be taken into account in deciding whether or not the conditions contained in paragraph 9 (a) of this consent have been complied with.
- ii) On each occasion that the sewage treatment works is not under normal operating conditions for the reasons in 10 (a) i), the discharger shall use its best endeavours to mitigate any adverse effect and shall notify the Authority by telephone/telefax as soon as practicable and confirm in writing within 14 days of the occurrence of such conditions. That notification shall include a full description of the abnormal operating conditions and their impact on the operation of the works.
- (b) i) No samples of sewage effluent taken at a time when unusual weather conditions are adversely affecting the operation of the sewage treatment works, shall be taken into account in deciding whether or not the conditions contained in paragraph 9. (a) of this consent have been complied with.
- ii) For the purpose of this condition "unusual weather conditions" shall include:-
- (a) low ambient temperatures as evidenced by effluent temperatures of 5 degrees Celsius or less, or by the freezing of mechanical equipment in the works;
- (b) significant snow deposits;

continued.....

WATER RESOURCES ACT 1991  
 Continuation Sheet

Consent No. GC0351401

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(c) tidal or fluvial flooding;

(d) weather conditions causing unforeseen loss of power supply to the sewage treatment which could not be ameliorated by the reasonable provision and operation of standby generation facilities.

iii) On any occasion where unusual weather conditions adversely affect the operation of the sewage treatment works, the discharger shall use its best endeavours to mitigate that adverse affect. The discharger shall notify the NRA by telephone/telefax as soon as unusual weather conditions are known to have adversely affected operation and shall confirm the circumstances in writing as soon as possible thereafter (and in any event within 14 days of the occurrence of such conditions). That notification shall include a full description of the unusual weather conditions and their impact on the operation of the works.

11. The discharger shall notify the Authority in writing if any known introduction or change, in respect of discharges from trade premises to the sewerage system, occurs that may increase or introduce into the effluent any "dangerous substance" included on Lists I, II, or Red List (set out in Annex 2 to this notice as updated by the Authority from time to time, and notified to the discharger in writing), or any other substance considered by the discharger as having or likely to have a significant effect on the receiving waters.
12. The disinfection of the effluent by means of UV irradiation is only required for the period 1st May to 30th September inclusive. Operation of the UV irradiation equipment outside of this time period is at the dischargers' discretion.
13. All of the effluent shall be disinfected by means of UV irradiation, of an appropriate wavelength, produced by means of an artificial source (at least 75% of the energy emitted in the wavelength range 250-260 nm).
14. The disinfection facility shall be constructed to ensure that its hydraulic characteristics and the path length of the UV irradiation are such that, during the required period of disinfection, the effluent receives the dose specified in condition '16' or '17', as appropriate.

continued.....

WATER RESOURCES ACT 1991  
 Continuation Sheet

Consent No. CG0351401

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15. The nominal dose rate shall take into account the flow rate of effluent through the disinfection facility (l/s), a UV transmission value for the effluent (at 254 nm) of 45% (or such higher value as is agreed with the NRA in writing) and the rated output (mW) of the UV lamps which are energised. If the UV transmission drops below 45% then the NRA will consider immediate introduction of additional conditions to ensure that the effluent is of adequate quality for effective disinfection.
16. If the works is commissioned (see '24' below) in the period March to September inclusive then, a nominal UV dose rate of 32 mW.s/cm<sup>2</sup> must be exceeded at all times, during the first bathing season. If the works is commissioned outside of this period then, prior to the start of the first bathing season following commissioning, after consideration of the initial results of the monitoring programme in Annex 3, by the NRA, a revised nominal dose rate may be specified, to be applied during the bathing season (1st May - 30th September inclusive).
17. In the event of failure of any measurement system used in the control of UV dosing equipment, the maximum available number of duty UV modules shall be automatically activated. The minimum design UV dose rate, at maximum effluent flow rates and 45% UV transmission (at 254 nm), shall not be less than 32 mW.s/cm<sup>2</sup> in this eventuality.
18. Hourly, or more frequent, values of the nominal and empirical UV dose rate (and the flow, measured UV intensity and other parameters, used in dose rate calculations) shall be recorded and supplied to the NRA on a monthly basis, in a format to be specified. The method of calculating the UV dose rates is specified in Annex 4.
19. The equipment for estimating the UV dose and measuring the instantaneous flow rate and received UV intensity must be made accessible to the NRA for inspection, whenever reasonably requested.
20. A standby generator shall be provided to enable automatic resumption of full biological treatment and UV disinfection in the event of external power supply failure.
21. Details of the maintenance of the disinfection equipment which is undertaken, to a programme agreed in writing with the NRA, shall be made

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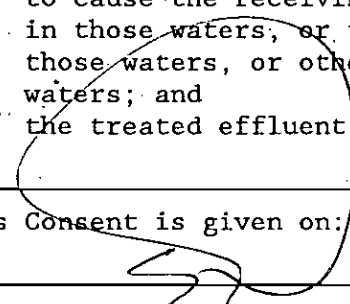
WATER RESOURCES ACT 1991  
 Continuation Sheet

Consent No. CG0351401

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available to the NRA on request. Any failure to meet the programme should be advised to the NRA as soon as is practicable.

22. The discharger shall carry out the monitoring programme as detailed in Annex 3 for the duration of the commissioning of the UV disinfection equipment and during the period specified in the consent, when the effluent receives UV disinfection.
23. The conditions to which this Consent is subject shall take effect from 31st December 1995, or from the date of commissioning of the works which ever is the earlier, unless otherwise agreed in writing with the NRA. The discharger shall give the Authority at least 28 days written notice before making a discharge.
24. This consent will be reviewed 24 months from the works commissioning date. The works commissioning date is defined as the date on which Dwr Cymru begin operating the UV equipment continuously, for periods of greater than 8 weeks.
25. The outfall shall be maintained in an efficient operational condition at all times.
26. As far as is reasonably practicable, the works shall be operated so as to prevent:
  - (a) any matter being present in the effluent, other than matter specifically covered by numerical conditions in this consent, to such an extent as to cause the receiving waters to be poisonous or injurious to fish in those waters, or to the spawning grounds, spawn or food of fish in those waters, or otherwise cause damage to the ecology of those waters; and
  - (b) the treated effluent from having any other adverse environmental impact.

This Consent is given on: 21st October, 1994 on behalf of the Authority  
 by:  Area Environmental Quality Manager

During the period ending with the: 21st October, 1996 the terms of this Consent will not be altered without the written agreement of the person making the discharge.

ANNEX 1

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TABLE

<u>Column 1</u>	<u>Column 2</u>
Number of samples taken in any period of 12 months	Maximum number of samples permitted to exceed limit for given determinand
4-7	1
8-16	2
17-28	3
29-40	4
41-53	5
54-67	6
68-81	7
82-95	8
96-110	9
111-125	10
126-140	11
141-155	12
156-171	13
172-187	14
188-203	15
204-219	16
220-235	17
236-251	18
252-268	19
269-284	20
285-300	21
301-317	22
318-334	23
335-350	24
351-365	25

continued.....

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ANNEX 2.

Consent No CG0351401

SUBSTANCE

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Mercury	Fenthion
Cadmium	Parathion
g-Hexachlorocyclohexane	Parathion-methyl
DDT	Tetrachloroethylene
Pentachlorophenol	Trichloroethane
Hexachlorobenzene	Dioxins
Hexachlorobutadiene	Isodrin
Aldrin	
Dieldrin	
Endrin	
Polychlorinated Biphenyls	
Dichlorvos	
1,2 Dichloroethane	
Trichlorobenzene	
Atrazine	
Simazine	
Tributyltin compounds	
Triphenyltin compounds	
Trifluralin	
Fenitrothion	
Azinphos-methyl	
Malathion	
Endosulphan	
Carbon tetrachloride	
Chloroform	
Trichloroethylene	
Perchloroethylene	
Lead	
Chromium	
Zinc	
Copper	
Nickel	
Arsenic	
Iron	
pH	
Boron	
Vanadium	
PCSDs	
Cyfluthrin	
Sulcofuron	
Flucofuron	
Permethrin	
Cyanide	
Azinphos-ethyl	

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ANNEX 3.

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MONITORING PROGRAMME.

A). SAMPLE POINTS.

- i) Crude influent to sewage treatment works
  - ii) Effluent after UV disinfection
- Locations to be agreed in writing with the Authority.

B). MICROBIOLOGICAL DETERMINANDS AND FREQUENCIES AT ALL SAMPLE POINTS.

(NRA Standard Analytical Methods to be employed, including AQC)

- i) Faecal Coliforms - weekly.
- ii) Faecal Streptococci - weekly.
- iii) Representative enteroviruses - weekly.
- iv) F-specific bacteriophage - weekly.

C.) UV TRANSMISSION

The UV transmission (at 254 nm) will be measured on the final effluent, weekly.

D.) REPORTING

Results of the monitoring programme are to be supplied to the NRA via a data report every 3 months following the works commissioning date with a final report 24 months after commissioning.

A N N E X 4  
 CALCULATION OF UV DOSE RATE

Consent No CG0351401

page 10 of 10

(1) UV DOSE = AVERAGE INTENSITY x RETENTION TIME

AVERAGE INTENSITY is affected by sleeve and effluent transmission and lamp output. DESIGN AVERAGE INTENSITY requires assumptions to be made on all of these parameters.

RETENTION TIME is defined as FLOW RATE divided by REACTOR VOLUME. REACTOR VOLUME is the volume of effluent at any given time flowing within the usable reactor volume. FLOW RATE can be directly stated and measured as a process variable.

It is impracticable to measure actual retention time, but ADJUSTED RETENTION TIME can be derived from expected actual retention time and measured flow rate.

NOMINAL UV DOSE can be calculated and recorded. It is based upon THEORETICAL AVERAGE INTENSITY at a DESIGN UV TRANSMISSION and does not take into account sleeve fouling. ADJUSTED RETENTION TIME is used in the calculation :-

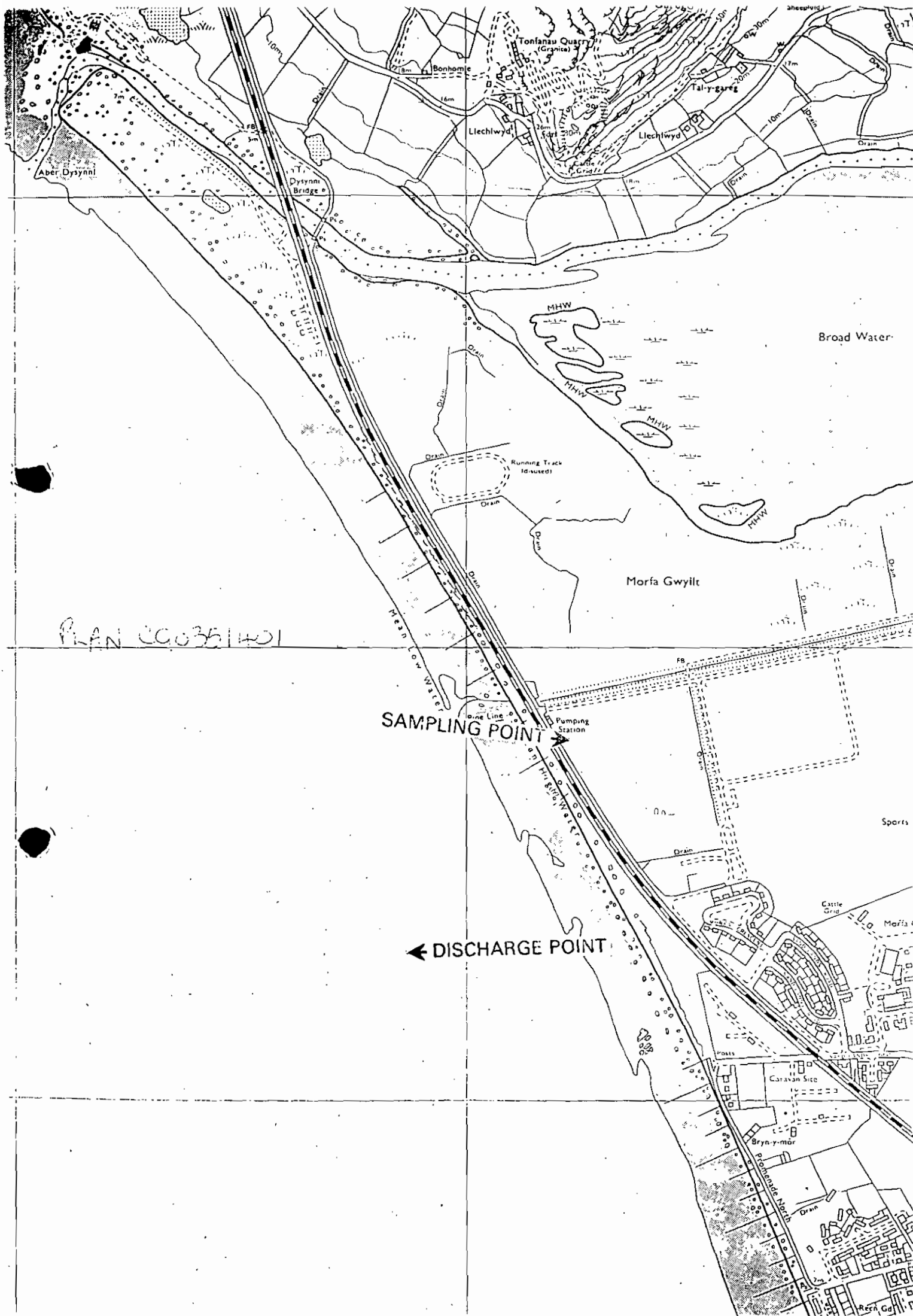
(2) NOMINAL UV DOSE = THEORETICAL AVERAGE INTENSITY x ADJUSTED RETENTION TIME

EMPIRICAL UV DOSE is based on the UV sensor reading of intensity. It therefore takes into account sleeve and effluent transmission and lamp output. ADJUSTED RETENTION TIME is used in the calculation.

(3) EMPIRICAL UV DOSE = MEASURED INTENSITY x ADJUSTED RETENTION TIME

NB DESIGN AVERAGE INTENSITY takes lamp ageing into account.  
 THEORETICAL AVERAGE INTENSITY does not

NOTE - See manufacturer's technical specification for further information.



**Water Resources Act 1991**  
as amended by the Environment Act 1995  
**Consent to Discharge**  
**Certificate of Holder**



**ENVIRONMENT  
AGENCY**

**Part A**

**To:** DWR CYMRU CYFYNGEDIG  
CONSENTS REGULATION OFFICER  
PLAS-Y-FFYNNON  
CAMBRIAN WAY  
BRECON LD3 7HP

The Environment Agency ("the Agency") hereby confirm that the above named person is a/the registered holder of consent CG0351401

Nature of Discharge(s); SEWAGE EFF/TREATED EFF/CONTINUOUS  
at TYWYN SEWAGE TREATMENT WORKS

Note: This certificate should be kept with the consent document for future reference. If you transfer responsibility for the discharge to somebody else you must pass the consent to them and tell the Agency within 21 days. **Responsibility for the consent cannot be disclaimed by the holder but the registration of holder may be transferred to a successor.** To do this please complete the form below, then tear it off and return it to the address shown. If you fail to transfer the consent, even though you are no longer on the site, you may still be liable for prosecution for pollution. If you transfer the consent but do not tell us, you will be committing an offence. In case of any queries please contact your local Environment Agency office.

**Part B** Please complete in block capitals or type.

**To:**

**Water Resources Act 1991: Notice of transfer of consent to discharge**

**Consent:**

**Name:**  
**Address:**

I/We\* hereby serve notice on the Agency that I/we\* am/are\* no longer a/the\* Holder of the above consent which will be/was\* transferred to:

\* delete as appropriate

**Name(s) of new holder(s):**

**Address:**

**Post Code:**

**Date of Transfer to new Holder(s):**

**Signed:**

**Dated:**

**Name (block capitals):**

**Position:**

(to be completed when signing)



# NATIONAL RIVERS AUTHORITY

## WATER RESOURCES ACT 1991

Application for consent to discharge  
Schedule 10



National Rivers Authority,  
Welsh Region,  
M. D. Inghit, Consents Section,  
Rivers House,  
St Mellons Business Park,  
St Mellons,  
Cardiff,  
CF3 0LT

Official Use Only
Dist/Area Ref. <u>Narr</u>
Application No. <u>CG035401</u>
Date Received: <u>9/6/94</u>

PLEASE REFER TO THE ATTACHED NOTES WHEN COMPLETING THE APPLICATION

I/We hereby apply for consent under the provisions of the Water Resources Act 1991 to make a discharge of effluent as described in this application and on the attached plan(s). I/We will bear the costs of any advertisement (see note 1).

I/We enclose a cheque for £            to cover the cost of this application (see note 2).

Signed ..... Date .....

Authorised on behalf of .....

Have you made, or do you intend to make, an application to the Secretary of State for exemption from publicity? (See note 3.) YES/NO\*

Has this application been made in response to the service of a relevant prohibition? YES/NO\*

If yes please give reference number:

<p>1a Full name and postal address of applicant. (See note 4.)</p>   <p>Post Code: Daytime telephone number:</p>	
<p>1b Agent (if any) Full name and postal address</p>   <p>Contact name and daytime telephone number</p>	<p>Note: if this box is completed, all correspondence will be sent to this address.</p>

**NOTE:** The application should be accompanied by 3 copies of an adequate plan and details of any environmental impact assessment. Failure to do so may result in a delay in processing the application. (See note 5.)

\*Delete as necessary

2a) Address or other sufficient description of land or premises to which this application relates.	TYWYN STW MCLFA GWYLLT TYWYN MCLFA
2b) Name and Land Reference of point of discharge.	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">5620</div> <div style="border: 1px solid black; padding: 2px;">1132</div> </div>
2c) District Council area.	MCLFA TLA
3 State the nature of the discharge. Tick one or more boxes as appropriate. (See note 6.)	<div style="display: flex; flex-direction: column;"> <div>Sewage effluent <input checked="" type="checkbox"/></div> <div>Storm/emergency sewage effluent <input type="checkbox"/></div> <div>Trade effluent <input type="checkbox"/></div> <div>Any other matter (inc. surface water). <input type="checkbox"/></div> </div>
4 For sewage and trade effluent, and storm/emergency discharges, state:-  a) Maximum quantity it is proposed to discharge in one day. (See note 7.)  b) Highest rate at which it is proposed to operate the discharge.  c) Periods during which the discharge will take place.	<div style="text-align: right;">         5011.2 m<sup>3</sup>/day           58 l/sec           CONTINUOUS       </div>
5 For rainfall dependent discharges, state the area to be drained. (Roof areas and other impervious areas should be separately identified.)	<div style="text-align: right;">m<sup>2</sup></div>
6 Receiving medium Tick the category to which the proposed discharge(s) are to be made. <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">           TIDAL RIVER OR STREAM <input type="checkbox"/>            NON-TIDAL RIVER OR STREAM <input type="checkbox"/>            CANAL <input type="checkbox"/>            LAKE, LOCH OR POND <input type="checkbox"/>            (not discharging to a river or stream)         </div> <div style="width: 45%;">           INTO LAND <input type="checkbox"/>            ONTO LAND <input type="checkbox"/>            DIRECTLY INTO GROUNDWATER <input type="checkbox"/>            INTO LAND AND WATERCOURSE <input type="checkbox"/>            COASTAL WATER (see Note 8.) <input checked="" type="checkbox"/> </div> </div> <div style="margin-top: 10px;">           State name of watercourse, if known:- DISCHARGE THROUGH 500 M OUTFALL         </div>	

- 7 The Authority will normally require adequate provision for the taking of samples of the discharge. Please indicate the means proposed. (See note 9.)

At the outlet

☐

At a manhole or  
sampling chamber

☐

See plan

☐

Other

☒

If other, please give further details:-

AT THE END OF THE HV DISCHARGE CHAMBER

- 8 Indicate proposed means of discharge:-

1. Pipe

☐

2. Channel

☐

3. Borehole

☐

4. Soakaway

☐

5. Well

☐

6. Sub-irrigation

☐

7. Culvert

☐

8. Soakaway &  
sub-irrigation  
system

☐

9. Other

☒

If 9 please give further details:-

MAKINE OUTFALL

- 9 Give details as appropriate

a) For pipes, channels, wells and boreholes, state diameter in millimetres or dimension(s) in metres.

a) 350 mm

b) For sub-irrigation systems, soakaway pits, wells and boreholes, state depth in metres and geological stratum, if known.

b) N/A

c) For boreholes, state details of lining:

c) N/A

Type of lining

: metres

Depth of lining

: metres

Depth of perforated lining

: metres

Depth of unperforated lining

: metres

- 10 Is there a foul sewer available to which the discharge could be made?

~~YES~~/NO\*

If yes give reason for not connecting.

:

Distance from nearest foul sewer.

:

- 11 Give brief details of:

a) Source of water supply (eg mains, well, borehole, etc.)

a)

b) General purpose for which water is used (eg domestic, cooling, etc.)

b)

12	Is consent required for a limited period? If yes give relevant dates	YES/NO*
13	On what date do you anticipate the discharge will begin to be made?	17/04/2012
14	Does this proposal replace an existing discharge? If yes give details	YES/NO* TYWYN/ABERDARE SCHEME EXISTING DISCHARGE (DECEASED) (CONSENT)
15	Are there any existing consents for discharge from the premises? (see note 10.) If yes, give details, numbers, if known.	YES/NO SCHEME TO REPLACE EXISTING DISCHARGE CG 0136401
16	Please give details of the premises – tick as appropriate:–	
	1. Single dwelling <input type="checkbox"/>	2. Multiple dwellings <input type="checkbox"/>
	3. Licenced premises <input type="checkbox"/>	4. Vehicle parking area <input type="checkbox"/>
	5. Industrial premises <input type="checkbox"/>	6. Fish farm <input type="checkbox"/>
	7. Mineral workings <input type="checkbox"/>	8. WSPLC STW <input checked="" type="checkbox"/>
	9. Water supply <input type="checkbox"/>	10. Other <input type="checkbox"/>
	If other, please give further details.	
17	IN THE CASE OF SUB-IRRIGATION SYSTEMS AND SOAKAWAYS	
a)	Is any part of the system within 10 metres of the site boundary?	YES/NO*
b)	Is any part of the system within 10 metres of a watercourse?	YES/NO*
c)	Is the land in which the disposal system is to be constructed under-drained with land drains discharging to a watercourse or to be so under-drained?	YES/NO*
d)	If the answer to either (b) or (c) is "YES" please state the name of the watercourse or sufficient information to identify it.	N/A
e)	Attach details of the percolation test carried out.	Attached
18	FOR SEWAGE TREATMENT PLANTS	
a)	State the population served/population equivalent/estimated population*	*All year *Summer 8500 *Winter 5000
b)	Give details of the treatment plant to be used (see note 11.)	6mm SCREEN, DE-GRITTER, 2-STAGE SEDIMENTATION, PERCOLATING FILTER, UV DISINFECTION.

\*Delete as necessary



FOR TRADE EFFLUENT AND SEWAGE DISCHARGES  
CONTAINING TRADE EFFLUENT

19 a) Describe the trade effluent and the process(es) from which it arises. (See note 12.)

b) Maximum temperature of the effluent as discharged ..... °C

c) Does the effluent contain any of the following? ~~YES~~/NO

If yes, underline those present and give full details (including maximum, minimum and mean values) separately.

- |  |  |
|--|--|
| 1. Aldrin, dieldrin, endrin and isodrin                      | 25. Iron                               |
| 2. Arsenic   | 26. Lead                               |
| 3. Atrazine  | 27. Malathion                          |
| 4. Azinphos-ethyl  | 28. Mercury and its compounds          |
| 5. Azinphos-methyl   | 29. Nickel                             |
| 6. Boron   | 30. Parathion                          |
| 7. Cadmium and its compound                                  | 31. Parathion-methyl                   |
| 8. Carbon tetrachloride                                      | 32. PCSD's                             |
| 9. Chloroform  | 33. Pentachlorophenol (PCP)            |
| 10. Chromium   | 34. Perchloroethylene                  |
| 11. Copper   | 35. Permethrin                         |
| 12. Cyanide  | 36. pH if outside the range 5.5 to 9.0 |
| 13. Cyfluthrin   | 37. Polychlorinated biphenyls          |
| 14. DDT  | 38. Simazine                           |
| 15. 1, 2-Dichloroethane                                      | 39. Sulcofuron                         |
| 16. Dichlorvos   | 40. Tetrachloroethylene                |
| 17. Dioxins  | 41. Tributyltin compounds              |
| 18. Endosulfan   | 42. Trichlorobenzene                   |
| 19. Fenitrothion   | 43. Trichloroethane                    |
| 20. Fenthion   | 44. Trichloroethylene                  |
| 21. Flucifuron   | 45. Trifluralin                        |
| 22. Hexachlorobenzene (HCB)                                  | 46. Triphenyltin compounds             |
| 23. Hexachlorobutadiene (HCBD)                               | 47. Vanadium                           |
| 24. Hexachlorocyclohexane<br>(lindane and related compounds) | 48. Zinc                               |

d) Give full details of any other significant chemical components contained in the effluent:—

20 FOR STORM AND EMERGENCY DISCHARGES AND SURFACE WATER SEWERS

State the type of discharge. Tick one or more boxes as appropriate.

- |   |                          |                            |
|---|--------------------------|----------------------------|
| Storm tanks                             | <input type="checkbox"/> | Answer all except 23 & 26  |
| Storm overflow from sewer               | <input type="checkbox"/> | Answer all except 23 & 26  |
| Storm overflow from pumping station     | <input type="checkbox"/> | Answer all sections below  |
| Emergency overflow from sewer           | <input type="checkbox"/> | Answer 20a, 21, 25, 27, 28 |
| Emergency overflow from pumping station | <input type="checkbox"/> | Answer all except 20b, 22  |
| Surface Water                           | <input type="checkbox"/> | Answer 25, 27              |
| Other                                   | <input type="checkbox"/> | Answer as appropriate      |

If other, please give further details:-

21	a) State dry weather flow to pumping station/in sewer	:	$m^3/day$
	b) State flow at which storm discharge will commence	:	$l/sec$
22	Expected frequency of operation	:	per annum
23	State volume of storm tank(s).	:	$m^3$
24	State volume of wet well	:	$m^3$
25	What provisions have been made to raise alarms? (eg telemetry)		
26	What facilities have been provided to prevent the discharge of gross solids? (For screens, give bar spacing or aperture.)		
27	What provisions have been included to deal with a) power failure? b) mechanical breakdown? c) rising main failure?		
28	What facilities have been provided for flow measurements?		
29	Are there any other factors to be taken into account?		