



**ENVIRONMENT
AGENCY**

Notice of Modification of Consent to discharge

Water Resources Act 1991

**Wessex Water Services
Ltd**

Operations Centre
Claverton Down Road
Claverton Down
Bath
BA2 7WW

**Consent to discharge
from**

Christchurch Sewage
Treatment Works
Stoney Lane
Christchurch
Dorset

**Modification of consent
number**

400501

**Replacement number of
modified consent**

401355

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Consent history

Detail	Date	Comment
Consent No 400501	Issued 04/06/1999	Modified by this notice

**Notice of Modification of
Consent to discharge**

Water Resources Act 1991
Section 88, Schedule 10
(as amended by the
Environment Act 1995)



**ENVIRONMENT
AGENCY**

Notice of Modification of Consent to discharge

Modification of consent number
400501

Replacement number of modified consent
401355

To:
Wessex Water Services Ltd ("the Consent Holder")
**Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2
7WW**

The Environment Agency ("the Agency") in pursuance of its powers under the Water Resources Act 1991 hereby **modifies** Consent to Discharge number **400501** and any variations or modifications of that consent by **replacing** all the conditions with the conditions set out in this Notice.

For:
**biologically treated sewage disinfected by ultra violet (UV)
settled storm sewage**

From:
sewage treatment works

At:
Christchurch Sewage Treatment Works

To:
Lower Avon

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, altering this Notice, without the agreement of the Consent Holder, during a period of 4 years from the date this notice is issued.

This Notice is issued and takes effect on: **03 March 2003**

Signed

1

Conditions of consent for biologically treated sewage disinfected by ultra violet (UV)

1.1

Nature

1.1.1

- a** The Discharge shall consist solely of biologically treated sewage effluent which 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 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 260nm. A received UV dose of 27 mJ/cm² must be exceeded subject to condition 1.1.1c and 1.1.1d.
- c** The received UV dose must exceed the limit set out in condition 1.1.1b for at least 99% of the recorded measurements (as required by conditions 1.9.3aiii) in any period of 12 consecutive months.
- d** No more than 10% of the recorded measurements of the received dose taken consecutively during any 24 hour period from midnight to midnight shall fall below 13.5 mJ/cm².
- e** The Consent Holder shall not allow the received UV dose to fall below 27 mJ/cm² during the maintenance of the UV plant. Maintenance is defined in the UV Code of Practice attached to this Consent.

1.2

Location

1.2.1

The Discharge shall be made in the manner and at the place specified as:

- a** discharging to Lower Avon;
- b** at National Grid Reference SZ 1620 9304.

1.3

Volume

1.3.1

The Dry Weather Flow of the Discharge shall not exceed 20270 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.

1.4

Composition

1.4.1

- a** For the period from 1 April to 30 November inclusive and subject to paragraph b below, the Discharge shall not contain more than;

- i** 20 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
 - ii** 10 milligrammes per litre of ammoniacal nitrogen (expressed as N);
 - iii** 30 milligrammes per litre of suspended solids (measured after drying at 105°C).
- b** The limit for any of the relevant determinands 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 'Look-up table' attached 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 determinand.

1.4.2

- a** For the period from 1 December to 31 March inclusive and subject to paragraph b below, the Discharge shall not contain more than;
 - i** 20 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
 - ii** 15 milligrammes per litre of ammoniacal nitrogen (expressed as N);
 - iii** 30 milligrammes per litre of suspended solids (measured after drying at 105°C).
- b** The limit for any of the relevant determinands set out in paragraph 1.4.1a 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 'Look-up table' attached 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 determinand.

1.4.3

For the period from 1 April to 30 November inclusive, the Discharge shall not contain more than;

- a** 56 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
- b** 37 milligrammes per litre of ammoniacal nitrogen (expressed as N);

1.4.4

For the period from 1 December to 31 March inclusive, the Discharge shall not contain more than;

- a** 56 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
- b** 44 milligrammes per litre of ammoniacal nitrogen (expressed as N);

1.4.5

The Discharge shall not have a pH less than 6 or greater than 9.

1.4.6

As far as is reasonably practicable, the works shall be operated so as to prevent the Discharge from containing any significant trace of visible oil or grease.

1.5 Failure of UV measurement systems

1.5.1 In the event of failure of the flow monitor or intensity 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 27 mJ/cm².

1.6 Sample point conditions

1.6.1 An appropriately labelled sample point shall be provided by agreed date and maintained at National Grid Reference SZ 1651 9362, 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.

1.7 Flow Measurement

1.7.1 Flows of the discharge shall be measured at the outlet, or such other point(s) as are agreed by the Agency.

1.7.2 A continuous flow recorder, to a specification provided by the Agency, with on-site visual display from which readings can be readily obtained, shall be provided and operated to record the daily volume and instantaneous flow of the discharge.

1.7.3 As soon as practicable after completion of the flow recorder 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.

1.7.4 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.

1.7.5 The Consent Holder shall produce and maintain a quality control manual, to the satisfaction of the Agency, specifying procedures for the calibration, operation and maintenance of the flow recorder. The flow recorder 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.

- 1.7.6 The Consent Holder shall record all failures of the continuous flow recorder 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.

1.8 **Unusual weather conditions**

1.8.1

- 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 paragraph(s) 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.13.1 and 1.14.1 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.
- 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 paragraph **a** above, the Consent Holder shall notify the Agency by fax 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.

1.9 **Recording and reporting**

- 1.9.1 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 environment occurs, that may increase or introduce into the effluent any "dangerous substance" included on Lists I, II or Red List (set out in the 'List of dangerous substances' attached to this consent, 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.

1.9.2

- a** The Consent Holder shall establish and operate a documented maintenance programme including the method and frequency of cleaning and replacement of UV lamps, UV Intensity meters 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. 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.

1.9.3

- a** The following variables shall be measured and recorded at 15-minute intervals, using continuous recorders with on-site visual displays from which readings may readily be obtained:
 - i** the instantaneous flow rate through each UV irradiation channel
 - ii** the instantaneous applied UV dose for each UV irradiation channel
 - iii** the instantaneous received UV dose for each UV irradiation channel
 - iv** the instantaneous measured UV intensity for each bank
 - v** 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 quarterly basis, the records of the readings specified in condition 1.9.3a:

1.9.4

- a** 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:
 - 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 1.1.1d or 1.5.1 of this consent.
- b** 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.

1.9.5

- c** The Agency, if satisfied that the cause of such an occurrence 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 of that occurrence for compliance purposes with condition 1.1.1d.

- a** 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.

- b** Sample points as shown on attached plan:

- i** B Crude influent to sewage treatment works at N.G.R. SZ 1668 9370.
- ii** C Biologically treated sewage effluent before UV disinfection at N.G.R. SZ 1653 9362.
- iii** D Biologically treated sewage effluent after UV disinfection at N.G.R. SZ 1651 9362.

- c** Microbiological determinands and frequencies (Agency Standard Analytical Methods to be employed, including AQC):

- i** **Faecal Coliforms** - fortnightly at sample points B, C and D;
- ii** **Total Coliforms** - fortnightly at sample points B, C and D;
- iii** **Faecal Streptococci** - fortnightly at sample points B, C and D;
- iv** **Salmonella** - fortnightly at sample points C and D;
- v** **Representative enteroviruses** - fortnightly at sample points C and D;
- vi** **F-specific bacteriophage** - fortnightly at sample points C and D.

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.

- d** Other determinands and frequencies

The measurements of determinands i to iii below and the sample at Point C for the determination of iv to vi below and the microbial determinands shall be taken at the same time. 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.

- i** The flow through each UV irradiation channel shall be measured.
- ii** The received dose shall be recorded in each UV irradiation channel.
- iii** The measured UV transmittance at 254nm shall be measured by in-situ meter.
- iv** The UV transmittance shall also be measured by laboratory analysis of samples collected from sample point C.
- v** Suspended solids shall be measured by laboratory analysis of samples collected at sample point C.
- vi** BOD (ATU) shall be measured by laboratory analysis of samples collected at sample point C.

1.10 **Emergency notification**

- 1.10.1 The Consent Holder shall notify the Agency in the event of a discharge of sewage effluent which has not met the requirements of conditions 1.1.1d or 1.5.1 of this consent, or of 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.

1.11 **Telemetry**

- 1.11.1 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 received UV dose of 27 mJ/cm².

1.12 **Power**

- 1.12.1 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.

1.13 **Maintenance**

- 1.13.1 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 returned to normal operation as soon as practicable after the failure
 - b** the Agency shall be informed of any failure that may have adversely affected effluent quality as soon as practicable after the failure;
 - c** tanks shall be desludged at sufficient frequency and in such a manner to prevent excessive carryover of suspended solids.
- 1.13.2 The Consent Holder shall maintain the outfall pipe 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 outfall pipe.

1.14 **Works operation**

- 1.14.1 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 conditions 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5, and 1.4.6 than is required by those conditions;
- b** any alteration of the works or a change in the type of treatment used.

1.15 Substantial change

1.15.1 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.

- a** 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.
- b** 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 effect 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.
- c** 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 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5 and 1.4.6 of this consent but it may be significant if it is caused by a change in some other characteristic of the Discharge.
- d** For the purposes of this condition, "trade effluent" means:
 - i** any discharge by the sewerage undertaker other than surface water run-off or domestic sewage from premises connected directly or indirectly to the works,
 - 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.

1.16 Operational Surveillance and Audit Condition

1.16.1

- a** The Consent Holder shall maintain records that demonstrate to the satisfaction of the Agency:
 - i** knowledge and understanding by the Consent Holder of the composition of materials supplied to them and of any changes in formulation of process inputs to the collecting, sewerage and/or treatment system;
 - ii** any changes in processes that may result in a change in the Dangerous Substances composition of the effluent discharge.

- b** The Consent Holder, at a time scale and frequency agreed by the Agency, shall undertake and record an audit to identify any additions or changes to the concentrations and loads of Dangerous Substances in the effluent since the date of issue of the consent.
- c** The audit procedure is to be previously agreed in writing by the Agency.
- d** The records kept in accordance with paragraphs a and b above shall be made available to the Agency on request.

1.17 The Dangerous Substances List I Condition

1.17.1

- a** The quantity of List I Substances (as defined in the Dangerous Substances Directive 76/464/EEC) in the Discharge shall not increase above the levels in the Discharge on the date of effect of this consent where no specific level is authorised; and
- b** Notwithstanding a above, the concentration of List I Substances in the Discharge shall not exceed the concentrations specified in the "List 1 General Standards" attached to this consent.

1.18 The Dangerous Substance List II Condition

1.18.1

- a** The quantity of List II Substances (as defined in the Dangerous Substances Directive 76/464/EEC) in the Discharge shall not increase above the levels in the Discharge on the date of effect of this consent where no specific level is authorised; and
- b** Notwithstanding a above, the Discharge shall not contain quantities of any List II Substance such as to cause or contribute to the concentration of that substance in the receiving water exceeding the relevant Environmental Quality Standard.

1.19 Investigate and Monitor Condition

1.19.1

At the request of the Agency, the Consent Holder shall undertake any necessary investigations and provide an assessment of the source and quantity of specified List I and List II Substances (as defined in the Dangerous Substances Directive 76/464/EEC) within the discharge.

1.20 Power to Modify Condition

1.20.1

If the Agency believes that the load of one or more Dangerous Substances has increased, it may at any time after the issue of this discharge consent, modify this consent by written notification to include specific limits for List I and List II Substances as defined in the Dangerous Substances Directive (76/464/EEC), or any Substance with a non-statutory EQS. This includes any period during which the Agency would otherwise be prohibited from modifying the consent.

1.21 **Unauthorised discharges**

1.21.1

- 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.

1.22 **Urban Waste Water Treatment Regulations**

1.22.1

- a** The Consent Holder shall comply with the Urban Waste Water Treatment (England and Wales) Regulations 1994 ('the Regulations')
- b** For the purpose of conditions 1.22.2 and 1.22.3 below, interpretations and references to a numbered regulation or Schedule shall have the meaning as in the Regulations, unless otherwise indicated.

1.22.2

- a** The Discharge derives from an agglomeration with a population equivalent of between 50,000 and 100,000, discharging to an estuary.
- 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(1) and shall satisfy the relevant requirements of Part I of Schedule 3.

1.22.3

- a** The Consent Holder shall provide apparatus for the purpose of:
 - i** measuring and recording the volume, rate of flow, nature, composition and temperature, and
 - ii** collecting samples of any waste water,as is necessary to ensure compliance with paragraph **b** below.
- b** The Consent Holder shall monitor the Discharge to verify compliance with the requirements of paragraph 1.22.2 above in accordance with control procedures as set out in Part II of Schedule 3.
- c** The Consent Holder shall provide to the Agency any information collected in complying with paragraph **b** above in a manner agreed with the Agency.

1.22.4

- a** Condition 1.22.3 above shall apply for the purpose of verifying compliance with the Directive from the date as specified in the relevant paragraph of Regulation 5 as incorporated into this consent under paragraph 1.22.2c above.

2 **Conditions of consent for settled storm sewage**

2.1 **Start date**

- 2.1.1 There shall be no discharge of settled storm sewage under the terms of this consent until the 31 March 2003 or the end of commissioning of the works whichever is the sooner. The Consent Holder shall give the Agency at least 28 days written notice before making the discharge.

2.2 **Nature**

- 2.2.1 The Discharge shall consist solely of settled storm sewage.

2.3 **Location**

- 2.3.1 The Discharge shall be made in the manner and at the place specified as:
- a** discharging to Lower Avon;
 - b** at National Grid Reference SZ 1620 9304.

2.4 **Volume**

- 2.4.1 The Dry Weather Flow arriving at the CSO shall not exceed 20270 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.

- 2.4.2 The Discharge shall occur when and only for as long as, the storm tanks are full. The discharge of storm sewage to the storm tank shall only occur when the rate of flow at the storm sewage separating weir is in excess of 490 litres per second due to rainfall and/or snowmelt and shall consist only of flows in excess of that figure. The storm tanks shall be emptied automatically and their contents returned for full treatment as soon as practicable after cessation of the overflow to the storm tanks. The duty storm return pumps shall be rated at a minimum of 75 litres per second.
- 2.4.3 The capacity of the storm tank(s) shall be at least 3966 cubic metres.

2.5 **Composition**

- 2.5.1
- a** The Discharge shall have passed, without prior comminution or maceration, through an automatically cleaned screening device having apertures no greater than 6 millimetres in two dimension(s).

- b** The screening device shall be maintained in an efficient operational condition.
- c** All screenings must be removed and disposed of in a manner such as to prevent entry to the discharge.

2.6 **Sample point conditions**

- 2.6.1 An appropriately labelled sample point shall be provided and maintained at National Grid Reference SZ 1667 9367, 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.

2.7 **Recording and reporting**

- 2.7.1
 - a** The Consent Holder shall establish and operate a documented maintenance programme and record all non-routine actions undertaken that may have adversely affected the operation of the storm tanks. 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 the operation of the storm tanks.
- 2.7.2
 - a** A recording system shall be provided and maintained to record the frequency and duration of overflow events.
 - b** On request the Consent Holder shall supply the Agency with a written report on the frequency and duration of overflow events.

2.8 **Telemetry**

- 2.8.1
 - a** A 24 hour response telemetry alarm system shall be provided and maintained to give notification of failure or breakdown of the storm tank return pumping station.
 - b** The Consent Holder shall take all reasonable remedial measures to return the pumping station to normal operation, as soon as practicable after warning of failure or breakdown of the storm tank return pumping station.

2.9 **Maintenance**

- 2.9.1 The Consent Holder shall maintain the outfall pipe 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 outfall pipe.

2.10 **Works operation**

2.10.1

- a** 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.
- b** This condition does not require any alteration of the works or a change in the type of treatment used.

2.11 **Substantial change**

2.11.1

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.

- a** 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.
- b** 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 effect 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.
- c** 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 other conditions of this consent but it may be significant if it is caused by a change in some other characteristic of the Discharge.
- d** For the purposes of this condition, "trade effluent" means:
 - i** any discharge by the sewerage undertaker other than surface water run-off or domestic sewage from premises connected directly or indirectly to the works,
 - 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.

2.12

Unauthorised discharges

2.12.1

- 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.

Look up table

Look-up table	
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

List of dangerous substances

Mercury and its compounds	Cadmium and its compounds	Hexachlorocyclohexane (lindane and related compounds)
Carbon tetrachloride	DDT (the isomers of 1,1,1-trichloro- 2,2 bis{p-chlorophenyl} ethane)	Pentachlorophenol (PCP)
Aldrin	Dieldrin	Endrin
Isodrin	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)
Chloroform	Polychlorinated biphenyls	Dichlorvos
1,2-Dichloroethane	Trichlorobenzene	Atrazine
Simazine	Tributyltin compounds	Triphenyltin compounds
Trifluralin	Fenitrothion	Azinphos-methyl
Malathion	Endosulfan	Lead
Chromium	Zinc	Copper
Nickel	Arsenic	*Iron
*pH outside range 5.5 to 9.0	*Boron	Vanadium
PCSD'S	Cyfluthrin	Sulcofuron
Flucofuron	Permethrin	4-Chloro-3-methyl-phenol
2-Chlorophenol	2,4-Dichlorophenol	2,4-D (ester)
2,4-D (non ester)	1,1,1-Trichloroethane	1,1,2-Trichloroethane
Bentazone	Benzene	Biphenyl
Chloronitrotoluenes	Demeton	Dimethoate
Linuron	MCPA	Mecoprop
Mevinphos	Napthalene	Omethoate
Toluene	Triazophos	Xylene
Cyanide	Azinphos-ethyl	Fenthion
Parathion	Parathion-methyl	Trichloroethylene
Tetrachloroethylene	Dioxins	PAHs
Nonyl phenol	Nonyl phenyl ethoxylate	Di-ethylhexyl phthalate
Bisphenol-A	Diazinon	Chlorfenvinphos
Chlorotoluron	Isoproturon	Diuron
Propetamphos	Flumethrin	Amitraz
High-Cis Cypermethrin	Cyromazine	Deltamethrin
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.

List I General Standards

List I General Standards		
	Substance	Limit Total Concentration (ug/l)
1.	Aldrin	0.02
2.	Dieldrin	0.02
3.	Endrin	0.01
4.	Isodrin	0.01
5.	Cadmium	10.0
6.	Carbon tetrachloride	24.0
7.	Chloroform	24.0
8.	DDT (all isomers)	0.05
9.	para-pare-DDT	0.02
10.	Hexachlorobenzene	0.06
11.	Hexachlorobutadiene	0.2
12.	Hexachlorocyclohexane	0.2
13.	Mercury	2.0
14.	Pentachlorophenol	4.0
15.	Trichlorobenzene	0.8
16.	1,2-Dichloroethane	20.0
17.	Trichloroethylene	20.0
18.	Tetrachloroethylene	20.0

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 doses (as defined in the Calculation of UV dose) shall be determined from

- a.** the flow rate of effluent through the UV disinfection system (l/s),
- b.** the reactor volume,
- c.** the theoretical UV intensity at end of lamp life at the assumed UV transmittance for the effluent (at 254nm)
- d.** the measured UV intensity at 254nm

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.
- b.** Any failure to meet the requirements of the 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.

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 UV intensity at 254nm measured in accordance with the manufacturer's recommendations 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 assumed UV transmittance (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));

Calculations

- | | | | | | |
|------------|--|---|--|---|--------------------------------|
| i. | Received UV Dose
per Bank (mJ/cm^2) | = | Measured
UV Intensity
(mW/cm^2) | X | Adjusted Retention
Time (s) |
| ii. | Applied UV Dose
per Bank (mJ/cm^2) | = | Theoretical
UV Intensity
(mW/cm^2) | X | Adjusted Retention
Time (s) |

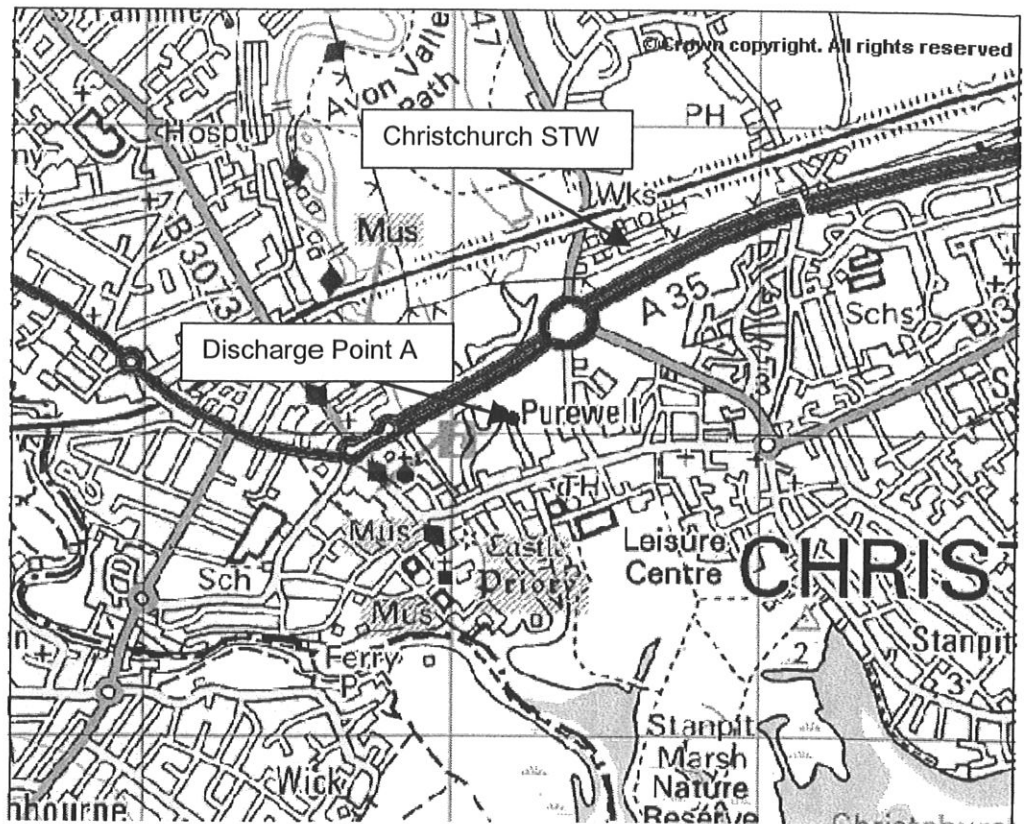
The UV dose (applied or received) for each channel is the sum of the UV doses for each operational bank in that channel.

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

Plan Key

Plan Ref:	Description	National Grid Reference
A	Final effluent and Settled Storm outfall	SZ 1620 9304
B	Crude Influent Sampling Point	SZ 1668 9370
C	Final effluent before UV disinfection sampling point	SZ 1653 9362
D	Final effluent after UV disinfection sampling point and Final Effluent Sampling Point	SZ 1651 9362
E	Settled storm sampling point	SZ 1667 9367
F	Site main entrance	SZ 1641 9357

Site location plan



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Site layout plan

