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Agency Wales

CONSENT NO.	CG0326001
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WATER RESOURCES ACT 1991

SECTION 88 – SCHEDULE 10

(AS AMENDED BY 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

Following a review of the conditions of its consent, the Environment Agency ("The Agency") in pursuance of its powers under paragraph 7 (2)(b) of Schedule 10 to the Water Resources Act 1991 hereby modifies its consent to the making of a discharge of **TREATED SEWAGE EFFLUENT**

with respect to Consent No. CG0326001 issued on 31st December 2005

FROM: BENLLECH STW (NEW OUTFALL)

AT: SH53790 83630

TO: COASTAL WATERS OFF BENLLECH, ANGLESEY

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

Treated Sewage Effluent

Schedule No. CG0326001 01

UWWT Regulations 1994

Schedule No. CG0326001 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 to this consent, without the agreement in writing of the consent holder, during a period of 4 years from the date this modification is issued.

This modification of consent is issued on the 13th day of February 2007

This modification of consent is effective from the 13th day of February 2007

Signed *Iwan Williams*

IWAN WILLIAMS

Regulatory Water Quality Team Leader

Asiantaeth yr Amgylchedd Cymru
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DATE ISSUED	13 th February 2007

CONDITIONS OF CONSENT TO DISCHARGE

Treated Sewage Effluent ("the Discharge")

FROM: Benllech Waste Water Treatment Works

NATURE

1. The Discharge shall consist solely of treated sewage effluent.

LOCATION

2. The Discharge shall be made in the manner and at the place specified as:
 - (a) discharging via a 300 millimetre diameter outfall pipe terminating with a diffuser consisting of two risers at a minimum spacing of 17 metres apart. Each riser shall not exceed 1000 millimetres above the sea bed and shall end in twin ports discharging horizontally and perpendicular to the main tidal flow. One pair of ports shall be of diameter 155 millimetres and the other pair 100 millimetres;
 - (b) discharging to Coastal Waters through a 1.85 kilometre long outfall from the headworks to a point 1.45 kilometres offshore from the lowest astronomical tide;
 - (c) at National Grid Reference SH 53790 83630;
 - (d) shown marked 'Consent Point' on Plan CG0326001 attached as Annex 2.

SAMPLE POINT

3. An appropriately labelled sample point shall be provided and maintained at National Grid Reference SH 52590 82230, as shown marked 'Discharge Sample Point' on the Plan CG0326001 attached as Annex 2 or some other point as agreed in writing with the Agency, so that a representative spot sample of the Discharge may be





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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.

VOLUME

4. The volume of the Discharge shall not exceed 3234 cubic metres per day.
5. The Dry Weather Flow of the Discharge shall not exceed 1230 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.

6. The rate of discharge shall not exceed 37.4 litres per second.

FLOW MEASUREMENT

7. 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 sewage through the treatment works. 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.
8. 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.





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9. 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.
10. 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.
11. Records of the flow readings or the reasons for any breaks in the record, as described in condition 10 above, shall be provided to the Agency when requested, in a format specified by the Agency.
12. Flows of sewage through the treatment works shall be measured at the location identified by the MCERTS inspector in the Report Reference Number HS0164/d2/68.

COMPOSITION

13. (a) Subject to paragraph (b) below, the Discharge shall not contain more than;
 - (i) 40 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20⁰ C with nitrification suppressed by the addition of allyl-thiourea)
 - (ii) 60 milligrammes per litre of suspended solids (measured after drying at 105⁰C);



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- (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.

14. (a) The Discharge shall not contain more than
- (i) 80 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20⁰ C with nitrification suppressed by the addition of allyl-thiourea)
 - (ii) 150 milligrammes per litre of suspended solids (measured after drying at 105⁰C);

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 conditions 13 and 14 than is required by that condition;
- (b) any alteration of the works or a change in the type of treatment used.

UNUSUAL WEATHER

16. (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 13, 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;

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- (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 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

17. (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.
18. 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" 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.





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SUBSTANTIAL CHANGE

19. (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.
- (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 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.
- (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 is specifically regulated by conditions 13 and 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;



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- (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 DISCHARGE

20. (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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START DATE

21. Conditions 21 to 26 of this consent to discharge, that refer to UV disinfection, shall not come into effect until 1st April 2009.

NATURE

22. (a) The Discharge shall consist solely of secondary 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 a broad spectrum medium pressure artificial UV source with at least 85% of available UV irradiation emitted in the wavelength range 200 to 300nm or UV irradiation from an artificial source with at least 85% of the available radiation emitted in the wavelength range 250 to 260nm.
- (c) The UV plant shall have a dose that delivers at least 4.4 log reduction in faecal coliform and in enterovirus between the influent to the sewage treatment works and the bathing waters, and a minimum 1 log reduction in enteroviruses across the UV plant.
- (d) At the request of the Agency, the Consent Holder shall provide calculations and evidence to demonstrate that the UV plant is designed and constructed in accordance with conditions (c) above.

FAILURE OF UV MEASUREMENT SYSTEMS

23. In the event of failure of the flow monitor or failure of the UV transmittance or intensity 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;



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- (b) the UV plant shall have a dose rate that delivers a performance no less than that specified in condition 22 (c).

RECORDING AND REPORTING

24. (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, transmittance meters or 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 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.

(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 an interval which shall be agreed in writing between the Consent Holder and the Agency not later than the 31/03/09:-
 - (a) the instantaneous flow rate through each UV irradiation channel
 - (b) the UV dose for each UV irradiation channel
 - (c) the number of operational UV lamps for each UV irradiation channel





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- (d) the instantaneous measured UV transmittance at the inlet to the UV irradiation plant
 - (e) the instantaneous measured UV intensity for each bank
 - (f) any other parameters used in calculating the UV dose to be agreed with the Agency not later than the 31/03/09
- 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, 1 month in arrears, in a format specified by the Agency, on a monthly basis, the records of the readings specified in condition 24(b) I.

(c) **EXCEPTION REPORTS**

The Consent Holder shall supply to the Agency at an interval to be agreed, or upon request, a written report, detailing all occurrences where:

- 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 22(c) of this consent.
- 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 22(c).





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(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, at an interval to be agreed, two months in arrears.

I. A plan showing:

- A The sample point NGR for the crude influent to sewage treatment works shall be provided by the Consent Holder not later than 31/03/09.
- B The sample point NGR for the secondary treated sewage effluent before UV disinfection shall be provided by the Consent Holder not later than 31/03/09
- C The sample point NGR for the secondary treated sewage effluent after UV disinfection shall be provided by the Consent Holder not later than 31/03/09.

II. Microbiological determinands and frequencies (Agency Standard Analytical Methods to be employed, including AQC):

- 1) **Faecal Coliforms** - at an interval to be agreed at sample points A, B and C;
- 2) **Total Coliforms** - at an interval to be agreed, at sample points A, B and C;
- 3) **Faecal Streptococci** - at an interval to be agreed, at sample points A, B and C;
- 4) **Salmonella** - at an interval to be agreed, at sample points B and C;
- 5) **Representative enteroviruses** - at an interval to be agreed, at sample points B and C
- 6) **F-specific bacteriophage** - at an interval to be agreed, at sample points A, 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 dose shall be recorded in each UV irradiation channel.
- c) The measured UV transmittance at 254nm 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 / C
- e) BOD (ATU) shall be measured at sample point B / C.

TELEMETRY

25. 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 22(c) of this consent.

EMERGENCY NOTIFICATION

26. 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 22(c) 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.



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POWER

27. 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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CONDITIONS OF CONSENT TO DISCHARGE

Urban Waste Water Treatment Regulations 1994 ("the Discharge")

FROM: Benllech 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 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).



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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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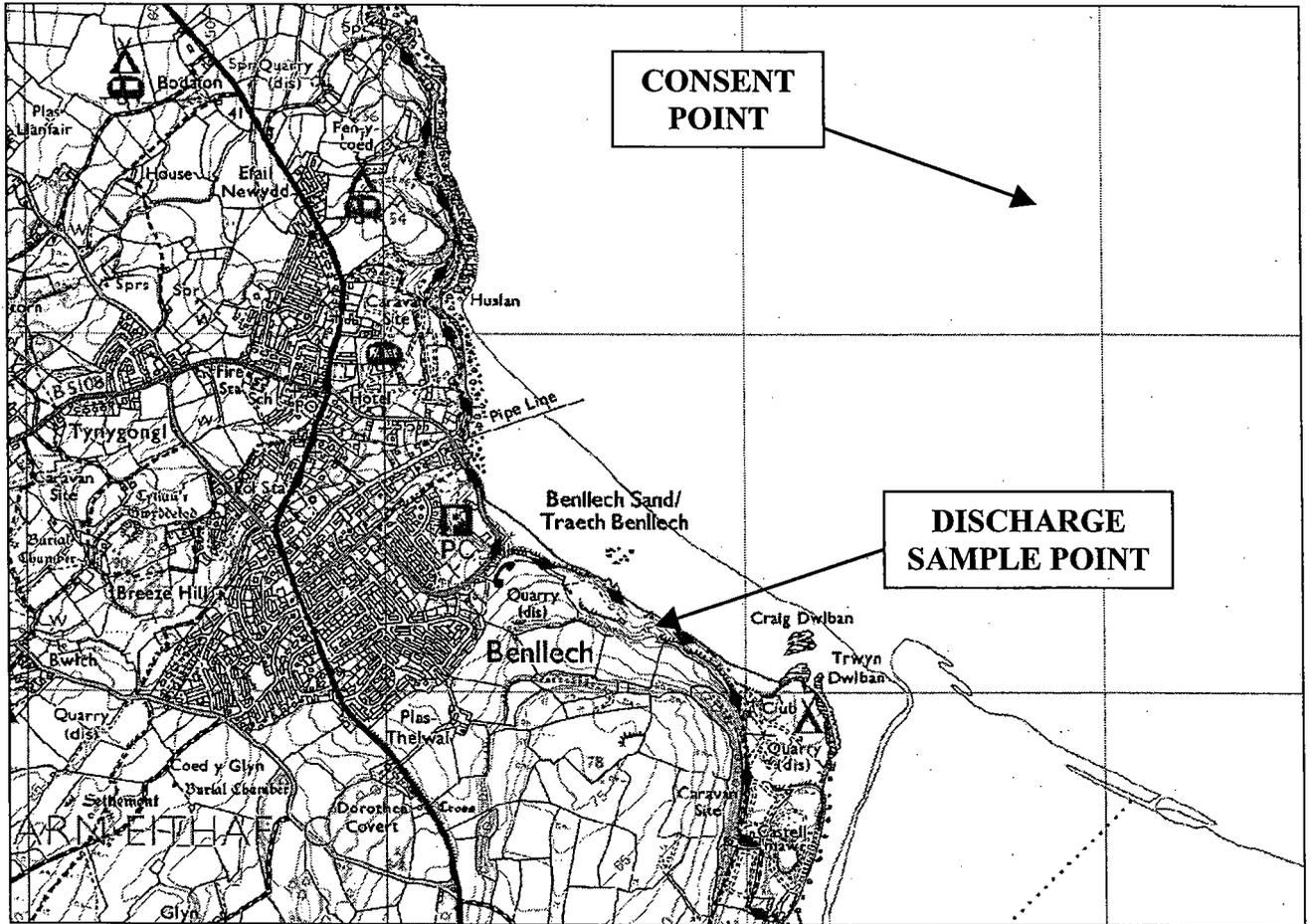
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ANNEX 2

PLAN No CG0326001

NOT TO SCALE



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