

SETTLED SEWAGE OVERFLOW
STORM TANK LLANDDAROG STW

NATIONAL RIVERS AUTHORITY WATER ACT 1989



Application for consent to discharge
Schedule 12

To:

The Consents Officer
National Rivers Authority
Welsh Region
Plas yr Afon/Rivers House
St Mellons Business Park
Cardiff
CF10 1T

Official Use Only
Dist/Area Ref. SWTH NUR

Application No. 802207

Date Received

2-1-91

PLEASE REFER TO THE ATTACHED NOTES WHEN COMPLETING THE APPLICATION.

I/We hereby apply for consent under the provisions of the Water Act 1989 to make a discharge of effluent as described in this application and on the attached plan(s). I/We will bear the cost of any advertisement (see note 1).

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

Signed D.W.R. Date 30.12.90

Authorised on behalf of D.W.R. CYMRU CYF

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

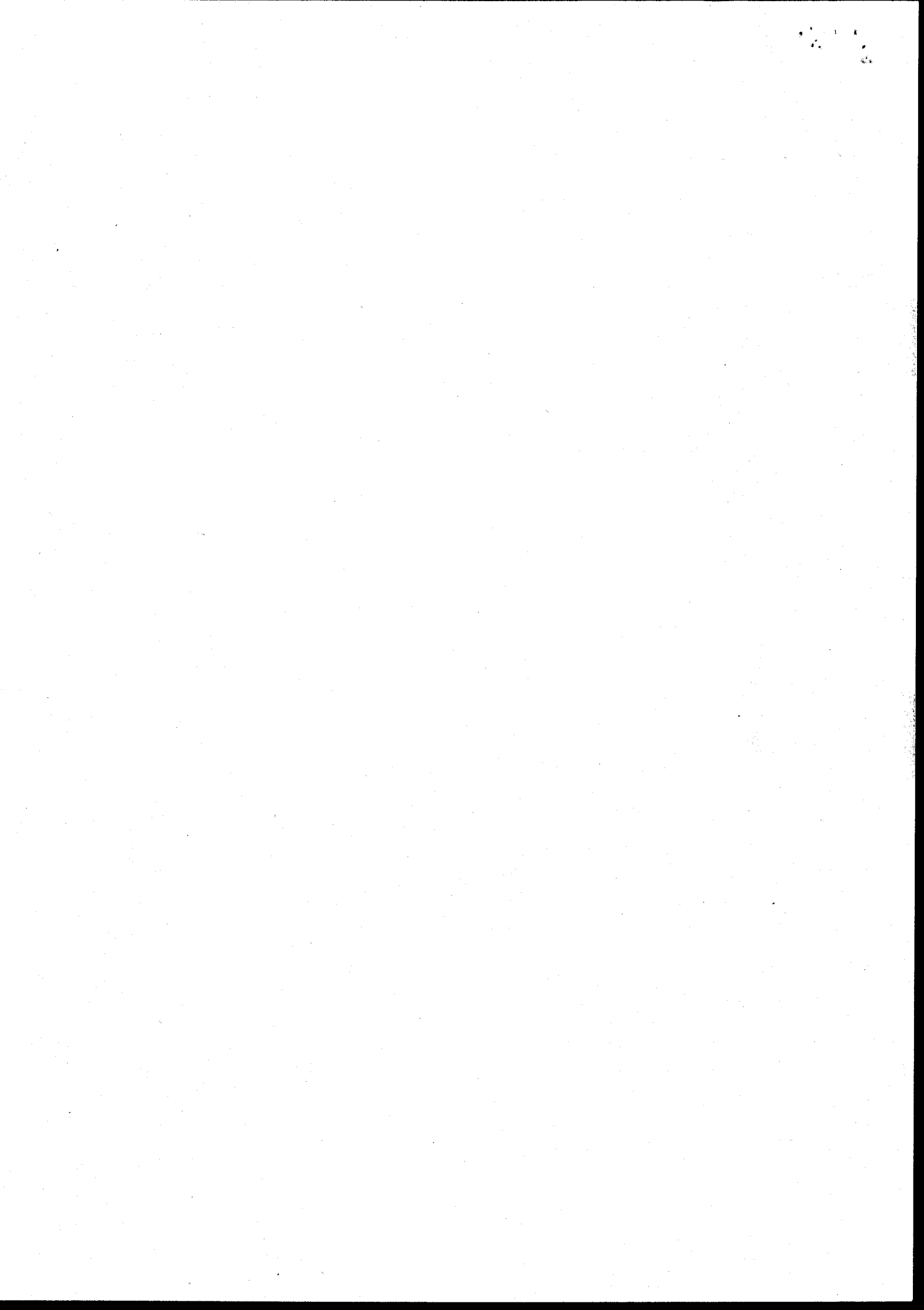
Has this application been made in response to the service of a relevant prohibition? YES/NO

If yes please give reference number:

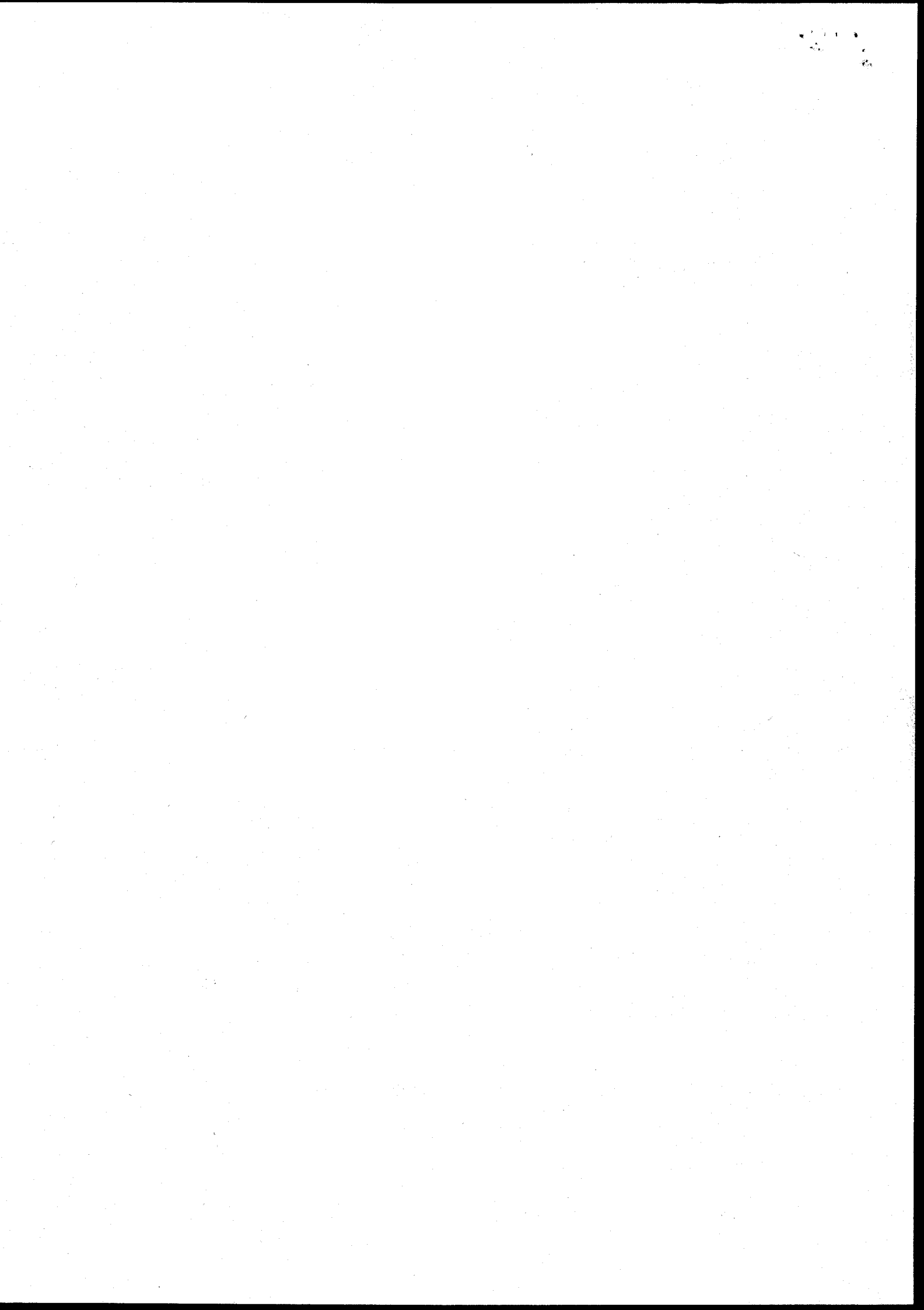
<p>1a Full name and postal address of applicant. (See note 4.)</p> <p>Post Code:</p> <p>Daytime telephone number:</p>	<p>DWR CYMRU (2190) PLAS YFFYNNON CAMBRIAN WAY BRECON POWYS LD3 7HP 0874 3181</p>
<p>1b Agent (if any) Full name and postal address</p> <p>Contact name and daytime telephone number</p>	<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



<p>2a) Address or other sufficient description of land or premises to which this application relates.</p>	<p>LLANDDAROG STW 2520</p>																				
<p>2b) National Grid Reference of point of discharge</p>	<p>SN 1930 1430</p>																				
<p>2c) District Council area</p>	<p>CARMARTHEN</p>																				
<p>3) State the nature of the discharge. Tick one or more boxes as appropriate. (See note 6.)</p>	<p> <input type="checkbox"/> Sewage effluent <input checked="" type="checkbox"/> Storm/emergency sewage effluent <input type="checkbox"/> Trade effluent <input type="checkbox"/> Any other matter </p>																				
<p>4) For sewage and trade effluent, and storm/emergency discharges, state:</p> <p>a) Maximum quantity it is proposed to discharge in one day. (See note 7.)</p> <p>b) Highest rate at which it is proposed to operate the discharge.</p> <p>c) Periods during which the discharge will take place.</p>	<p> m³/day l/sec when flow to works exceeds 6 1/2 and storm tank is full </p>																				
<p>5) For rainfall dependent discharges, state the area to be drained. (Roof areas and other impervious areas should be separately identified.)</p>	<p>m²</p>																				
<p>6) Receiving medium</p> <p>Tick the category to which the proposed discharge(s) are to be made.</p> <table border="0"> <tr> <td>A. TIDAL RIVER OR STREAM</td> <td><input type="checkbox"/></td> <td>E. INTO LAND</td> <td><input type="checkbox"/></td> </tr> <tr> <td>B. NON-TIDAL RIVER OR STREAM</td> <td><input checked="" type="checkbox"/></td> <td>F. ONTO LAND</td> <td><input type="checkbox"/></td> </tr> <tr> <td>C. CANAL</td> <td><input type="checkbox"/></td> <td>G. DIRECTLY INTO GROUNDWATER</td> <td><input type="checkbox"/></td> </tr> <tr> <td>D. LAKE, LOCH OR POND</td> <td><input type="checkbox"/></td> <td>H. INTO LAND AND WATERCOURSE</td> <td><input type="checkbox"/></td> </tr> <tr> <td>(not discharging to a river or stream)</td> <td></td> <td>I. COASTAL WATER (See Note 8.)</td> <td><input type="checkbox"/></td> </tr> </table> <p>If A-D or H, state name of watercourse, if known:-</p> <p>TR1B GWENDRAETH FACH</p>		A. TIDAL RIVER OR STREAM	<input type="checkbox"/>	E. INTO LAND	<input type="checkbox"/>	B. NON-TIDAL RIVER OR STREAM	<input checked="" type="checkbox"/>	F. ONTO LAND	<input type="checkbox"/>	C. CANAL	<input type="checkbox"/>	G. DIRECTLY INTO GROUNDWATER	<input type="checkbox"/>	D. LAKE, LOCH OR POND	<input type="checkbox"/>	H. INTO LAND AND WATERCOURSE	<input type="checkbox"/>	(not discharging to a river or stream)		I. COASTAL WATER (See Note 8.)	<input type="checkbox"/>
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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:

8. Indicate proposed means of discharge:

1. Pipe 2. Channel
 4. Soakaway 5. Well
 7. Culvert 8. Soakaway sub-irrigation system
 9. Borehole
 10. Sub-irrigation system
 11. Other

If 9 please give further details:

9. Give details as appropriate

- a) For pipes, channels, wells and boreholes, state diameter in millimetres or dimension(s) in metres.
- b) For sub-irrigation systems, soakaway pits, wells and boreholes, state depth in metres and geological stratum, if known.
- c) For boreholes, state details of lining:
- Type of lining
 Depth of lining
 Depth of perforated lining
 Depth of unperforated lining

a) 150 mm

b)

c)

metres
 metres
 metres

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

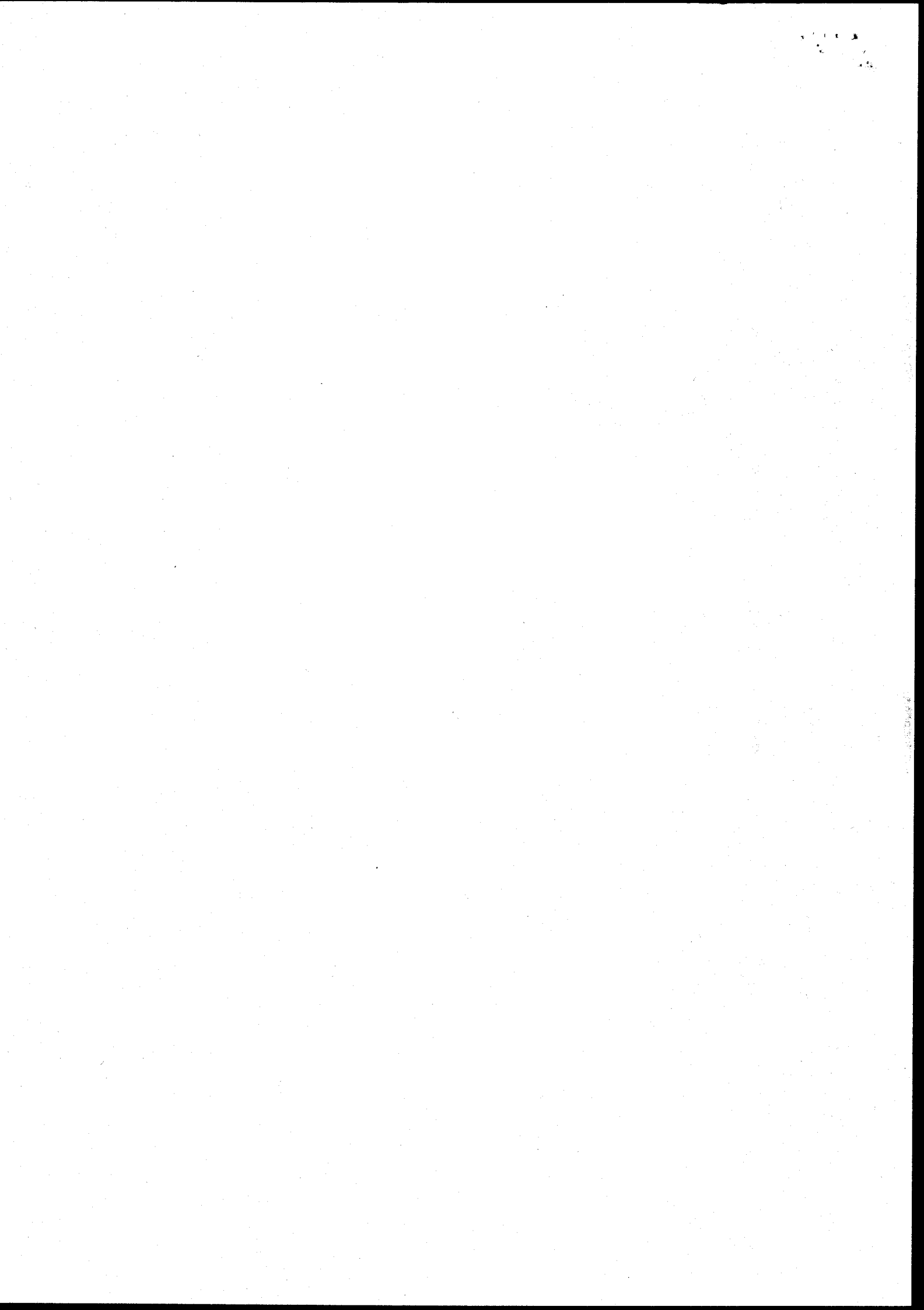
YES/NO*

If yes give reason for not connecting.

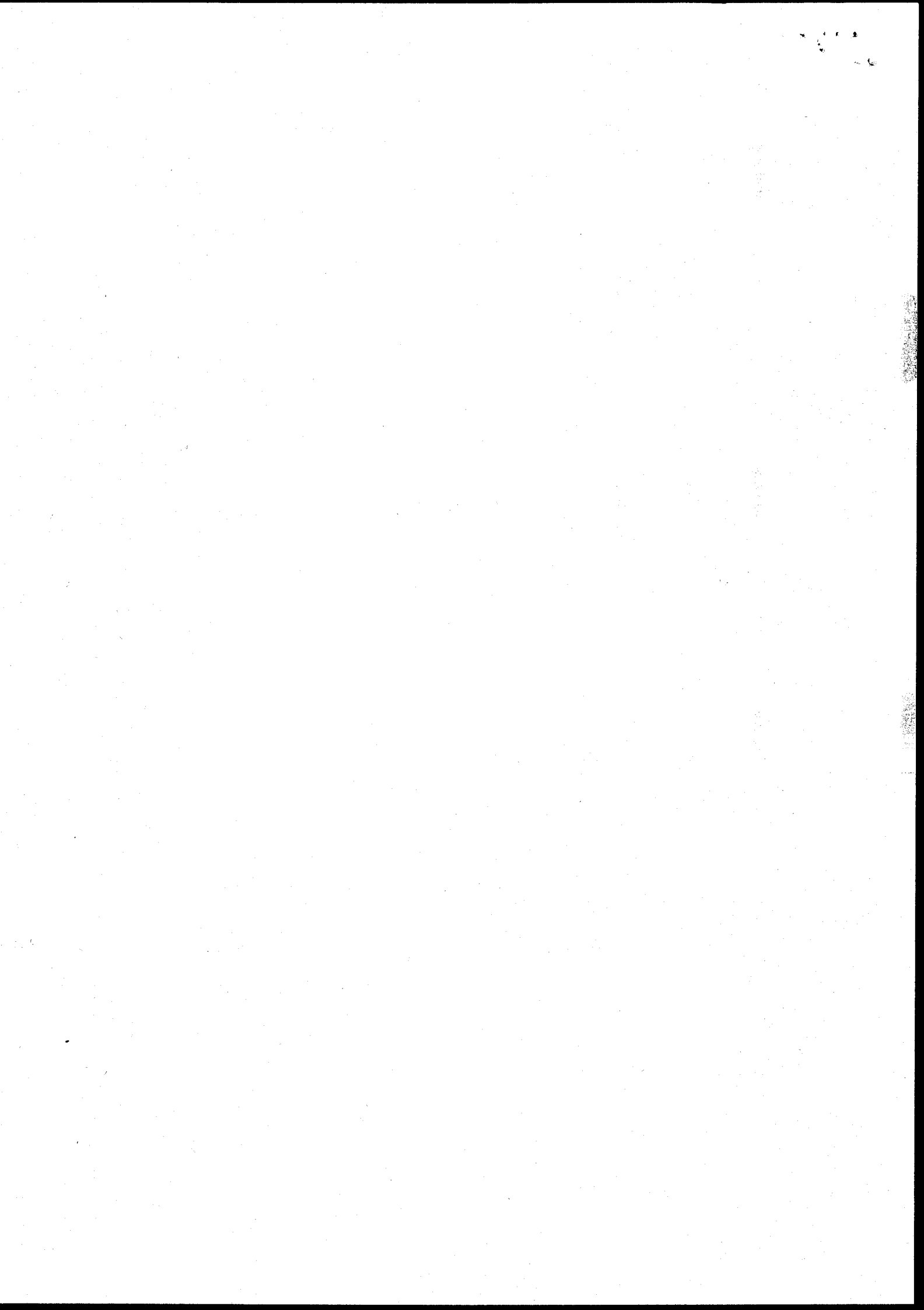
11. Give brief details of:

- a) Source of water supply (eg mains, well, borehole, etc.)
- b) General purpose for which water is used (eg domestic, cooling, etc.)

*Delete as necessary



<p>12 Is consent required for a limited period? If yes give relevant dates</p>	<p>YES/NO</p>																				
<p>13 Does this proposal replace an existing discharge? If yes give details</p>	<p>YES/NO</p>																				
<p>14 Are there any existing consents for discharge from the premises? (see note 10) If yes, give details, numbers, if known</p>	<p>YES/NO FINAL EFFLUENT BE 003730</p>																				
<p>15 Please give details of the premises - tick as appropriate -</p> <table border="0"> <tr> <td>1. Single dwelling</td> <td><input type="checkbox"/></td> <td>2. Multiple dwelling</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3. Licenced premises</td> <td><input type="checkbox"/></td> <td>4. Vehicle parking area</td> <td><input type="checkbox"/></td> </tr> <tr> <td>5. Industrial premises</td> <td><input type="checkbox"/></td> <td>6. Fish farm</td> <td><input type="checkbox"/></td> </tr> <tr> <td>7. Mineral workings</td> <td><input type="checkbox"/></td> <td>8. WSPLC STW</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>9. Water supply</td> <td><input type="checkbox"/></td> <td>10. Other</td> <td><input type="checkbox"/></td> </tr> </table> <p>If other, please give further details.</p>		1. Single dwelling	<input type="checkbox"/>	2. Multiple dwelling	<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"/>
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<p>16 IN THE CASE OF SUB-IRRIGATION SYSTEMS AND SOAKAWAYS</p>																					
<p>a) Is any part of the system within 10 metres of the site boundary?</p> <p>b) Is any part of the systems within 10 metres of a watercourse?</p> <p>c) Is the land in which the disposal system is to be constructed, to be under-drained with land drains discharging to a watercourse?</p> <p>d) If the answer to either (b) or (c) is "YES" please state the name of the watercourse or sufficient information to identify it.</p> <p>e) Has a percolation test been carried out? If yes, please attach results.</p>	<p>YES/NO*</p> <p>YES/NO*</p> <p>YES/NO*</p> <p>YES/NO*</p>																				
<p>17 FOR SEWAGE TREATMENT PLANTS</p>																					
<p>a) State the population served/population equivalent/estimated population*</p> <p>b) Give details of the treatment plant to be used (see note 11)</p>	<p>*All year *Summer *Winter</p>																				



19 FOR STORM AND EMERGENCY DISCHARGES AND SURFACE WATER SEWERS

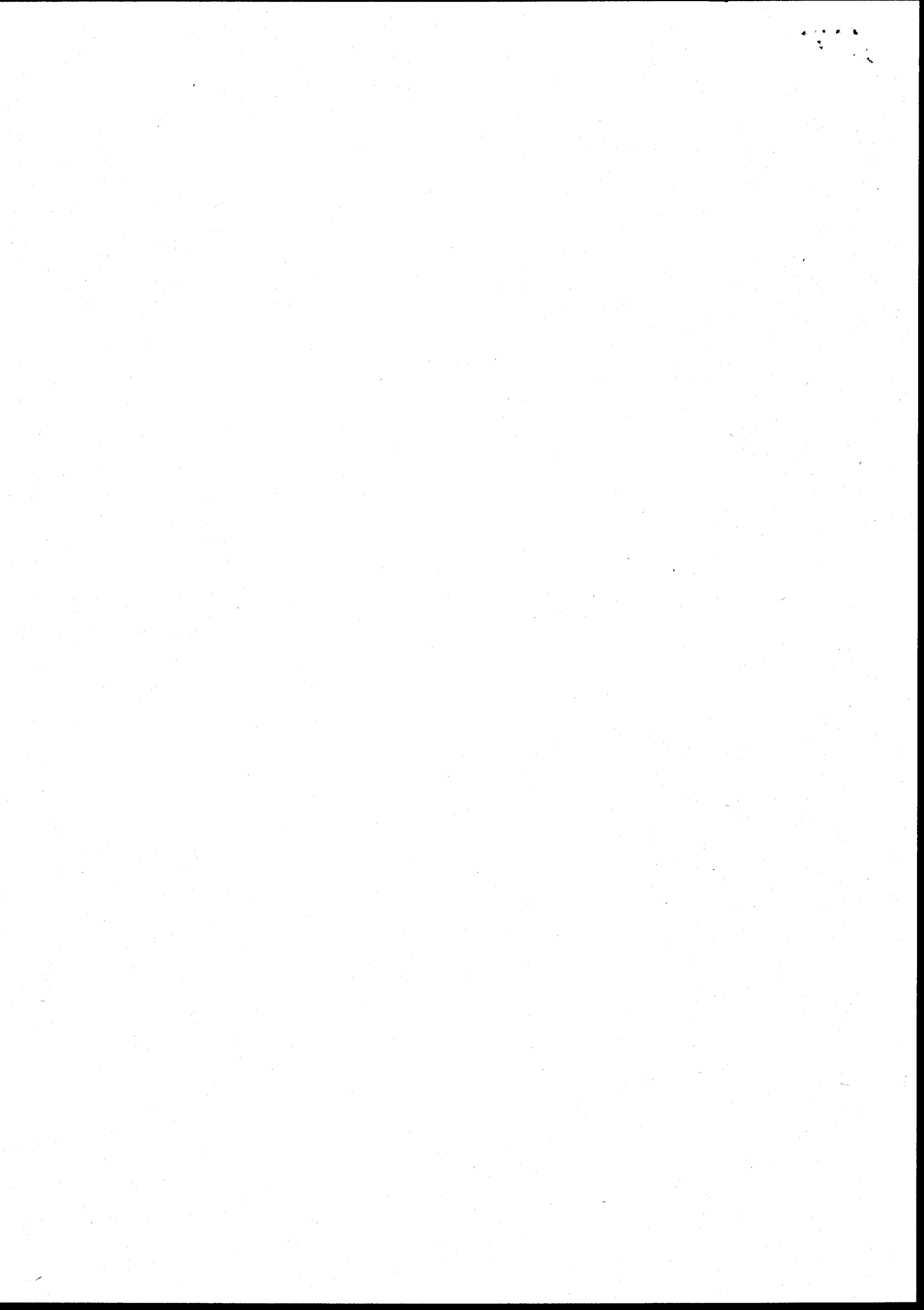
State the type of discharge. Tick one or more boxes as appropriate.

- Storm tanks
- Storm overflow from sewer
- Storm overflow from pumping station
- Emergency overflow from sewer
- Emergency overflow from pumping station
- Surface Water
- Other

Answer all except 23 & 26
 Answer all except 23 & 26
 Answer all sections below
 Answer 20a, 21, 25, 27, 28
 Answer all except 20b, 22
 Answer 20a
 Answer as appropriate

If other, please give further details—

<p>20</p> <p>a) State dry weather flow to pumping station (in sewer)</p> <p>b) State flow at which storm discharge will commence</p>	<p>18.2 m³/day</p> <p>6 l/sec</p>
<p>21 Expected frequency of operation</p>	<p>Fairly infrequent per annum</p>
<p>22 State volume of storm tank(s).</p>	<p>85 m³</p>
<p>23 State volume of wet well</p>	<p>— m³</p>
<p>24 What provisions have been made to raise alarms? (eg telemetry)</p>	<p></p>
<p>25 What facilities have been provided to prevent the discharge of gross solids? (For screens, give bar spacing or aperture.)</p>	<p>Storm separation is after existing 6 mm bar screen</p>
<p>26 What provisions have been included to deal with</p> <p>a) power failure?</p> <p>b) mechanical breakdown?</p> <p>c) rising main failure?</p>	<p>—</p>
<p>27 What facilities have been provided for flow measurements?</p>	<p>There is no flow measurement on storm flows at present</p>
<p>28 Are there any other factors to be taken into account?</p>	<p></p>



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 BP0220701

Nature of Discharge(s); SEWAGE EFF/STORM EFF/RAINFALL
at LLANDDAROG STW

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:

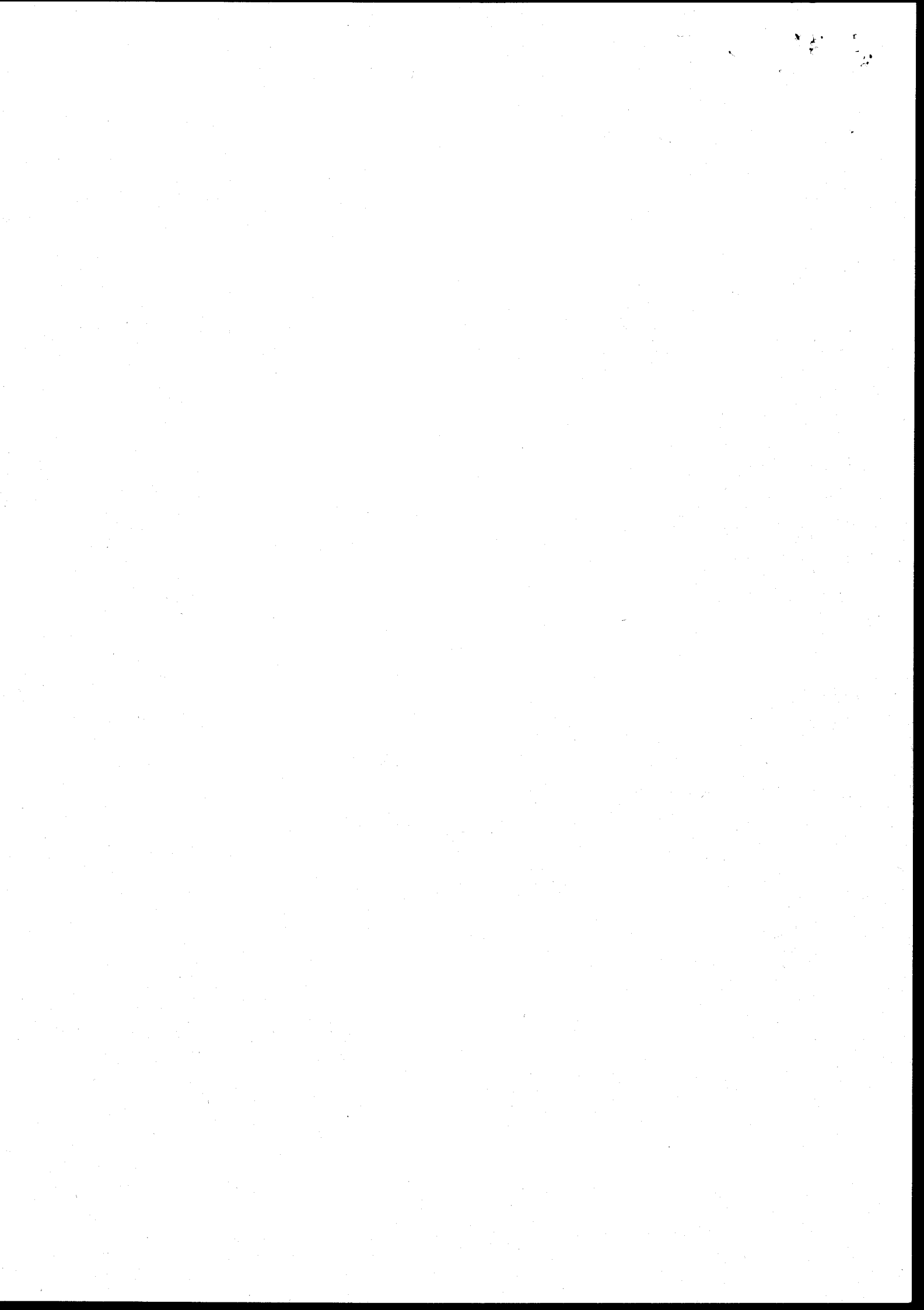
Post Code:

Date of Transfer to new Holder(s);

Signed:..... Dated:.....

Name (block capitals):..... Position:.....





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

Date: 14th March 2000



ASiantaeth YR
AMGYLCHEDD CYMRU
ENVIRONMENT
AGENCY WALES

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

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.	BPO220701
SCHEDULE NO.	BPO22070101

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. Flucifurion | 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.



Joy.

*Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru*

*National Rivers Authority
Welsh Region*

Dwr Cymru Cyfyngedig,
Plas Y Ffynnon,
Cambrian Way,
Brecon,
Powys.
LD3 7HP

Our Ref:
2/EQ/BP0220701/NB/LEH

Enquiries:
Mr. Norman Bunyan

Date
25 September 1992.

Dear Sirs,

Consent to Discharge of Effluent

I enclose the Authority's Consent to Discharge of Effluent, Reg No. BP0220701 for your attention.

This consent does not constitute approval under the Building Regulations 1985, which should be obtained from the local Council (Authority) prior to commencing any site works.

Yours faithfully

S J Brown
Area Environmental Quality Manager

Recorded Delivery No:H006663

Aelod Rhanbarthol o'r Bwrdd
Yr Athro Ron Edwards

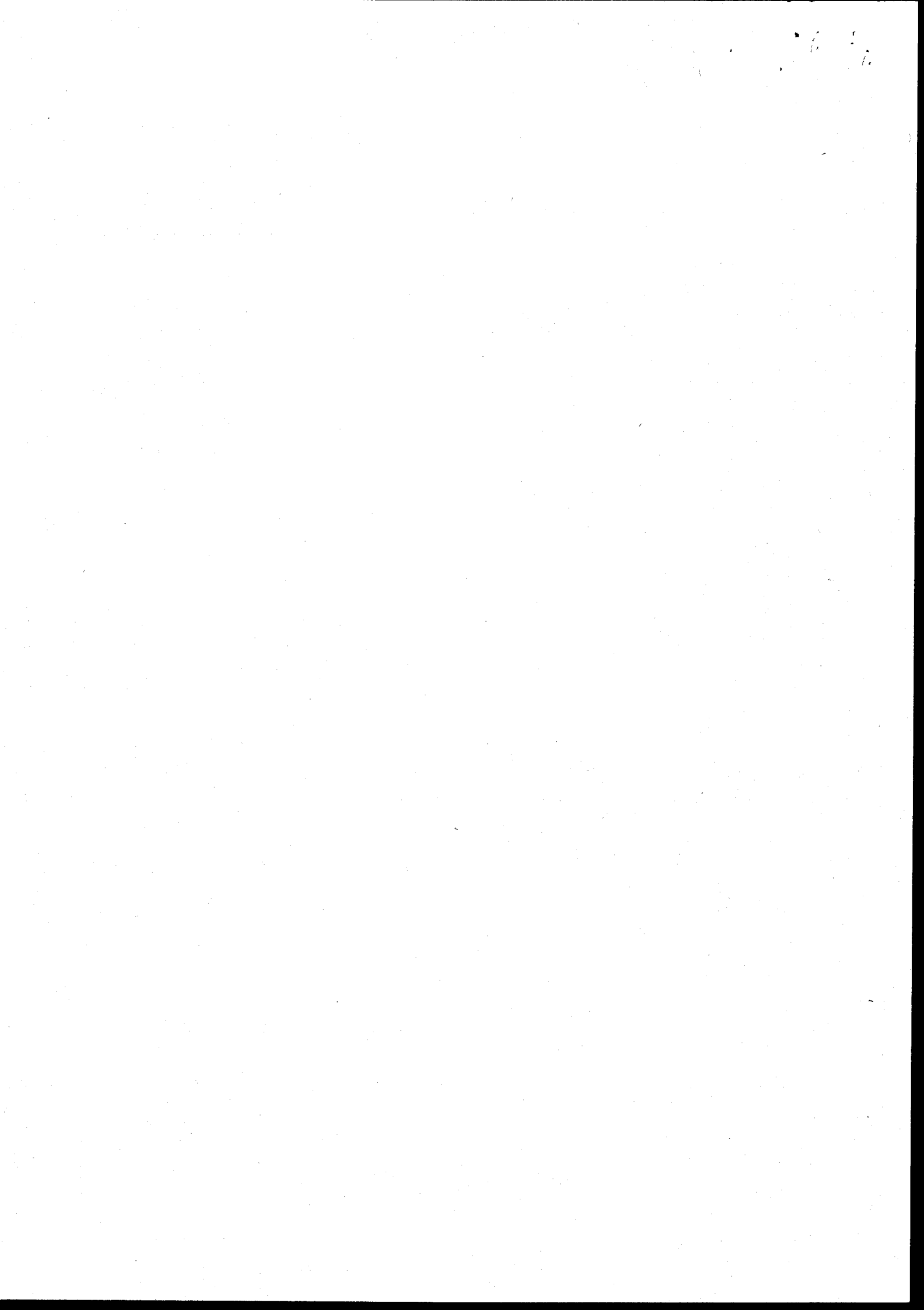
Rheolwr Rhanbarth Cyllfredinol
Dr John Stoner

Llys Afon
Hawthorn Rise
Hwlfordd
Dyfed SA61 2BQ
Ffôn: Hwlfordd (0437) 760081
Ffacs: (0437) 760881

Regional Board Member
Professor Ron Edwards

Regional General Manager
Dr John Stoner

Llys Afon
Hawthorn Rise
Haverfordwest
Dyfed SA61 2BQ
Tel: Haverfordwest (0437) 760081
Fax: (0437) 760881





Joy.

*Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru*

*National Rivers Authority
Welsh Region*

Dwr Cymru Cyfyngedig,
Plas Y Ffynnon,
Cambrian Way,
Brecon,
Powys.
LD3 7HP

Our Ref:
2/EQ/BP0220701/NB/LEH

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S J Brown
Area Environmental Quality Manager

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Yr Athro Ron Edwards

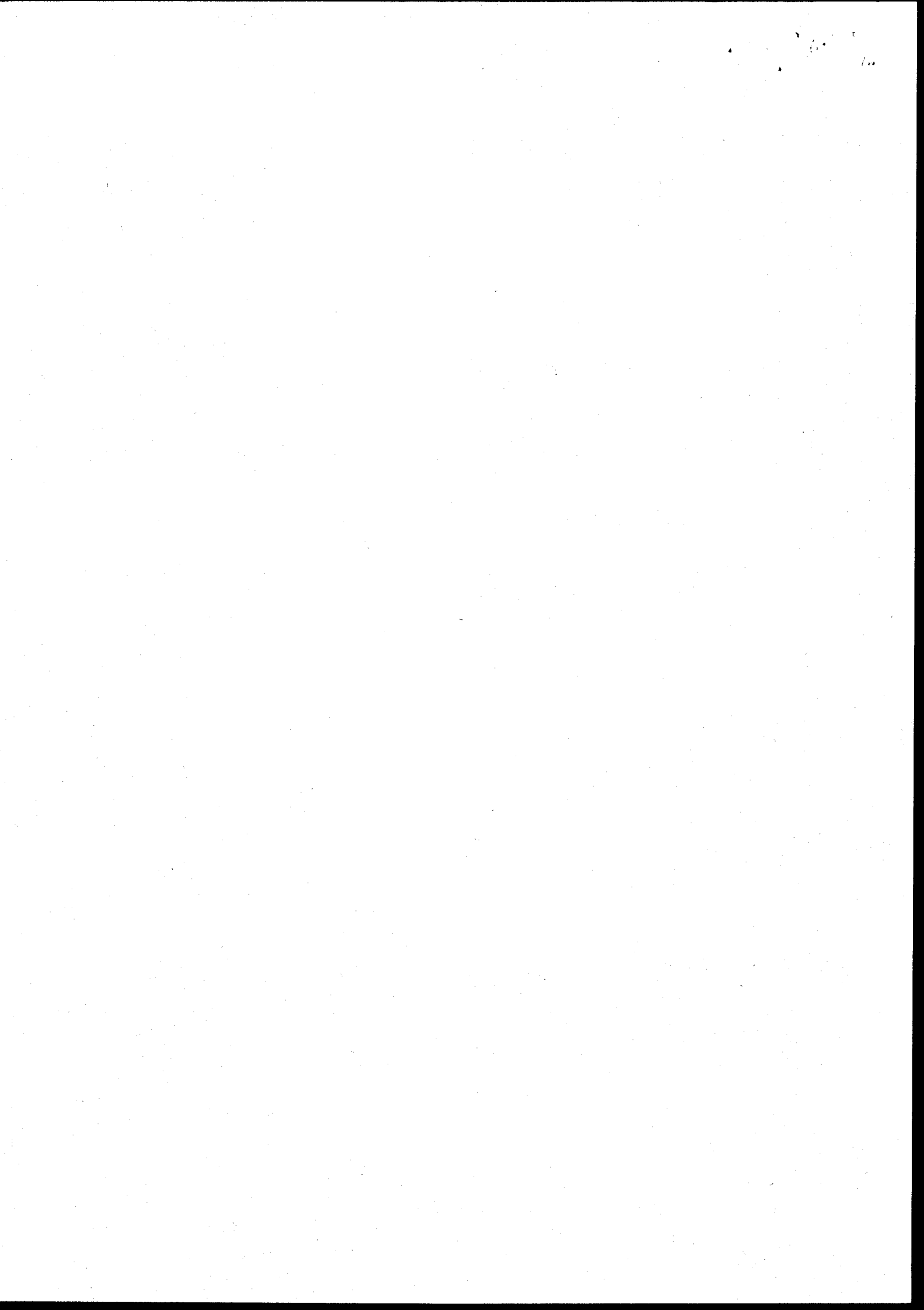
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Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru

National Rivers Authority
Welsh Region

Consent No.	BP0220701
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WATER RESOURCES ACT 1991

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 2

To: Dŵr Cymru Cyfyngedig
Of: Plas Y Ffynnon, Cambrian Way, Brecon, Powys, LD3 7HP
For: A Discharge of Settled Storm Sewage
To: A tributary of Afon Y Bantwen
From: Llanddarog STW, Llanddarog, Carmarthen, Dyfed.

CONDITIONS OF CONSENT

1. The discharge shall consist only of settled storm sewage.
2. The discharge shall be made in the manner and at the place specified as follows:-

Discharging via : 150 mm diameter pipe
Discharging to : A tributary of Afon Y Bantwen
At OS Grid Ref: : SN 4930 1630
As shown marked : Point 'A' on attached drawing/plan number BP0220701.
3. Adequate facilities shall be provided to enable representative samples of the discharge to be conveniently obtained at any time at the open top chamber (point C) as shown marked 'Sampling Point' on the attached drawing/plan number BP0220701.
4. No discharge shall occur unless the rate of flow passing forward to full treatment is at least 6.0 litres per second.
5. The sewage shall be passed through a screen of 6.0 mm aperture size prior to discharge.

continued.....

Aelod Rhanbarthol o'r Bwrdd
Yr Athro Ron Edwards

Rheolwr Rhanbarth Cyllfredinol
Dr John Stoner

Llys Afon
Hawthorn Rise
Hwllfordd
Dyfed SA61 2BQ
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Tel: Haverfordwest (0437) 760081
Fax: (0437) 760881

Consent No. BP0220701

WATER RESOURCES ACT 1991
Continuation Sheet

page 2 of 2

6. The Authority shall be informed in writing and as soon as reasonably practicable of any information received by Dŵr Cymru to the effect that there has been or is likely to be discharged into the sewer upstream of the overflow, a significant increase in the quantities of any of the substances listed in the attached annex.
7. The storm sewage shall receive at least 2 hours retention in the storm tank prior to discharge.

This Consent is given on: *25th September 1992* on behalf of the Authority
by: *[Signature]* Area Environmental Quality Manager

During the period ending with the *24th September 1994* the terms of this
Consent will not be altered without the written agreement of the person
making the discharge.

ANNEX

<u>SUBSTANCE</u>	
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	





DŴR CYMRU
WELSH WATER

Gwaith Trin Dŵr Gwastraff Pont Myrddin
Pont Myrddin
Hwlfordd
Sir Benfro SA61 1JL

Ffôn: +44 (0)1437 765 460
Ffacs: +44 (0)1437 762 552
Safle gwe: www.dwrcymru.com

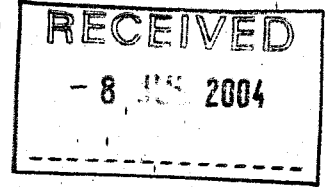
Merlins Bridge WWTW
Merlins Bridge
Haverfordwest
Pembrokeshire SA61 1JL

Tel: +44 (0)1437 765 460
Fax: +44 (0)1437 762 552
Web site: www.dwrcymru.com

Ms. Anne Sennett
Environment Agency Wales
Maes Newydd
Llandarcy
Neath Port Talbot
SA10 6JQ

6th July 2004

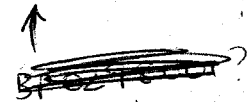
Tel: 01437 769061



Dear Madam

~~SECRET~~
Application for Discharge Consent – Llanddarog WwTW AMP3 Scheme

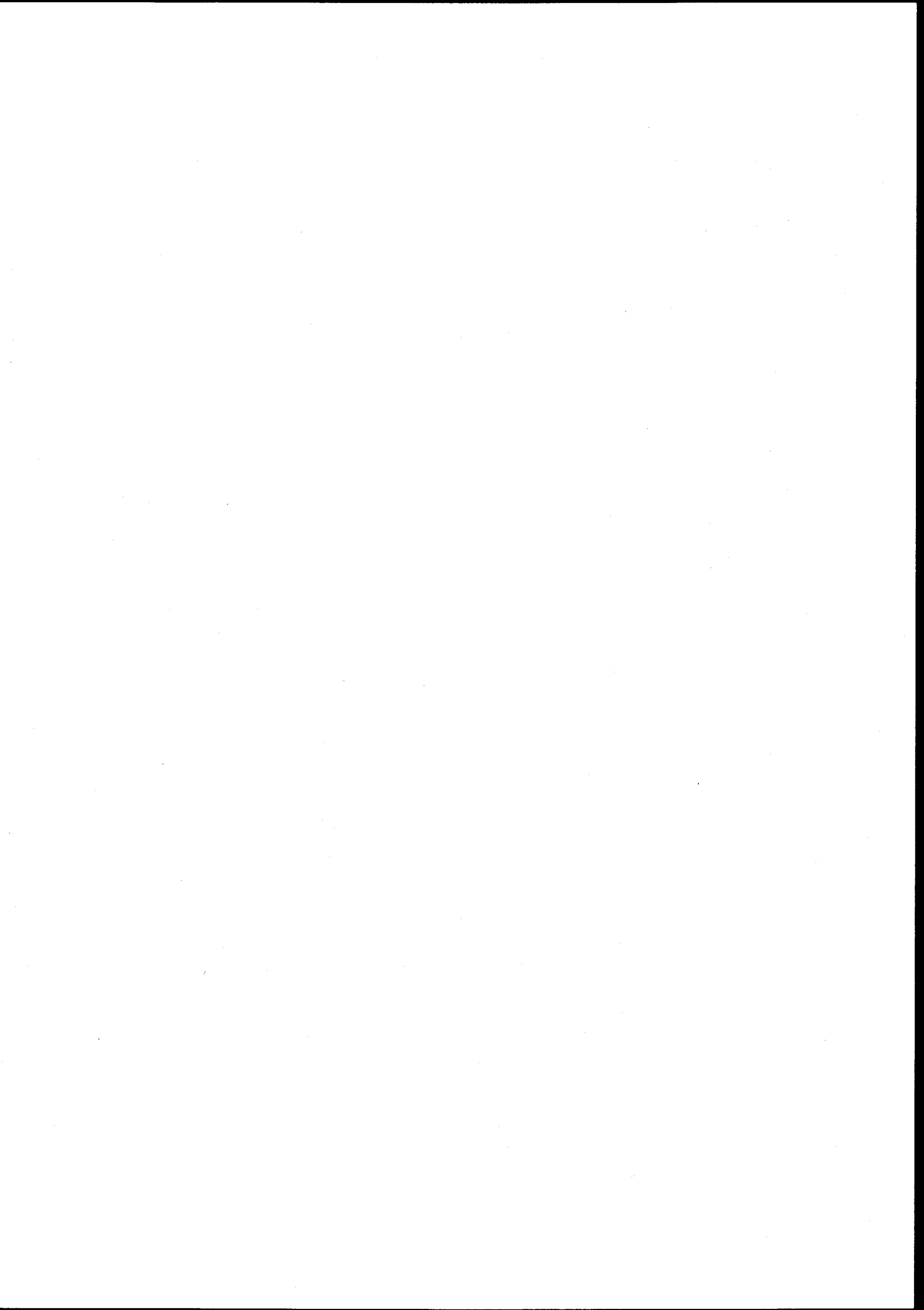
Please find enclosed application forms, fee and supporting information for variation of final effluent and storm discharge at the above works. The final effluent pumping station is also being improved as part of the above scheme and an application for variation of the existing consent for emergency discharge from that PS will follow shortly.

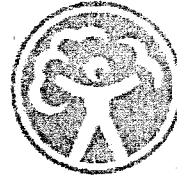


Yours faithfully

Hilary Ford

Hilary Ford
Area Consents and Regulation Scientist





ASiantaeth Yr
AMGylchedd
ENVIRONMENT
AGENCY

WATER RESOURCES ACT 1991 (schedule 10)

(as amended by the Environment Act 1995)

Application for variation to an existing consent* to discharge

(* delete as appropriate)

Regional/Area Address: The Regional Finance Manager Environment Agency Welsh Region PO Box 425 St Mellons Business Park CARDIFF CF3 0LT	<i>Official Use Only</i> Dist/Area Ref: 1303 Application No. BP 0 220701 220701 Date Received: 8/7/04 Fee Received: £143
--	---

Each applicant must complete the main form and may need to complete a separate annexe if appropriate. Please look through the form and read the notes carefully before you complete it. Processing of your application will be aided by full and accurate completion of all relevant sections and provisions of the necessary plans. If you have any queries regarding the form please contact the person given in the notes.

NOTE:

All information contained within this application will be made available on the public register unless there is a request to withhold any of it. Any such request should provide a full justification stating why the information needs to be withheld (see note xiii).

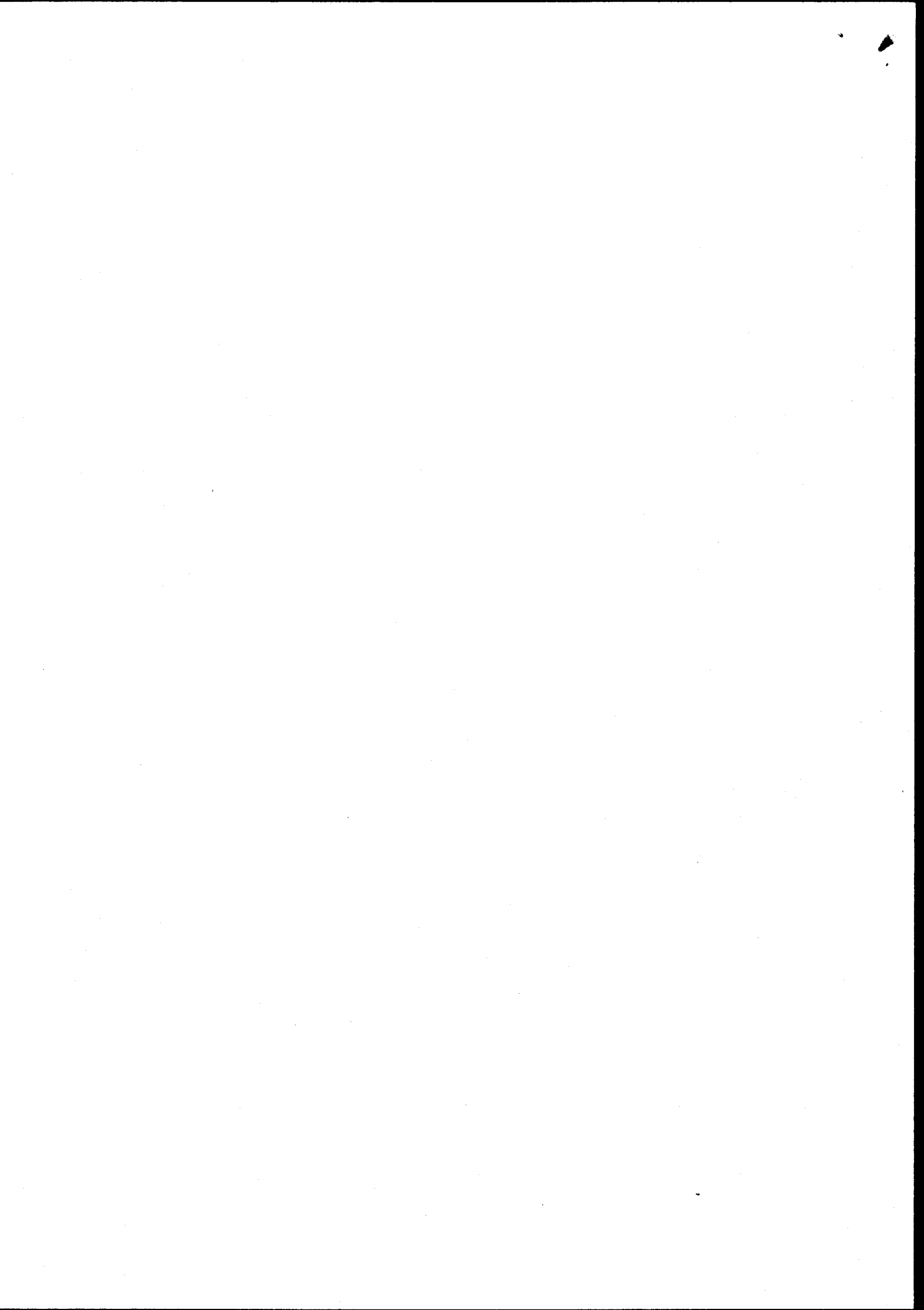
1 SITE ADDRESS

1.1 Address or other sufficient description of land or premises to which this application applies.

Llanddarog WwTW

Post Code:

N/a



2 DETAILS OF DISCHARGE(S)

2.1 State the nature of the discharge(s) (see note i and ii) - tick one or more boxes as appropriate:

- Sewage Effluent - volume of 5 cubic metres per day or less
- Sewage Effluent - volume greater than 5 cubic metres per day (**complete annexe 1**)
- Sewage Effluent discharged under storm or emergency conditions (**complete annexe 2**)
- Cooling Water (**complete annexe 3**)
- Trade Effluent (*including site drainage*) (**complete annexe 3**)
- Others (*please specify*)

2.2 Please state the maximum quantity it is proposed to discharge in any one day m³/day
Briefly state how this figure was calculated (see note ii).

See enclosed supporting documentation – report NE02349

2.3 a) Indicate proposed means of discharge - tick as appropriate and show on plan:
(for 1, 2 & 3 please state dimensions below)

- | | | | | | |
|------------|-------------------------------------|-------------|--------------------------|--|--------------------------|
| 1. Pipe | <input checked="" type="checkbox"/> | 4. Borehole | <input type="checkbox"/> | 7. Sub-Irrigation System | <input type="checkbox"/> |
| 2. Channel | <input type="checkbox"/> | 5. Well | <input type="checkbox"/> | 8. Combination of 6 & 7 | <input type="checkbox"/> |
| 3. Culvert | <input type="checkbox"/> | 6. Soakaway | <input type="checkbox"/> | 9. Other (<i>please specify below</i>) | <input type="checkbox"/> |

150 mm NB

b) National Grid Reference(s) of point(s) of discharge (see note iii).

S	N	4	9	2	4	9	1	6	3	0	4
---	---	---	---	---	---	---	---	---	---	---	---

(please indicate on accompanying plans)

2.4 a) The Agency will normally require adequate provision for the taking of samples of the discharge in a safe and convenient manner at any time. Please indicate the means proposed (see note iv) - tick as appropriate and show on plan:

- At the outlet At a manhole or sampling chamber

Other (*please specify*)

b) National Grid Reference(s) of sampling point(s) (if different from 2.3 b) above).

S	N	4	9	2	8	0	1	6	2	8	3
---	---	---	---	---	---	---	---	---	---	---	---

(please indicate on accompanying plans)

c) What flow measurement facilities will be provided (see note v)?
Please give details.

none

2.5 a) Type of Treatment Plant(s) to be used (*please specify make and model*) - tick as appropriate:

- Septic Tank Package Sewage Treatment Works Other

6mm x 6mm mechanical screen plus 98 m3 storm settlement tank



[]

b) Will the treatment process involve the use of any chemicals (eg ferric salts, polyelectrolytes). If yes please give details. no

[]

2.6 a) On what date do you anticipate the discharge will commence?

b) If you require the consent for a limited time period please give dates; from:

to:

c) If the discharge is not continuous please detail the period/circumstances when it will occur.

When the storm tank is full, see supporting documentation – NE02349

2.7 a) Are there any existing consents for discharges from the premises (see note vi)? yes

If yes, please give the reference numbers (Any further information should be given in Section 5.3).

Treated effluent BE0027201
Storm overflow BP0220701
Emergency overflow BP0220801

b) Has any person had a Prohibition Notice serviced on them in respect of this site? no

If yes, please give the reference number.

[]

3 SITE DETAILS

3.1 Please give the name of the relevant Planning Authority.

Carmarthen County Council

3.2 Please give details of the premises - tick as appropriate:

- 1. Single Dwelling
- 2. Multiple Dwellings
- 3. Industrial Premises
- 4. Vehicle Parking Area
- 5. Commercial Premises (please specify)
- 6. Fish Farm
- 7. Mineral Workings
- 8. Water Services plc STW
- 9. Water Supply
- 10. Other (please specify)

[]

[]



- 3.3 Please indicate source of the water supply - tick as appropriate: not applicable
- | | | | |
|--|--------------------------|---|--------------------------|
| 1. Well | <input type="checkbox"/> | 5. River (please give name below) | <input type="checkbox"/> |
| 2. Borehole | <input type="checkbox"/> | 6. Estuary (please give name below) | <input type="checkbox"/> |
| 3. Precipitation (eg rain or snow) | <input type="checkbox"/> | 7. Coastal Water (please give name below) | <input type="checkbox"/> |
| 4. Mains (please state water supply company) | <input type="checkbox"/> | | |

4 DETAILS OF RECEIVING ENVIRONMENT

- 4.1 Receiving Medium - tick the category(s) to which the proposed discharge(s) is(are) to be made:
- | | | | |
|--|-------------------------------------|---------------------------------|--------------------------|
| 1. Estuarial Water (tidal river or stream) | <input type="checkbox"/> | 5. Into Land | <input type="checkbox"/> |
| 2. River or Stream (non-tidal) | <input checked="" type="checkbox"/> | 6. Onto Land | <input type="checkbox"/> |
| 3. Canal | <input type="checkbox"/> | 7. Directly into Groundwater | <input type="checkbox"/> |
| 4. Lake, Lock or Pond | <input type="checkbox"/> | 8. Coastal Water (see note vii) | <input type="checkbox"/> |

State name of receiving water if known:

Tributary of Afon Y Bantwen

- 4.2 In the case of sub-irrigation systems, soakaways or boreholes: not applicable
- (a) Is any part of the system within 5 metres of the boundary of the premises? Y/N
- (b) Is any part of the system within 10 metres of a watercourse? Y/N
- (c) Is any part of the system within 50 metres of a borehole or spring? Y/N
- (d) For wells and boreholes state dimension(s) in metres. m
- (e) For sub-irrigation systems, soakaway pits, wells and boreholes, state maximum depth in metres. m
- (f) For boreholes, state details of lining in metres:
- | | |
|------------------------------------|------------------------|
| (i) Depth of lining | <input type="text"/> m |
| (ii) Depth of perforated lining | <input type="text"/> m |
| (iii) Depth of unperforated lining | <input type="text"/> m |
- (g) A percolation test must be carried out in accordance with British Standard BS6297:1983.
Have the results been provided? Y/N
- 4.3 Is there a foul sewer available to which the discharge(s) could be made (see note viii)? Y/N
- If yes, please give the reasons it is not practical to connect to it (eg distance, flow etc).
-



5 DETAILS OF APPLICANT AND OTHER INFORMATION

5.1 (See general notes and note ix)

(a) Full name and postal address of applicant. This should be the person who will become the consent holder should consent be issued.

*Dwr Cymru Cyf

*Pentwyn Road

*Nelson

*Treharris

*Caerphilly

*

Post Code: CF46 6LY

Daytime Telephone Number: Hilary Ford 01437 769061

Company Registration Number (if appropriate):2366777

(b) Agent (if any) - Full name and postal address.

*

*

*

*

*

*

Post Code:

Contact Name and Daytime Telephone Number:

5.2

Please give full name and address to which bills should be sent if different to that given above:

*

*

*

*

*

*

Post Code:

Daytime Telephone Number:

5.3 Are there any other factors to be taken into account? Please continue on a separate sheet if necessary.



DECLARATION

I/We:

1. apply under the Water Resources Act 1991 (as amended by the Environment Act 1995) for consent to discharge, as described in this Application. "This Application" means this page, all the other pages of this form and any attached annexes, the attached plan(s), any other sheets attached, and any other written information supplied to support the application.
2. enclose the required application fee, payable to the Environmental Agency (see note x).
3. enclose 3 copies of the plan(s) and location maps with all relevant information clearly marked (see note xi).
4. will pay required advertising costs (see note xii).
5. confirm that I/we* will notify the Environment Agency of any changes in the information in this application which might be material to the continuation of the consent.
6. confirm that the information given in this application and any questions which the Environment Agency may have about it is/will* be true to the best of my/our* knowledge, information and belief and am/are* not aware of any other facts or information which might affect the granting of a consent, or conditions which might be put on it (see note xiii).
7. confirm that I/we* will pay any annual charges due should a consent be granted YES/NO*. If no please indicate who will be completing section 5.2 above (see note xiv).

(* Delete as appropriate)

SIGNED: <i>Hilary Ford</i>	PRINT NAME: <i>HILARY FORD</i>
ON BEHALF OF: <i>Dion Cymru Cym</i>	DATED: <i>6.7.04</i>

CONFIDENTIALITY

I/we apply for commercial confidentiality and enclose a full written justification (see note xv).

SIGNED:	DATED:
---------------	--------------

PLEASE RETURN THIS FORM TO THE ADDRESS GIVEN ON THE FRONT PAGE





ANNEXE 1
SEWAGE EFFLUENT GREATER THAN 5 CUBIC METRES PER DAY

Please complete this annexe if you are proposing to discharge more than 5 cubic metres per day of sewage effluent (if the effluent is to contain a trade component Annexe 3 should also be completed).

Official Use Only
Application No.

1. Site Name.

Llanddarog WwTW

2. Please detail the type and number of treatment units you are proposing to use.

1 off mechanical inlet screen 6mm x 6mm,
1 off 98 m3 storm water settlement tank

3. Volume, rates and overflow settings. (Please give volumes in cubic metres per day or litres per second as indicated below)

- | | |
|---|-----------------------|
| a) Maximum flow to full treatment.
(see note ii) in main guidance notes for population equivalents). | 553 m ³ /d |
| b) Dry weather flow of discharge(s). | 207 m ³ /d |
| c) Average daily flow. | 259 m ³ /d |
| d) Maximum rate of discharge(s) | 12.0 l/s |

4. Will there be provisions for storm/emergency discharges?
If yes, please complete Annexe 2.

Yes

5. a) Will any self monitoring take place?
If yes, please give details.

No

b) Will automatic sampling equipment be provided?
If yes, please give details of type and location (*please indicate on plan*).

No



6. a) Please state the maximum population served by the treatment works.

953 PE

- b) Please give reasons for any variations in population, eg holiday resort, training area, seasonal industry etc, and detail the periods/times involved.

None

- c) Please state type of catchment/site being served, eg residential, resort, industrial etc.

Residential

7. Will a maintenance agreement be set up to manage the sewage works? (see note b) No
If yes, please give details.

8. Does the effluent contain a trade component? No

If yes, please complete appropriate section on Annexe 3 for authorised discharges of trade effluent to the sewerage system.

Notes (see also the notes attached to the main form):

- a) *For significant sewage treatment plants full details of the plant design, dry weather flow and Biochemical Oxygen Demand load, along with information on all discharges from the works must be included in order for the application to be processed. Flow monitoring will normally be required for such discharges and details of siting and type of flow recorders should be provided.*
- b) *The Agency require a single body or company to be responsible for the discharge and any bills raised under the Charges for Discharges Scheme. Where multiple dwellings under different ownership are connected to the same system a management company should be set up.*





**ANNEXE 2
SEWAGE EFFLUENT DISCHARGED IN STORM OR EMERGENCY CONDITIONS**

Please complete this annexe if you are proposing to make a discharge of sewage in emergency or storm conditions (if the effluent is to contain a trade component Annexe 3 should also be completed).

*Official Use Only
Application No.*

1. Site Name.

Llanddarog WwTW

2. State the type of discharge - tick as appropriate:

Storm tanks

Combined Sewer Overflow from sewerage system

Combined Sewer Overflow from pumping station

Emergency overflow from sewerage system

Emergency overflow from pumping station

Other (please specify)

3. For effluents discharging from sewage treatment works, is the storm/emergency effluent discharged via the same outlet as the treated effluent?

no

If no please give:

a) the National Grid Reference of the treated effluent outlet.

S	N	4	9	2	4	9	1	6	3	0	4
---	---	---	---	---	---	---	---	---	---	---	---

b) the consent or application number covering the treated effluent discharge

BE 0027201

If yes please give the National Grid Reference of the storm/emergency sampling point (see notes)

S	N										
---	---	--	--	--	--	--	--	--	--	--	--

4. For effluents discharging from combined sewer overflows, is the discharge via a dedicated pipe?

Y/N

If no please give the National Grid Reference of the overflow into the sewer.

--	--	--	--	--	--	--	--	--	--	--	--



5. Overflow settings

- | | |
|--|---------|
| a) Overflow setting to storm tanks | 6.4 l/s |
| b) Maximum flow to storm tanks | 5.6 l/s |
| c) Overflow setting to storm sewage overflow | l/s |
| d) Maximum flow to storm sewage overflow | l/s |

6. Storage capacity

- | | |
|--|-------------------|
| a) Volume of Storm tanks | 98 m ³ |
| b) Retention time of storm tanks at maximum flow | 4.9 hours |
| c) Storage capacity of sewer/wet well | m ³ |

7. Please provide full details of the design criteria that have been used to support this application.

See supporting documentation – Verification and Hydraulic Assessment Report – NE02349

8. Will facilities be provided to raise alarms (eg telemetry)?
If yes, please give details.

Yes

Spill event recorder on telemetry

9. Will facilities be provided to prevent the discharge of gross solids?
If yes, please give details (for screens give bar spacing or aperture).

yes

All flows will be screened 6mm x 6mm at the inlet works

10. What provisions will be made to deal with:

- a) power failure (eg standby generators)?

N/a

- b) mechanical breakdown (eg standby pumps)?

N/a

- c) rising main failure?

N/a

- d) tanker access?

available

Notes (see also the notes on the main form):

Full details of the design criteria must be provided in order for the application to be determined. If you have any queries about what information is required please contact the person given in notes attached to the main form.





ANNEXE 4
WELSH REGION SUPPLEMENTARY INFORMATION ANNEXE

Please complete this annexe for every proposed discharge.

Official Use Only
Application No.

For all proposed discharges:

1. Site Name.

Llanddarog WwTW

2. Is this application being made to reinstate a lapsed Consent? No

If so, please state the Number of the lapsed Consent:

IMPORTANT: If you are in need of advice on either part of Question 2, please contact the Agency Regional Consents Section on 01222 770088.

3. If the proposed discharge is to be made down a pipe, channel or culvert (as given in Section 2.3 of the main application form), please state the diameter (including units):

150mm NB

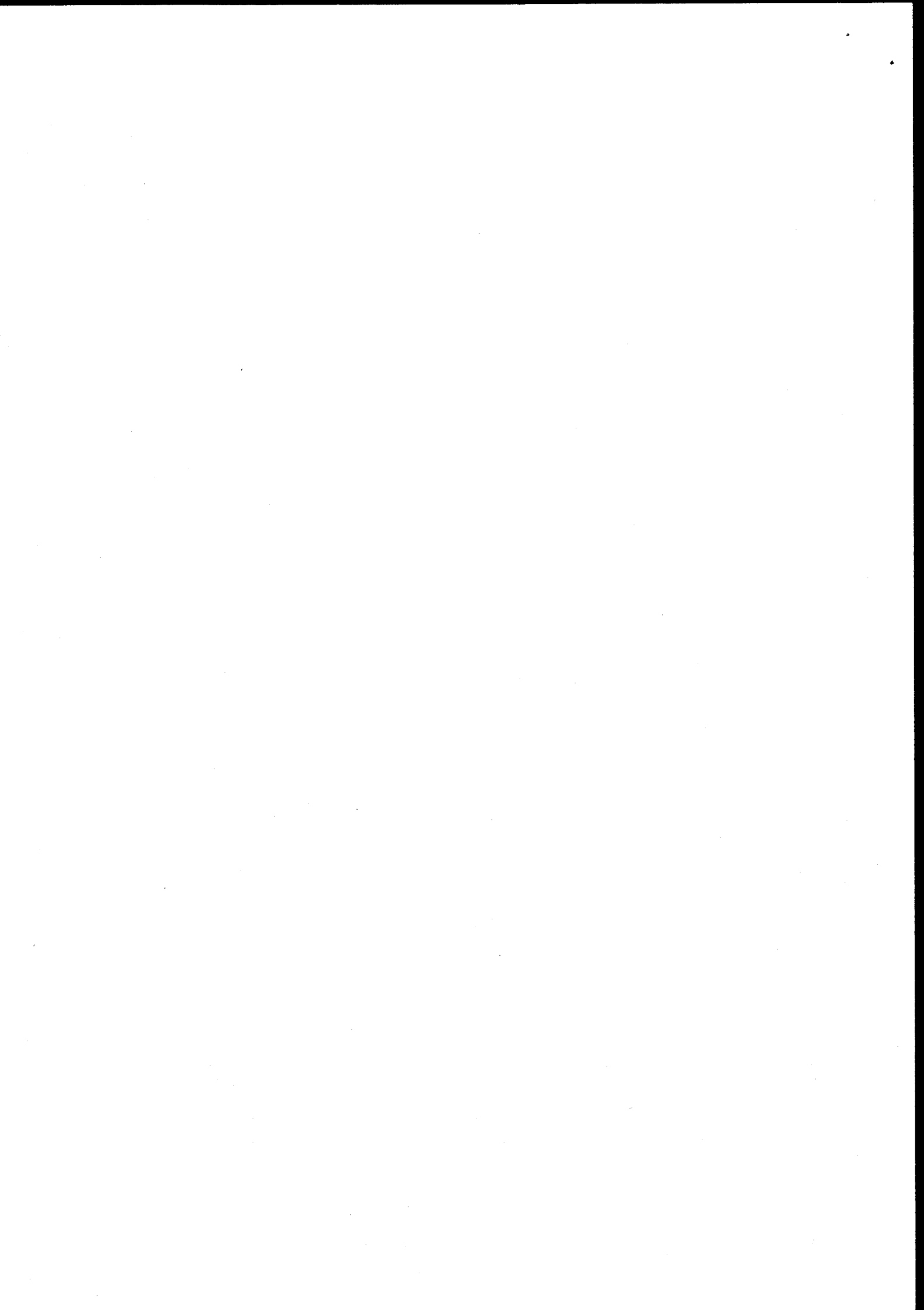
4. Please indicate the anticipated cost of the proposed scheme, including any alternatives which may have been considered:

£490k

5. Is there any trade effluent component in the proposed discharge? no

If yes, please confirm here that you have completed and enclosed Annexe 3:

Tick



6. Will the proposed discharge be pumped or made under gravity? (please circle)

If pumped, please state the maximum pump rate in l/sec:

For proposed discharges of sewer in storm or emergency conditions:

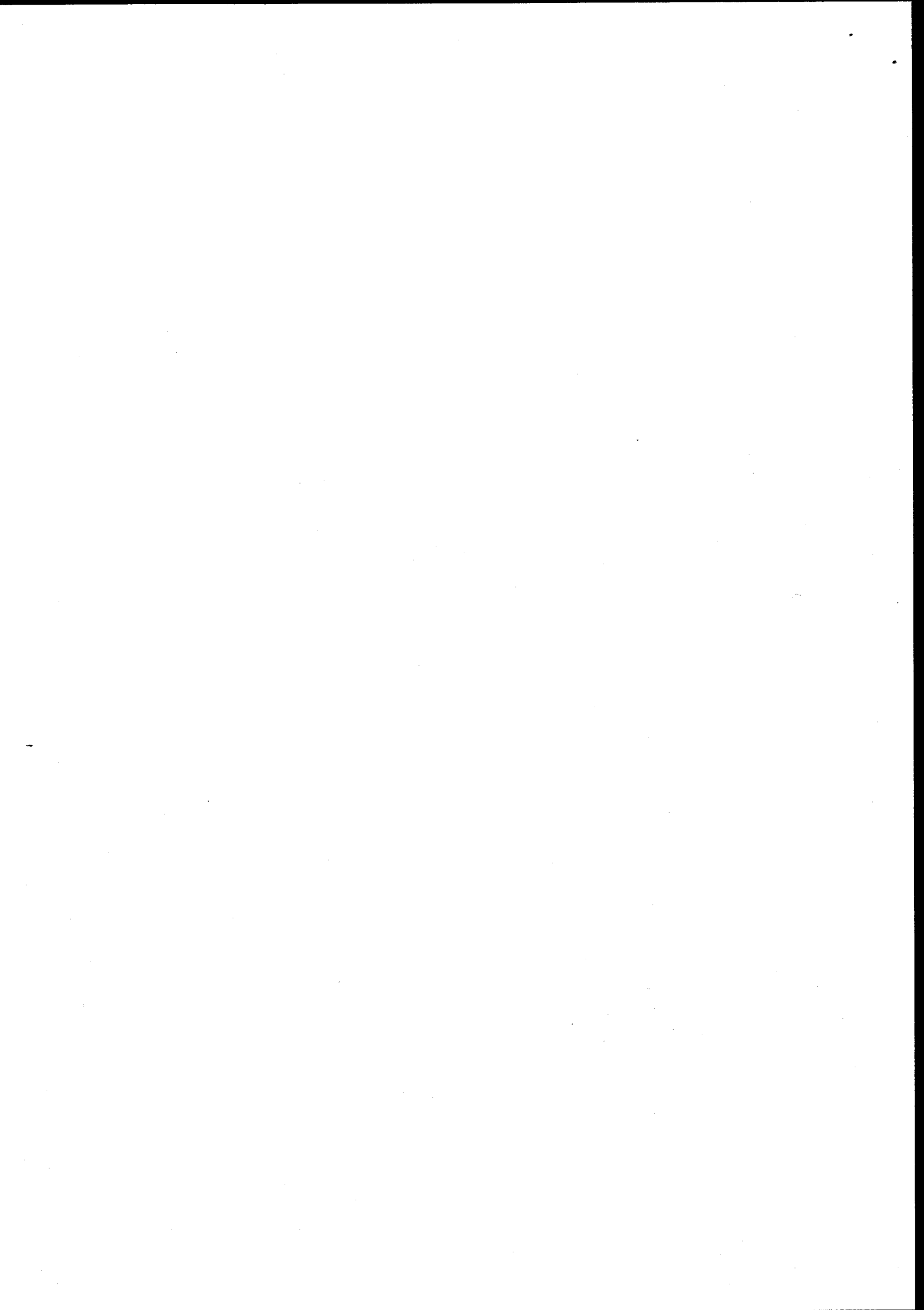
7. Please confirm here that you have completed and enclosed both Annexes 1 and 2:

8. Please state:

Population served (head)	953 PE
Consumption (l/head/day) default = 180	180
Infiltration (m ³ /day)	36
Industrial effluent flow (m ³ /day)	0
Dry Weather Flow (m ³ /day)	207
Soc A (l/sec)	9.2
Predicted spill frequency (per annum)	< 1.0 %

IMPORTANT NOTES FOR ALL CONSENT APPLICATIONS:

1. **Whoever signs the declaration on the main application form takes responsibility for the discharge, and will become the registered consent holder, if consent is given. In the case of a 'body corporate' (eg a public limited company ('plc'), limited, company, local authority), the 'body corporate' will be the registered consent holder, and the person with the delegated authority to sign on behalf of the 'body corporate' should give their job title.**
2. **Agents making an application on behalf of a client, must attach their clients written authority.**
3. **If the name and/or address of the applicant changes after submission of this application to the Environment Agency, the applicant must inform the Agency in writing.**



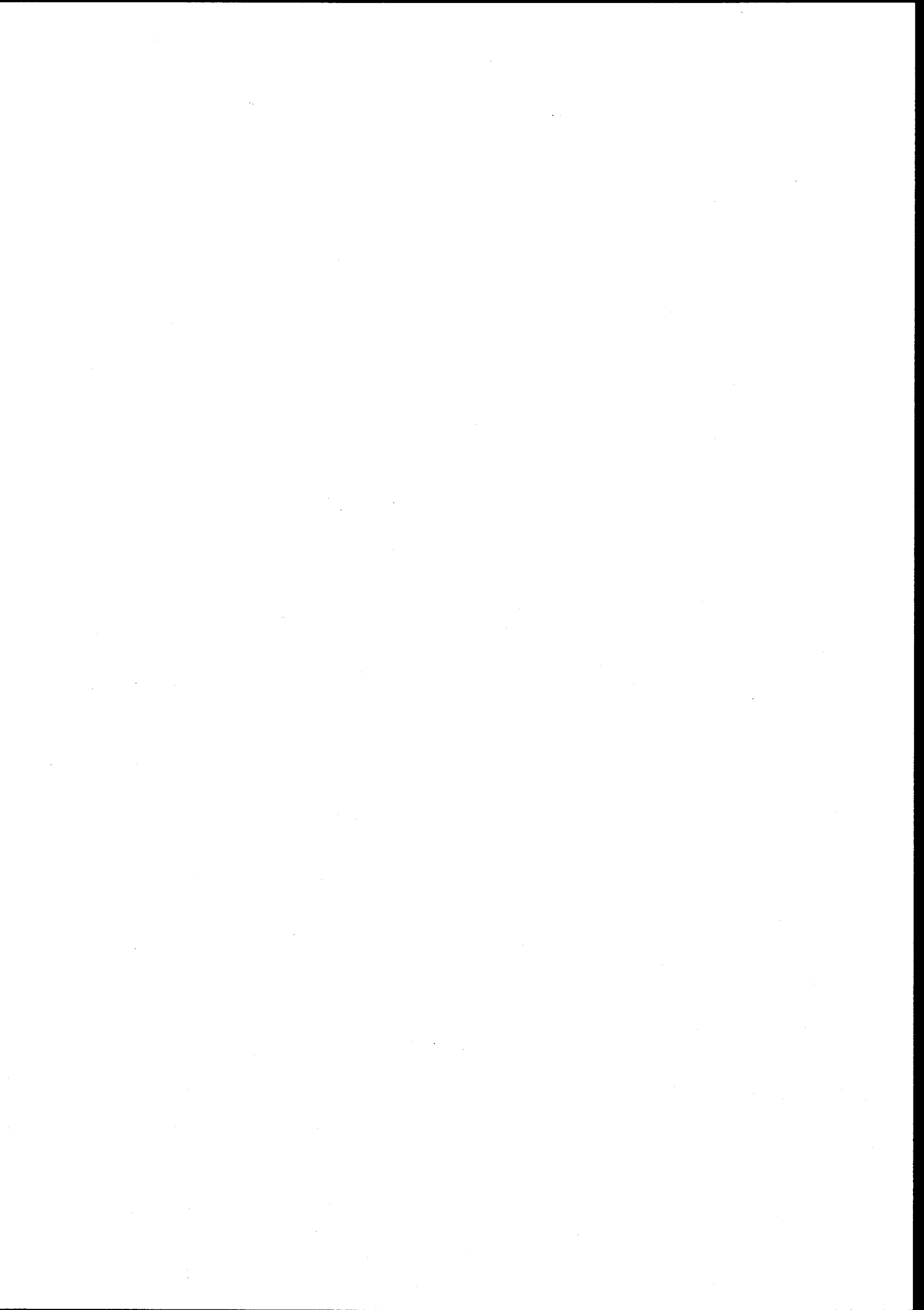
**Documentation Supporting Consent Application for
Llanddarog WwTW**



CONTENTS

INTRODUCTION

- 1 Feasibility Report, doc C886/6.1/01/001
- 2 Executive summary of Verification and Hydraulic Assessment Report, ref NE02349
- 3 A location map showing position of sample points, treated effluent discharge and storm overflow drg C886/2005, C886/2002
- 4 A location map of the site, drg C886/2004



Introduction

Llanddarog WwTW treats wastewater from the domestic dwellings in the villages of Llanddarog and Porthyrhyd. The gravity sewage from Porthyrhyd is collected and pumped up to discharge into the gravity system that drains Llanddarog to the works.

The EA spread sheet for AMP3 investment applies the core drivers QOC to the treated sewage discharge and U16 to the intermittent discharge from the storm tank.

Morrison Construction have commissioned a flow survey, catchment model and a report to establish the frequency of spills.

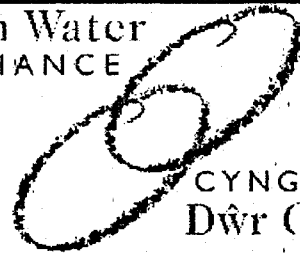
The report has been submitted separately to the EA, included in this supporting documentation is an executive summary sheet.

Supporting documentation is attached with respect to the treated effluent discharge.



Meica Processes
 Parc Y Splott WwTW
 Llansteffan Road
 Johnstown
 Carmarthen SA31 3QU
 Tel 01267 221131
 Fax 01267 221167

Welsh Water
 ALLIANCE



CYNGHRAIR
 Dŵr Cymru

Document Cover Sheet

Project Title	Llanddarog WwTW
Project Number	C886
Client	DWR CYMRU/WELSH WATER
Document Reference Number	C886/6.1/01/001

Llanddarog WwTW

Feasibility & Outline Design Report

Rev.	Date	Description/Purpose	Prepared	Checked ¹			Approved for Issue ²		
				Mech	Proc	Elect	LE	EM	PM
0	10.05.04	First issue	MR	SR	MR	BB	SR	AJW	SW
A	25.05.04	For sign off	MR	SR	MR	BB	SR	AJW	SW
B									
C									
D									

Notes

1. Relevant Disciplines to initial
2. LE – Lead Engineer, EM – Engineering Manager, PM – Project Manager



CONTENTS

	Page No.
Summary	
1. INTRODUCTION.....	1
2. EXISTING WORKS.....	1
3. FLOWS AND LOADS.....	1
4. PROCESS ISSUES.....	2
4.1 Schedule of Improvements.....	3
5. RECOMMENDATIONS.....	4

APPENDIX

- Process Calculations Sheets C886/6.1/100/02
- Existing Process Flow Diagram (PFD) C886/1000
- Proposed Process Flow Diagram (PFD)C886/1001
- Executive summary – hydraulic assessment report ref NE02349



Summary

Llanddarog WwTW is scheduled for upgrade under the AMP3 programme, there are 2 drivers applicable, U16 intermittent discharges relating to the storm and emergency discharges and QO© to meet new consents of BOD:SS:Amn-N = 23:32:17, 95%ile.

Recommendations from the flow survey report from Morrison construction have been incorporated into the quality scheme so that a single project will be able to deliver both drivers.



1. INTRODUCTION

Llanddarog WwTW treats wastewater from the domestic dwellings in the villages of Llanddarog and Porthyrhyd. The gravity sewage from Porthyrhyd is collected and pumped up to discharge into the gravity system that drains Llanddarog to the works.

Current consent limits for the works are as follows

Biological Oxygen Demand (BOD) :	25 mg/l
Suspended Solids (SS) :	35 mg/l
Ammoniacal Nitrogen :	35 mg/l
Dry Weather Flow (DWF)	192 m ³ /d
Maximum flow rate	6.32 l/sec

The EA spread sheet for AMP3 investment applies the core driver QO©

The indicative consent limits are as follows

Biological Oxygen Demand (BOD) :	10 mg/l
Suspended Solids (SS) :	15 mg/l
Ammoniacal Nitrogen :	5 mg/l

Treated effluent is pumped to the Gwendraith Fawr .

2. EXISTING WORKS

The Process Flow Diagram (PFD) for the existing works is included in the Appendix as Dwg. C886/1000.

The existing works comprises 6mm raked bar screen, storm overflow weir, storm storage tank with returns pump, inlet flow measuring flume, two pyramidal primary settlement tanks, flow distribution chamber to three rock media biological filters followed by a single pyramidal humus tank. Pumping systems are provided for final effluent discharge, humus sludge return, filter recirculation and primary sludge to storage.

Operational problems at the site include; screen unable to run in automatic mode, unsatisfactory storm flow split due to the effect of the pumped flows from the catchment, one filter isolated due to excessive ponding, the other 2 filters also suffer from ponding, problems with restriction of the outfall pipe due to root ingress.

3. FLOWS AND LOADS

A flow survey has been carried out, the results have been used to support the design basis.

The information is summarised in the appendix as an extract from the Hyder report ref NE02349.



The process design on which this report is based has been calculated from house counts, occupancy densities, and UDP expansions projected.

The basis for design for the works upgrade, including relevant wastewater inflow characteristics is as set out below:

	BASIS	VALUE
Population Equivalent (PE)	Flow	953
Dry Weather Flow (DWF)	m ³ /day	208
	l/s	2.4
Average Flow	m ³ /day	259
	l/sec	3.0
3DWF	m ³ /d	551
	l/sec	6.37
Design flow	m ³ /d	553
	l/s	6.4
SOC A	m ³ /d	1504
	l/sec	17.4
BOD Load	kg/day	57.2
SS Load	kg/day	57.2
NH ₃ – N Load	kg/day	7.6

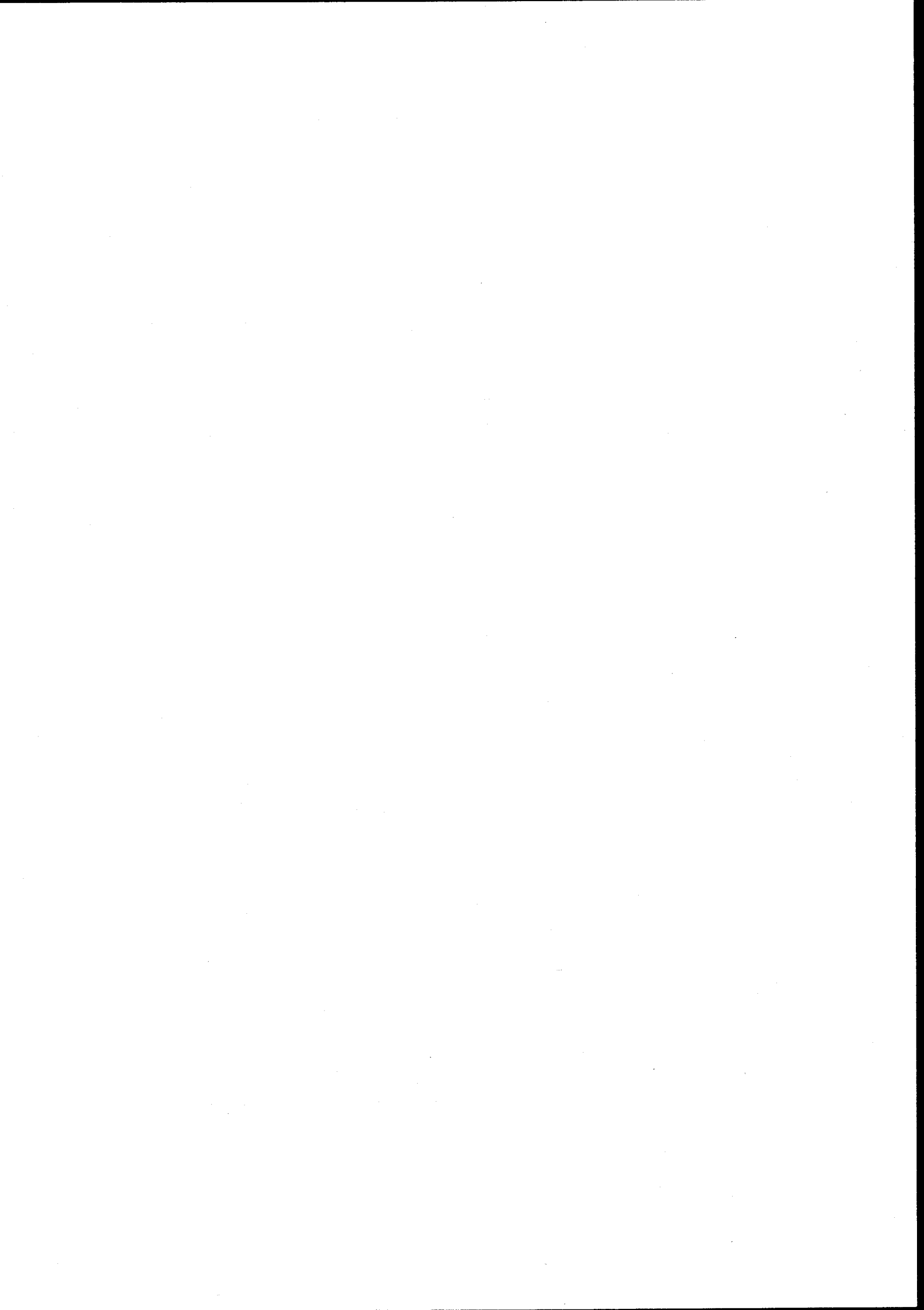
The above table is a summary of the calculations, which are included in the Appendix as Process Calculations Sheet C886/6.1/100/02/A.

4. PROCESS ISSUES

The existing storm tank at the works has an operating volume of 98 m³ which is equivalent to nearly 3 hrs at SocA less FFT and is thus compliant with Amp2 guidelines. The Hyder report referenced above proves that provided the storm return system is improved then the spill is less than 1% of the year.

Storm tank cleaning and automated storm return will need to be incorporated.

During a site visit it was noted that the current storm spill arrangement is not ideal as spills can occur each time one of the pumping stations in the catchment operates. A balancing arrangement needs to be incorporated to overcome this, or modifications to the feeding pump station control.



Theoretical process designs suggest that DWF will be similar to the current consented DWF. Thus there will be little effect due to 'no deterioration' and the determination of the consented values for BOD and Amm-N are based on river water quality.

Confirmed values from the EA are BOD/SS/Amm-N < 23/32/17, 95%ile.

Existing primary tanks are considered satisfactory for the projected FFT provided that the rate of return of humus sludge is limited to less than 2 l/s, and that the recirculation flows are automatically controlled by treatment flow rate.

Biological capacity needs to be increased to meet the new consent, it is suggested that this be achieved by re-mediaing the ponding filters with new steel works slag media. It will be necessary for the re-circulation and distribution arrangements to be modified to suit the needs of wetting rates on the re-media'd filters.

Humus tank capacity will need to be increased to limit the upflow velocity to achieve the indicative solids consented values, the size of additional tankage is suggested as 3.2m dia.

Maintenance of outfall pipeline.

4.1 Schedule of Improvements.

New 6mm x 6mm inlet screen sized to screen all flows arriving at the works, flowrate = 35l/s, it is understood that this screen has been ordered and will be fitted by UUOS.

Storm balance tank, approx. 3 m³ complete with storm return pump, 6 l/s and auto control from treatment flowrate.

Add storm tank re-suspension pump and automation of return pump.

Improvements to primary tank inlet flow splitter.

Changes to filter flow distribution chamber to split flows correctly between the filters, 30%/30%/40% and to reduce backpressure on primary tank outlets.

Replace rock media in all the filters with blast furnace slag media, total 440 m³. NB in order to maintain process these filters will have to be re-media'd one at a time with adequate commissioning time allowed between each one.

Replace/modify distributors to suit new media,
Add recirc. pump sized to suit new media minimum flow rates, 3.75 l/s.

Cut back trees overhanging 12m dia filter to limit possibility of blockage.

Construct humus flow split chamber to suit 70%/30% split..



Install 3.2m dia GRP humus tank c/w desludge facility.

Construct/modify sample chamber to suit

Install magflow meter in pump discharge c/w readouts of instantaneous and totalised flow.

Uprate final effluent pumping station to suit the new FFT of 6.4 l/s.

Provide standby generator for final effluent pump station.

Clear outfall pipe by root cutting and jetting.

Establish new outfall headwall into river.

5. RECOMMENDATIONS.

That the scope of work outlined above is costed and submitted for scheme approval. In order to meet the programme, and to protect the current consent it is vital that early specific scheme approval is sought for the re-mediaing of the filters.



Feasibility and Outline Design Report Acceptance Sheet

We confirm that we have discussed the content of the Llanddarog WwTW, Feasibility Report and that we are in agreement with the conclusions and recommendations.

Rob Wilson, Manager United Utilities

..... Date

Stuart Worts , Meica Process Ltd., Project Manager

..... Date



APPENDIX

- **Process Calculations Sheets C886/6.1/100/02/A**
- **Existing Process Flow Diagram (PFD) C886/1000**
- **Proposed Process Flow Diagram (PFD)C886/1001**
- **Executive summary – hydraulic assessment report ref NE02349**



LLANDDAROG

consent BOD:SS:Amm-N 25/35/35
DWF = 192 m3/d, max flow = 6.32 l/s

10.05.04 **CONVENTIONAL PLANT - PROPOSED**
actual consent BOD:SS:Amm-N 23/32/17

PARAMETER

design basis horizon
Resident Population served (P)

UNITS

date
pop. 953

taken from Hyder report
based on house count 312+ 80 (udp) @2.5
taken from survey report, inc' school

Design Flows

Tourist pop served(T) pop. 0
Day visitors(V) pop. 0
Peak population served pop. 953
Per capita BOD contribution Residents kg/h.d 0.06
Per capita BOD contribution Tourists kg/h.d 0.04
Per capita BOD contribution Visitors kg/h.d 0.02
per capita resident TSS contribution kg/h.d 0.06
per capita tourist TSS contribution kg/h.d 0.06
per capita Amm-N contribution Residents kg/h.d 0.008
per capita Amm-N contribution Tourists kg/h.d 0.006
per capita Amm-N contribution Visitors kg/h.d 0.003
per capita domestic flow(G) l/h.d 180
per capita tourist flow l/h.d 120
per capita visitors flow l/h.d 25
total residents flow (PG) m3/d 172
total tourists flow (Tg) m3/d 0
total visitors flow (Vg) m3/d 0.0
Infiltration (I) m3/d 36.0

21 %
derived from flow survey

industrial flow (E) m3/d 0.00
Dry weather flow (PG + Tg + Vg + I + E) m3/d 208 PG+I+E

Consent DWF = 192 m3/d

Average Flow l/s 2.4
m3/d 259

max flow measured at 50 l/s

(3DWF) m3/d 551 3PG+I+3E
l/s 6.37

Consent max flow = 6.32 l/s

Revised FFT m3/d 553.0
l/s 6.4

Check outfall pump duty

(6DWF) m3/d 1065
l/s 12.3

Formula A=(PG+I+E)+1.36P+2E m3/d 1504
l/s 17.4

Storm tank capacity (2hrs at 3DWF) m3 45.9
storm tank capacity (68 l/h) m3 64.8
Storm tank capacity (2hrs SocA-FFT) m3 79.2

storm tank 12x4x2.4=115m3

LOADS

Total BOD Load kg/d 57.2
BOD Concentration at Average Flow mg/l 220
Total TSS load kg/d 57.2
TSS concentration at Average Flow mg/l 220
Total Amm-N Load kg/d 7.6
Amm-N concentration at Average Flow mg/l 29.4

Primary Treatment

% removal

Settled BOD load 30 kg/d 42.0
Settled BOD Concentration mg/l 162
Settled TSS load 50 kg/d 30.0
Settled TSS concentration mg/l
Settled Amm-N load 0 kg/d 8.0
Settled Amm-N concentration mg/l 30.9
primary sludge mass kg/d 27.2

includes return liquors

includes return liquors

Flow split % 100.0

Number of tanks 2.0

Type of tank square

diameter m 3.4

Size m 0.0

Area m2 20.8

Volume based on 1.5 depth m3 31.2

Upflow rate m/h 1.1 at revised FFT



Retention time		h	1.4	
Biological treatment				
secondary BOD load		kg/d	42.0	
secondary BOD concentration		mg/l		
secondary TSS load		kg/d	30.0	
secondary TSS concentration		mg/l		
secondary Amm-N load		kg/d	8.01	
secondary Amm-N concentration		mg/l		
biol. sludge mass (@0.7kg/kg BOD removed)		kg/d	27.9	
Number of filters				
flow split		%	60.0	1.0
flow		l/s	3.8	40.0
media				2.6
Diameter		m	10.0	rock
Depth		m	1.6	rock
Surface area		m ²	157.1	12.0
Volume		m ³	251.4	1.6
BOD loading		kg/m ³ /d	0.100 OK	113.1
hydraulic loading		m ³ /m ² /d	2.1	181.0
Amm-N loading		kg/m ³ /d	0.019 OK	0.093 OK
Min wetting rate		m ³ /m ² /h		2.0
Min wetting rate		m ³ /m ³ /d	0.750	0.750
Min recirc flow	per filter	l/s	1.091	1.571
combined recirc flow		l/s		3.75 to splitter box flow controlled
Final Settlement				
	% removal			
Final BOD load	95	kg/d	2.10	
Final BOD concentration		mg/l	8.1	
Final TSS load	90	kg/d	3.00	
Final TSS concentration		mg/l	12	
Final Amm-N load	0	kg/d	8.01	
Final Amm-N concentration		mg/l	30.9	
Number of tanks				
flow split		%	70.0	1.0
flow		l/s	4.5	30.0
Type of tank				1.9
diameter		m	4.2	square
Size		m	4.2	circular
Area		m ²	15.9	3.2
Volume based on	1.5 depth	m ³	23.8	0.0
Upflow rate		m/h	1.0 at revised FFT	7.2
Retention time		h	1.5	1.5
				10.9
				1.0 at revised FFT
				1.6
Sludge Production				
total sludge mass		kg/d	55.1	
total sludge volume @2%ds		m ³ /d	2.8	



Rural WwTW Parent Discharges: Llandarrog

Model Preparation, Verification and Hydraulic Assessment Report – Executive Summary

- Abbreviated scope - InfoWorks model constructed and verified in order to assess Parent Discharge. Not suitable for assessment of catchment level of performance.

Manhole/ Ancillary Survey		OnSite		
Date	Manholes (N)	CSOs (N)	Pumping Stations (N)	
Nov 2003	29	1	2	
Flow Survey		InDepth		
Date	Flow Monitors (N)	Depth Monitors (N)	Pirgaugs (N)	
July – Nov 2003	8	3	2	

Catchment Parameters			
Data	Units	Existing	Design Horizon
Year	Year	2003	2016
Population	N	758	953
New Development Population	N	-	195
Per Capita Return to Sewer Flow (G)	L/hd/day	160	180
Tourists (T)	N	-	-
Day Visitors (V)	N	-	-
Infiltration (I)	L/s	0.42	0.42
Trade Flow (E)	L/s	0.04	0.04
New Development Trade Flow (E)	L/s	-	-
DMF	L/s	1.9	2.4
FFT (assessed as 3DMF)	L/s	4.7	6.4
SOC A (Combined) ¹	L/s	13.9	17.5
SOC A (Partially separate) ²	L/s	7.8	9.2

Notes

- SOC 'A' calcs assuming the population of the catchment is 100% combined as originally stated in the AIS export provided by Logica.
- SOC 'A' calcs assuming 75% of the catchment is separate, therefore SOC 'A' values are reduced. Noting the limited storm response observed in the catchment, it is considered that the determination undertaken using the allowance for separate areas is more applicable. Impermeable area included in the model equates to 3% of the total catchment area.
- The existing maximum flowrate arriving at the WwTW, as assessed from the flow survey results is approximately 12l/s.

Storm Tank Assessment			
Data	Units	Existing	Design Horizon
Identified Drivers	-	U16, LMMTD, A W- Aesthetics/ Inland Water Quality	
Inlet screening	-	6mm raked bar screen	
FFT – current setting ¹	L/s	6	-
Volume	m ³	98	-
2 hrs @ 3DMF	m ³	34	47
2 Hrs @ maximum incoming flow	m ³	43	79
2 Hrs @ SOC A (combined) – FFT (current setting)	m ³	57	83
2 Hrs @ SOC A (partially separate) – FFT (current setting)	m ³	7	23
Population * 68 l/hd	m ³	51	65
Spill frequency - Tank empty at event start (spills with a total volume >50m ³ are given in brackets).	N/ year	-	29 (4)
Spill frequency - Tank half full at event start (spills with a total volume >50m ³ are given in brackets).	N/ year	-	83 (11)

Notes

- FFT is the minimum pass forward flow before the storm tank is utilised, flows can increase slightly before the storm tank overflow operates. The existing consent for the storm overflow states that no discharge shall occur unless the rate of flow passing forward to full treatment is at least 6 l/s.
- Assuming adequate return of storm tank contents to FFT, spill duration is less than 1% of the year, therefore 99%ile water quality requirements are satisfied.

- SUMMARY**
- Review storm tank return mechanism – entire tank volume to be available for subsequent storms.
 - Confirm adequacy of screening arrangements.





ASiantaeth yr
AMGYLCHEDD CYMRU
ENVIRONMENT
AGENCY WALES

Ein cyf/Our ref. 2/CS/LL/BE0027201
Eich cyf/Your ref.

Dyddiad/Date: 14 July 2004

Hilary Ford,
Area Consents and Regulation Scientist
Dwr Cymru Welsh Water
Merlins Bridge WWTW
Merlins Bridge
Haverfordwest
Pembrokeshire SA61 1JL

Dear Ms Ford,

**WATER RESOURCES ACT 1991, SCHEDULE 10 (As amended by the Environment Act 1995)
APPLICATION FOR VARIATION TO CONSENT TO DISCHARGE FINAL EFFLUENT BY DWR
CYMRU CYF. FROM LLANDDAROG WWTW
APPLICATION NO: BE0027201**

Thank you for your application for variation to consent to discharge final effluent & your application fee of £743.00. It is receiving consideration and you will be hearing from us again shortly. Please state application BE0027201 in any correspondence with us relating to this application.

Yours sincerely

ANNE SENNETT
Customer Contact & Authorisations Officer

Asiantaeth yr Amgylchedd Cymru
Maes Newydd, Llandarsi, Nedd Port Talbot, SA10 6JQ
Ffon: 01792 325500, Ffacs: 01792 325511

Environment Agency Wales
Maes Newydd, Llandarcy, Neath Port Talbot, SA10 6JQ
Tel: 01792 325500, Fax: 01792 325511





CONSENT NO. BP0220701



ASiantaeth YR
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ENVIRONMENT
AGENCY WALES

WATER RESOURCES ACT 1991

SECTION 88 – SCHEDULE 10

(AS AMENDED BY THE ENVIRONMENT ACT 1995)

VARIATION OF CONSENT TO DISCHARGE

TO: Environment Quality Scientist
Dŵr Cymru Cyfyngedig
Pentwyn Road
Nelson
Treharris
CF46 6LY

In pursuance of an application by the consent holder for variation of consent, the **ENVIRONMENT AGENCY** ("The Agency") in pursuance of its powers under the Water Resources Act 1991 **HEREBY VARIES ITS CONSENT** to the making of a discharge **OF SEWAGE EFFLUENT**, as follows:

Settled Storm Sewage

with respect to Consent No. **BP0220701** issued on the 25th day of September 1992

FROM: LLANDDAROG WASTEWATER TREATMENT WORKS

AT: LLANDDAROG, NEAR CARMARTHEN

TO: UN-NAMED TRIBUTARY OF THE AFON Y BANTWEN

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

Settled Storm Sewage

Schedule No. BP0220701 01

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 affects the effect of variations made to this consent, without the agreement in writing of the Consent Holder, during a period of 4 years from the date this variation is issued.

This variation of consent is issued on the 5th day of November 2004 and takes effect on the 31st day of March 2005.

Signed 

Team Leader – Regulatory Water Quality



CONSENT NO.	BP0220701
SCHEDULE NO.	BP0220701 01
DATE ISSUED	5 th November, 2004



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Amgylchedd Cymru
Environment
Agency Wales

CONDITIONS OF CONSENT TO DISCHARGE

Settled Storm Sewage ("the Discharge")

**FROM: LLANDDAROG WASTEWATER TREATMENT WORKS,
LLANDDAROG, NEAR CARMARTHEN**

NATURE

1. The Discharge shall consist solely of settled storm sewage.

LOCATION

2. The Discharge shall be made in the manner and at the place specified as:
 - (a) discharging via a 150 millimetre diameter pipe;
 - (b) discharging to an un-named tributary of the Afon y Bantwen;
 - (c) at National Grid Reference SN 49249 16304;
 - (d) shown marked 'Consent Point' on Plan BP0220701 attached as Annex 1.

SAMPLE POINT

3. An appropriately labelled sample point shall be provided and maintained at National Grid Reference Reference SN 49280 16283, as shown marked 'Sampling Point' on Plan BP0220701, so that a representative spot 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.

VOLUME

4. (a) The Discharge shall occur when and only for as long as, the storm tank(s) are full. The discharge of storm sewage to the storm tank(s) shall only occur when the rate of flow at the storm sewage separating weir is in excess of 6.4 litres per second due to rainfall and/or snow melt and shall consist only of flows in excess of this figure. The storm tank(s) shall be emptied automatically and their contents returned for full treatment as soon as practicable after cessation of the overflow to the storm tank(s).
 - (b) The capacity of the storm tank(s) shall be at least 98 cubic metres.



CONSENT NO.	BP0220701
SCHEDULE NO.	BP0220701 01



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COMPOSITION

5. (a) The Discharge shall not contain a significant quantity of solid matter having a size greater than 6 millimetres in more than one dimension.
- (b) The Discharge shall not be comminuted or macerated to achieve the standard in (a) above.

UNUSUAL WEATHER CONDITIONS

6. (a) No inspection of the sewage treatment works, made 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 condition 6 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;
 - (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 an inspection of the sewage treatment works 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.



CONSENT NO.	BP0220701
SCHEDULE NO.	BP0220701 01



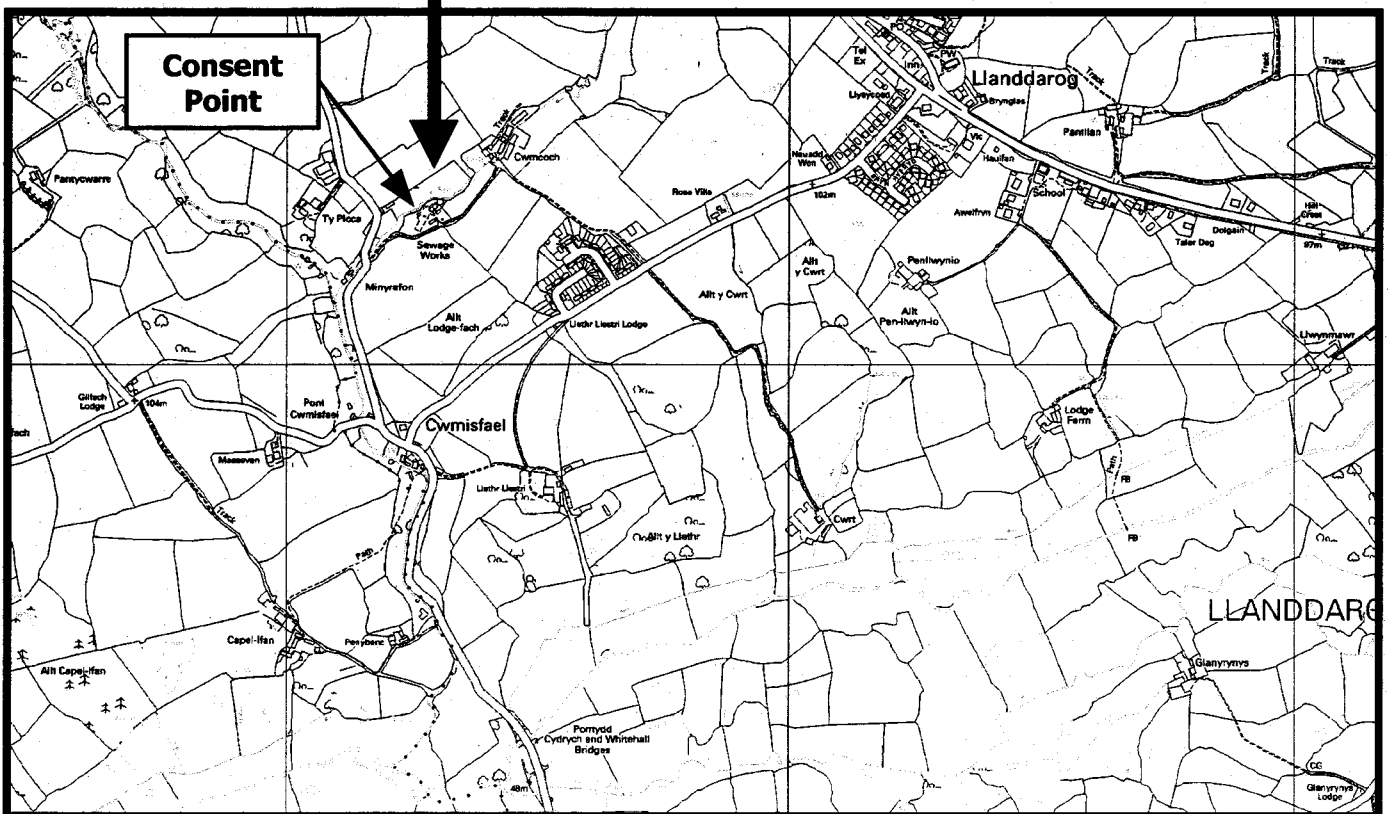
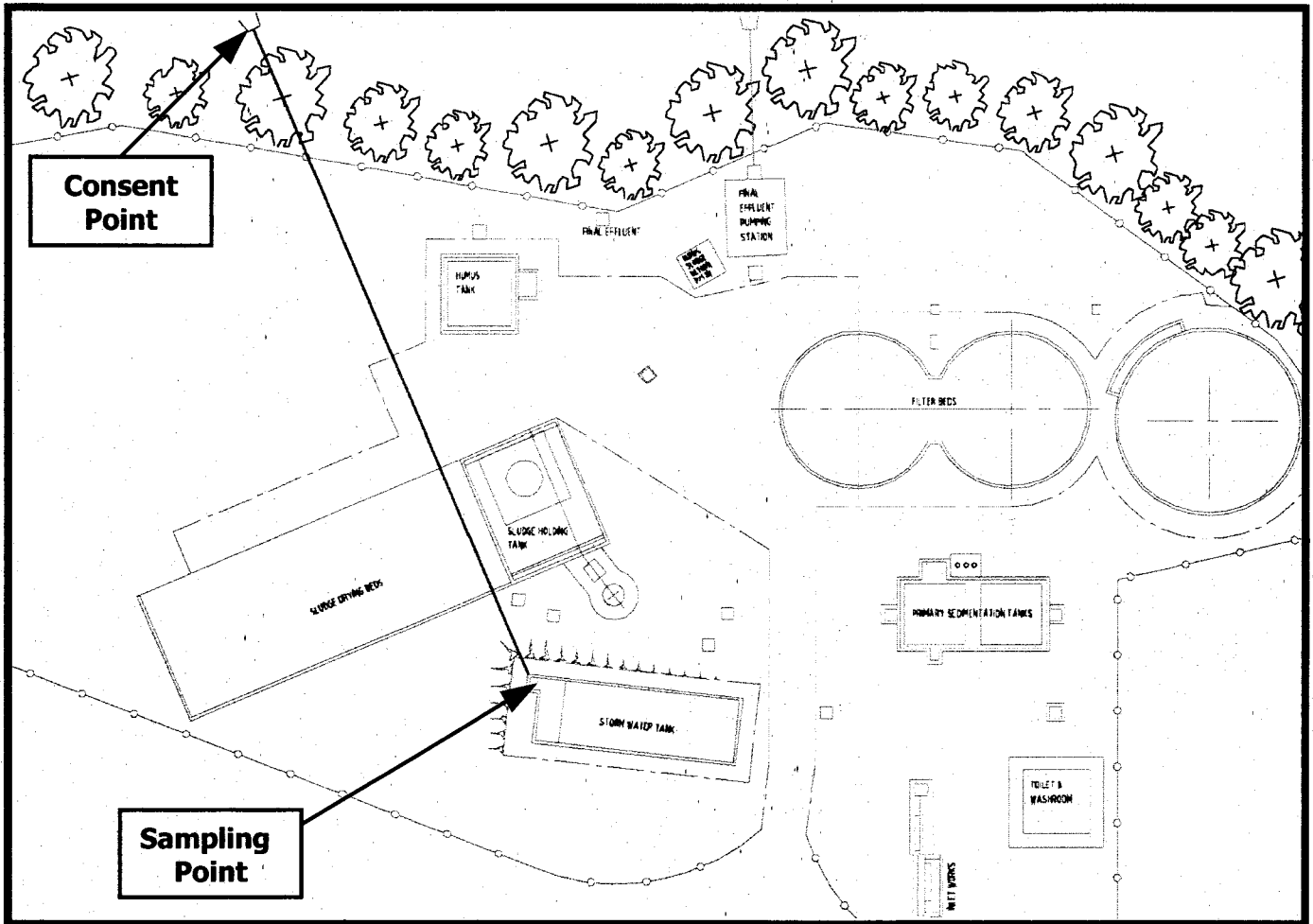
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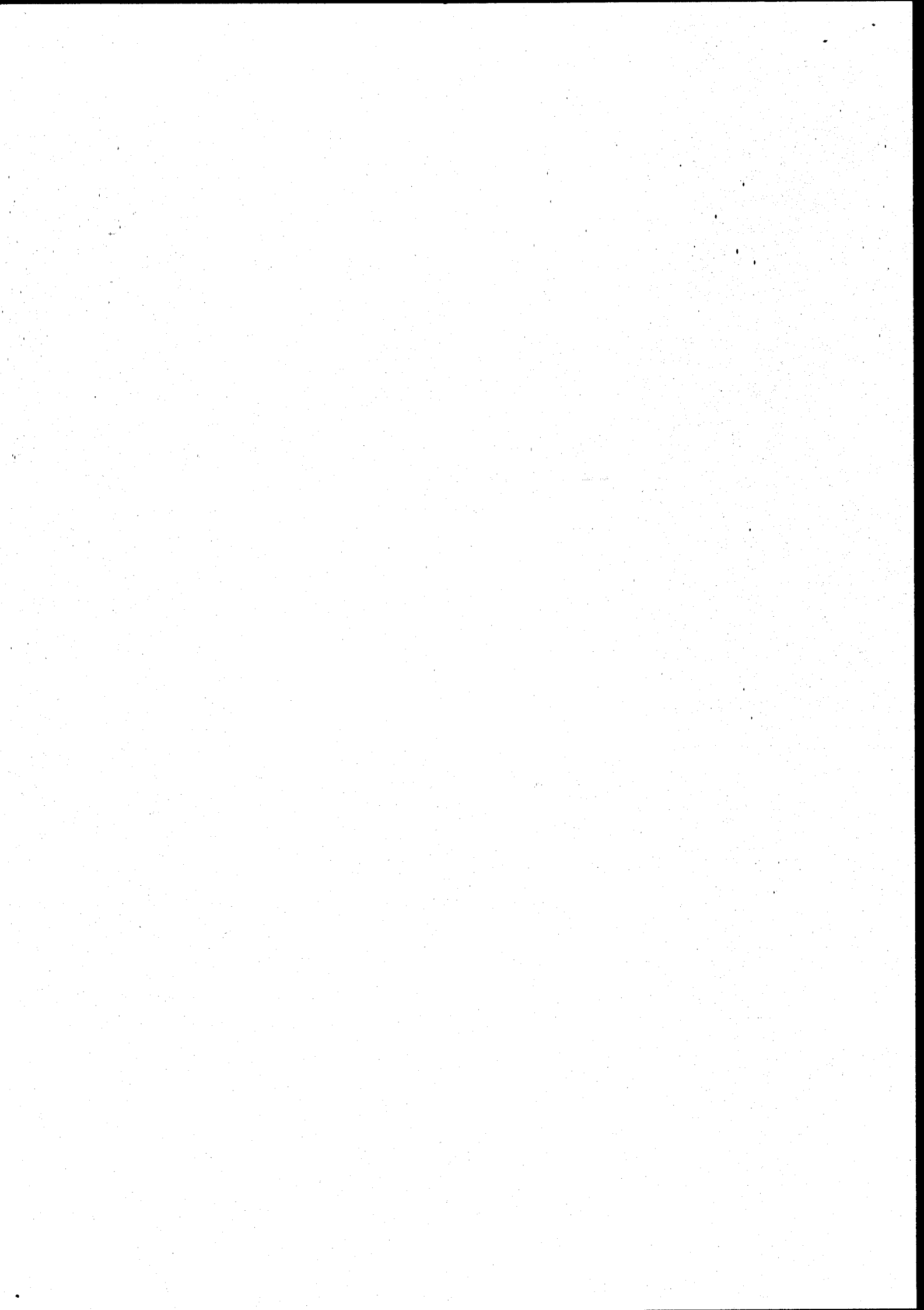
RECORDING AND REPORTING

7. (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.



LLANDDAROG WwTW Settled Storm, LLANDDAROG, NEAR CARMARTHEN







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AMGYLCHEDD CYMRU
ENVIRONMENT
AGENCY WALES

Ein cyf/Our ref. LL/BP0220701
Eich cyf/Your ref.

Dyddiad/Date: 8 November 2004

Ms Hilary Ford
Dwr Cymru Cyf
Pentwyn Road
Nelson
Treharris
Mid Glamorgan
CF46 6LY

Dear Ms Ford,

**WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO VARY CONSENT TO DISCHARGE SEWAGE EFFLUENT BY DWR CYMRU CYF FROM LLANDDAROG WWTW, LLANDDAROG, CARMARTHEN
APPLICATION NO: BP0220701**

Further to your application for variation of consent of the Agency to discharge under the provisions of Section 88 of the Water Resources Act 1991, I enclose the Agency's formal notice of the variations made to the conditions of the consent as detailed 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. This 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 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.

Asiantaeth yr Amgylchedd Cymru
Maes Newydd, Llandarsi, Nedd Port Talbot, SA10 6JQ
Ffon: 08708 506 506, Ffacs: 01792 325511

Environment Agency Wales
Maes Newydd, Llandarcy, Neath Port Talbot, SA10 6JQ
Tel: 08708 506 506, Fax: 01792 325511



If you have any queries regarding the enforcement of this consent, please do not hesitate to contact Hamish Osborn, Team Leader Environment Management, Plas Gwendraeth, Heol Parc Mawr, Cross Hands Business Park, Llanelli SA14 6RE.

Yours sincerely,



L LEWIS
Authorisations Officer

Enc.

Asiantaeth yr Amgylchedd Cymru
Maes Newydd, Llandarsi, Nedd Port Talbot, SA10 6JQ
Ffon: 08708 506 506, Ffacs: 01792 325511

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