

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 BP0072801

Nature of Discharge(s); SEWAGE EFF/TREATED EFF/CONTINUOUS
at LLANEDI 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:



Mr S Lewis
Dwr Cymru Cyf
Plas Y Ffynnon
Cambrian Way
Brecon
Powys
LD3 7HP

Our Ref:
2/EQ/BP0072801/TJK/JAT

Enquiries:
T J Kindon

Date
July 17, 1990

Dear Mr Lewis

DISCHARGE CONSENT BP0072801 - LLANEDI STW

Subsequent to recent discussions on the above subject, I now enclose the corrected consent which replaces that previously issued. The following amendments have been incorporated:-

- i) Discharging via: 150 mm pipe with flap valve and not 100mm pipe as detailed on the application. This was requested by W. Liddell 16 July 1990.
- ii) Determinand - The suspended solids concentration (dried at 105 degrees celcius) shall not exceed 80 mg/l and not 40 mg/l as detailed on the original consent.

Please adjust your records accordingly.

Yours sincerely

T J Kindon
E & Q Services Officer

R.D. NO:- 0597320



*Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru*

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

*National Rivers Authority
Welsh Region*

Our Ref:
2/EQ/BP0072801/EHD/LW

Enquiries:
E. H. Davies

Date:
10th July 1990

Dear Sir/Madam

CONSENT TO DISCHARGE OF EFFLUENT.

I enclose the Authority's Consent to Discharge of Effluent, Reg No BP0072801.. 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

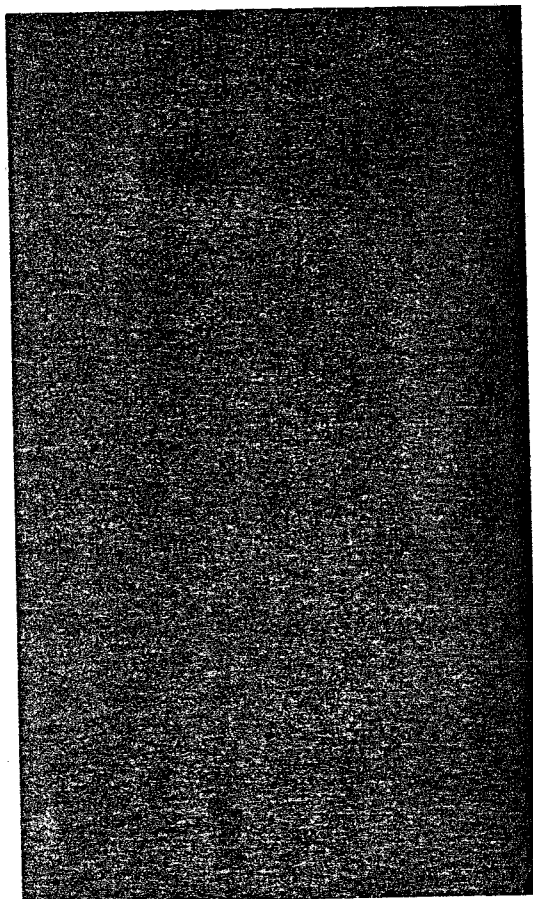
D.R. Thomas
Divisional Scientist

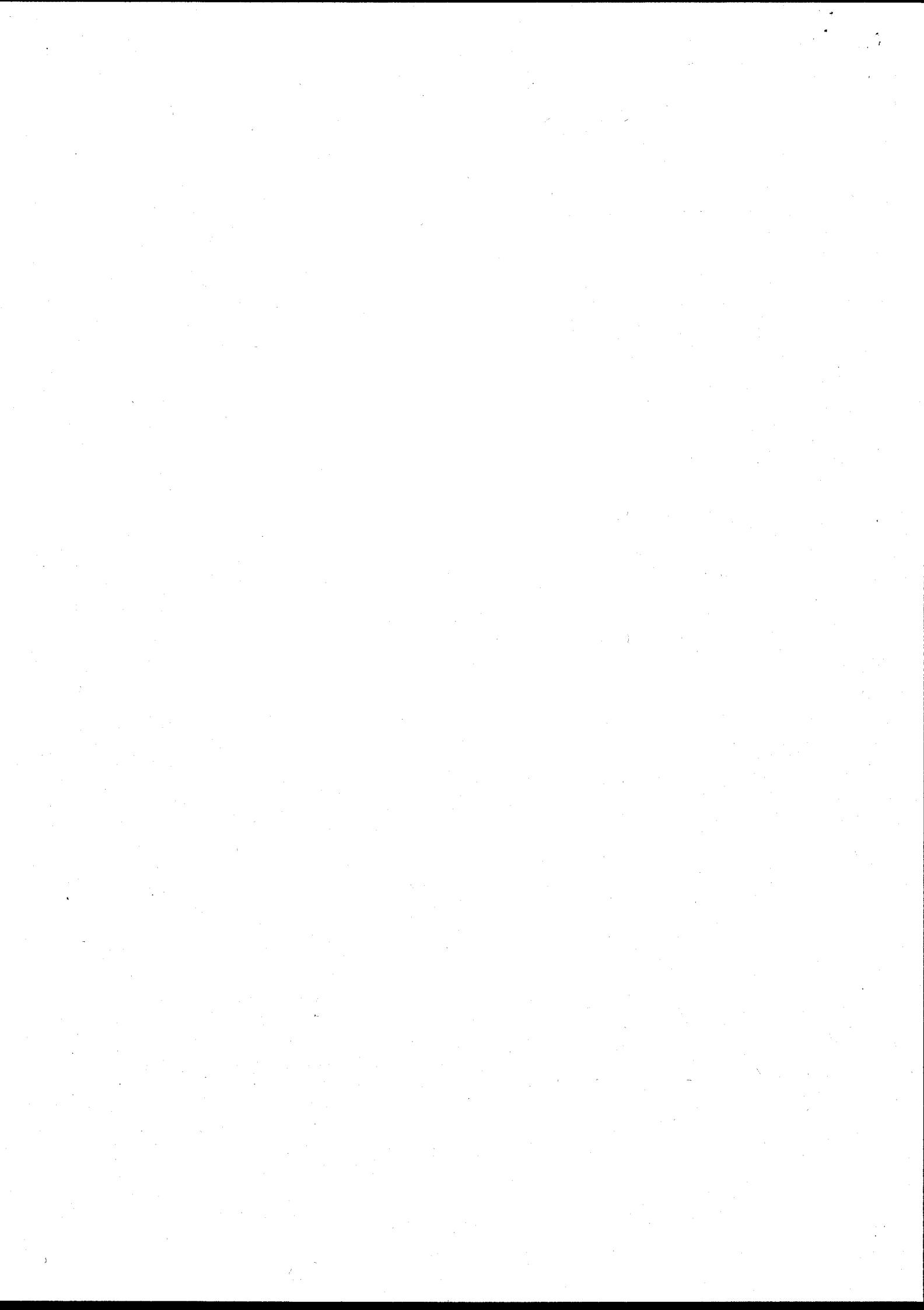
Recorded Delivery No: V 679238

Aelod Rhanbarthol o'r Bwrdd
Yr Athro Ron Edwards

Rheolwr Rhanbarth Cyffredinol
Dr John Stoner

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







Awdurdod Afonydd Cenedlaethol

National Rivers Authority

~~Rhanbarth Cymru~~

~~Welsh Region~~

WATER ACT 1989

Consent No. BP0072801

Under Section 113 and Schedule 12 of the Water Act 1989 and all other enabling powers the National Rivers Authority hereby gives this

C O N S E N T

To : Dwr Cymru Cyf
Of : Plas-Y-Ffynnon, Cambrian Way, Brecon, Powys, LD3 7HP.
For : A discharge of Sewage effluent
To : River Gwili
From: Llanedi STW

CONDITIONS OF CONSENT

1. The discharge shall consist only of: Fully treated sewage effluent
2. The discharge shall be made in the manner and at the place specified as follows:

Discharging via : 150mm pipe with flap valve

Discharging to : River Gwili

At OS Grid Ref : SN579078

As shown marked : Discharge pt.

On attached Plan No.: BP0072801

3. Adequate facilities shall be provided for the taking of samples of this discharge at: A nominated point within the sewage treatment works

4. The quantity and quality of the discharge shall not exceed the following values:

Determinand

Value Unit

The BOD (Biological Oxygen Demand) concentration 40 mg/l
determined in the presence of allyl-thiourea
shall not exceed

This Consent is given on
Authority by:

10 July 1990

on behalf of the
DIVISIONAL SCIENTIST

During the period ending with the: 9th July 1992 the terms of this
Consent will not be altered without the written agreement of the person
making this discharge

~~Aelod Rhanbarthol o'r Bwrdd~~

Yr Athro Ron Edwards

Rheolwr Rhanbarth Cyffredinol

Dr John Stoner

Llys Alon

Hawthorn Rise

Hwlfordd

Dyfed SA61 2BQ

Ffôn: Hwlfordd (0437) 760081

Ffacs: (0437) 760681

~~Regional Board Member~~

Professor Ron Edwards

Regional General Manager

Dr John Stoner

Llys Alon

Hawthorn Rise

Haverfordwest

Dyfed SA61 2BQ

Tel: Haverfordwest (0437) 760081

Fax: (0437) 760681

CONSENT CONTINUATION

DETERMINANDVALUEUNIT

The suspended solids concentration (dried at 105 degrees celcius) shall not exceed.

80

mg/l

Ammoniacal Nitrogen (as N) ✓

30

mg/l

Maximum volume of discharge in any 24 hour period shall not exceed

274

m³/day

The daily volume in dry weather flow conditions shall not exceed

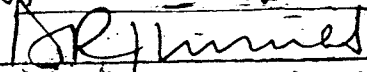
50

m³/day

Provision must be made for facilities to measure all discharge flow.

This Consent is given on: 10 July 1990

By:



on behalf of the Authority
DIVISIONAL SCIENTIST

During the period ending with the 9th July 1992 the terms of this Consent will not be altered without the written agreement of the person making this discharge.



Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru

National Rivers Authority
Welsh Region

WATER ACT 1989

Consent No. BP0072801

Under Section 113 and Schedule 12 of Pollution Act 1989 and all other enabling powers the National Rivers Authority hereby gives this
VARIATION OF
CONSENT

To : Dwr Cymru Cyf
Of : Plas-y-Ffynnon, Cambrian Way, Brecon, Powys, LD3 7HP
For : A discharge of Sewage Effluent.
To : River Gwili.
From: Llanedi STW

CONDITIONS OF CONSENT

1. The discharge shall consist only of Fully treated sewage effluent.

2. The discharge shall be made in the manner and at the place specified as follows:

Discharging via : 150mm pipe with flap valve.

Discharging to : River Gwili.

At OS Grid Ref : SN579078

As shown marked : Discharge pt.

On attached Plan No.: BP0072801

3. Adequate facilities shall be provided by the Company for authorised officers of the Authority to conveniently obtain representative samples at any time of the effluent at a final effluent sampling chamber within the works compound.

This Consent is given on:
Authority by:

1990

on behalf of the
Divisional Scientist

During the period ending with the: 1992 the terms of this
Consent will not be altered without the written agreement of the person
making this discharge

Aelod Rhanbarthol o'r Bwrdd

Yr Athro Ron Edwards

Rheolwr Rhanbarth Cyffredinol

Dr John Stoner

Llys Afon

Hawthorn Rise

Hwlfordd

Dyfed SA61 2BQ

Regional Board Member

Professor Ron Edwards

Regional General Manager

Dr John Stoner

Llys Afon

Hawthorn Rise

Haverfordwest

Dyfed SA61 2BQ

LLANEDI STW
CONSENT REVISION

- 4.a. The volume of the effluent discharged under dry weather conditions shall not exceed 50 cubic metres in any period of 24 hours.
- b. The maximum volume of effluent discharged to the river shall not exceed 274 cubic metres in any period of 24 hours.
- c. The maximum rate of flow of effluent discharged to the river at any time shall not exceed 3.5 litres per second.
- d. All flows up to the maximum quoted above shall receive full biological treatment.
5. Adequate facilities shall be provided by the Company for the accurate measurement (+ 10% over the range of flows to be measured) of effluent flows. Information shall be collected and provided for such periods as may be requested in advance by the Authority.
6. The quality of the effluent discharged at all flow rates up to both the maximum figures quoted in 4 above shall not exceed in the following lower tier numerical quality limits (determinand concentrations) same as provided for in the Annex attached to this consent nor to the upper tier limits (determinand concentrations at any time).

	Lower Tier Numerical Limits	Upper Tier Numerical Limits
A. Suspended Solids (dried at 105 C)	60	120 both expressed as milligrams per litre of sample
B. The 5 day Biological Oxygen Demand (BOD ATU) determined after the suppression of nitrification using ally/thiourea and at 20 degrees centigrade.	40	80 both expressed as milligrams of oxygen per litre of sample
C. Ammonical Nitrogen (as N)	30	60 both expressed as milligrams per litre of sample.
7. The discharge shall not be poisonous or injurious to fish, fish spawn, spawning grounds or food or otherwise cause damage to the ecology of the receiving water.		

ANNEX

Where the number of samples taken in any period of 12 months falls within any of the ranges given in Column 1 of the table below, the number of samples which are inferior to a specified numerical quality limit determinand set in Paragraph 6, of the Consent shall not exceed the appropriate number as listed in Column 2. A sample shall only be considered as having failed in relation to the particular determinand(s) for which the specified quality limit is exceeded.

A sample shall be considered to be satisfactory in relation to other determinands, the concentration of which, are equal to or lower than the specified limit.

TABLE

Column 1	Column 2
Series of samples taken in any year	Maximum number of samples in which the same numerical quality limit may be exceeded.
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



Awdurdod Afonydd Cenedlaethol
Rhanbarth Cymru

National Rivers Authority
Welsh Region

WATER ACT 1989
PART III THE PROTECTION AND MANAGEMENT OF RIVERS AND OTHER WATERS
CONTROL OF POLLUTION
SECTION 113 AND SCHEDULE 12
APPLICATION FOR CONSENT

TO: National Rivers Authority,
Welsh Region, Plas-yr-Afon,
St. Mellons Business Park,
St. Mellons,
Cardiff. CF3 0LT

OFFICE USE:
Application No. BPO0728 01
Date received _____
Date accepted as being
in "suitable form" _____

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 plans. I/We will bear the costs of any advertisement (See note A2 for guidance).

Signed *N. Jones*
Authorised on behalf of Dwr Cymru Cyf

Date 8th March 1990

PLEASE REFER TO NOTES WHEN COMPLETING THE APPLICATION, ANY QUERIES SHOULD BE MADE TO THE ABOVE ADDRESS

NATURE OF THE DISCHARGE(S)

Please tick the appropriate box

Answer sections	
Surface water	☐ A,C

Answer sections	
Trade effluent	☐ A,B,E

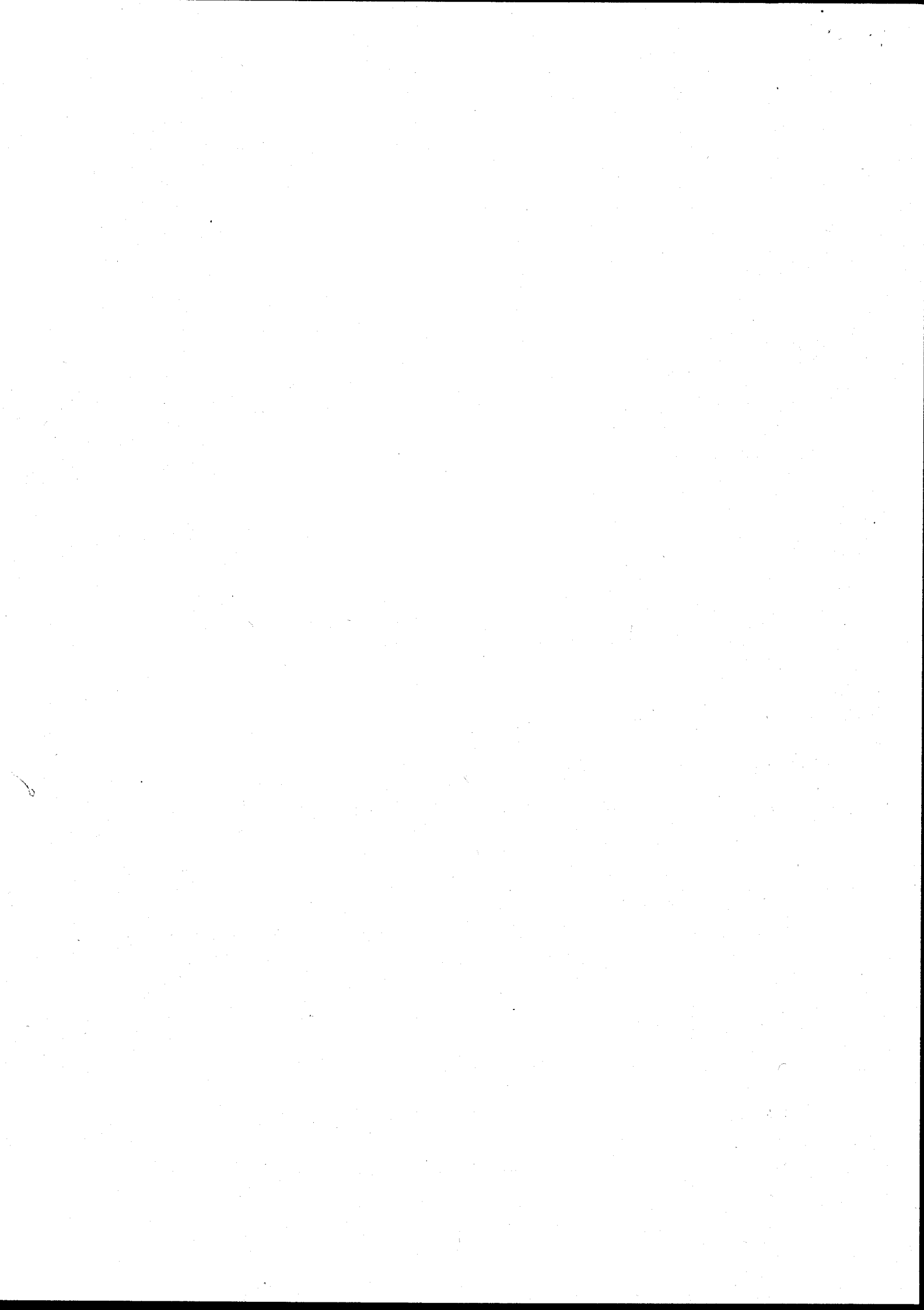
Sewage effluent	☒	Drainage from	-> ☐ Answer sections A,D
		>populations less than 15	
		>All other applications for sewage effluent	-> ☒ Answer sections A,B & D Complete form

For combined discharges answer all relevant sections

Codeirdd Rhanbarthol
Yr Athro Ron Edwards
Rheolwr Rhanbarth Cyffredinol
Dr John Stoner
Plas-yr-Afon
Parc Busnes Lloneirwg, Lloneirwg
Caerdydd, CF3 0LT
Ffôn: Caerdydd (0222) 770088
Ffacs: (0222) 798555

Regional Chairman
Professor Ron Edwards
Regional General Manager
Dr John Stoner
Rivers House
St Mellons Business Park, St Mellons
Cardiff, CF3 0LT
Tel: Cardiff (0222) 770088
Fax: (0222) 798555

A1	APPLICANT	
	(a) Full name (ie of the principal, not an agent) Postal address (if a limited company the registered office). Telephone number	(a) Dwr Cymru Cyf Plas-y-Ffynnon Cambrian Way Brecon Powys LD3 7HP 0874 3181
	(b) Agent (if any) Full name Postal Address Telephone number	(b)
A2	EXEMPTION FROM PUBLICITY	
	Have you made application for a certificate of exemption from publicity?	
	No ☒ Yes ☐ (Provide further details as appropriate)	
	If a certificate has been obtained then a copy should be submitted with this application.	
A3	TEMPORARY CONSENT	
	If the consent is only required for a limited period state dates:	
A4	LOCATION	
	(a) Address or location or other sufficient description of land or premises to identify the place at which it is proposed to make the discharge(s)	Llanedi Dyfed
	(b) National Grid Reference of the points(s) of discharge(s)	SN579078
	The application should be accompanied by <u>FOUR</u> copies of a site plan of an appropriate scale showing the location of point(s) of discharge(s). Failure to provide these plans could result in a delay in processing.	



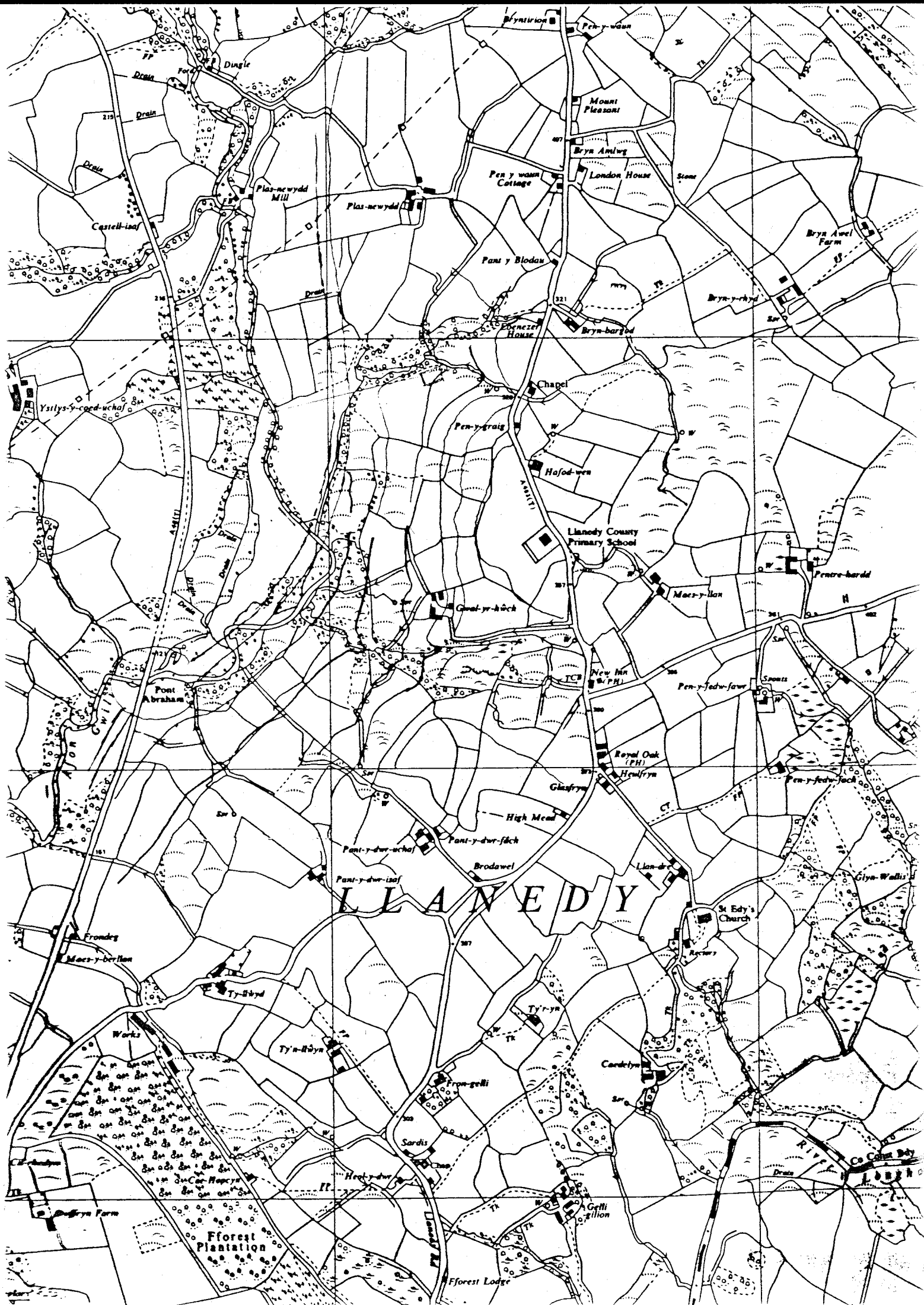
A5	OUTLET (a) Does proposal involve use of Existing outlet ☐ unaltered Existing outlet altered ☐ New outlet ☒ (b) Description and size of outlet (diameter mm) 100mm pipe with flap valve The application should be accompanied by 4 copies of a plan and sectional drawing	
A6	RECEIVING WATER Tick category to which proposed discharge(s) are to be made: The sea or other tidal water ☐ Stream or other freshwater ☒ Directly underground ☐ Onto or into land ☐ Name of receiving water <u>Afon Gwili</u>	
B1	VOLUME, RATE AND PERIOD OF DISCHARGE (a) Maximum quantity of effluent it is proposed to discharge in any one day (b) Highest rate at which it is proposed to operate discharge (c) Periods during which discharge will take place	State units (a) 274m ³ d ⁻¹ (b) 3.2 litres sec ⁻¹ (c) 24 hour
B2	SAMPLING FACILITIES Details of sampling facilities and accessibility of outlet	At outlet from works
C	SURFACE WATER Description and size of area from which surface water arises	
D	SEWAGE EFFLUENT (a) Description of premises from which discharge is to be made (b) Total number of persons for whom accomodation is provided (c) Method of sewage treatment to be used	(a) Domestic only (b) 225 (c) Not determined

E1	TRADE EFFLUENT (a) General description of the process from which the effluent is derived (b) Nature of effluent to be discharged (c) Maximum temperature of the effluent at the time of discharge	(a) (b) (c) °F/°C
E2	COMPOSITION OF EFFLUENT (a) Typical analysis (b) Analysis of strongest (most polluting) discharge likely (c) Give details of any of the substances listed in the Annexes (continue on separate sheet if necessary)	State units (a) (b) (c)

WELSH WATER AUTHORITY				Welsh Office Form COPA4		Welsh Off Ref			
SUPPORTING INFORMATION FOR CONSENT/REVIEW - WWA Form SS.SI.1						Welsh W A Ref		BP0072801	
DISCHARGER + Agent		DWR CYMRU CYF						WWA District	
PREMISES / SOURCE Address/Location		LLANEDI SEWAGE TREATMENT PLANT							
DISCHARGE TYPE		TREATED SEWAGE EFFLUENT							
DISCHARGE STATUS		New reqg Consent ☒		Exg reqg Review		Exg reqg Consent		Prevly Exempt	
CONSENT / REVIEW EXISTING - issued		To: —			By: —			Date: —	
ADVERTISEMENT ?		Yes / No because:							
OUTLET DETAILS		New / Altered / Exg		OS Ref		SN579078		Diam 100 mm Form	
SAMPLING POINT		TDIB SPT		OS Ref		Outlet / PIPE WITH FLAP VALVE			
DISCHARGE IS TO		Inland Stream		Landl Pond		Onto Land		Into Land	
RECEIVING WATER		Immediate / Main		AFON GWILI		/ kms >			
Water in current RQO Programme ?		Data for :		Current Situath		Short-term RQO		Long-term RQO	
Immed. Yes / No		Assessed by :		NWC		Bio1		by	
Main Yes / No		Main Up / Down		/		/		19	
		Main Up / Down		/		/		19	
USE(S) OF THE RECEIVING WATER, whether surface or groundwater		Exg / Future Use(s)		PotWS		IndWS		AgrWS	
		Of Immed R.W. @ km							
		Of Main R.W. @ km							
		Effect of discharge on uses, etc.							
EFFLUENT QUALITY DATA - derived from: samples taken from: to :		Determinand							
		Maximum							
		Minimum							
		Mean							
		Standard Deviation							
		Median / 50%ile							
(mg/l except pH)		95%ile: N / LN / NP							
QUALITY LIMITS (mg/l except pH)		Existing							
S/W if seasonal		Proposed 95%ile							
1/2 if phased		Proposed Maximum							
		Application							
CALCULATION MODE		To Quality Spec'n							
		Method used							
EFFLUENT FLOW DATA		P Popul'n No.		G Consum'n m³/h/d		PG Sewage m³/d		I Infiltr'n m³/d	
		E Trade m³/d		PG+I+E QWF m³/d		Storm Sewage Qflow Weir Setting x QWF 1/sec		Maximum Rate 1/sec	
Existing Design									
Meas/Est'd Current									
Proposed Design		225		0.185		41.6		4	
Ultimate Design									
Design Horizons: Proposed:		Sewerage system is		Flow values for		Existing		—	
Ultimate:		% combined		Consent Conditions		Proposed		46	
								274	

Relating to:

RIVER AND EFFLUENT FLOWS AND DILUTIONS			Flows in Immediate Receiving Water			Flows in Main Receiving Water		
Flows in m ³ /d. (If estimated, give method:			Meas / Estd at OSGR:			Meas / Estd at OSGR:		
			Minimum	5%ile	Mean	Minimum	5%ile	Mean
Effluent Statistic	Source of Data	Effluent Volume	Dilution Ratios - expressed as x River : 1 Effluent					
O.W.F.	Meas / Estd							
Maximum	Meas / Estd							
RIVER REGIME	Width, Depth & Reaeration	W	m	D	m	R	W	m
TREATMENT PLANT UNITS - with Critical Dimensions					Primary Sett.	Area	m ²	
Unit	Detail	Existing	Proposed	Ultimate	Storm Tanks	Area	m ²	
Storm S. Offlow	Set @ 1/s:				" "	Volume	m ³	
Screens	Space mm				Septic Tank	Volume	m ³	
Well Retent'n.	Hours				Biol. Filters	Media	m ³	
Pumping Rate	Max. 1/s				Act'd. Sludge #	Volume	m ³	
Gravity Feed	Yes / No				Package Plant*	Surface	m ²	
Flow Meas't.*	Yes / No				Pasveer Ditch#	Volume	m ³	
Grit Removal	Yes / No				Final Sett't.	Area	m ²	
Macern/Comm.	Yes / No				Tert'y Treat.*	Area	m ²	
Other Units and Details	1 Type # Power							
SLUDGE TREAT. AND DISPOSAL								
TRADE WASTES Types & m ³ /d	NIL							
FURTHER DATA & STATEMENT From Dist/Div.								
Additional conditions nearby efflts and changes EC Dangerous Substances EC Designated Waters SSSI's (Continue on Form SS.SI.2 if necessary)								
CAPITAL WORKS	Outline Appra.		Second Appra.		Final Appra.		Start	Finish
District Ref			District Contact				HQWOS Ref	
For use by : HQ WATER QUALITY SECTION								
For use by : WELSH OFFICE								



DISCHARGE APPLICATION COSTING EXERCISE

DATE RECEIVED:

CONSENT REFERENCE:

BP00728 01

BY (OFFICER):

E.H.DAVIES

TITLE:

DATA

No abstraction licence is issued

MSW. 23/7/90.

DISCHARGE (Please tick except *)

TYPE		D.W.F.	
S.T.W.	☒	<30 m3	
COOLING WATER		>30 m3 & <100 m3	
MINERAL WORKINGS		>100 m3 & <1000 m3	☒
AGRICULTURAL		>1000 m3 & <10000 m3	
FISH FARM		>10000 m3	
PROCESS & TRADE EFFLUENT		* ACTUAL m3 (IF KNOWN)	
HOTELS, CARAVAN SITES ETC.			
CROWN EXEMPT			
OTHER (SPECIFY)			

TIME (Decihours) By each officer

GRADE	2	3	4	5	7	8	9	10	11	OTHER (SPECIFY)
1. PRE-APPLICATION										
2. APPLICATION PROCESSING			.5							
3. ADVERTISING										
4. DETERMINATION										
5. OTHER			.5							
TOTAL TIME										

DATE: COMPLETED:

RETURNED TO ST. MELLONS:

BY (OFFICER):

M E M O R A N D U M

Llys Afon
Hawthorn Rise, Haverfordwest
Dyfed, SA61 2BQ.

To: P. Varallo. From: T.J. Kindon,
E&Q Services Officer.
cc: R.P. Merriman.
D.R. Thomas.
E.H. Davies.
Ref: 2/EQ/C8/TJK/LEH Date: 23 July 1990.
2/EQ/NF/TJK/LEH

Dwr Cymru - Consents to Discharge

I enclose a copy of the consent for Llanedi STW, issued to Dwr Cymru 10 July 1990.

You will see from its content, that there is no reference to the "Look up Table" and as this should form an important part of any such consent, we intend supplying Dwr Cymru with a revised version or alternatively a letter confirming the inclusion of this condition.

Before taking this action both Bob and I thought that there might be some benefit in John considering the conditions we need to include in such consents and if appropriate to include any agreed additional conditions at the same time. As an example, I have attached a copy of consent reference BP 0087901. Bob is of the opinion that 5, 6 and 7 of the schedule, together with the annex, could be incorporated, but John, with his experience, might be aware of more.

Will you arrange for John to have a look at the whole subject, in particular the conditions appertaining to Llanedi, and let us have your observations in due course.

T.J. Kindon
E&Q Services Officer

ENCL.

M E M O R A N D U M

Llys Afon
Hawthorn Rise, Haverfordwest
Dyfed, SA61 2BQ.

To: P. Varallo. From: T.J. Kindon,
E&Q Services Officer.
cc: R.P. Merriman.
D.R. Thomas.
E.H. Davies.
Ref: 2/EQ/C8/TJK/LEH Date: 23 July 1990.
2/EQ/NF/TJK/LEH

Dwr Cymru - Consents to Discharge

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T.J. Kindon
E&Q Services Officer

ENCL.



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

Mr. Gareth Davies
Environment Agency Wales
Glan Tawe
154 St. Helens Road
Swansea
SA1 4DF

30th July 2003

Tel: 01437 769061

Dear Sir

**Applications for Discharge Consent – AMP3 Schemes at Angle, Freshwater East,
Golden Grove and Llanedi
Section 101A first time sewerage Llanafan**

Please find enclosed application forms, fees and supporting information for the applications relating to the above schemes.

- Angle STW final effluent and storm overflow - variation
- Freshwater East STW final effluent only – new works
- Golden Grove STW final effluent, storm overflow and works emergency overflow- outfall relocation
- Llanedi STW final effluent and storm overflow – variation and new overflow

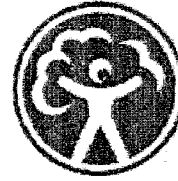
The scheme at Freshwater East replaces the proposed new works, consented in 2002, which will not now be built. The associated storm and emergency discharges remain as consented in 2002.

- First time sewerage Llanafan STW, package plant, final effluent only – new works

These applications are submitted in accordance with our year 4 programme.

Yours faithfully

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

Regional/Area Address: The Regional Finance Manager Environment Agency Welsh Region PO Box 425 St Mellons Business Park CARDIFF CF3 0LT	<u>Official Use Only</u> Dist/Area Ref: 1303 Application No. 3P0072801 Date Received: 04/08/03 Fee Received: £722
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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.

Llanedi WwTW

Post Code:

N/a



REC: 00273
CHD: 00401

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 **297 m³/day**
Briefly state how this figure was calculated (see note ii).

6DWF calculated using 250PE, 60% infiltration and no trade flow
see enclosed supporting data

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

☒

4. Borehole

☐

7. Sub-Irrigation System

☐

2. Channel

☐

5. Well

☐

8. Combination of 6 & 7

☐

3. Culvert

☐

6. Soakaway

☐

9. Other (*please specify below*)

☐

Pipe dia = 150mm NB

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

S	N	5	7	8	7	5	0	7	8	3	9
---	---	---	---	---	---	---	---	---	---	---	---

(*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	5	8	1	0	7	0	7	8	3	0
---	---	---	---	---	---	---	---	---	---	---	---

(*please indicate on accompanying plans*)

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

V notch and level measurement located in final sample chamber, readouts to EA policy

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 ☒

Screening, primary settlement, secondary horizontal flow reed beds, tertiary downflow reed beds

(see attached supporting information)

- 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?

31/ 03 /04

- 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.

- 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).

BP0072801

- b) Has any person had a Prohibition Notice serviced on them in respect of this site?
If yes, please give the reference number.

no

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

☐

6. Fish Farm

☐

2. Multiple Dwellings

☐

7. Mineral Workings

☐

3. Industrial Premises

☐

8. Water Services plc STW

☒

4. Vehicle Parking Area

☐

9. Water Supply

☐

5. Commercial Premises (please specify)

☐

10. Other (please specify)

☐

3.3 Please indicate source of the water supply - tick as appropriate: not applicable

- | | | | |
|--|--------------------------|---|--------------------------|
| 1. Well | ☐ | 5. River (please give name below) | ☐ |
| 2. Borehole | ☐ | 6. Estuary (please give name below) | ☐ |
| 3. Precipitation (eg rain or snow) | ☐ | 7. Coastal Water (please give name below) | ☐ |
| 4. Mains (please state water supply company) | ☐ | <input type="text"/> | |

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) | ☐ | 5. Into Land | ☐ |
| 2. River or Stream (non-tidal) | ☒ | 6. Onto Land | ☐ |
| 3. Canal | ☐ | 7. Directly into Groundwater | ☐ |
| 4. Lake, Lock or Pond | ☐ | 8. Coastal Water (see note vii) | ☐ |

State name of receiving water if known:

Afon Gwili

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?
- (b) Is any part of the system within 10 metres of a watercourse?
- (c) Is any part of the system within 50 metres of a borehole or spring?
- (d) For wells and boreholes state dimension(s) in metres.
- (e) For sub-irrigation systems, soakaway pits, wells and boreholes, state maximum depth in metres.
- (f) For boreholes, state details of lining in metres:
- (i) Depth of lining
- (ii) Depth of perforated lining
- (iii) Depth of unperforated lining
- (g) A percolation test must be carried out in accordance with British Standard BS6297:1983.
Have the results been provided?

4.3 Is there a foul sewer available to which the discharge(s) could be made (see note viii)?

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

* Mid Glam

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: Hilary Ford PRINT NAME: HILARY FORD
ON BEHALF OF: Dŷon Cymru Cymdeithas DATED: 30.07.2003

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



ASiantaeth YR
AMGYLCHEDD
ENVIRONMENT
AGENCY

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.

Llanedi WwTW

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

1 off 6mm x 6mm mechanical screen
1 off storm overflow weir
1 off 4m dia conical radial flow primary settlement tank
2 off 640 m² horizontal flow reed beds
2 off 144 m² downflow reed beds

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). | 297 m ³ /d |
| b) | Dry weather flow of discharge(s). | 72 m ³ /d |
| c) | Average daily flow. | 90 m ³ /d |
| d) | Maximum rate of discharge(s) | 3.4 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.

250 PE

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

Residential catchment, static population

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

Residential catchment

7. Will a maintenance agreement be set up to manage the sewage works? (see note b)
If yes, please give details.

N/a

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.*



ASiantaeth YR
AMGYLCHEDD
ENVIRONMENT
AGENCY

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.

Llanedi 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:

£150,000
Tertiary reed bed or, SAF treatment considered

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)	250
Consumption (l/head/day) default = 180	180
Infiltration (m ³ /day)	27
Industrial effluent flow (m ³ /day)	0
Dry Weather Flow (m ³ /day)	72
Soc A (l/sec)	4.8
Predicted spill frequency (per annum)	10

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 Llanedi WwTW

CONTENTS

INTRODUCTION

1. Feasibility report, doc C889/6.1/01/001 RevA
2. Storm Spill Frequency Analysis, dated 24.04.03
3. A location plan showing discharge and sample points Drg C889.2000

Introduction

Llanedi WwTW serves the domestic population of the village of Llanedi together with the developments along the B4297.

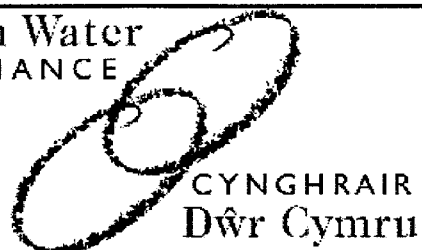
The Amp3 spread sheet requires a QO(c) driver to be applied with an indicative consent of BOD/TSS/Amm-N = 20/30/10.

The original works comprised twin horizontal flow reed beds to meet the current consent. This type of reed bed cannot be expected to remove substantial amounts of Ammonia therefore a downflow reedbed has been added as a dedicated Ammonia removal process.

Supporting documentation is attached.

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

Welsh Water
 ALLIANCE



Document Cover Sheet

Project Title	Llanedi WwTW
Project Number	C889
Client	DWR CYMRU/WELSH WATER
Document Reference Number	C889/6.1/01/001

Llanedi WwTW

Feasibility & Outline Design Report

Rev.	Date	Description/Purpose	Prepared	Checked ¹			Approved for Issue ²		
				Mech	Proc	Elect	LE	EM	PM
0	22.04.03	Draft for discussion	MR		MR				
A	25.04.03	Modified after review	MR	SR	MR	BB	SR	AJW	SW
B	04.06.03	Issue for approval	AJW	SR	MR	BB	SR	AJW	SW
C									
D									

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UUOS Acceptance Sheet

Process Calculations sheets C889/6.1/100/01

Existing PFD – Drg C889/1000

Proposed PFD Option 1 – Drg C889/1001

Proposed PFD Option 2 – drg C889/1002

Notes

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

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APPENDIX

- Process Calculations Sheets C889/6.1/100/01
- Existing Process Flow Diagram (PFD) C889/1000
- Proposed Process Flow Diagram (PFD), Option 1 C889/1001
- Proposed Process Flow Diagram (PFD), Option 2 C889/1002

Summary

Llanedi WwTW (pop. 250), which was constructed in 1989, employs reed bed technology to provide secondary treatment.

The AMP3 programme requires modifications to the works to ensure compliance with more stringent consent limits, most notably for ammoniacal nitrogen (10mg/l)

Two options have been considered, both of which are considered viable and robust solutions:

- a) The installation of a third , downflow reedbed, to provide tertiary treatment
- b) The installation of a submerged aerated filter (SAF) to provide tertiary treatment.

Following a site visit to a Wessex Water nitrifying reed bed installation , the preferred option is considered to be option (a), ie the third reed bed, with associated site improvements.

The reasons for preferred solution selection are as follows

- Continuation of current site process technology
- Security in the event of power failure
- Confidence gained from recent site visit to Wessex Water site

1. INTRODUCTION

Llanedi WwTW treats sewage from the village as well as from developments along the B 4297.

The works has the following current discharge consent conditions:

BOD	40mg/l	95%ile
TSS	80 mg/l	95%ile
Amm-N	30 mg/l	95%ile
DWF	63 m ³ /d	
Max flow rate	3.2 l/s	

The works is the subject of an AMP3 Quality Scheme, for which the NEP spreadsheet suggests indicative consent limits as follows;

BOD	20 mg/l	95%ile
TSS	30 mg/l	95%ile
Ammonia	10 mg/l	95%ile

The driver for the investment project is EA non-core, river water quality QO (c).

This Report is the output of feasibility and outline design work carried out to identify and scope the most appropriate solution for the Llanedi works.

2. EXISTING WORKS

The existing Process Flow Diagram (PFD) is shown on attached drawing C889/1000.

Flows mostly gravitate (one pumping station in the catchment) to an inlet chamber at the head of the works. From here they pass forward onto a 4.0m diameter, primary settlement tank.

The primary tank is manually desludged to a holding tank (12m³). Supernatant, from the holding tank, discharges directly onto the upper of the two reed beds.

Settled sewage passes to a chamber where flows are split to two 640 m² reed beds (each 16 x 40m). Distribution is via an arrangement of widely spaced, hand-adjustable nozzles discharging onto stone-filled gabions - which also assist in distributing flows across the beds.

Treated flows are collected along the width of each reed bed and discharge, through an adjustable 2" pipe, to an effluent sump. Effluent flows from the upper to the lower sump and then discharges onto a nitrifying filter (2mdiam x 2m deep) over a fixed cruciform distributor.

There is a final sample chamber prior to discharge to the Afon Gwili.

There are no services connected to the site, apart from a concrete access road.

During visits to the site the following issues have been identified

- There is no effective screening at the works.
- The storm split and treatment should be reviewed and if necessary re-engineered.
- Automatic desludging of the primary tank is needed.
- The size of the reed beds should be reviewed against the best estimates of flows and loads.
- Distribution of settled sewage across the reed bed should be improved.
- A power supply is required on the site to facilitate recirculation flows and automatic desludging.

3. FLOWS AND LOADS

From information gathered during a flow and load survey which was carried out during 14th to 28th January 2003, and information from local authority and from house counts the following wastewater inflow characteristics have been determined;

	Basis	Value
Population Equivalent	Flow	250
Dry Weather Flow (DWF)	m ³ /day	72
Average Flow	m ³ /day	90
	l/sec	1.04
Peak Flow (hourly average)	l/sec	5.8
6 DWF	l/sec	3.3
BOD Load	kg/day	15
SS Load	kg/day	17.5
NH ₃ – N Load	kg/day	2.0

4. PROCESS OPTIONS

Sampling results show that the plant has failed twice on BOD and once on Amm-N since last summer and is now considered 'at risk'.

It is also evident that the plant will consistently fail the indicative Amm-N consent limit without process improvements.

However after excluding the out of spec results the average BOD and TSS results are 7.3 and 11.7 mg/l respectively giving confidence that once the flow split has been improved the existing consent limits can be achieved consistently.

Two process design options have been considered in order to provide the plant to meet the new, more stringent, consent limits. Both options include the retention of the 2 existing reed beds for secondary treatment.

Process options are based on the treatment of 6DWF, so that flows in excess of this would be by-passed either directly to the outfall or around the primary treatment and onto the reed beds.

The basis of design is included in the appendix to this report as Process Calculations Sheets C889/6.1/100/01

Options which have been considered include the following;

4.1 Option 1

The installation of a packaged nitrifying plant (see Dwg C889/1001)

Following the addition of effective flow splitting at the works inlet it is considered that the existing reed beds will be capable of consistently meeting the indicative BOD and TSS consented limits.

A packaged plant solution , sized for the Amm-N load will be required to be added.

This plant would be based on submerged aeration filter (SAF) technology, situated at the lower end of the site , complete with air blower, and recirculation pipework.

Any excess BOD will be removed by the proposed tertiary plant, as will any Amm-N; during this process some solids will be produced but the quantity will be relatively small and it is not considered necessary to provide final settlement.

4.2 Option 2

The installation of a third (“downflow” nitrifying) reed bed. (see Dwg C889/1002)

Horizontal flow reed beds are not suited to the removal of Ammonia due to the limited oxygen transfer available but the use of downflow reed bed technology does overcome this limitation.

This option comprises the provision of an additional downflow reed bed (arranged as a pair) for the ammonia removal. Each of these would have an active treatment area of 144 m² and be operated in parallel, with the facility for recirculation.

This additional reed bed, will not only remove Amm-N but will also have the effect of polishing the discharge from the existing reed beds.

4.3 Common Elements.

Common elements to either option are:

- Provide services, power, water and telephone to site
- Either screening or macerating of inlet flows to ensure reliable operation of the flow split
- Auto de-sludging of primary tank
- Provision of telemetry
- Provision of facilities for recirculation
- Modifications to treatment of decant liquors
- Some additional improvements to existing reed bed distribution
- Flow measuring facilities to EA requirements

5. RECOMMENDATIONS.

That both of the above options should be developed through outline design so that choice can be made based on whole life cost as well as consideration of operational, process robustness, and other relevant factors. Excluding financial considerations, the preferred option is Option 2, ie. The installation of a nitrifying reed bed, for the following reasons ;

- Continuation of current site process technology
- Security in the event of power failure
- Confidence gained from recent site visit to Wessex Water site

Feasibility and Outline Design Report Acceptance Sheet

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

Aled Daniel, Manager United Utilities

..... Date

Stuart Worts , Meica Process Ltd., Project Manager

..... Date

APPENDIX

- **Process Calculations Sheets C889/6.1/100/01**
- **Existing Process Flow Diagram (PFD) C889/1000**
- **Proposed Process Flow Diagram (PFD), Option 1 C889/1001**
- **Proposed Process Flow Diagram (PFD), Option 2 C889/1002**

LLANEDI WwTWconsent BOD:SS:Amm-N 40:80:30
Max discharge 274 m3/d DWF 50m3/d**28.03.03**
Future consent 20:30:10doc No C889/6.1/100/01
prepared by MR
checked by AJW**PARAMETER**

design basis horizon

Resident Population served (P)

UNITS

date

pop.

250 DCWW database = 56

House count @ 2.5 = 250

Design Flows

Tourist pop served(T)

pop.

0

from load survey

Day visitors(V)

pop.

0

basis

PE

Peak population served

pop.

250

BOD

152

Per capita BOD contribution Residents

kg/h.d

0.06

SS

215

Per capita BOD contribution Tourists

kg/h.d

0.04

Amm-N

136

Per capita BOD contribution Visitors

kg/h.d

0.02

per capita resident TSS contribution

kg/h.d

0.07

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

0.008

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

45

total tourists flow (Tg)

m3/d

0

total visitors flow (Vg)

m3/d

0.0

Infiltration (I)

m3/d

27.0

60 %

l/s

0.3

industrial flow (E)

m3/d

0.0

Dry weather flow (PG + Tg + Vg + I + E)

m3/d

72

PG+I+E

Consent DWF = 50 m3/d

average dry flow measured = 0.69 l/s

l/s

0.8

Average Flow

m3/d

90

average flow measured = 1.2 l/s

l/s

1.0

Full Flow to Treatment(3DWF)

m3/d

162

3PG+I+3E

l/s

1.9

Full Flow to Treatment(6DWF)

m3/d

297

l/s

3.4

Consent max flow = 3.2 l/s

Formula A=(PG+I+E)+1.36P+2E

m3/d

412

highest flow measured = 5.7 l/s

l/s

4.8

spill excess to outfall

Storm tank capacity (2hrs at 3DWF)

m3

13.5

No capacity

storm tank capacity (68 l/h)

m3

17.0

LOADS

Total BOD Load

kg/d

15.0

BOD Concentration at Average Flow

mg/l

167

Total TSS load

kg/d

17.5

TSS concentration at Average Flow

mg/l

194

Total Amm-N Load

kg/d

2.0

Amm-N concentration at Average Flow

mg/l

22.2

Primary Treatment

% removal

Settled BOD load

25

kg/d

11.3

Settled BOD Concentration

mg/l

125

Settled TSS load

50

kg/d

8.8

Settled TSS concentration

mg/l

97

Settled Amm-N load

0

kg/d

2.0

Settled Amm-N concentration

mg/l

22.2

primary sludge mass

kg/d

8.8

Flow split

%

100.0%

Number of tanks

1.0

Type of tank

circular

Size

m

4.0

Area

m2

11.31

Collar depth

m

0.50

Cone Depth

3.46 depth

m3

13.1

Total Vol (Cone & collar)

m3

18.7

Upflow rate

m/h

1.1

at 6DWF 1.9 m/h at highest flow

Retention time

h

2.8

LLANEDI WwTW

28.03.03

doc No C889/6.1/100/01

prepared by MR

checked by AJW

Reed Beds

No		2
length	m	15
width	m	38
area	m ²	1140
loading	m ² /pe	4.56
hydraulic loading	m ³ /m ²	0.260526 at 6DWF

5 is a typical loading for tertiary treatment
CIWEM handbook reports 1-4mg/l BOD, 2-8mg/l TSS (nitrification with established beds) irrespective of influent?

Ammonia removal

secondary Amm-N load	kg/d	2.00	removal	SAF	1.00 kg/d
secondary Amm-N concentration	mg/l				

Number of filters

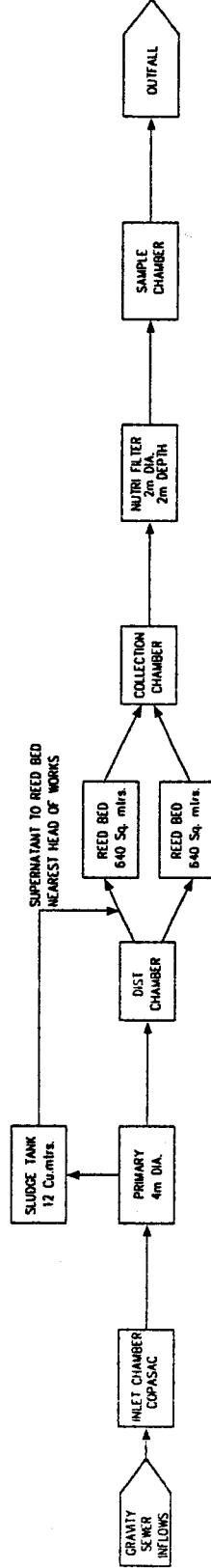
Diameter	m	2.0	number	1.0
Depth	m	2.0	dia	2.8 m
Surface area	m ²	3.1	bed depth	2.0 m
Volume	m ³	6.3	area	6.2 m ²
hydraulic loading	m ³ /m ² /d	94.5 at 6DWF	volume	12.3 m ³
Ammon-N loading	kg/m ³ /d	0.32	specific	150.0 m ² /m ³
			area	1847.50 m ²
			loading	0.54 g/m ² /d

should be max 6 m³/m²/d

should be 0.02 for 10 mg/l

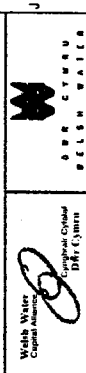
blower	10 Nm/h
rate	61.58 Nm ³ /h

EXISTING - LLANEDI W.W.T.W. PROCESS FLOW DIAGRAM



SEE PREVIOUS ISSUES FOR PAST REVISION DETAILS			
REV.	REVISION DESCRIPTION	DESIGN APPROVAL	DATE
A	FIRST ISSUE	A.G.H. MURPHY	01/04/10

GENERAL NOTES			
1	NOTES		



13 Station Road, Four Acre
Barnstaple, Devon PL4 8AB
Tel: 01323 834111 Fax: 01323 834112

CUSTOMER
DWR CYMRU WELSH WATER

PROJECT FILE
LLANEDI W.W.T.W.

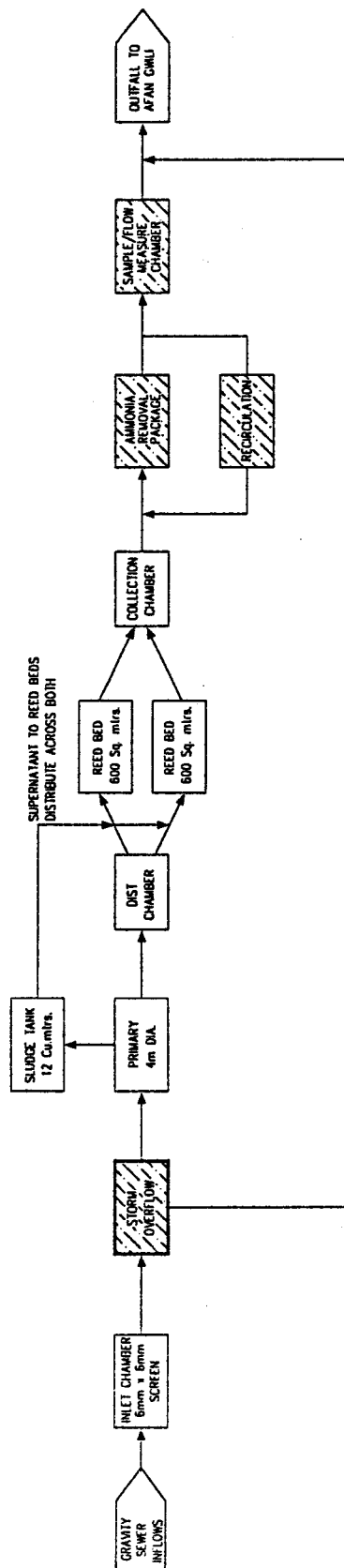
FILE
EXISTING PROCESS FLOW
DIAGRAM (PFD)

DESIGNED BY A.G.H.	DESIGNED DATE 01/04/10	DESIGNED BY A.G.H.	DESIGNED DATE 01/04/10
CHECKED BY C889/1000	CHECKED DATE 01/04/10	CHECKED BY N.T.S.	CHECKED DATE 01/04/10

 Welsh Water Cymru Iwerddon Cymru Iwerddon	 DWR CYMRU CYMRU IWERDDON CYMRU IWERDDON	 DWR CYMRU CYMRU IWERDDON CYMRU IWERDDON	 DWR CYMRU CYMRU IWERDDON CYMRU IWERDDON
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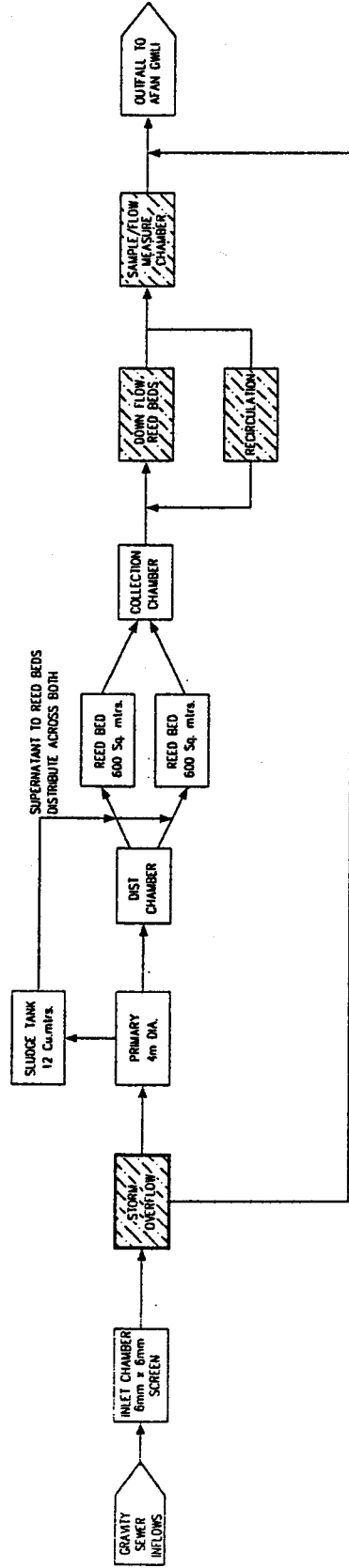
KEY

 NEW/MODIFIED ITEMS



PROPOSED - LLANEDI W.W.T.W. PROCESS FLOW DIAGRAM OPTION 2

KEY
 NEW/MODIFIED ITEMS



 Welsh Water Cymru Dŵr Dŵr Cymru	 MEICA 12 Station Road, Four Oaks Birmingham, B80 7NE Tel: 0121 717 1171
PROJECT NAME DWR CYMRU WELSH WATER	
PROJECT NO. LLANEDI W.W. T.W.	
TITLE PROPOSED PROCESS FLOW DIAGRAM (PFD) OPTION 2	
DRAWN BY A.C.H.	CHECKED BY M.R.
DATE 15/10/2018	SCALE N.T.S.

LLANEDI – C889 – SPILL FREQUENCY

1.0 Introduction

- 1.1 Llanedi WwTW serves the gravity catchment from the village by means of an existing reed bed treatment process. It is proposed to add tertiary treatment in order to reduce the discharged Ammonia concentration and to limit the flow to treatment to 6DWF, any flows above this being diverted via a by-pass to the existing outfall.
- 1.2 The EA require a prediction of spill frequency for consideration of the consent limits.

2.0 Methodology

- 2.1 Under the Environment Agency guidelines for spill frequency analysis, this site was assessed using the South West Series of the Annual Time Series Rainfall data, this data was made 'catchment specific' using the guidelines published by WRc.
- 2.2 Meica Process Limited commissioned a flow monitoring survey of this site which was undertaken by Titan Environmental Surveys. The resultant report and flow information was used to verify that the model was producing accurate results.

3.0 Population and Flow Assessment

- 3.1 The population within this catchment has been assessed as 250, this figure is based on a resident population with no increase in population due to tourists.
- 3.2 The daily water consumption has been assumed to be 180 litres/head/day, with an occupancy rate of 2.5 persons per property for permanent residential properties.
- 3.3 Infiltration has been calculated from base flow measured and is equivalent to 60%.
- 3.4 The maximum flow for treatment in the existing plant is 3.4 l/s (equivalent to 6DWF) Flows in excess of this will overflow to the outfall.

Martyn Robinson
25.04.03

SPILL FREQUENCY ANALYSIS LLANEDI WWTW
Results of Annual Time Series Rainfall Assessment

24.04.03

Event No	Date	Total intensity (mm)	Rainfall duration (hr)	Average intensity (mm/hr)	Maximum intensity (mm/hr)	peak storm flow Q = 2.78 C _s C _r i A (l/s)	Total storm inflow (m ³)	DWF (l/s)	Total foul flow (m ³)	Total inflow (m ³)	Peak sewer flow (l/s)	FFT (l/s) 3.40	Spill to Storm Tank (m ³)	Storm tank volume (m ³)	Overflow to watercourse (m ³)
1	08/10/1964	1287.4	8.15	2.63	34.2	3.8	111.7	0.7	20.5	132.2	4.5	99.8	32.4	0.0	32.4
2	20/07/1973	903.0	5.65	2.66	23.4	3.9	78.3	0.7	14.2	92.6	4.6	69.2	23.4	0.0	23.4
3	25/09/1963	876.4	5.32	2.75	28.8	4.0	76.0	0.7	13.4	89.4	4.7	65.1	24.3	0.0	24.3
4	20/01/1960	864.6	10.32	1.40	16.2	2.0	75.0	0.7	26.0	101.0	2.7	126.3	0.0	0.0	0.0
5	09/12/1961	879.6	9.32	1.57	28.2	2.3	76.3	0.7	23.5	99.8	3.0	114.1	0.0	0.0	0.0
6	20/11/1974	937.2	7.15	2.18	22.8	3.2	81.3	0.7	18.0	99.3	3.9	87.5	11.8	0.0	11.8
7	23/09/1963	969.0	8.15	1.98	34.8	2.9	84.0	0.7	20.5	104.6	3.6	99.8	4.8	0.0	4.8
8	25/07/1973	632.4	1.65	6.39	51.0	9.2	54.9	0.7	4.2	59.0	9.9	20.2	38.8	0.0	38.8
9	23/01/1960	1074.0	8.32	2.15	15.0	3.1	93.2	0.7	21.0	114.1	3.8	101.8	12.3	0.0	12.3
10	11/12/1961	1098.6	14.48	1.26	32.4	1.8	95.3	0.7	36.5	131.8	2.5	177.2	0.0	0.0	0.0
11	10/11/1974	902.4	10.48	1.44	42.6	2.1	78.3	0.7	26.4	104.7	2.8	128.3	0.0	0.0	0.0
12	05/06/1964	875.4	10.15	1.44	36.0	2.1	75.9	0.7	25.6	101.5	2.8	124.2	0.0	0.0	0.0
13	26/08/1956	783.6	13.15	0.99	39.0	1.4	68.0	0.7	33.1	101.1	2.1	161.0	0.0	0.0	0.0
14	10/09/1963	460.2	8.65	0.89	73.2	1.3	39.9	0.7	21.8	61.7	2.0	105.9	0.0	0.0	0.0
15	22/03/1970	747.0	7.32	1.70	49.8	2.5	64.8	0.7	18.4	83.2	3.2	89.6	0.0	0.0	0.0
16	11/02/1973	1232.4	14.82	1.39	36.0	2.0	106.9	0.7	37.3	144.2	2.7	181.4	0.0	0.0	0.0
17	06/06/1964	675.0	10.50	1.07	9.6	1.5	58.5	0.7	26.5	85.0	2.2	128.5	0.0	0.0	0.0
18	08/09/1963	416.8	4.32	1.60	38.4	2.3	36.0	0.7	10.9	46.9	3.0	52.9	0.0	0.0	0.0
19	07/10/1964	481.2	11.32	0.71	45.0	1.0	41.8	0.7	28.5	70.4	1.7	138.6	0.0	0.0	0.0
20	24/09/1963	423.6	4.65	1.52	23.4	2.2	36.7	0.7	11.7	48.5	2.9	56.9	0.0	0.0	0.0
21	13/12/1961	285.6	4.00	1.19	53.4	1.7	24.8	0.7	10.1	34.9	2.4	49.0	0.0	0.0	0.0
22	12/06/1964	567.6	6.32	1.46	19.2	2.1	48.0	0.7	15.9	63.9	2.8	77.4	0.0	0.0	0.0
23	01/12/1961	728.4	13.32	0.91	18.6	1.3	63.2	0.7	33.6	96.7	2.0	163.0	0.0	0.0	0.0
24	06/10/1964	640.8	5.32	2.00	15.0	2.9	55.4	0.7	13.4	68.8	3.6	65.1	3.7	0.0	3.7
25	04/05/1962	798.6	8.93	1.48	8.4	2.1	68.8	0.7	22.5	91.3	2.8	109.3	0.0	0.0	0.0
26	03/09/1963	964.2	15.15	1.06	19.8	1.5	83.6	0.7	38.2	121.8	2.2	185.4	0.0	0.0	0.0
27	30/04/1963	866.4	11.15	1.29	10.8	1.9	74.9	0.7	28.1	103.0	2.6	136.5	0.0	0.0	0.0
28	07/12/1961	771.0	16.32	0.79	10.2	1.1	67.1	0.7	41.1	108.2	1.8	199.8	0.0	0.0	0.0
29	12/12/1961	388.8	5.00	1.30	18.6	1.9	33.7	0.7	12.6	46.3	2.6	61.2	0.0	0.0	0.0
30	11/11/1974	316.8	6.48	0.81	39.0	1.2	27.3	0.7	16.3	43.6	1.9	79.3	0.0	0.0	0.0
31	23/01/1960	602.4	12.33	0.81	10.8	1.2	52.2	0.7	31.1	83.3	1.9	150.9	0.0	0.0	0.0
32	25/08/1956	319.8	3.32	1.59	23.4	2.3	27.5	0.7	8.4	35.8	3.0	40.6	0.0	0.0	0.0
33	15/07/1973	382.2	2.65	2.39	11.4	3.5	33.0	0.7	6.7	39.6	4.2	32.4	7.2	0.0	7.2
34	20/04/1963	387.4	6.00	0.80	18.0	1.2	25.0	0.7	15.1	40.1	1.9	73.4	0.0	0.0	0.0
35	01/08/1956	486.0	5.00	1.62	7.2	2.3	42.2	0.7	12.6	54.8	3.0	61.2	0.0	0.0	0.0
36	30/03/1970	315.6	5.00	1.05	11.4	1.5	27.3	0.7	12.6	39.9	2.2	61.2	0.0	0.0	0.0
37	14/07/1973	769.2	14.65	0.87	16.2	1.3	66.3	0.7	36.9	103.2	2.0	179.3	0.0	0.0	0.0
38	18/07/1973	547.2	6.15	1.48	11.4	2.1	47.4	0.7	15.5	62.9	2.8	75.3	0.0	0.0	0.0
39	03/03/1970	442.8	6.65	1.11	9.0	1.6	38.4	0.7	16.8	55.2	2.3	81.4	0.0	0.0	0.0
40	21/01/1960	382.2	6.15	1.03	9.0	1.5	33.0	0.7	15.5	48.5	2.2	75.3	0.0	0.0	0.0
41	19/03/1970	256.8	3.48	1.22	8.4	1.8	22.1	0.7	8.8	30.9	2.5	42.6	0.0	0.0	0.0

SPILL FREQUENCY ANALYSIS LLANEDI WwTW
Results of Annual Time Series Rainfall Assessment

24.04.03

Event No	Date	Total intensity (mm)	Rainfall duration (hr)	Average intensity (mm/hr)	Maximum intensity (mm/hr)	peak storm flow $Q = 2.78 C_p C_{ra} I$ (l/s)	Total storm inflow (m ³)	DWF (l/s)	Total foul flow (m ³)	Total inflow (m ³)	Peak sewer flow (l/s)	FFT (l/s) (m ³)	Spill to Storm Tank (m ³)	Storm tank volume (m ³)	Overflow to watercourse (m ³)
42	08/05/1962	220.2	3.15	1.16	8.4	1.7	19.0	0.7	7.9	27.0	2.4	38.6	0.0	0.0	0.0
43	10/05/1962	166.2	0.65	4.15	12.0	6.0	14.0	0.7	1.6	15.7	6.7	8.0	7.7	0.0	7.7
44	19/11/1974	803.4	11.32	1.18	10.8	1.7	69.5	0.7	28.5	98.0	2.4	138.6	0.0	0.0	0.0
45	05/10/1964	467.4	7.32	1.06	25.8	1.5	40.4	0.7	18.4	58.8	2.2	89.6	0.0	0.0	0.0
46	02/01/1960	357.6	8.82	0.70	11.4	1.0	32.1	0.7	22.2	54.4	1.7	108.0	0.0	0.0	0.0
47	05/06/1964	327.0	3.65	1.50	5.4	2.2	28.5	0.7	9.2	37.7	2.9	44.7	0.0	0.0	0.0
48	13/07/1973	328.8	6.00	0.90	17.4	1.3	28.1	0.7	15.1	43.2	2.0	73.4	0.0	0.0	0.0
49	29/08/1956	352.8	6.15	0.95	15.0	1.4	30.4	0.7	15.5	45.9	2.1	75.3	0.0	0.0	0.0
50	10/12/1961	394.2	5.50	1.19	10.8	1.7	34.2	0.7	13.9	48.1	2.4	67.3	0.0	0.0	0.0
51	01/01/1960	250.2	11.32	0.37	8.4	0.5	21.7	0.7	28.5	50.2	1.2	138.6	0.0	0.0	0.0
52	11/03/1970	211.8	3.48	1.01	10.2	1.5	18.4	0.7	8.8	27.1	2.2	42.6	0.0	0.0	0.0
53	04/12/1961	180.0	2.15	1.40	9.6	2.0	15.6	0.7	5.4	21.0	2.7	26.3	0.0	0.0	0.0
54	09/10/1964	305.4	7.48	0.68	13.2	1.0	26.5	0.7	18.8	45.3	1.7	91.6	0.0	0.0	0.0
55	02/11/1974	201.6	2.15	1.56	11.4	2.3	17.5	0.7	5.4	22.9	3.0	26.3	0.0	0.0	0.0
56	03/12/1961	288.6	11.82	0.41	9.6	0.6	25.0	0.7	29.8	54.8	1.3	144.7	0.0	0.0	0.0
57	11/11/1974	285.0	6.65	0.71	18.6	1.0	24.7	0.7	16.8	41.5	1.7	81.4	0.0	0.0	0.0
58	19/07/1973	252.0	3.32	1.27	8.4	1.8	21.9	0.7	8.4	30.2	2.5	40.6	0.0	0.0	0.0
59	10/03/1970	157.8	2.15	1.22	9.0	1.8	13.7	0.7	5.4	19.1	2.5	26.3	0.0	0.0	0.0
60	30/03/1970	171.0	1.98	1.44	11.4	2.1	14.8	0.7	5.0	19.8	2.8	24.2	0.0	0.0	0.0

Summary

number of spills from works
number of spills (>50m³) from works

10
0

Notes

1. Rainfall events are the Annual Time Series Rainfall for the South-West region.
2. Due to the low number of spills, only the first 60 storms have been assessed.
3. Peak storm flow has been calculated using the Wallingford Procedure, Modified Rational Method, with total impermeable area of 0.5Ha (20 m²/house)
4. Total storm inflow = peak storm flow x storm duration
5. DWF = dry weather flow from calculations = 0.7 l/s at the WwTW location
6. Total foul flow = DWF x storm duration
7. Total inflow = total storm inflow + total foul flow
8. FFT = flow to treatment, maximum rate of 3.4 l/s x storm duration
9. When Inflow > FFT spill to watercourse will occur

CONSENT NO. BP0072801



ASiantaeth YR
AMGYLCHEDD CYMRU
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:

Secondary Treated Sewage Effluent incorporating the requirements of the Urban Waste Water Treatment Regulations 1994 (UWWTR)

with respect to Consent No. **BP0072801** issued on the 30th day of August 1990

FROM: LLANEDI WASTEWATER TREATMENT WORKS

AT: LLANEDI, NEAR PONTARDDULAI, CARMARTHENSHIRE

TO: AFON GWILI

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

Secondary Treated Sewage Effluent
UWWT Regulations 1994

Schedule No. BP0072801 01
Schedule No. BP0072801 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 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 and takes effect on the 31st day of March 2004.

Signed

MARK SAGINE

Peter Jordan – Environment Management Team Leader



CONSENT NO.	BP0072801
SCHEDULE NO.	BP0072801 01
DATE ISSUED	31st March, 2004



**ASiantaeth Yr
Amgylchedd Cymru
Environment
Agency Wales**

CONDITIONS OF CONSENT TO DISCHARGE

Secondary Treated Sewage Effluent ("the Discharge")

**FROM: LLANEDI WASTEWATER TREATMENT WORKS, LLANEDI, NEAR
PONTARDDULAI, CARMARTHENSHIRE**

NATURE

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

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 the Afon Gwili;
 - (c) at National Grid Reference SN 57875 07839;
 - (d) shown marked 'Consent Point' on Plan BP0072801 attached as Annex 3.

SAMPLE POINT

3. An appropriately labelled sample point shall be provided and maintained at National Grid Reference Reference SN 58107 07830, as shown marked 'Sampling Point' on Plan BP0072801, 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 discharging into controlled waters.

VOLUME

4. The volume of the Discharge shall not exceed 297 cubic metres per day.
5. The Dry Weather Flow of the Discharge shall not exceed 72 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 3.4 litres per second.



CONSENT NO.	BP0072801
SCHEDULE NO.	BP0072801 01



**ASiantaeth Yr
Amgylchedd Cymru
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Agency Wales**

FLOW MEASUREMENT

7. A continuous flow monitoring and recording system, to a specification provided by the Agency, with on-site visual display from which readings can be readily obtained by the Agency, shall be provided and operated to record the daily volume and instantaneous flow of the discharge.
8. As soon as practicable after completion of the flow system installation the Consent Holder shall employ an independent expert to certify that the installation complies with the Agency's specification. The Consent Holder shall satisfy himself as to the professional competence of the expert. A copy of the certifier's report shall be provided to the Agency when it is available.
9. Records of the flow readings shall be maintained by the Consent Holder and shall be provided to the Agency when requested, in a format specified by the Agency.
10. The Consent Holder shall produce and maintain a quality control manual, approved by the independent expert and to the satisfaction of the Agency, specifying procedures for the calibration, operation and maintenance of the flow monitoring system. The flow system shall be calibrated, operated and maintained by the Consent Holder in accordance with the provisions of the manual. The Consent Holder shall keep a record of these procedures available for inspection by the Agency and provide a copy to the Agency on request.
11. The Consent Holder shall record all failures of the continuous flow system and any other breaks in the flow record. The reasons for these failures and breaks shall be recorded and all steps taken to prevent a re-occurrence. The Consent Holder shall ensure that as far as possible the recorder remains fully operational at all times. Any failures shall be remedied as soon as possible.
12. Flows passing forward to full treatment after the storm overflow shall be measured at the final effluent sampling chamber, at National Grid Reference SN 58107 07830, or such other point(s) as agreed by the Agency.

COMPOSITION

13. (a) Subject to paragraph (b) below, the Discharge shall not contain more than:
 - (i) 27 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
 - (ii) 41 milligrammes per litre of suspended solids (measured after drying at 105°C);
 - (iii) 10 milligrammes per litre of ammoniacal nitrogen (expressed as N).



CONSENT NO.	BP0072801
SCHEDULE NO.	BP0072801 01



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Amgylchedd Cymru
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Agency Wales**

- (b) The limit for any of the relevant parameters set out in paragraph (a) above may be exceeded where, in any series of samples of the Discharge taken at regular but randomised intervals in any period of twelve consecutive months as listed in Column 1 of the table at Annex 1 to this consent, no more than the relevant number of samples, as listed in Column 2 of the said table, exceed the applicable limit for that relevant parameter.

WORKS OPERATION

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

This condition does not require -

- (a) any higher standard to be achieved in relation to any characteristic of the discharge which is specifically regulated by condition 13, than is required by that condition;
- (b) any alteration of the works or a change in the type of treatment used.

UNUSUAL WEATHER CONDITIONS

15. (a) No sample of the discharge, taken at a time when unusual weather conditions are adversely affecting the operation of the sewage treatment works, shall be taken into account in deciding whether or not the conditions 13 and 14 of this consent have been complied with.
- (b) For the purpose of this condition "unusual weather conditions" shall include:
- (i) low ambient temperatures as evidenced by effluent temperatures of 5°C or less, or by the freezing of mechanical equipment in the works;
 - (ii) significant snow deposits;
 - (iii) tidal or fluvial flooding;
 - (iv) weather conditions causing unforeseen loss of power supply to the sewage treatment which could not be ameliorated by the reasonable provision and operation of standby generation facilities.
- (c) On any occasion where unusual weather conditions adversely affect the operation of the sewage treatment works, the Consent Holder shall use its best endeavours to mitigate that adverse effect.



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- (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

16. (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.
17. 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 from time to time and notified to the Consent Holder in writing), and any other substance considered by the consent holder as having or likely to have a significant effect on the receiving waters.

SUBSTANTIAL CHANGE

18. 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.
- 18.1 A discharge of trade effluent into the works is new if -
- (a) it is made by the sewerage undertaker and is of a kind not made into the works by the undertaker immediately before the date of effect of this consent; or
- (b) it is made by a third party and the discharge is authorised on or after that date.
- 18.2 A discharge of trade effluent into the works is altered if -
- (a) it is made by the sewerage undertaker and its composition or quantity changes significantly on or after the date of effect of this consent; or
- (b) it is made by a third party and the alteration of the discharge is authorised on or after that date.



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18.3 An increase in the polluting effects of the Discharge on controlled waters is not significant for the purposes of this condition if it relates to any characteristic of the Discharge which is specifically regulated by condition 13 of this consent but it may be significant if it is caused by a change in some other characteristic of the Discharge.

18.4 For the purposes of this condition "trade effluent" means -

- (a) any discharge by the sewerage undertaker other than
 - (i) domestic sewage from premises connected directly or indirectly to the works; or
 - (ii) surface water run-off;
- (b) any discharge by a third party which is authorised under Chapter III of Part IV of the Water Industry Act 1991 or which is only accepted as a result of a contract with the sewerage undertaker.

UNAUTHORISED DISCHARGES

19. A discharge made from the works shall not contain any poisonous, noxious or polluting matter or solid waste matter which is attributable to any unauthorised discharge into the works.

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



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DATE ISSUED	31st March, 2004



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CONDITIONS OF CONSENT TO DISCHARGE

Secondary Treated Sewage Effluent ("the Discharge")

**FROM: LLANEDI WASTEWATER TREATMENT WORKS, LLANEDI, NEAR
PONTARDDULAIS, CARMARTHENSHIRE**

URBAN WASTE WATER TREATMENT REGULATIONS

- 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 conditions U1 below, interpretations and references to a numbered regulation or Schedule shall have the meaning as in the Regulations, unless otherwise indicated.
- U1** (a) The Discharge derives from an agglomeration with a population equivalent of less than 2,000, discharging to freshwaters.
- (b) The Consent Holder shall inform the Agency in writing of any change, or proposed change, to the population equivalent such as would make a material change to the application of the Regulations and shall, on request, inform the Agency in writing of the actual population equivalent.
- (c) The Discharge shall be subject to Regulation 5(7) and shall satisfy the requirements of Regulation 5(8)(a).



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ANNEX 1

TABLE

Column 1

Number of samples
taken in any period
of 12 months

Column 2

Maximum number of samples
permitted to exceed limit
for given determinand

4-7	1
8-16	2
17-28	3
29-40	4
41-53	5
54-67	6
68-81	7
82-95	8
96-110	9
111-125	10
126-140	11
141-155	12
156-171	13
172-187	14
188-203	15
204-219	16
220-235	17
236-251	18
252-268	19
269-284	20
285-300	21
301-317	22
318-334	23
335-350	24
351-365	25

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ANNEX 2

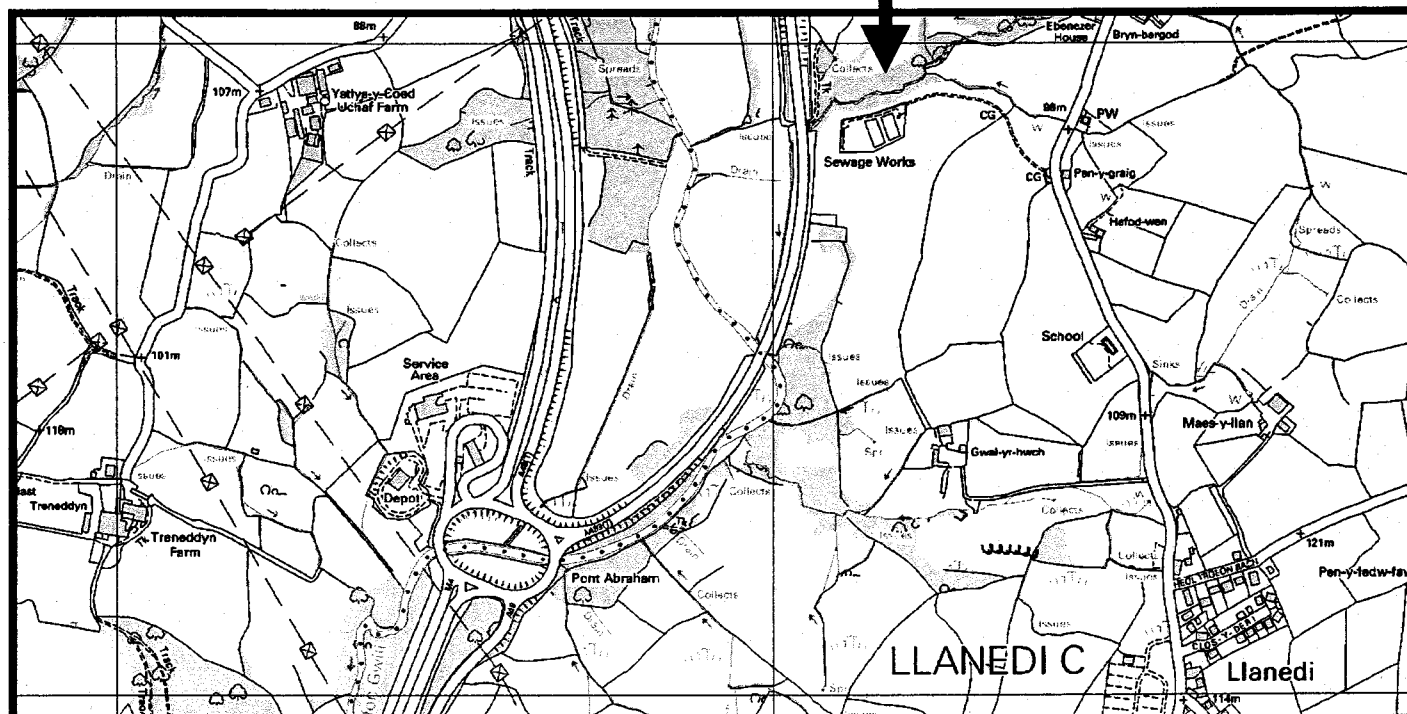
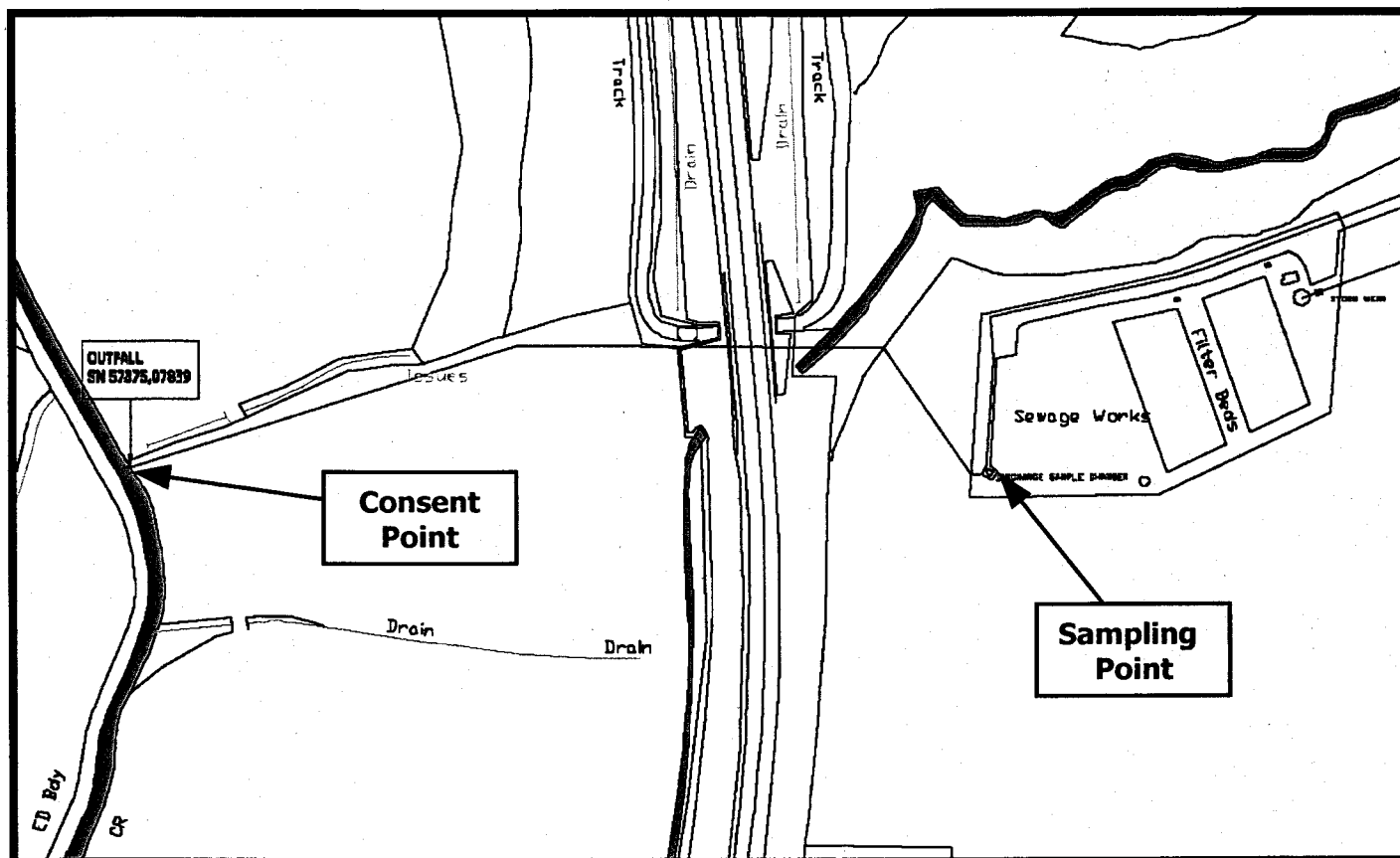
- | | |
|--|------------------------------|
| 1. Mercury and its compounds | 2. Cadmium and its compounds |
| 3. Hexachlorocyclohexane
(lindane and related compounds) | 4. Carbon tetrachloride |
| 5. DDT (the isomers of 1,1,1-trichloro-2,2 bis{p-chlorophenyl} ethane) | |
| 6. Pentachlorophenol (PCP) | 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. Flucofuron | 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.



**LLANEDI WwTW FE,
LLANEDI, NEAR PONTARDDULAI,
CARMARTHENSHIRE**





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Ein cyf/Our ref. 2/CS/LL/BJ0087001, BH0050801, BC0010601, BN0077102, BC0019001,
BN0169301, BE0039501, BP0014601, BG0028101, BP0072801,
BE0000206, BN0018001, BJ0078801.

Eich cyf/Your ref.

Dyddiad/Date: 21 April 2004

F.A.O Hilary Ford
Dwr Cymru Cyf
Pentwyn Road
Nelson
Treharris
CF46 6LY

Dear Ms Ford

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 consents as detailed below.

**WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM GOLDEN GROVE WWTW.
APPLICATION NO: BJ0078801**

**WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM CWRT HENRI WWTW.
APPLICATION NO: BN0018001**

**WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM PONTYATES WWTW.
APPLICATION NO: BE0000206**

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



WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM LLANEDI WWTW.

APPLICATION NO: BP0072801

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM CYNWYL ELFED WWTW.

APPLICATION NO: BG0028101

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM HEOL SHON WWTW.

APPLICATION NO: BP0014601

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM LLANGYNDERYN WWTW.

APPLICATION NO: BE0039501

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SETTLED STORM SEWAGE BY DWR CYMRU WELSH WATER FROM FERRYSIDE WWTW.

APPLICATION NO: BN0169301

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM TRIMSARAN WWTW.

APPLICATION NO: BC0019001

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM PANTYRATHRO WWTW.

APPLICATION NO: BN0077102

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Tel: 01792 325500, Fax: 01792 325511

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM CWMGWILI WWTW.

APPLICATION NO: BC0010601

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM MYDDFAI WWTW.

APPLICATION NO: BH0050801

WATER RESOURCES ACT 1991, SCHEDULE 10 (AS AMENDED BY THE ENVIRONMENT ACT 1995) APPLICATION TO DISCHARGE SECONDARY TREATED SEWAGE EFFLUENT BY DWR CYMRU WELSH WATER FROM FERRYSIDE WWTW.

APPLICATION NO: BJ0087001

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.

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

Yours sincerely



GARETH DAVIES
Customer Contact & Authorisations Officer

Enc.

Asiantaeth yr Amgylchedd Cymru
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