

ENVIRONMENTAL PROTECTION



NRA

*National Rivers Authority
South West Region*

**Lands End Streams
River Water Quality
Classification 1990**

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Suggestions for improvements that could be incorporated in the production of the next Classification report would be welcomed.

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ENVIRONMENT AGENCY



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RIVER WATER QUALITY IN THE LANDS END STREAMS CATCHMENT

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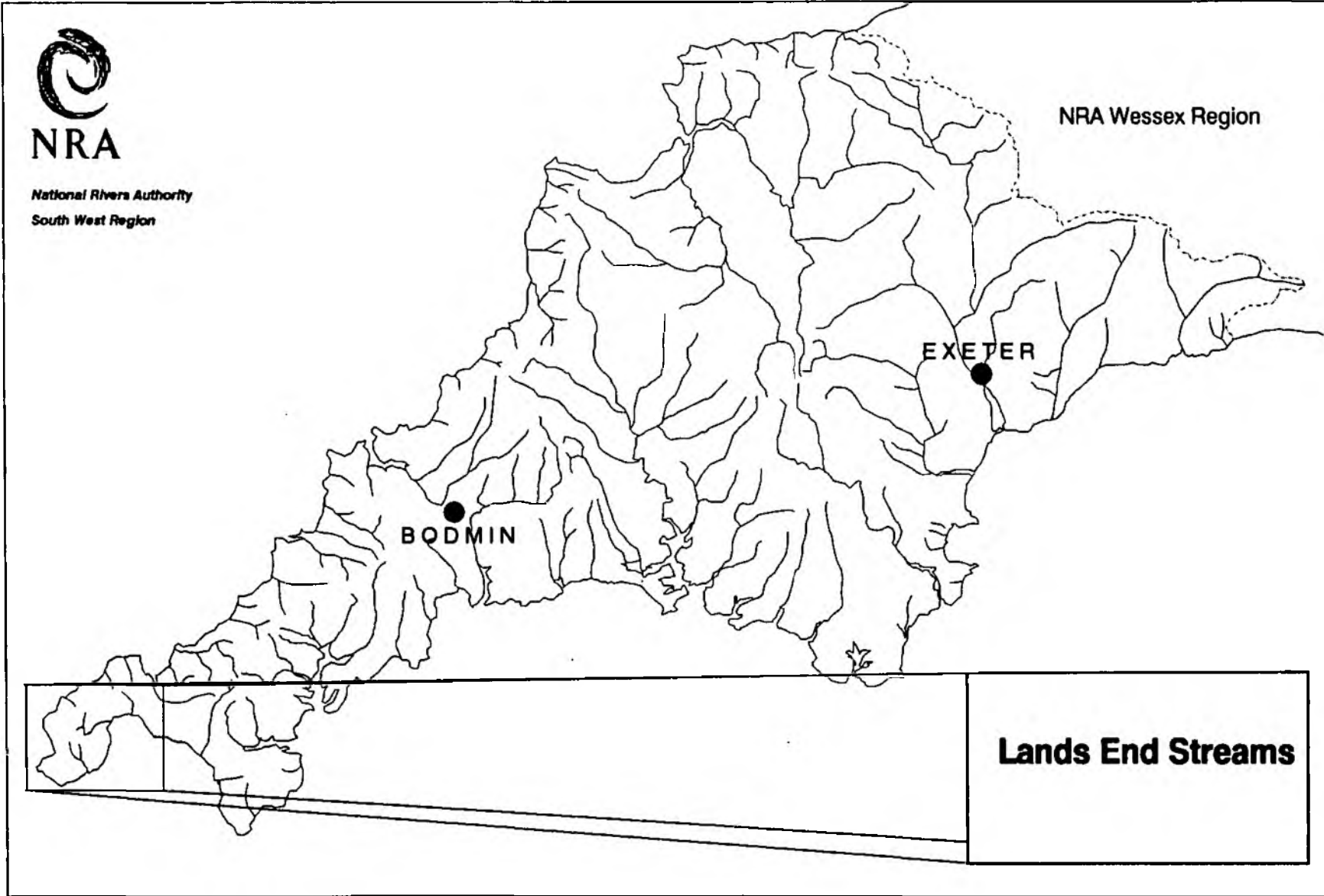
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**National Rivers Authority
South West Region**



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Lands End Streams

Lands End Streams

NRA Wessex Region

EXETER

BODMIN

1. INTRODUCTION

Monitoring to assess the quality of river waters is undertaken in thirty-two catchments within the region. As part of this monitoring programme samples are collected routinely from selected monitoring points at a pre-determined frequency per year, usually twelve spaced at monthly intervals. Each monitoring point provides data for the water quality of a river reach (in kilometres) upstream of the monitoring point.

River lengths have been re-measured and variations exist over those recorded previously.

Each water sample collected from each monitoring point is analysed for a range of chemical and physical constituents or properties known as determinands. The analytical results for each sample are entered into a computer database called the Water Quality Archive.

Selected data are accessed from the Archive so that the quality of each river reach can be determined based on a River Classification System developed by the National Water Council (NWC), (9.1).

This report presents the river water quality classification for 1990 for monitored river reaches in the Lands End Streams catchment.

2. LANDS END STREAMS CATCHMENT

Porthleven Stream and Newlyn River flow over a distance of 4.1 km and 11.6 km respectively from their source to the tidal limits, (Appendix 10.1). Water quality was monitored at approximately monthly intervals at four locations on each watercourse.

Trevaylor Stream (7.2 km), Chyandour Stream (5.3 km) and Lariggan River (6.5 km) were all monitored at approximately monthly intervals at two sites between their source and the tidal limits, (Appendix 10.1).

Lamorna Stream and Penberth Stream flow over a distance of 6.1 km and 6 km respectively from their source to the tidal limits, (Appendix 10.1) and were both monitored at three sites at approximately monthly intervals.

Marazion River flows over a distance of 10.5 km from its source to the tidal limit, (Appendix 10.1) and was monitored at three locations. Two sites were sampled at approximately monthly intervals and the site at Nancledra was sampled on fifteen occasions during 1990 because of no recent water quality data.

The Tregaseal Stream flows over a distance of 4.9 km from its source to the tidal limit, (Appendix 10.1) and was monitored at three locations. One site was sampled at approximately monthly intervals and the site at Bostraze and a site just prior to the sea were sampled on twenty occasions during 1990 because of no recent water quality data.

The Zennor Stream flows over a distance of 2.5 km from its source to the tidal limit, (Appendix 10.1) and was monitored at one location at approximately monthly intervals.

Throughout the Lands End Streams catchment one secondary tributary of the Marazion River, one secondary tributary of Trevaylor Stream, two secondary tributaries of the Newlyn River and one secondary tributary of the Lamorna Stream were monitored. In addition the Drift Reservoir was monitored at one location at approximately monthly intervals.

2.1 SECONDARY TRIBUTARIES

The Tregilliowe Stream flows over a distance of 2.7 km from its source to the confluence with the Marazion Stream, (Appendix 10.1) and was monitored at one location at approximately monthly intervals.

The Rosemorran Stream flows over a distance of 4.3 km from its source to the confluence with the Trevaylor Stream, (Appendix 10.1) and was monitored at one location at approximately monthly intervals.

The Trereife Stream flows over a distance of 1.6 km from its source to the confluence with the Newlyn River, (Appendix 10.1) and was sampled at two locations at approximately monthly intervals.

Sancreed Brook flows over a distance of 3.8 km from its source to the confluence with the Newlyn River, (Appendix 10.1) and was monitored at one location at approximately monthly intervals.

Carn Euny Brook flows over a distance of 6.9 km from its source to the confluence with the Lamorna Stream, (Appendix 10.1) and was monitored at one location at approximately monthly intervals. Monitoring points are all situated in the lower reaches.

Each sample was analysed for a minimum number of determinands (Appendix 10.2) plus additional determinands based on local knowledge of the catchment. In addition, at selected sites, certain metal analyses were carried out.

The analytical results from all of these samples have been entered into the Water Quality Archive and can be accessed through the Water Act Register, (9.2).

3. NATIONAL WATER COUNCIL'S RIVER CLASSIFICATION SYSTEM

3.1 River Quality Objectives

In 1978 river quality objectives (RQOs) were assigned to all river lengths that were part of the routine monitoring network and to those additional watercourses, which were not part of the routine network, but which received discharges of effluents.

For the majority of watercourses long term objectives were identified based on existing and assumed adequate quality for the long term protection of the watercourse. In a few instances short term objectives were identified but no timetable for the achievement of the associated long term objective was set.

The RQOs currently in use in the Lands End Streams catchment are identified in Appendix 10.1.

3.2 River Quality Classification

River water quality is classified using the National Water Council's (NWC) River Classification System (see Appendix 10.3), which identifies river water quality as being one of five quality classes as shown in Table 1 below:

Table 1 - National Water Council - River Classification System

<u>Class</u>	<u>Description</u>
1A	Good quality
1B	Lesser good quality
2	Fair quality
3	Poor quality
4	Bad quality

Using the NWC system, the classification of river water quality is based on the values of certain determinands as arithmetic means or as 95 percentiles (5 percentiles are used for pH and dissolved oxygen) as indicated in Appendices 10.4.1 and 10.4.2.

The quality classification system incorporates some of the European Inland Fisheries Advisory Commission (EIFAC) criteria (Appendix 10.3) recommended for use by the NWC system.

4. 1990 RIVER WATER QUALITY SURVEY

The 1990 regional classification of river water quality also includes the requirements of the Department of the Environment quinquennial national river quality survey. The objectives for the Department of the Environment 1990 River Quality Survey are given below:

- 1) To carry out a National Classification Survey based on procedures used in the 1985 National Classification Survey, including all regional differences.
- 2) To classify all rivers and canals included in the 1985 National Classification Survey.

- 3) To compare the 1990 Classification with those obtained in 1985.

In addition, those watercourses, which were not part of the 1985 Survey and have been monitored since that date, are included in the 1990 regional classification of river water quality.

5. 1990 RIVER WATER QUALITY CLASSIFICATION

Analytical data collected from monitoring during 1988, 1989 and 1990 were processed through a computerised river water quality classification programme. This resulted in a quality class being assigned to each monitored river reach as indicated in Appendix 10.5.

The quality class for 1990 can be compared against the appropriate River Quality Objective and previous annual quality classes (1985-1989) also based on three years combined data, for each river reach in Appendix 10.5.

The river water classification system used to classify each river length is identical to the system used in 1985 for the Department of the Environment's 1985 River Quality Survey. The determinand classification criteria used to determine the annual quality classes in 1985, subsequent years and for 1990 are indicated in Appendices 10.4 and 10.4.1.

Improvements to this classification system could have been made, particularly in the use of a different suspended solids standard for Class 2 waters. As the National Rivers Authority will be proposing new classification systems to the Secretary of State in the near future, it was decided to classify river lengths in 1990 with the classification used for the 1985-1989 classification period.

The adoption of the revised criteria for suspended solids in Class 2 waters would not have affected the classification of river reaches.

The river quality classes for 1990 of monitored river reaches in the catchment are shown in map form in Appendix 10.6.

The calculated determinand statistics for pH, temperature, dissolved oxygen, biochemical oxygen demand (BOD), total ammonia, un-ionised ammonia, suspended solids, copper and zinc from which the quality class was determined for each river reach, are indicated in Appendix 10.7.

6. NON-COMPLIANCE WITH QUALITY OBJECTIVES

Those monitored river reaches within the catchment, which do not comply with their assigned (RQO), are shown in map form in Appendix 10.8.

Appendix 10.9 indicates the number of samples analysed for each determinand over the period 1988 to 1990 and the number of sample results per determinand, which exceed the determinand quality standard.

For those non-compliant river reaches in the catchment, the extent of exceedance of the calculated determinand statistic with relevant quality standard (represented as a percentage), is indicated in Appendix 10.10.

7. CAUSES OF NON-COMPLIANCE

For those river reaches, which did not comply with their assigned RQOs, the cause of non-compliance (where possible to identify) is indicated in Appendix 10.11.

8. GLOSSARY OF TERMS

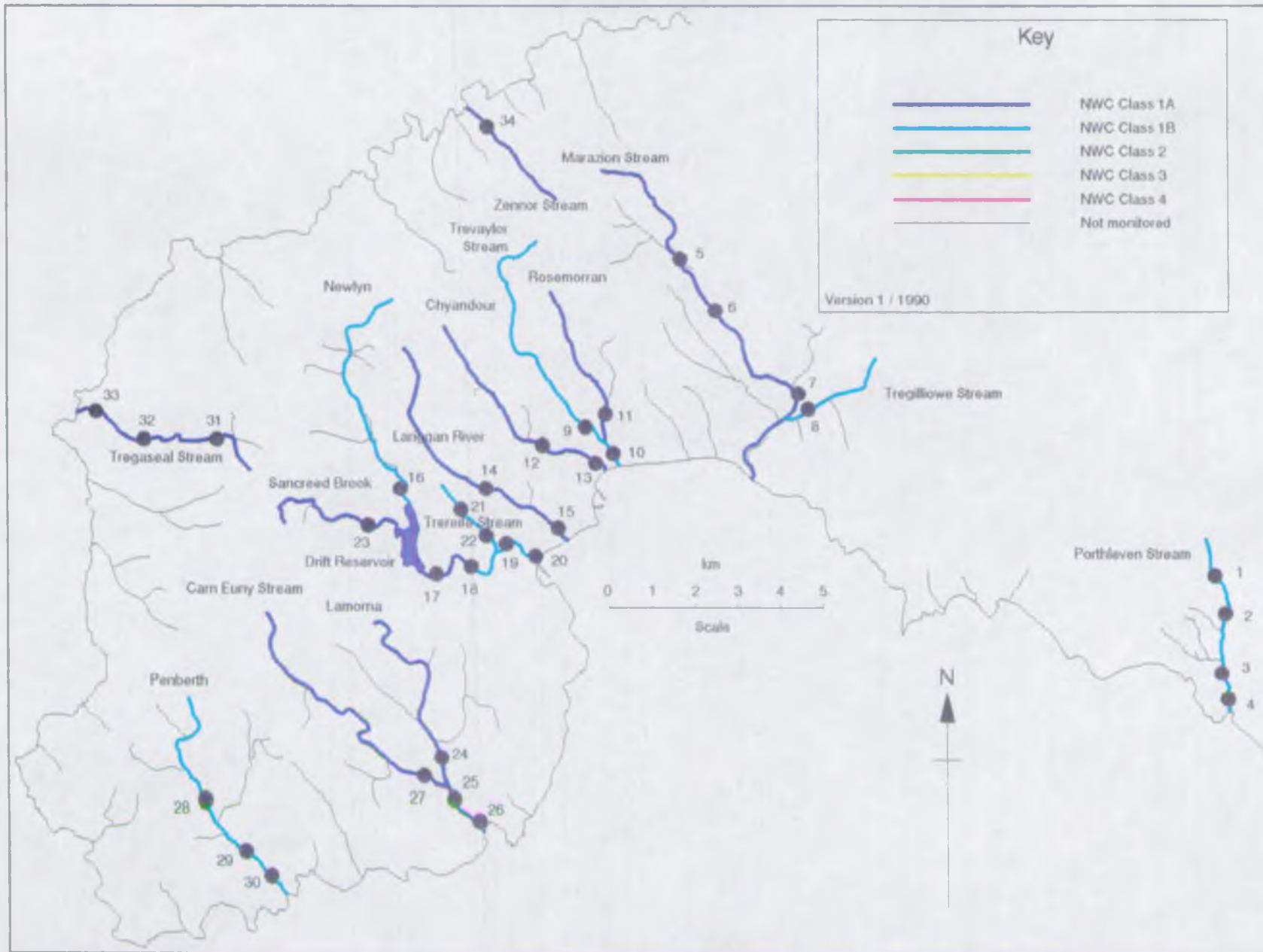
RIVER REACH	A segment of water, upstream from sampling point to the next sampling point.
RIVER LENGTH	River distance in kilometres.
RIVER QUALITY OBJECTIVE	That NWC class, which protects the most sensitive use of the water.
95 percentiles	Maximum limits, which must be met for at least 95% of the time.
5 percentiles	Minimum limits, which must be met for at least 95% of the time.
BIOLOGICAL OXYGEN DEMAND (5 day carbonaceous ATU)	A standard test measuring the microbial uptake of oxygen - an estimate of organic pollution.
pH	A scale of acid to alkali.
UN-IONISED AMMONIA	Fraction of ammonia poisonous to fish, NH_3 .
SUSPENDED SOLIDS	Solids removed by filtration or centrifuge under specific conditions.
USER REFERENCE NUMBER	Reference number allocated to a sampling point.
INFERRED STRETCH	Segment of water, which is not monitored and whose water quality classification is assigned from the monitored reach upstream.

9. REFERENCES

Reference

- 9.1 National Water Council (1977). River Water Quality: The Next Stage. Review of Discharge Consent Conditions. London.
- 9.2 Water Act 1989 Section 117
- 9.3 Alabaster J. S. and Lloyd R. Water Quality Criteria for Freshwater Fish, 2nd edition, 1982. Butterworths.

Lands End Streams River Quality Objectives



BASIC DETERMINAND ANALYTICAL SUITE FOR ALL CLASSIFIED RIVER SITES

pH as pH Units

Conductivity at 20 C as uS/cm

Water temperature (Cel)

Oxygen dissolved & saturation

Oxygen dissolved as mg/l O

Biochemical oxygen demand (5 day total ATU) as mg/l O

Total organic carbon as mg/l C

Nitrogen ammoniacal as mg/l N

Ammonia un-ionised as mg/l N

Nitrate as mg/l N

Nitrite as mg/l N

Suspended solids at 105 C as mg/l

Total hardness as mg/l CaCO₃

Chloride as mg/l Cl

Orthophosphate (total) as mg/l P

Silicate reactive dissolved as mg/l SiO₂

Sulphate (dissolved) as mg/l SO₄

Sodium (total) as mg/l Na

Potassium (total) as mg/l K

Magnesium (total) as mg/l Mg

Calcium (total) as mg/l Ca

Alkalinity as pH 4.5 as mg/l CaCO₃

MWC RIVER QUALITY CLASSIFICATION SYSTEM

River Class	Quality criteria	Remarks	Current potential uses
Class limiting criteria (95 percentile)			
1A Good Quality	(i) Dissolved oxygen saturation greater than 80%	(i) Average BOD probably not greater than 1.5 mg/l	(i) Water of high quality suitable for potable supply abstractions and for all abstractions
	(ii) Biochemical oxygen demand not greater than 3 mg/l	(ii) Visible evidence of pollution should be absent	(ii) Game or other high class fisheries
	(iii) Ammonia not greater than 0.4 mg/l		(iii) High amenity value
	(iv) Where the water is abstracted for drinking water, it complies with requirements for A2* water		
	(v) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available)		
1B Good Quality	(i) DO greater than 60% saturation	(i) Average BOD probably not greater than 2 mg/l	Water of less high quality than Class 1A but usable for substantially the same purposes
	(ii) BOD not greater than 5 mg/l	(ii) Average ammonia probably not greater than 0.5 mg/l	
	(iii) Ammonia not greater than 0.9 mg/l	(iii) Visible evidence of pollution should be absent	
	(iv) Where water is abstracted for drinking water, it complies with the requirements for A2* water	(iv) Waters of high quality which cannot be placed in Class 1A because of the high proportion of high quality effluent present or because of the effect of physical factors such as canalisation, low gradient or eutrophication	
	(v) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available)	(v) Class 1A and Class 1B together are essentially the Class 1 of the River Pollution Survey (RPS)	
2 Fair Quality	(i) DO greater than 40% saturation	(i) Average BOD probably not greater than 5 mg/l	(i) Waters suitable for potable supply after advanced treatment
	(ii) BOD not greater than 9 mg/l	(ii) Similar to Class 2 of RPS	(ii) Supporting reasonably good coarse fisheries
	(iii) Where water is abstracted for drinking water it complies with the requirements for A3* water	(iii) Water not showing physical signs of pollution other than humic colouration and a little foaming below weirs	(iii) Moderate amenity value
	(iv) Non-toxic to fish in EIFAC terms (or best estimates if EIFAC figures not available)		

<p>Poor Quality</p>	<p>(i) DO greater than 10% saturation (ii) Not likely to be anaerobic (iii) BOD not greater than 17 mg/l. This may not apply if there is a high degree of re-aeration</p>	<p>Similar to Class 3 of RPS</p>	<p>Waters which are polluted to an extent that fish are absent only sporadically present. May be used for low grade industrial abstraction purposes. Considerable potential for further use if cleaned up</p>
<p>4 Bad Quality</p>	<p>Waters which are inferior to Class 3 in terms of dissolved oxygen and likely to be anaerobic at times</p>	<p>Similar to Class 4 of RPS</p>	<p>Waters which are grossly polluted and are likely to cause nuisance</p>
	<p>DO greater than 10% saturation</p>		<p>Insignificant watercourses and ditches not usable, where the objective is simply to prevent nuisance developing</p>

- Notes
- (a) Under extreme weather conditions (eg flood, drought, freeze-up), or when dominated by plant growth, or by aquatic plant decay, rivers usually in Class 1, 2, and 3 may have BODs and dissolved oxygen levels, or ammonia content outside the stated levels for those Classes. When this occurs the cause should be stated along with analytical results.
 - (b) The BOD determinations refer to 5 day carbonaceous BOD (ATU). Ammonia figures are expressed as NH₄. **
 - (c) In most instances the chemical classification given above will be suitable. However, the basis of the classification is restricted to a finite number of chemical determinands and there may be a few cases where the presence of a chemical substance other than those used in the classification markedly reduces the quality of the water. In such cases, the quality classification of the water should be down-graded on the basis of biota actually present, and the reasons stated.
 - (d) EIFAC (European Inland Fisheries Advisory Commission) limits should be expressed as 95 percentile limits.

EEC category A2 and A3 requirements are those specified in the EEC Council directive of 16 June 1975 concerning the Quality of Surface Water intended for Abstraction of Drinking Water in the Member State.

Ammonia Conversion Factors

(mg NH₄/l to mg N/l)

Class 1A	0.4 mg NH ₄ /l = 0.31 mg N/l
Class 1B	0.9 mg NH ₄ /l = 0.70 mg N/l
	0.5 mg NH ₄ /l = 0.39 mg N/l

NWC RIVER CLASSIFICATION SYSTEM

CRITERIA USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION FOR NON-METALLIC DETERMINANDS

River Class	Quality Criteria
1A	Dissolved oxygen % saturation greater than 80% BOD (ATU) not greater than 3 mg/l O Total ammonia not greater than 0.31 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 21.5 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
1B	Dissolved oxygen % saturation greater than 60% BOD (ATU) not greater than 5 mg/l O Total ammonia not greater than 0.70 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 21.5 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
2	Dissolved oxygen & saturation greater than 40% BOD (ATU) not greater than 9 mg/l O Total ammonia not greater than 1.56 mg/l N Non-ionised ammonia not greater than 0.021 mg/l N Temperature not greater than 28 C pH greater than 5.0 and less than 9.0 Suspended solids not greater than 25 mg/l
3	Dissolved oxygen % saturation greater than 10% BOD (ATU) not greater than 17 mg/l O
4	Dissolved oxygen % saturation not greater than 10% BOD (ATU) greater than 17 mg/l O

STATISTICS USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

Determinand	Statistic
Dissolved oxygen	5 percentile
BOD (ATU)	95 percentile
Total ammonia	95 percentile
Non-ionised ammonia	95 percentile
Temperature	95 percentile
pH	5 percentile
Suspended solids	95 percentile arithmetic mean

NWC RIVER CLASSIFICATION SYSTEM

CRITERIA USED BY NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION FOR METALLIC DETERMINANDS

SOLUBLE COPPER

Total Hardness (mean) mg/l CaCO ₃	Statistic	Soluble Copper*	
		Class 1 ug/l Cu	Class 2
0 - 10	95 percentile	< = 5	> 5
10 - 50	95 percentile	< = 22	> 22
50 - 100	95 percentile	< = 40	> 40
100 - 300	95 percentile	< = 112	> 112

* Total copper is used for classification until sufficient data on soluble copper can be obtained.

TOTAL ZINC

Total Hardness (mean) mg/l CaCO ₃	Statistic	Total Zinc		
		Class 1 ug/l Zn	Class 2	Class 3
0 - 10	95 percentile	< = 30	< = 300	> 300
10 - 50	95 percentile	< = 200	< = 700	> 700
50 - 100	95 percentile	< = 300	< = 1000	> 1000
100 - 300	95 percentile	< = 500	< = 2000	> 2000

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CATCHMENT: LANDS END STREAMS (23)

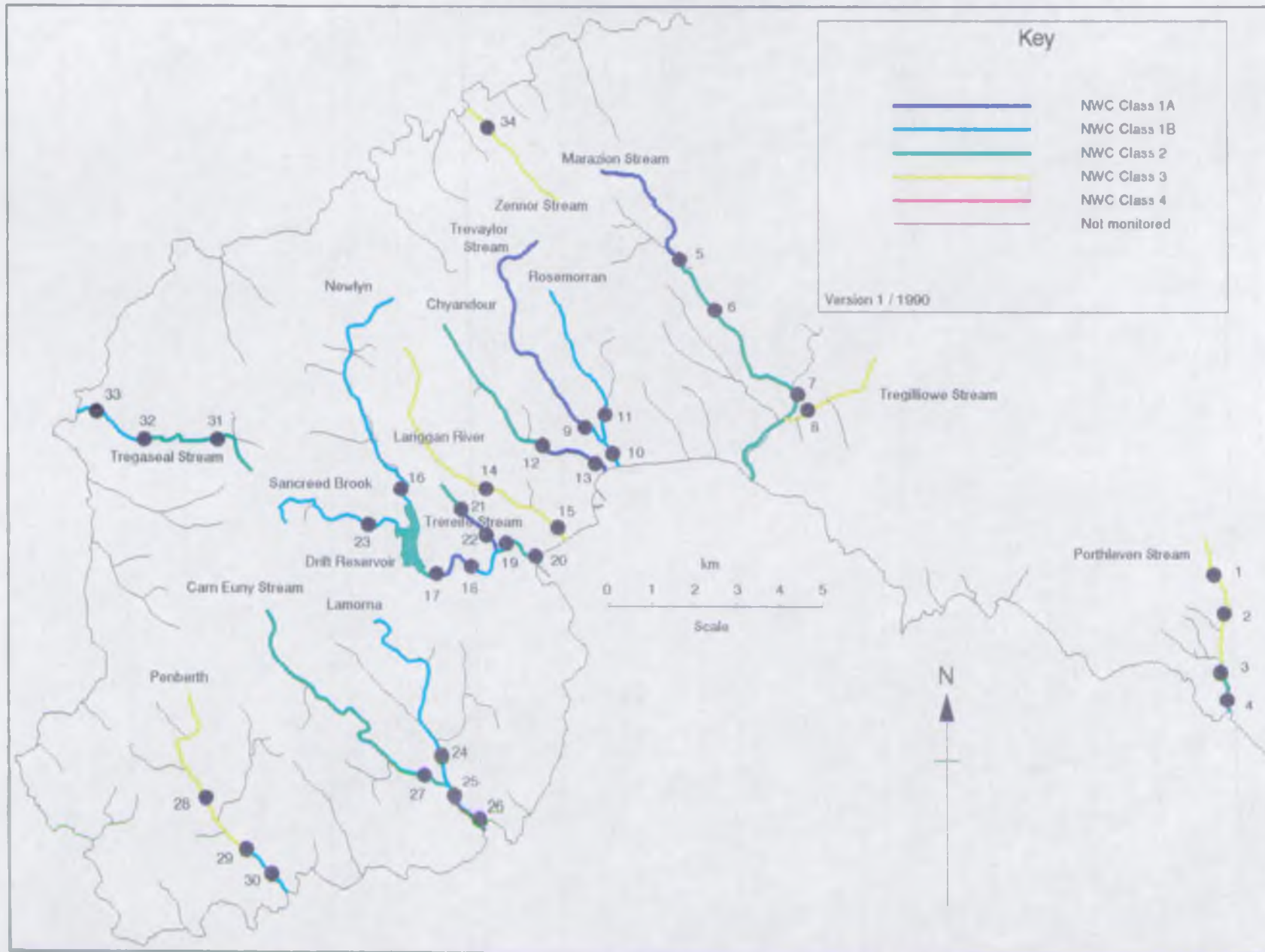
1990 Map Position Number	River	Reach upstream of	User Reference Number	National Grid Reference	Reach Length (km)	Distance from source (km)	River Quality Objective	85 RWC Class	86 RWC Class	87 RWC Class	88 RWC Class	89 RWC Class	90 RWC Class
1	PORHLEVEN STREAM	PENBRO	R21A013	SW 6283 2825	1.5	1.5	1B	1B	1B			2	3
2	PORHLEVEN STREAM	A394 BRIDGE, LITTLEANTRON	R21A009	SW 6275 2769	0.6	2.1	1B	1B	1B			2	3
3	PORHLEVEN STREAM	METHLEIGH	R21A012	SW 6271 2667	1.0	3.1	1B	1B	1B			2	3
4	PORHLEVEN STREAM	UPSTREAM OF HARBOUR, PORHLEVEN	R21A010	SW 6272 2600	0.7	3.8	1B	1B	1B			2	2
	PORHLEVEN STREAM	MEAN HIGH WATER (INFERRED STRETCH)			0.3	4.1	1B	1B	1B			2	2
5	MARAZION RIVER	HASCLEDA	R21A028	SW 4965 3603	3.4	3.4	1A	1B	1B	2		2	1A
6	MARAZION RIVER	CUCURRIAN MILL	R21A001	SW 5033 3494	1.3	4.7	1A	1B	1B	2		2	2
7	MARAZION RIVER	TRUTHWELL MILL BRIDGE	R21A002	SW 5237 3247	3.6	8.3	1A	1B	1B	2		2	2
	MARAZION RIVER	MEAN HIGH WATER (INFERRED STRETCH)			2.2	10.5	1A	1B	1B	2		2	2
8	TREGILLIOWE STREAM	GWALLON	R21A026	SW 5256 3213	2.3	2.3	1B						3
	TREGILLIOWE STREAM	MARAZION R. CONFL. (INFERRED STRETCH)			0.4	2.7	1B						3
9	TREVAYLOR STREAM	TRYTHOGGA	R21A022	SW 4769 3180	6.2	6.2	1B	1B	1A			2	1A
10	TREVAYLOR STREAM	A.30 BRIDGE AT CHYANDOUR	R21A008	SW 4812 3115	0.9	7.1	1B	1B	1A			2	1B
	TREVAYLOR STREAM	MEAN HIGH WATER (INFERRED STRETCH)			0.1	7.2	1B	1B	1A			2	1B
11	ROSEMORRAN STREAM	KENEGIE COTTAGE	R21A021	SW 4788 3220	3.8	3.8	1A						1B
	ROSEMORRAN STREAM	TREVAYLOR STREAM CONFL. (INF. STRETCH)			0.5	4.3	1A						1B
12	CHYANDOUR BROOK	HEAMOOR	R21A023	SW 4615 3158	3.3	3.3	1A	2	2		1B	1B	2
13	CHYANDOUR BROOK	A.30 BRIDGE AT CHYANDOUR	R21A006	SW 4785 3102	1.9	5.2	1A	2	2		1B	1B	1A
	CHYANDOUR BROOK	MEAN HIGH WATER (INFERRED STRETCH)			0.1	5.3	1A	2	2		1B	1B	1A
14	LARIOGGAN RIVER	WEST LODGE	R21A024	SW 4468 3085	3.7	3.7	1A	1B	1B			3	3
15	LARIOGGAN RIVER	MERRY TOWN BRIDGE	R21A007	SW 4675 2945	2.8	6.5	1A	1B	1B			3	3
16	NEWLYN RIVER	SKIMMEL BRIDGE	R21A003	SW 4335 3018	6.4	6.4	1B	1B	1B	1B	1B	1B	1B
	NEWLYN RIVER	INFLOW, DRIFT RES. (INFERRED STRETCH)			0.3	6.7	1A	1B	1B	1B	1B	1A	1B
17	NEWLYN RIVER	DRIFT RESERVOIR	R21A018	SW 4381 2878	1.3	8.0	1A	1B	1B	1B	1B	1A	2
18	NEWLYN RIVER	BURYAS BRIDGE	R21A004	SW 4475 2908	1.2	9.2	1A	1B	1B	1B	1B	1A	1A
19	NEWLYN RIVER	STABLE BOBBA	R21A027	SW 4550 2931	1.3	10.5	1B	2	1B	1B	1B	2	1B
20	NEWLYN RIVER	NEWLYN BRIDGE	R21A005	SW 4625 2903	1.0	11.5	1B	2	1B	1B	1B	2	2
	NEWLYN RIVER	NORMAL TIDAL LIMIT (INFERRED STRETCH)			0.1	11.6	1B	2	1B	1B	1B	2	2
21	TREREIFE STREAM	DENNIS PLACE	R21A019	SW 4461 3005	0.5	0.5	1B						2
22	TREREIFE STREAM	PRIOR TO NEWLYN RIVER	R21A020	SW 4520 2928	1.1	1.6	1B						1A
23	SANCREED BROOK	LITTLE SELLAN BRIDGE	R21A017	SW 4256 2975	3.2	3.2	1A						1B
	SANCREED BROOK	NORMAL TIDAL LIMIT (INFERRED STRETCH)			0.6	3.8	1A						1B
24	LAMORNA STREAM	TREWOPE	R21A025	SW 4415 2540	4.5	4.5	1A	1A	1A			1A	1B
25	LAMORNA STREAM	HOTEL LAMORNA	R21A016	SW 4468 2458	1.0	5.5	1A	1A	1A			1A	1B
26	LAMORNA STREAM	LAMORNA	R21A011	SW 4502 2410	0.6	6.1	1A	1A	1A			1A	1A

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CATCHMENT: LANDS END STREAMS (23)

1990 Map Position Number	River	Reach upstream of	User Reference Number	National Grid Reference
27	CARN EUNY STREAM CARN EUNY STREAM	TREWOOFE LAMORNA STREAM CONFL. (INF. STRETCH)	R21A015	SW 4401 2524
28	PENBERTH STREAM	BOTTOMS	R22A010	SW 3857 2423
29	PENBERTH STREAM	TREEN	R22A011	SW 3961 2329
30	PENBERTH STREAM PENBERTH STREAM	PENBERTH BRIDGE MEAN HIGH WATER (INFERRED STRETCH)	R22A009	SW 4011 2289
31	TREGASEAL STREAM	BOSTRAZE	R22A012	SW 3887 3190
32	TREGASEAL STREAM	TREGASEAL BRIDGE	R22A006	SW 3731 3180
33	TREGASEAL STREAM TREGASEAL STREAM	PRIOR TO SEA MEAN HIGH WATER (INFERRED STRETCH)	R22A007	SW 3566 3231
34	ZENNOR STREAM ZENNOR STREAM	ZENNOR MEAN HIGH WATER (INFERRED STRETCH)	R22A008	SW 4521 3860

Reach Length (km)	Distance from source (km)	River Quality Objective	85 NWC Class	86 NWC Class	87 NWC Class	88 NWC Class	89 NWC Class	90 NWC Class
6.4	6.4	1A	1B					2
0.5	6.9	1A	1B					2
3.4	3.4	1B	1A	1B				3
1.6	5.0	1B	1A	1B				3
0.7	5.7	1B	1A	1B				1B
0.3	6.0	1B	1A	1B				1B
1.1	1.1	1A	1B	1B				2
1.7	2.8	1A	1B	1B				2
1.9	4.7	1A	1B	1B				1B
0.2	4.9	1A	1B	1B				1B
1.9	1.9	1A	1A	1A				3
0.6	2.5	1A	1A	1A				3

Lands End Streams Water Quality - 1990



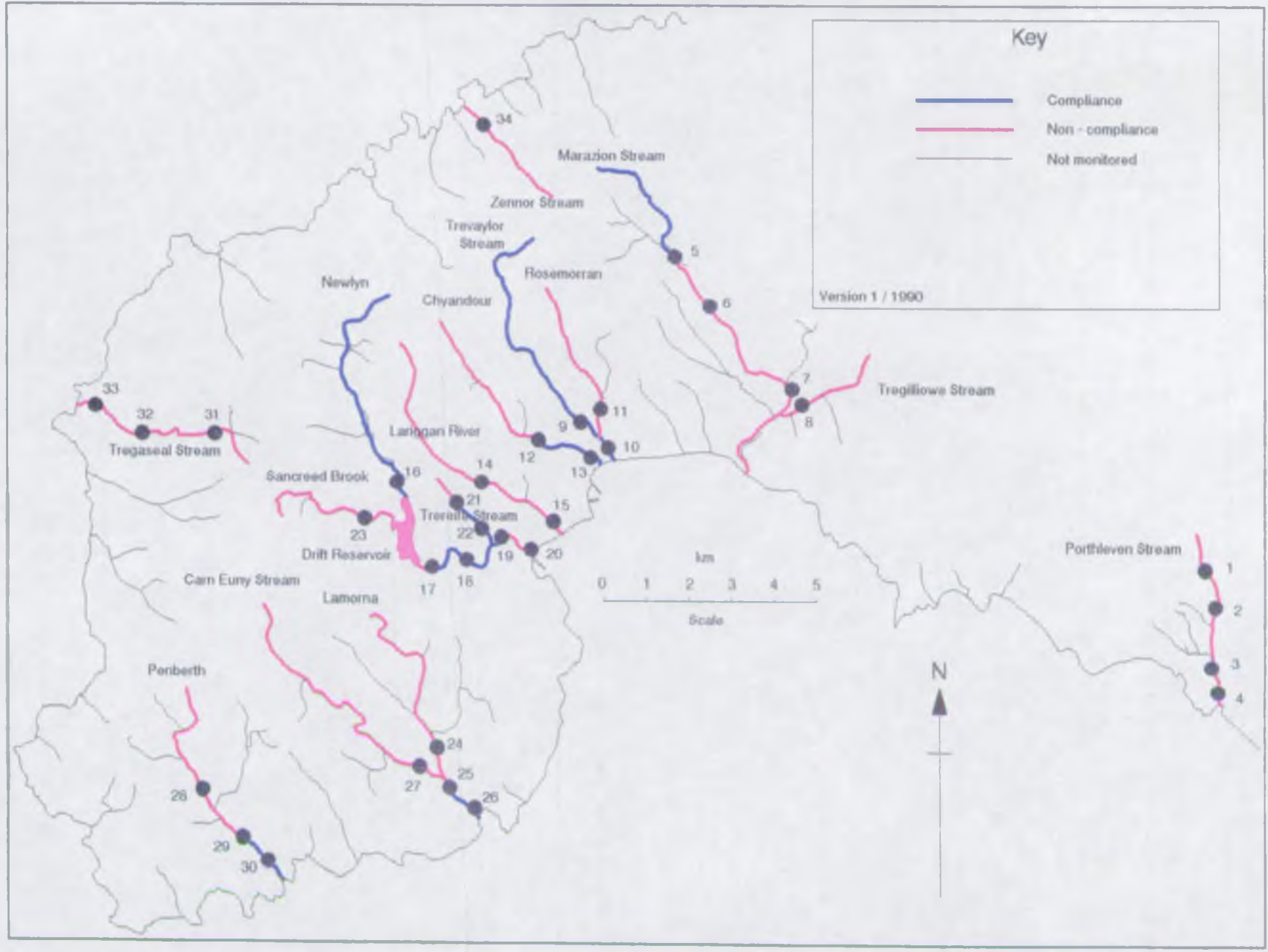
NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CALCULATED DETERMINAND STATISTICS USED FOR QUALITY ASSESSMENT
 CATCHMENT: LANDS END STREAMS (23)

River	Reach upstream of	User Ref. Number	90 NWC Class	Calculated Determinand Statistics used for Quality Assessment																			
				pH Lower Class 5Stile		pH Upper Class 95Stile		Temperature Class 95Stile		DO (%) Class 5Stile		BOD (BODU) Class 95Stile		Total Ammonia Class 95Stile		Union. Ammonia Class 95Stile		S.Solids Class Mean		Total Copper Class 95Stile		Total Zinc Class 95Stile	
FORTHLEVEN STREAM	PENRO	[R21A013]	3	1A	6.1	1A	7.1	1A	16.4	1A	84.0	1A	2.4	1B	0.420	1A	0.010	1A	2.2	2	134.2	3	1700.0
FORTHLEVEN STREAM	A394 BRIDGE, LITTLEKIRKTON	[R21A009]	3	1A	6.4	1A	7.2	1A	15.8	1A	80.8	1A	2.5	1B	0.438	1A	0.010	1A	5.4	2	114.0	3	1600.0
FORTHLEVEN STREAM	METHLEIGH	[R21A012]	3	1A	6.5	1A	7.6	1A	16.0	1A	87.0	1A	2.1	1B	0.383	1A	0.010	1A	4.1	2	63.3	3	1096.0
FORTHLEVEN STREAM	UPSTREAM OF HARBOUR, FORTHLEVEN	[R21A010]	2	1A	6.1	1A	7.6	1A	15.8	1B	71.0	1A	2.7	1A	0.183	1A	0.010	1A	13.8	2	179.9	2	912.0
IMRAZZON RIVER	FRICKLEDA	[R21A028]	1A	1A	6.4	1A	7.6	1A	15.8	1A	87.2	1A	2.6	1A	0.113	1A	0.010	1A	3.5	1A	11.0	1A	21.8
IMRAZZON RIVER	CUCKERON MILL	[R21A001]	2	1A	6.1	1A	7.3	1A	15.8	1A	87.4	1A	1.9	1A	0.078	1A	0.010	1A	4.1	2	36.4	1A	25.0
IMRAZZON RIVER	FRUHWELL MILL BRIDGE	[R21A002]	2	1A	6.7	1A	7.6	1A	16.5	1B	68.0	2	5.1	2	0.790	1A	0.010	1A	6.7	1A	17.5	1A	31.8
TREBILLOWE STREAM	GANLON	[R21A026]	3	1A	6.7	1A	7.6	1A	16.2	3	12.5	1B	3.7	1B	0.445	1A	0.010	1A	8.5	1A	99.0	2	1498.5
TREAVAILOR STREAM	DRYHOOGA	[R21A022]	1A	1A	6.4	1A	7.4	1A	17.1	1A	86.4	1A	2.3	1A	0.202	1A	0.010	1A	4.7	1A	15.1	1A	12.7
TREAVAILOR STREAM	A.30 BRIDGE AT CHAZANDOUR	[R21A008]	1B	1A	6.7	1A	7.5	1A	18.2	1B	76.3	1B	4.4	1B	0.349	1A	0.010	1A	9.3	1A	17.1	1A	43.3
ROSEMORAN STREAM	KENELE COTTAGE	[R21A021]	1B	1A	6.6	1A	7.4	1A	15.9	1A	85.2	1B	3.1	1B	0.350	1A	0.010	1A	4.3	1A	12.8	1A	10.0
CHAZANDOUR BROOK	HEMOR	[R21A023]	2	1A	6.5	1A	7.6	1A	14.3	1A	82.2	1A	2.5	2	0.899	1A	0.010	1A	4.7	1A	10.6	1A	17.8
CHAZANDOUR BROOK	A.30 BRIDGE AT CHAZANDOUR	[R21A006]	1A	1A	6.9	1A	7.7	1A	17.1	1A	88.5	1A	2.5	1A	0.175	1A	0.010	1A	5.1	1A	12.8	1A	94.8
LARDIGAN RIVER	WEST LODGE	[R21A024]	3	1A	5.9	1A	7.4	1A	15.5	1A	82.5	2	5.7	3	2.236	1A	0.010	1A	4.5	1A	9.4	1A	20.4
LARDIGAN RIVER	MERRY TOWN BRIDGE	[R21A007]	3	1A	6.7	3	9.2	1A	18.5	1B	79.1	1B	3.8	3	1.757	1A	0.015	1A	4.8	1A	15.4	1A	47.8
NEMLEN RIVER	SKIMMEL BRIDGE	[R21A003]	1B	1A	6.4	1A	7.0	1A	16.8	1A	81.8	1B	4.0	1A	0.138	1A	0.010	1A	9.9	1A	13.2	1A	17.5
NEMLEN RIVER	DRIFT RESERVOIR	[R21A018]	2	1A	6.6	1A	7.4	2	22.0	1A	85.0	1A	2.4	2	0.990	1A	0.010	1A	7.3	-	-	-	-
NEMLEN RIVER	BURRAS BRIDGE	[R21A004]	1A	1A	6.0	1A	7.3	1A	17.2	1A	81.4	1A	2.3	1A	0.074	1A	0.010	1A	4.8	1A	6.0	1A	34.6
NEMLEN RIVER	STONE HOBB	[R21A027]	1B	1A	6.7	1A	7.3	1A	16.6	1B	77.0	1A	2.0	1A	0.300	1A	0.010	1A	4.3	2	1500.0	1A	39.0
NEMLEN RIVER	NEMLEN BRIDGE	[R21A005]	2	1A	6.1	1A	7.5	1A	16.7	1A	82.8	1B	4.6	1A	0.148	1A	0.010	1A	14.6	2	64.1	1A	49.8
TRENEIFE STREAM	DENNIS PLACE	[R21A019]	2	1A	6.0	1A	7.5	1A	15.7	1B	79.5	1B	3.2	2	1.230	1A	0.010	1A	10.2	1A	9.0	1A	54.8
TRENEIFE STREAM	PRIOR TO NEMLEN RIVER	[R21A020]	1A	1A	5.9	1A	7.6	1A	16.4	1A	83.3	1A	3.0	1A	0.115	1A	0.010	1A	17.0	1A	18.8	1A	60.0
SPINWOOD BROOK	LITTLE SELLAN BRIDGE	[R21A017]	1B	1A	6.1	1A	7.0	1A	17.9	1B	75.5	1A	2.0	1B	0.572	1A	0.010	1A	7.2	1A	6.0	1A	12.0
LAMPONA STREAM	TRESCOPE	[R21A025]	1B	1A	6.7	1A	7.3	1A	16.9	1B	79.3	1A	2.8	1B	0.344	1A	0.010	1A	9.5	1A	8.4	1A	32.7
LAMPONA STREAM	HOTEL LAMPONA	[R21A016]	1B	1A	6.7	1A	7.5	1A	17.3	1A	86.0	1B	3.1	1B	0.476	1A	0.010	1A	5.7	1A	5.0	1A	19.9
LAMPONA STREAM	LAMPONA	[R21A011]	1A	1A	7.0	1A	7.5	1A	16.2	1A	84.4	1A	2.1	1A	0.198	1A	0.010	1A	4.7	1A	7.0	1A	19.2
CHRY ELNY STREAM	TRESCOPE	[R21A015]	2	1A	6.8	1A	7.6	1A	16.9	1A	85.2	1A	2.6	2	0.706	1A	0.010	1A	5.9	1A	6.0	1A	23.3
PENBERTH STREAM	BITIONS	[R22A010]	3	1A	6.9	1A	7.7	1A	16.9	3	20.2	1A	2.9	1B	0.514	1A	0.010	1A	6.1	1A	7.0	1A	54.0
PENBERTH STREAM	TREN	[R22A011]	3	1A	6.9	1A	7.7	1A	16.4	1B	69.8	3	9.5	2	1.159	1A	0.010	1A	4.7	1A	12.8	1A	24.1
PENBERTH STREAM	PENBERTH BRIDGE	[R22A009]	1B	1A	7.0	1A	7.7	1A	17.4	1A	81.0	1A	3.0	1B	0.340	1A	0.010	1A	6.4	1A	15.0	1A	13.0
TRENGEAL STREAM	BOGRAZE	[R22A012]	2	1A	5.5	1A	6.9	1A	16.0	2	56.2	2	6.1	2	1.076	1A	0.010	1A	8.9	1A	10.0	1A	38.0

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 CALCULATED DETERMINAND STATISTICS USED FOR QUALITY ASSESSMENT
 CATCHMENT: LANDS END STREAMS (23)

River	Reach upstream of	User Ref. Number	90 NWC Class	Calculated Determinand Statistics used for Quality Assessment																			
				pH Lower Class 5tile		pH Upper Class 95tile		Temperature Class 95tile		DD (%) Class 5tile		BOD (ATU) Class 95tile		Total Ammonia Class 95tile		Union. Ammonia Class 95tile		S.Solids Class Mean		Total Copper Class 95tile		Total Zinc Class 95tile	
WREGSEAL STREAM	WREGSEAL BRIDGE	R22A006	2	1A	5.9	1A	7.4	1A	17.0	1A	82.1	2	5.4	2	1.161	1A	0.010	1A	11.3	2	40.0	1A	35.0
WREGSEAL STREAM	PRICOR TO SEA	R22A007	1B	1A	6.1	1A	7.3	1A	16.8	1B	72.3	1A	2.9	1A	0.288	1A	0.010	1A	11.3	1A	12.0	1A	64.0
ZENNER STREAM	ZENNER	R22A008	3	1A	5.8	1A	7.5	1A	15.0	1B	60.2	2	8.7	3	2.532	1A	0.010	1A	4.6	1A	11.0	1A	29.0

Lands End Streams Compliance - 1990



NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

1990 RIVER WATER QUALITY CLASSIFICATION

NUMBER OF SAMPLES (N) AND NUMBER OF SAMPLES EXCEEDING QUALITY STANDARD (F)

CRITERIA: LAKE END STANDARDS (23)

River	Reach upstream of	Uber Ref. Number	pH Lower		pH Upper		Temperature		DO (%)		BOD (PTU)		Total Ammonia		Union. Ammonia		S.Solids		Total Copper		Total Zinc	
			N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F
FORTHLEVEN STREAM	FERRIS	[R21A013]	22	-	22	-	22	-	22	-	22	-	22	-	22	-	22	-	22	21	22	21
FORTHLEVEN STREAM	A394 BRIDGE, LITTLEBROOK	[R21A009]	23	-	23	-	23	-	23	-	23	-	23	-	23	-	23	-	12	10	12	12
FORTHLEVEN STREAM	MEIKLE	[R21A012]	21	-	21	-	21	-	21	-	21	-	21	-	21	-	21	-	21	6	21	19
FORTHLEVEN STREAM	UPSTREAM OF HARBOLD, FORTHLEVEN	[R21A010]	24	-	24	-	24	-	24	-	24	-	24	-	23	-	24	3	21	6	21	21
MARAZICH RIVER	FINCLEDA	[R21A028]	22	-	22	-	22	-	22	-	22	-	22	-	20	-	22	-	22	-	22	-
MARAZICH RIVER	CLIMBERS MILL	[R21A001]	23	-	23	-	23	-	23	-	23	-	23	-	22	-	23	-	23	1	23	-
MARAZICH RIVER	FINDSMILL MILL BRIDGE	[R21A002]	29	-	29	-	29	-	29	2	29	2	29	1	27	-	29	1	24	-	24	-
TREHILLIOME STREAM	OMALLON	[R21A025]	21	-	21	-	21	-	21	6	21	-	21	-	19	-	21	3	20	-	20	17
TREVALENT STREAM	TRINCOCCA	[R21A022]	23	-	23	-	23	-	23	-	23	-	23	-	23	-	23	-	22	-	22	-
TREVALENT STREAM	A.30 BRIDGE AT CHRENDOUR	[R21A008]	28	-	28	-	28	-	28	-	28	1	28	-	26	-	28	1	25	-	25	-
ROSEMORAN STREAM	FERRIS COITAGE	[R21A021]	21	-	21	-	20	-	20	-	21	1	21	1	18	-	21	-	21	-	21	-
CHRENDOUR BROOK	FERRIS	[R21A023]	21	-	21	-	20	-	20	-	21	-	21	4	20	-	21	-	21	-	21	-
CHRENDOUR BROOK	A.30 BRIDGE AT CHRENDOUR	[R21A005]	29	-	29	-	28	-	28	-	29	-	29	-	27	-	29	-	24	-	24	-
LARIGGAN RIVER	WEST LODGE	[R21A024]	22	-	22	-	22	-	22	-	22	1	22	1	22	-	22	-	22	-	22	-
LARIGGAN RIVER	MERRY TOWN BRIDGE	[R21A007]	28	-	28	1	28	-	28	1	28	1	28	1	28	-	28	1	25	-	25	-
NEMEN RIVER	SOMMEL BRIDGE	[R21A003]	34	-	34	-	34	-	34	-	34	-	34	-	29	-	34	1	25	-	25	-
NEMEN RIVER	DRIFT BUSHMILL	[R21A018]	12	-	12	-	12	1	12	-	12	-	12	1	12	-	12	1	12	-	12	-
NEMEN RIVER	BURNS BRIDGE	[R21A004]	43	-	43	-	43	-	43	-	43	-	43	-	41	-	43	-	35	-	35	-
NEMEN RIVER	SINGLE BURN	[R21A027]	16	-	16	-	15	-	15	-	16	-	16	-	13	-	16	-	15	1	15	-
NEMEN RIVER	NEMEN BRIDGE	[R21A005]	44	-	44	-	42	-	42	-	44	1	44	-	41	-	44	2	36	2	36	-
TRESCHEP STREAM	DERRIS PLACE	[R21A019]	34	-	34	-	34	-	34	-	34	-	34	2	34	-	34	2	34	-	34	-
TRESCHEP STREAM	FEOR TO NEMEN RIVER	[R21A020]	34	-	34	-	34	-	34	-	34	-	34	-	28	-	34	4	34	-	34	-
SPEICED BROOK	LITTLE SELLAN BRIDGE	[R21A017]	20	-	20	-	20	-	20	1	20	-	20	1	20	-	20	-	19	-	19	-
LANCRA STREAM	TRESCOPE	[R21A025]	22	-	22	-	22	-	22	1	22	-	22	1	22	-	22	1	22	-	22	-
LANCRA STREAM	BEEL LANCRA	[R21A016]	21	-	21	-	21	-	21	-	21	1	21	1	21	-	21	-	21	-	21	-
LANCRA STREAM	LANCRA	[R21A011]	27	-	27	-	27	-	27	-	27	-	27	-	25	-	27	-	27	-	27	-
CHRI ELNY STREAM	TRESCOPE	[R21A015]	22	-	22	-	22	-	22	-	22	-	22	1	22	-	22	-	22	-	22	-
FERRIS STREAM	BOITONS	[R22A010]	22	-	22	-	22	-	22	1	22	-	22	-	21	-	22	1	22	-	22	-
FERRIS STREAM	FERRIS	[R22A011]	22	-	22	-	22	-	22	-	21	1	22	1	22	-	22	-	22	-	22	-
FERRIS STREAM	FERRIS BRIDGE	[R22A009]	20	-	20	-	20	-	19	-	20	-	20	-	20	-	20	-	19	-	19	-
TRESCHEP STREAM	BOITRAZE	[R22A012]	40	-	40	-	40	-	40	14	40	4	40	12	36	-	40	2	24	-	24	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION

1990 RIVER WATER QUALITY CLASSIFICATION

NUMBER OF SAMPLES (N) AND NUMBER OF SAMPLES EXCEEDING QUALITY STANDARD (F)

CATCHMENT: LANDS END STREAMS (23)

River	Reach upstream of	User Ref. Number	pH Lower		pH Upper		Temperature		DO (%)		BOD (RTU)		Total Ammonia		Union. Ammonia		S.Solids		Total Copper		Total Zinc	
			N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F	N	F
TRIGASEN STREAM	TRIGASEN BRIDGE	R222006	20	-	20	-	20	-	20	-	20	2	20	2	20	-	20	1	19	1	19	-
TRIGASEN STREAM	BEFORE TO SEA	R222007	24	-	24	-	24	-	24	3	24	-	24	-	24	-	24	1	14	-	14	-
ZENOR STREAM	ZENOR	R222008	21	-	21	-	21	-	21	4	21	2	21	7	20	-	21	-	17	-	17	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 PERCENTAGE EXCEEDENCE OF DETERMINAND STATISTICS FROM QUALITY STANDARDS
 CATCHMENT: LANDS END STREAMS (23)

River	Reach upstream of	User Ref. Number	PERCENTAGE EXCEEDENCE OF STATISTIC FROM QUALITY STANDARD									
			pH Lower	pH Upper	Temperature	DO (%)	BOD (ATU)	Total Ammonia	Un-ionised Ammonia	Suspended Solids	Total Copper	Total Zinc
PORThLEVEN STREAM	PENBRO	R21A013	-	-	-	-	-	-	-	-	235	466
PORThLEVEN STREAM	A394 BRIDGE, LITTLEANTRON	R21A009	-	-	-	-	-	-	-	-	185	433
PORThLEVEN STREAM	METHLEIGH	R21A012	-	-	-	-	-	-	-	-	58	265
PORThLEVEN STREAM	UPSTREAM OF HARBOUR, PORThLEVEN	R21A010	-	-	-	-	-	-	-	-	350	204
MARAZION RIVER	WASCLEDBA	R21A028	-	-	-	-	-	-	-	-	-	-
MARAZION RIVER	CUCURBLAN MILL	R21A001	-	-	-	-	-	-	-	-	65	-
MARAZION RIVER	TRUTHWELL MILL BRIDGE	R21A002	-	-	-	15	70	155	-	-	-	-
TREGILLIOWE STREAM	GWALLOH	R21A026	-	-	-	79	-	-	-	-	-	200
TREVAYLOR STREAM	TRYTHOGGA	R21A022	-	-	-	-	-	-	-	-	-	-
TREVAYLOR STREAM	A.30 BRIDGE AT CHYANDOUR	R21A008	-	-	-	-	-	-	-	-	-	-
ROSEMORRAN STREAM	KENEKIE COTTAGE	R21A021	-	-	-	-	3	13	-	-	-	-
CHYANDOUR BROOK	HEAMMOOR	R21A023	-	-	-	-	-	190	-	-	-	-
CHYANDOUR BROOK	A.30 BRIDGE AT CHYANDOUR	R21A006	-	-	-	-	-	-	-	-	-	-
LARIGGAN RIVER	WEST LODGE	R21A024	-	-	-	-	89	621	-	-	-	-
LARIGGAN RIVER	WHERRY TOWN BRIDGE	R21A007	-	2	-	1	27	467	-	-	-	-
NEWLYN RIVER	SKIMMEL BRIDGE	R21A003	-	-	-	-	-	-	-	-	-	-
NEWLYN RIVER	DRIFT RESERVOIR	R21A018	-	-	2	-	-	219	-	-	-	-
NEWLYN RIVER	BURYAS BRIDGE	R21A004	-	-	-	-	-	-	-	-	-	-
NEWLYN RIVER	STABLE HOBBA	R21A027	-	-	-	-	-	-	-	-	3650	-
NEWLYN RIVER	NEWLYN BRIDGE	R21A005	-	-	-	-	-	-	-	-	60	-
TREBEIFE STREAM	DENNIS PLACE	R21A019	-	-	-	-	-	76	-	-	-	-
TREBEIFE STREAM	PRIOR TO NEWLYN RIVER	R21A020	-	-	-	-	-	-	-	-	-	-
SANCREED BROOK	LITTLE SELLAN BRIDGE	R21A017	-	-	-	6	-	84	-	-	-	-
LAMORNA STREAM	TREMOOFE	R21A025	-	-	-	1	-	11	-	-	-	-
LAMORNA STREAM	HOTEL LAMORNA	R21A016	-	-	-	-	2	54	-	-	-	-
LAMORNA STREAM	LAMORNA	R21A011	-	-	-	-	-	-	-	-	-	-
CARN EUNY STREAM	TREMOOFE	R21A015	-	-	-	-	-	128	-	-	-	-
PENBERTH STREAM	BOTTOMS	R22A010	-	-	-	66	-	-	-	-	-	-
PENBERTH STREAM	TREEN	R22A011	-	-	-	-	89	66	-	-	-	-
PENBERTH STREAM	PENBERTH BRIDGE	R22A009	-	-	-	-	-	-	-	-	-	-
TREGASEAL STREAM	BOSTRAZE	R22A012	-	-	-	30	102	247	-	-	-	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 1990 RIVER WATER QUALITY CLASSIFICATION
 PERCENTAGE EXCEEDENCE OF DETERMINAND STATISTICS FROM QUALITY STANDARDS
 CATCHMENT: LANDS END STREAMS (23)

River	Reach upstream of	User Ref. Number	PERCENTAGE EXCEEDENCE OF STATISTIC FROM QUALITY STANDARD									
			pH Lower	pH Upper	Temperature	DO (%)	BOD (ATU)	Total Ammonia	Un-ionised Ammonia	Suspended Solids	Total Copper	Total Zinc
TREGASEAL STREAM	TREGASEAL BRIDGE	R22A006	-	-	-	-	80	275	-	-	82	-
TREGASEAL STREAM	PRIOR TO SEA	R22A007	-	-	-	10	-	-	-	-	-	-
ZENFOR STREAM	ZENFOR	R22A008	-	-	-	25	186	717	-	-	-	-

NATIONAL RIVERS AUTHORITY - SOUTH WEST REGION
 IDENTIFICATION OF POSSIBLE CAUSES OF NON-COMPLIANCE WITH BQO
 CATCHMENT: LANDS END STREAMS (23)

* = WORK ALREADY IN HAND

1990 Map Position Number	River	Reach upstream of	User Reference Number	Reach Length (km)	Possible causes of non-compliance
1	PORTHLEVEN STREAM	PENBERO	R21A013	1.5	MINING, CATCHMENT GEOLOGY
2	PORTHLEVEN STREAM	A394 BRIDGE, LITTLEANTRON	R21A009	0.6	MINING
3	PORTHLEVEN STREAM	METHLEIGH	R21A012	1.0	MINING
4	PORTHLEVEN STREAM	UPSTREAM OF HARBOUR, PORTHLEVEN	R21A010	0.7	MINING
6	NARAZION RIVER	CUCURRIAN MILL	R21A001	1.3	MINING
7	NARAZION RIVER	TRUTHWELL MILL BRIDGE	R21A002	3.6	CANALISATION, EUTROPHICATION, LAND RUN-OFF, FARMING ACTIVITIES
8	TREGILLIOME STREAM	GWALLON	R21A026	2.3	DROUGHT, MINING
11	ROSEMORRAN STREAM	KENEGIE COTTAGE	R21A021	3.8	LAND RUN-OFF, WASTE DISPOSAL SITE, FARMING ACTIVITIES
12	CHYANDOUR BROOK	HEAMDOOR	R21A023	3.3	LAND RUN-OFF, CHIP SHOP
14	LARIGGAN RIVER	WEST LODGE	R21A024	3.7	LAND RUN-OFF, FARMING ACTIVITIES, POLLUTION (ON-GOING)
15	LARIGGAN RIVER	WHERRY TOWN BRIDGE	R21A007	2.8	LAND RUN-OFF, UNKNOWN POINT SOURCE, URBANISATION
17	NEWLYN RIVER	DRIFT RESERVOIR	R21A018	1.3	BLUE-GREEN ALGAE, EUTROPHICATION, DROUGHT
20	NEWLYN RIVER	NEWLYN BRIDGE	R21A005	1.0	INDUSTRIAL ESTATE
21	TREKEIFE STREAM	DENNIS PLACE	R21A019	0.5	LAND RUN-OFF, FARMING ACTIVITIES, FERTILISER RUN-OFF
23	SANCREED BROOK	LITTLE SELLAN BRIDGE	R21A017	3.2	LAND RUN-OFF, FARMING ACTIVITIES, SEWAGE TREATMENT WORKS
24	LAMORNA STREAM	* TREWOOPE	R21A025	4.5	LAND RUN-OFF, FARMING ACTIVITIES
25	LAMORNA STREAM	* HOTEL LAMORNA	R21A016	1.0	LAND RUN-OFF, SEWAGE TREATMENT WORKS
27	CARN EUNY STREAM	TREWOOPE	R21A015	6.4	LAND RUN-OFF, FARMING ACTIVITIES, POLLUTION (ON-GOING)
28	PENBERTH STREAM	BOTTOMS	R22A010	3.4	DROUGHT
29	PENBERTH STREAM	TREEN	R22A011	1.6	LAND RUN-OFF, FARMING ACTIVITIES
31	TREGASEAL STREAM	BOSTRAZE	R22A012	1.1	LAND RUN-OFF
32	TREGASEAL STREAM	TREGASEAL BRIDGE	R22A006	1.7	URBANISATION, CANALISATION, LAND RUN-OFF, CATCHMENT GEOLOGY
33	TREGASEAL STREAM	PRIOR TO SEA	R22A007	1.9	LAND RUN-OFF
34	ZERNOR STREAM	ZERNOR	R22A008	1.9	CANALISATION, URBANISATION, LAND RUN-OFF, SPATE