

CHAPTER 1

BACKGROUND AND OBJECTIVES

1.1 Introduction

Section 65 of the Environmental Protection Agency Act, 1992 requires the Agency to prepare programmes for monitoring the quality of the environment. One of those programmes is a groundwater quality monitoring programme. In the following chapters, the available information on which to base a groundwater monitoring programme is reviewed and a national groundwater quality monitoring programme is proposed.

There are certain developments, such as agriculture, mining, solid waste disposal, industries, sewerage schemes, septic tanks, chemical and fuel storage depots, which generate contaminants that pose a threat to groundwater. Contamination manifests itself in chemical and/or bacterial form. Monitoring is essential to the identification of threats to groundwater and must be part of groundwater protection programmes. In addition, groundwater monitoring must be carried out to implement EU Directives.

Monitoring means the measurement of:

- the quality of the groundwater environment;
- inputs and developments which could affect the quality of groundwater;
- the effects of inputs and pressures on the groundwater environment.

1.2 Objectives of the Groundwater Quality Monitoring Programme

The main objectives of the groundwater quality monitoring programme are:

- to establish that groundwater quality reflects the geological characteristics of the aquifers, and check whether it

is impaired by anthropogenic influences;

- to define the state of groundwater quality and to detect changes and trends of quality on a national basis;
- to comply with National and EU Legislation, especially the Nitrates Directive;
- to identify any groundwater affected by pollution;
- to repeat monitoring for nitrates every four years in aquifers where nitrate concentrations greater than 25 mg/l NO₃ have been found;
- to identify vulnerable zones
- to identify user requirements and activities that affect the quantity and quality of groundwater.

1.3 Categories of Monitoring Network

The Groundwater Quality Monitoring Programme can be broken into three categories:

- (1) representative or basic monitoring;
- (2) user-related monitoring;
- (3) pollutant-related monitoring.

1.3.1 Representative Monitoring Network

This network is to be operated on a National basis in order to define the state of the groundwater quality, to detect changes in groundwater quality and to assess causes of any changes that might be identified. Monitoring points within this basic network are selected taking into account hydrogeological conditions and groundwater use.

1.3.2 User-Related Monitoring Network

This network mainly consists of monitoring of drinking water as required under the European Communities (Quality of Water intended for Human Consumption) Regulations, 1988. Under these Regulations, water used for human consumption as well as water used in the food industry, regardless of origin, must be monitored. Monitoring of the water quality is required at the point where it is made available to the consumer.

1.3.3 Pollutant-Related Monitoring Network

This network is intended to detect possible pollutant emissions from landfill sites, septic tank clusters, factories, chemical and fuel storage depots and includes the identification and mapping of potential sources of pollution.

1.4 Parameters for analysis

The extent of a monitoring programme is governed by the number and types of aquifers, the locations of potential sources of pollution within aquifers and water abstractions from the aquifer.

The parameters monitored and the frequency of monitoring will be different for each of the three categories. The representative monitoring will include the major anions and cations as well as physico-chemical parameters. The sampling for microbiological parameters and other parameters will depend on local circumstances.

1.5 Procedures for Establishing a Monitoring Programme

Procedures were developed for establishing a representative monitoring network as part of a research programme, supported by the STRIDE (Science and

Technology for Regional Innovation and Development in Europe) Operational Programme for Ireland (1991 - 1993), carried out at the Regional Water Laboratory, Kilkenny. The procedures included:

- (1) review of available hydrogeological information;
- (2) identification of suitable monitoring points;
- (3) characterisation of each monitoring point hydrogeologically;
- (4) establishment of a monitoring system.

These procedures are examined in detail in the following chapters. The available data relevant to the development of a national groundwater quality monitoring programme is assessed and described under each of these four headings in the following chapters.

CHAPTER 2

REVIEW OF AVAILABLE HYDROGEOLOGICAL INFORMATION

2.1 Identification of Aquifers

The Geological Survey of Ireland (GSI) is the main source of information on the aquifers of Ireland. Two studies were carried out for the EEC (i) "*Groundwater Resources of the Republic of Ireland*", published in 1982 by the EEC and (ii) "*Groundwater Vulnerability and Quality in the Republic of Ireland*", completed in 1983. The first entailed the mapping of the aquifers and the quantitative assessment of groundwater resources, and the second the assessment and mapping of the vulnerability and quality of those groundwater resources.

For their assessment of surface water resources in Ireland in the 1970s, An Foras Forbartha (AFF) used seven water resource regions. These are shown on Figure 1. Each water resource region comprises of a number of hydrometric areas. Each hydrometric area, with the exception of the River Shannon catchment, consists of one or more river catchments or coastal areas which have no significant river drainage systems. Because of its size the catchment of the main channel of the River Shannon comprises of two hydrometric areas. Hydrometric areas are shown on Figure 2 which also lists the river catchments and coastal drainage areas for each hydrometric area number.

For groundwater the GSI, for each surface water resource region, identified the aquifers by aquifer unit numbers in parts of river catchments and coastal drainage areas. For each surface water resource region Table 1 lists the aquifers and their areas in each aquifer unit and identifies the hydrometric area the aquifer unit is in. This allows the identification of aquifers in surface water catchments.

2.2 Mapping of Information

The aquifer maps published by the European Commission, as described above, were enlarged to a scale of 1:250000 and digitised on a county basis, by the former Environmental Research Unit of the Department of the Environment. The following information is mapped for each county:

- (i) aquifer units boundaries;
- (ii) aquifer type and area extent in each aquifer unit;
- (iii) sources of supply from groundwater for public water supply and for some private abstractions and group water supply schemes;
- (iv) representative sampling points and
- (v) groundwater sources of supply sampled under the Drinking Water Regulations.

Maps can be updated as additional information becomes available.

Each abstraction point (borehole, well, spring or infiltration gallery) is given a plot number by which it can be identified on the county map. A list of known groundwater abstraction points, giving their name and county plot numbers, has been prepared for each county.

2.3 Groundwater Quality Data

Groundwater quality data, plotted on aquifer maps, would be helpful in the design of a national monitoring network. However much of the data collected to date has not been mapped. Details of studies carried out are outlined below:

- (i) A national study of groundwater vulnerability and quality was undertaken by GSI for the

- Commission of the European Communities in the early 1980s, at a time when concern was being expressed about the possibility of groundwater pollution by nitrate. The report stated that there was virtually no systematic monitoring of groundwater quality being carried out in the country. Since that time, groundwater quality monitoring is carried out by local authorities in relation to their obligations under National and EU legislation, and information on groundwater quality is also collected by GSI, EPA and Universities/ Third Level Colleges, as part of special studies they undertake.
- (ii) A detailed assessment of the groundwater resources in counties Cavan, Lough and Monaghan was made in 1981, in a joint GSI/AFF report entitled Groundwater Resources in the North East Regional Development Organisation Region (NERDO).
 - (iii) A survey was carried out in 1985/86 of water quality and temperature of a number of large springs in Ireland. The analyses reflect the water quality of the springs mainly in the unconfined parts of limestone and sand and gravel aquifers.
 - (iv) Monitoring results of water quality for the Drinking Water Regulations give details in relation to nitrate concentrations and these results can be used for the purposes of nitrate pollution assessments.
 - (v) A STRIDE funded project was carried out by the Kilkenny Regional Water Laboratory which led to the establishment of a representative monitoring network in counties Carlow, Kilkenny, Tipperary North Riding, Tipperary South Riding, Waterford and Wexford. Groundwater quality data were collected for this project.
 - (vi) A STRIDE funded project was carried out by the Monaghan Regional Water Laboratory. The overall objective was to assess whether there had been any alteration in the quality of groundwater since the 1981 studies in Cavan, Louth and Monaghan.
 - (vii) A STRIDE funded project was undertaken by Sligo Regional Technical College on Groundwater Vulnerability Assessments and the Development of Aquifer Protection Plans for Counties Galway, Mayo, and Roscommon. Groundwater quality monitoring was confined to a small number of locations and parameters.
 - (viii) The GSI has carried out detailed studies in various locations such as the Nore Basin, East Cork and East Galway. It is also involved in developing aquifer protection schemes in a number of counties.

CHAPTER 3

ESTABLISHMENT OF A MONITORING SYSTEM, RESOURCES AND COST

3.1 Identification of Suitable Monitoring Points

As mentioned in the introduction, groundwater quality monitoring comprises three categories of monitoring networks: representative, user-related and pollutant-related.

The starting point for selecting a representative monitoring network is the county map showing the information described above (aquifers, aquifer unit boundaries, abstraction points and existing monitoring points). Each County Council was contacted for assistance in selecting suitable monitoring points. Advice and assistance was received from the GSI and from Dr. Richard Thorn, (co-ordinator of the STRIDE funded project for the western counties) at Sligo RTC, in relation to specific counties. The points selected comprise existing public water supply abstraction points where possible, but private wells are also included. These points were chosen for a number of reasons; (1) the use of public abstraction points is cost effective, (2) pumping creates movement of groundwater in the zone of influence of the borehole and monitoring results would be representative of this area, (3) there is a possibility of some historical data being available. Some 288 representative points were selected for the whole country (see Map 1). Details of these monitoring points are given in Table 2.

In relation to user-related monitoring the criteria for selecting supplies to be monitored are set out in the Drinking Water Regulations. A list of the known abstraction points (wells, springs, boreholes) was compiled for each county. The sources of supply from groundwater which were included in the Drinking Water Regulations monitoring, and which

contained analyses for Nitrates, have been mapped. These locations are given in Appendix 1 and are shown on Map 2.

3.2 Hydrogeological characterisation of each Monitoring Location

Fissure permeability predominates in aquifers in Ireland. The only widespread aquifers with intergranular permeability are Quaternary sands and gravels. Irish aquifers are generally unconfined and are often small in lateral extent with faulting common.

In order to make maximum use of the results of the monitoring programme, it is important that certain information be available for each monitoring point. This includes:

- (i) bedrock geology (from maps and drilling logs).
- (ii) overburden (from drilling)
- (iii) hydrogeology (from pump tests, water level records and drilling records).
- (iv) borehole construction (from drillers or owners).

In addition, information on land use, surface hydrology and vulnerability of the source of supply to pollution is necessary. Compilation of data on the characteristics of each monitoring point has been carried out, as far as possible, in the South Eastern Region and this work will be ongoing for the rest of the country.

An assessment of the vulnerability of the aquifers based on time of travel of pollutants has been made by the GSI as outlined above. Nitrate loading from livestock and tillage has been mapped on a county basis by Teagasc and groundwater nitrate pollution risk based

on soil survey associations has also been mapped.

In addition to information gathering in relation to groundwater quality a programme of groundwater level monitoring is being developed by EPA.

3.3. Establishing a Monitoring Programme

The three types of monitoring networks will be monitored by different organisations.

Representative monitoring will be carried out by EPA with assistance from the County Councils. Co-operation from local authority staff is necessary in arranging for the sampling of raw water (before chlorination or other treatment) at each sampling point. Sampling will be carried out by EPA technicians and analyses will be carried out by EPA laboratories. Standard operating procedures for sampling of groundwaters have been drawn up and issued to all technicians involved in collection of samples. Frequency of sampling is twice yearly. The locations of the representative monitoring points are listed for each county and shown on county aquifer maps and also on Map 1 of this report.

User-related groundwater quality monitoring consists mainly of monitoring carried out under the European Communities (Quality of water intended for Human Consumption) Regulations, 1988. Sanitary authorities are required to regularly monitor at the point where water is made available to the user. In the case of water supplies serving less than 1000 persons or producing or distributing less than 200 cubic metres of water per day monitoring frequency and extent is decided by the sanitary authority. The responsibility of sanitary authorities under the Drinking Water Regulations extends to public and private supplies. The data collected from this monitoring can be related to the

source of supply, and where the source is groundwater, these data will add to other available information, particularly in relation to nitrates in groundwater.

Pollutant-related groundwater monitoring will consist mainly of compliance monitoring of licensed activities under the Environmental Protection Agency Act, 1992, and the Waste Management Act, 1996.

The objectives of monitoring carried out under the Waste Management Act licences are to detect adverse environmental impacts from the management of waste; to provide information for the assessment of an application for a licence or surrender of a licence; to demonstrate that the environmental control measures are operating as designed and to demonstrate compliance with the licence conditions.

The EPA publication, Landfill Manuals - Landfill Monitoring, outlines the minimum requirements for analysis of groundwater composition and monitoring frequency. A minimum of one upgradient and two downgradient boreholes are required for a landfill site. However, site specific factors will determine the location and the number of boreholes that are necessary on industrial sites.

In Integrated Pollution Control (IPC) licensing, the need for groundwater monitoring is considered on a case by case basis. Where significant risk is considered to be present, groundwater monitoring is required. For example, where chemicals are being used or stored, or where there is particular aquifer vulnerability, such as proximity of important aquifers, monitoring of groundwater for the specific chemicals and for more general parameters is required in individual licences. Results of this monitoring are returned to the Agency on a regular basis and are available for public inspection.

These and other potential sources of pollution to groundwater, described earlier, will be mapped by EPA as the information becomes available. The monitoring will be carried out by the licensees and by EPA.

3.4 Resources and Costs

The representative monitoring network will be sampled by EPA technicians who are located at Dublin, Monaghan, Kilkenny, Castlebar, Mallow, Limerick, Athlone and Letterkenny. Analyses will be carried out at EPA laboratories. The estimated cost of this work is £140,000 per annum. The cost of collecting, collating and publishing available data on groundwater quality from all monitoring programmes will be additional to the above costs.

3.5 Publication of Results

As groundwater in Ireland is both an important resource and the source for a large number of public water supply schemes in Ireland, information on its quality is important and is a significant element in the management and protection of this resource. It is also increasingly important to keep the public more fully informed in relation to the current status of groundwater and the trend in relation to groundwater quality.

Towards these ends, the EPA will publish:

- reports on any EPA investigation of pollution incidents affecting groundwater as and when they occur;
- a report on Nitrates in Groundwater, based on the collation of the available information. This is scheduled for publication in 1999;
- A report on groundwater quality, based on the collation of data obtained from the analysis of samples taken as part of the representative monitoring programme will be

published when data for a 4 year period are available, i.e. in 2000.

3.6 Summary

Figure 1 and Figure 2, together with Table 1 and Map 1, summarise the aquifer locations and the representative monitoring points chosen on a national basis. Table 2 gives details of the representative monitoring network.

Appendix 1 contains a list of the groundwater sources that were sampled to date under the Drinking Water Regulations as part of the user-related network in each county and which were analysed for nitrates. These locations are shown on Map 2.

Establishing the locations of potential sources of pollution to groundwater, mapping them and getting the owners and operators to monitor them will be an ongoing part of this programme. The EPA will also carry out compliance and verification monitoring.

Enter figure 1

enter figure 2

Table 1

**List of Aquifer Units, Aquifers within each Aquifer Unit, Area of each Aquifer and
Hydrometric Area Number (Figure 2) in which aquifers lie.**

EASTERN WATER RESOURCE REGION

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km²	Hydrometric Area Number
E 1 North Louth	Quaternary Sand/Gravel Carboniferous Limestone	90.5 64.1	06
E 2 Glyde & Dee	Quaternary Sand/Gravel Permian/Triassic Sandstone Carboniferous Limestone (Edenderry Oolite)	72 23 163	07
E 3 Boyne-Blackwater	Carboniferous Limestone	250	08
E 4 Upper Boyne	Quaternary Sand/Gravel Carboniferous Limestone	190 115.5	08
E 5 Nanny/Devlin	Carboniferous Limestone	97.5	08
E 6 Broadmeadow	Quaternary Sand/Gravel	7	08
E 7 Liffey/Tolka	Quaternary Sand/Gravel Carboniferous Limestone	3 36	09
E 8 Upper Liffey	Quaternary Sand/Gravel Curragh Quaternary Sand/Gravel Wicklow	80 24	09
E 9 East Wicklow	Quaternary Sand/Gravel Ordovician Volcanics	67 43	10
E 10 Avoca	Quaternary Sand/Gravel Ordovician Volcanics	28.5 36	10

SOUTH EASTERN WATER RESOURCE REGION

SE 1 East Wexford Coastal	Quaternary Sand/Gravel Ordovician Volcanics	185 90	11
SE 2 Slaney	Quaternary Sand/Gravel Ordovician Volcanics	30 187	12
SE 3 South Wexford Coastal	Carboniferous Limestone Ordovician Volcanics	87 98	13
SE 4 Upper Barrow	Quaternary Sand/Gravel Curragh Sand/Gravel Clonaslee Sand/Gravel Maryborough Esker Carboniferous Limestone (Edenderry Oolite) Crosspatrick Limestone Clonaslee Devonian Sandstone	6 125.4 2 19.2 125.2 22.2 35.9	14
SE 5 Middle Barrow	Stradbally Sand/Gravel Carlow Gravels Kilkenny/Carlow Dolomites Upper Visean Limestone	4.1 60.6 34.8 387	14
SE 6 Lower Barrow	Ordovician Volcanics	40.4	14
SE 7 Upper Nore	Camross Sand/Gravel Ballyfin Sand/Gravel Clonaslee Upper Devonian Sandstone	16.1 13.5 15.7	15

Table 1 (continued)

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km ²	Hydrometric Area Number
SE 8 Middle Nore	Kilkenny Gravels South Laois/North Kilkenny Sand/Gravel Kilmanagh Gravels Dinin Gravels Kings River Gravels Upper Visean Limestone Crosspatrick Limestone	18.2 48.2 22.2 23 8.1 227 39.6	15
SE 9 Lower Nore	Thomastown Sand/Gravel Kiltorcan Upper Devonian Sandstone	10.1 69	15
SE 10 Upper Suir	Crosspatrick Limestone Clonaslee Upper Devonian Sandstone	34.1 69.2	16
SE 11 Middle Suir	Aherlow Gravels South West Tipperary Sand/Gravel Upper Visean Limestone Aherlow Limestone syncline Crosspatrick Limestone	43.6 87 494 53.1 67	16
SE 12 Lower Suir	Lower Suir Limestone Ordovician Volcanics	570 160	16
SE 13 Waterford Coastal	Dungarvan Limestone syncline Ordovician Volcanics	44.4 183	17

SOUTHERN WATER RESOURCE REGION

S 2 Dingle	none	0	22/23
S 3 Castleisland	Quaternary Sand/Gravel Carboniferous Limestone	167.5	22
S 4 Killarney	Quaternary Sand/Gravel Carboniferous Limestone	166.5	22
S 5 West Kerry	none	0	21
S 6 Kenmare	Carboniferous Limestone	16	21
S 7 Beara	none	0	21
S 8 West Cork	none	0	20
S 9 Bandon	Quaternary Sand/Gravel	24	20
S 10 Kinsale	Quaternary Sand/Gravel	3	20
S 11 Owenboy	Carboniferous Limestone	14	20
S 12 Upper Lee	Quaternary Sand/Gravel	6	19
S 13 Lower Lee	Quaternary Sand/Gravel Carboniferous Limestone	52.5	19
S 14 South East Cork	Quaternary Sand/Gravel Carboniferous Limestone	144	19
S 15 Upper Blackwater	Quaternary Sand/Gravel Carboniferous Limestone	24	18
S 16 Middle Blackwater	Quaternary Sand/Gravel Carboniferous Limestone	145	18

Table 1 (continued)

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km²	Hydrometric Area Number
S 17 Awbeg	Quaternary Sand/Gravel Carboniferous Limestone Upper Devonian Sandstone	240	18
S 18 Funshion	Quaternary Sand/Gravel Carboniferous Limestone	217.5	18
S 19 Lower Blackwater	Quaternary Sand/Gravel Carboniferous Limestone	87.5	18
S 20 Bride	Quaternary Sand/Gravel Carboniferous Limestone	77.5	18
S 21 Blackwater Estuary	Quaternary Sand/Gravel Carboniferous Limestone	17	18

MID-WESTERN WATER RESOURCE REGION

MW 2 North West Clare	Carboniferous Limestone	74	28
MW 3 Upper Fergus	Carboniferous Limestone Upper Devonian Sandstone	305 15	27
MW 4 West Clare	Carboniferous Limestone	4	28
MW 5 Lower Fergus	Carboniferous Limestone Upper Devonian Sandstone	145 10	27
MW 6 South West Clare	none	0	27
MW 7 South East Clare	Carboniferous Limestone Upper Devonian Sandstone	45 35	27
MW 9 Maigue	Quaternary Sand/Gravel Carboniferous Limestone /Volcanics Upper Devonian Sandstone	139.5 578.5 44	24
MW 10 Deel	Quaternary Sand/Gravel Carboniferous Limestone Upper Devonian Sandstone	127 281 12.5	24
MW 11 West Limerick/ North Kerry	none	0	23
MW 12 Galey	none	0	23
MW 13 North East Kerry	Quaternary Sand/Gravel Carboniferous Limestone	210	23
MW 14 Feale	Upper Carboniferous Limestone	6	23
MW 15 Tralee	Quaternary Sand/Gravel Carboniferous Limestone	72.5	23

SHANNON WATER RESOURCE REGION

SH 1 Tipperary East of Shannon	Roscrea Sand/Gravel Bellstone Visean Limestone Borrisokane Upper Devonian Sandstone Toomyvara Upper Devonian Sandstone	18.1 76.2 40 12.5 11	25
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Table 1 (continued)

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km²	Hydrometric Area Number
SH 2 Offaly East of Shannon	South Offaly Sand/Gravel Roscrea Sand/Gravel Birr Sand/Gravel Tullamore Limestone Clonaslee Sandstone	50 10.6 17.5 25.6 20	26
SH 3 Brosna	Birr Sand/Gravel Clara Sand/Gravel Clonaslee Sand/Gravel Tullamore Limestone Ferbane Sandstone Clonaslee Sandstone	10.6 6 6.2 177.6 2.4 12.5	26
SH 4 Westmeath/Offaly East of Shannon	Uppper Devonian/Lr Carboniferous Sandstone	14.5	26
SH 5 Inny	Quaternary Sand/Gravel Curry Rock Limestone Lough Sheelin Sandstone Ballinacargy Sandstone	2 71.2 11.4 7.9	26
SH 6 Longford East of Shannon	Lanesborough Limestone Ardagh Sandstone Longford Sandstone Cloon Grange Sandstone	122.9 14.3 13.1 10	26
SH 7 Leitrim East of Shannon	Cavetown Limestone Boyle Sandstone Strokestown Sandstone Keadew Limestone Cloon Grange Sandstone	25.2 20.2 34.6 6.4 14.4	26
SH 8 Dowra	Dowra Sandstone	66.9	26
SH 9 Roscommon/Sligo West of Shannon	Cavetown Limestone Boyle Limestone Keadew Limestone	4.6 8.9 23.7	26
SH 10 Boyle	Cavetown Limestone Boyle Sandstone Oakport Limestone (Lung) Bellanagare (Boyle) Sandstone Athleague Limestone Curlew Sandstone	4.6 49.8 153.1 10 23.9 25.8	26
SH 11 Roscommon West of Shannon	Lanesborough Limestone Lisdaly (Cavetown) Limestone Strokestown Sandstone	23.5 10.2 48.3	26
SH 12 Suck	Quaternary Sand/Gravel Athleague Limestone Mount Mary Sandstone Bellangare (Boyle) Sandstone Ballinasloe Limestone Ballinlough (Boyle) Sandstone	144.3 986 38.9 9.7 31 32.9	26
SH 13 Roscommon West of Shannon	Quaternary Sand/Gravel Athleague Limestone	28.1 158.1	26
SH 14 Galway West of Shannon	Quaternary Sand/Gravel Slieve Aughty Sandstone	302.5 40	25
SH 15 Clare West of Shannon	Slieve Aughty Sandstone	35	25
SH 16 Mulkear-Shannon	Quaternary Sand/Gravel Carboniferous Limestone /Volcanics Upper Devonian Sandstone	123 212.5 79.5	25

Table 1 (continued)

WESTERN WATER RESOURCE REGION

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km²	Hydrometric Area Number
W 1 North West Mayo (Owenmore)	Quaternary Sand/Gravel Carboniferous Sandstone	403	33
W 2 Lough Conn (Ballina)	Quaternary Sand/Gravel Carboniferous Limestone	395.5	34
W 3 Upper Moy	Quaternary Sand/Gravel Carboniferous Limestone Carboniferous Sandstone	155	34
W 4 Gweestion	Quaternary Sand/Gravel Carboniferous Limestone Carboniferous Sandstone	357.5	34
W 5 Clydagh	Carboniferous Limestone Carboniferous Sandstone	215	34
W 6 Clew Bay	Carboniferous Sandstone	200.5	32
W 7 Achill	Carboniferous Sandstone	15	32
W 8 Erriff	Carboniferous Sandstone	5	32
W 9 Lough Mask	Carboniferous Limestone Carboniferous Sandstone	90.1	30
W 10 Upper Clare	Quaternary Sand/Gravel Carboniferous Limestone	92.5	30
W 11 Black River	Carboniferous Limestone	336	30
W 12 Bealanabrack	none	0	31
W 13 Connemara	none	0	30
W 14 West Corrib	Carboniferous Limestone	93	30
W 15 Lower Clare	Quaternary Sand/Gravel Carboniferous Limestone	542	30
W 16 Clarin-Kilcolgan	Quaternary Sand/Gravel Carboniferous Limestone	505	29
W 17 Gort	Carboniferous Limestone Upper Devonian Sandstone	330 66	29
W 18 North Clare	Carboniferous Limestone	100	29

NORTH WESTERN WATER RESOURCE REGION

NW 1 North Monaghan	Carboniferous Limestone Carboniferous Sandstone	107.5 105	03
NW 2 Annalee	Carboniferous Limestone	0.5	36
NW 3 Lough Gowna	none	0	36
NW 4 Lough Oughter	Carboniferous Limestone & Basal Clastics	285	36
NW 5 Woodford	Carboniferous Limestone Carboniferous Limestone	132.5 25	36
NW 6 Arney	Carboniferous Limestone	20.5	36

Table 1 (continued)

Aquifer Unit Number and Hydrological Reference	Aquifer Geology	Aquifer Area km²	Hydrometric Area Number
NW 7 Sligo Bay	Quaternary Sand/Gravel Carboniferous Limestone	12 18	35
NW 8 Ballysodare	Quaternary Sand/Gravel Carboniferous Sandstone Carboniferous Limestone	30 3 305	35
NW 9 Sligo	Carboniferous Limestone Carboniferous Sandstone	57.5 19	35
NW 10 Bundoran	Carboniferous Limestone Carboniferous Sandstone	15 112	37
NW 11 Lough Derg	none	0	01
NW 12 Donegal	Carboniferous Sandstone	20	37
NW 13 Ardara	none	0	37
NW 14 Upper Foyle	none	0	01
NW 15 Burtonport	none	0	38
NW 16 Lough Swilly	none	0	39
NW 17 Sheep Haven	none	0	38
NW 18 Inishowen	Carboniferous Sandstone	8	40

Insert Map 1

Table 2**Groundwater Quality Monitoring Programme****Details of Representative Monitoring Network.**

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit	Quantity m³/d	Ownership
CARLOW	1	S713 620	Bagenalstown WS	Spring	SE 5	165.0	Public
CARLOW	2	S708 619	Bagenalstown WS(B)	Bore	SE 5	650.0	Public
CARLOW	3	S710 620	Bagenalstown WS(A)	Well	SE 5	90.0	Public
CARLOW	10	S720 619	Aughney Springs	Springs	SE 5		
CARLOW	11	S720 771	Celtic Linen	Bore	SE 5		Private
CARLOW	13	S720 785	Irish Sugar Co.	Bore	SE 5		Private
CARLOW	14	S712 744	Mortarstown GWS	Bore	SE 5		Group
CARLOW	15	S730 800	Oakpark	Bore	SE 5		Private
CARLOW	16	S707 677	Orchard Springs	Spring	SE 5		Public
CARLOW	17	S715 638	Rathduff GWS	Bore	SE 5		Group
CAVAN	4	H218 190	Bawnboy WS	Bore	NW 5	45.0	Public
CAVAN	18	N776 977	Crow	Bore	NW 4		Private
CAVAN	21	N801 980	Gilmore	Bore	E 2		Private
CAVAN	26	N441 893	Foxfield Mushrooms	Bore	NW 3		Private
CAVAN	33	H307 075	Lakeland Dairies	Bore	NW 4		Private
CAVAN	40	H217 185	Mc Kiernan	Bore	NW 5		Private
CAVAN	52	H262 142	Skellan Farm	Bore	NW 5		Private
CAVAN	89	H281 132	Frehill GWS	Bore	NW 4		Group
CAVAN	90	N780 962	Kingscourt Parochial House	Bore	E 2		Private
CLARE	1	R219 063	Ballyvaughan	Bore, Spring	W 18	568.0	Public
CLARE	4	M286 003	Carron WS	Spring	MW 3		Public
CLARE	6	R388 736	Carrowmere GWS	Bore	MW 5	8.0	Group
CLARE	9	R334 791	Ennis WS	Spring	MW 5		Public
CLARE	21	R405 947	Tubber GWS	Spring	MW 3	84.0	Group
CORK NTH	2	R283 122	Balinatona RWS	Spring	S 15	6362.0	Public
CORK NTH	26	R530 147	Charleville RWS	Bores	S 17	2500.0	Public
CORK NTH	28	W919934	Conna Village WS	Spring Bore	S 20		Public
CORK NTH	34	R662 074	Buttevant-Doneraile RWS	Spring	S 17	3200.0	Public
CORK NTH	62	W260 924	Millstreet WS	Well	S 15	662.0	Public
CORK NTH	82	W778 983	Fermoy UDC	Gallery	S 18		Public
CORK NTH	83	R811 100	Mitchelstown (new) WS	Bore	S 18	456	Public
CORK NTH	133	W556 985	Dairygold	Bore	S 16		Private
CORK STH	4	W841 820	Ballincurrig-Top Cross -Lisgoold WS	Bores	S 14	200.0	Public

Table 2 (continued)

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit+	Quantity m ³ /d	Ownership
CORK STH	21	W919 672	Cloyne-Aghada WS	Bores	S 14	1360.0	Public
CORK STH	24	W436 660	Crookstown WS	Bore	S 13	145.0	Public
CORK STH	25	W945 801	Dungourney WS	Bore	S 14	36.0	Public
CORK STH	48	W417 821	Rylane WS	Bore	S 13	90.0	Public
CORK STH	52	W698 777	Whites Cross WS	Bore	S 13	36.0	Public
DONEGAL	4	C462 462	Carndonagh WS	Bore	NW 18	1550.0	Public
DONEGAL	13	C340 290	Fruit of the Loom	Bore	NW 16	170.0	Private
DONEGAL	14	C520 455	Gleneely WS	Well	NW 18	200.0	Public
DONEGAL	22	C288 023	Craig, Mr. William	Spring	NW 14	0.1	Private
DONEGAL	24	G837 646	Creevy, Pier Hotel	Artesian Well	NW 12	0.3	Private
DONEGAL	25	G859 779	Mc Monagle, Mr. M.	Bore	NW 12	0.1	Private
DUBLIN	4	O252 548	Hayestown, Rush	Bore	E 6		Private
GALWAY	4	M506 272	Athenry WS	Spring, Bore	W 16	800.0	Public
GALWAY	9	M761 522	Ballygar WS	Spring	SH 12	235.0	Public
GALWAY	55	M412 539	Kilbennon GWS	Spring	W 10	436.0	Group
GALWAY	56	M326 586	Kilconly-Tuam GWS	Spring	W 11	468.0	Group
GALWAY	59	M644 539	Kilkerrin-Moylough RWS	Spring	SH 59	1094.0	Public
GALWAY	62	M378 101	Kinvara RWS	Bore	W 17	306.0	Public
GALWAY	70	M540 447	Mid-Galway RWS	Spring	W 15	3000.0	Public
GALWAY	73	M665 450	Mountbellew WS	Spring	SH 12	281.0	Public
GALWAY	85	M471 526	Tuam WS	Spring	W 10	2273.0	Public
GALWAY	89	M547 451	Barnaderg GWS	Spring	W 15	413.0	Group
GALWAY	92	M674 279	New Inn GWS	Spring	W 16	80.0	Group
GALWAY	94	M572 595	Gortgarran	Spring	W 10	46.0	Public
GALWAY	113	M571 131	Kilchrest GWS	Bore	W 17	43.0	Group
GALWAY	121	M794 126	Nenagh Co-op	Bore	SH 14	100.0	Private
KERRY	1	Q574 037	Anascaul WS	Springs	S 2	200.0	Public
KERRY	5	Q425 078	Ballinloghig WS	Well	MW 16	27.0	Public
KERRY	47	Q906 267	Lixnaw WS	Spring	MW 13	910.0	Public
KERRY	53	W161 885	Rathmore WS	Well	S 15	300.0	Public
KERRY	56	Q782 216	South Ardferf RWS	Bore	MW 15	2270.0	Public
KERRY	58	R075 464	Tarbert WS	Spring	MW 11	182.0	Public
KERRY	61	V996 924	Tullig GWS	Bore	S 4	23.0	
KERRY	66	Q768 265	Ballyheigue WS (North Adfert RWS)	Springs	MW 13	3636	Public
KERRY	68	Q364 044	Kerry Spring Water	Bore	MW 16		Private
KERRY	69	R017 098	Former Castleisland WS	Spring	S 3		Public
KERRY	70	W004 750	Roughly Valley Pigs	Bore	S 6		Private
KERRY	82	Q853 147	John A Wood	Bore	MW 15	140.0	Private
KERRY	98	Q976 045	Kerry Co-op	Bore	S 3	206.0	Private
KERRY	112	W018 903	Quirkies Sandpit	Bore	S 4		Private
KILDARE	6	S805 860	Castledermot WS	Bore	SE 5	430.0	Public
KILDARE	15	N647 125	Monasterevin WS	Bore	SE 4	645.0	Public
KILDARE	18	S640 955	Churchtown WS	Bore	SE 5	120.0	Public

Table 2 (continued)

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit	Quantity m ³ /d	Ownership
KILDARE	20	N635 064	Lughill-Monasterevin WS	3 Springs	SE 4		Public
KILDARE	22	N819 394	Newtown-Kilcock WS	Bore	E 4	17.0	Public
KILDARE	23	N773 155	Pollardstown Fen WS	Spring	SE 4		Public
KILDARE	40	N655 390	Clogherinkoe WS	Bore	E 4	11.0	Public
KILDARE	42	N770 115	Hare Park (Curragh Camp)	Bore	SE 4	1000.0	Dept. of Defence
KILDARE	46	S658 993	Kilberry Area WS	Bore	SE 5	400.0	Public
KILDARE	50	N788 117	McDonagh (Curragh Camp)	Bore	E 8	450.0	Dept. of Defence
KILKENNY	17	S302 710	Galmoy GWS	Bore	SE 8	20.0	Group
KILKENNY	32	S589 415	Thomastown WS	Gallery	SE 9		Public
KILKENNY	34	S300 635	Urlingford-Johnstown WS	Spring	SE 8		Public
KILKENNY	39	S552 469	Busheenmore	Springs	SE 8		Private
KILKENNY	41	S577 553	Clara GWS	Bore	SE 8		Group
KILKENNY	45	S393 525	Kilmanagh GWS	Bore	SE 8		Group
KILKENNY	46	S660 570	Paulstown Castle (Gowran-Goresbridge-Paulstown RWS)	Springs	SE 5	795	Public
KILKENNY	50	S258 661	Bawnmore GWS	Bore	SE 11		Group
KILKENNY	53	S500 602	Dunmore Sand & Gravel	Bore	SE 8		Private
KILKENNY	55	S587 551	Rathcash GWS	Bore	SE 8		Group
KILKENNY	91	S407 442	Westcourt- Callan WS	Spring	SE 8	840	Public
LAOIS	1	S452 841	Abbeyleix WS	Spring	SE 8	227.0	Public
LAOIS	2	S458 835	Abbeyleix WS	Spring	SE 8	237.0	Public
LAOIS	3	S459 839	Abbeyleix WS	Spring	SE 8	376.0	Public
LAOIS	5	S602 839	Athy Town WS	Spring	SE 5	450.0	Public
LAOIS	12	N309 094	Clonaslee WS	Spring	SE 3	46.0	Public
LAOIS	13	S678 836	Coolenagh WS	Bore	SE 5		Public
LAOIS	14	S403 775	Durrow WS	Bore	SE 8	530.0	Public
LAOIS	19	N452 059	Mountmellick WS	Bore	SE 4		Public
LAOIS	22	S479 971	Portlaoise WS	Spring	SE 4	409.0	Public
LAOIS	23	N494 019	Portlaoise WS	Spring	SE 4	1818.0	Public
LAOIS	28	S564 824	Swan-Newtown-Doonane RWS	Bore	SE 8	520.0	Public
LAOIS	37	S260 850	Donoghmore	Bore	SE 7		
LAOIS	39	S361 791	Fermoyle	Bore	SE 8		
LAOIS	40	N370 001	Knocks (Mountrath WS)	Bore	SE 7		Public
LEITRIM	2	H183 010	Aghavas GWS	Bore	SH 7	18.0	Group
LEITRIM	5	H113 099	Ballinamore WS	Spring	NW 5	455.0	Public
LEITRIM	11	N061 910	Cloonturk GWS	Bore	SH 7	22.0	Group
LEITRIM	13	H002 420	Corracloona GWS	Spring	NW 6	5.0	Group
LEITRIM	17	N080 943	Drumard-Jones GWS	Bore	SH 7	5.0	Group

Table 2 (continued)

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit	Quantity m ³ /d	Ownership
LEITRIM	22	G906 353	Glenboy GWS	Spring	NW 9	142.0	Group
LEITRIM	24	N118 925	Gortletteragh GWS	Bore	SH 7	22.0	Group
LEITRIM	26	G941 438	Kiltyclogher WS	Spring	NW 19	90.0	Public
LEITRIM	37	G925 421	Tawnyfealce GWS	Spring	NW 9	33.0	Group
LEITRIM	44	G839 570	Gallagher, N	Bore	NW 19	0.1	Private
LEITRIM	57	G822 294	Collins, Erica	Bore	NW 9	0.1	Private
LIMERICK	7	R472 280	Ballyagran WS	Bore	MW 9	218.0	Public
LIMERICK	11	R780 238	Ballylanders WS	Bore	SE 11		Public
LIMERICK	25	R680 500	Caherconlish WS	Well	SH 16	436.0	Public
LIMERICK	41	R508 413	Croom WS	Bore	MW 9	409.0	Public
LIMERICK	42	R824 504	Doon WS	Well	SH 16		Public
LIMERICK	46	R593 445	Fedamore	Well	MW 9	68.0	Public
LIMERICK	49	R130 465	Glin WS	Bore	MW 11		Public
LIMERICK	55	R685 409	Herbertstown GWS	Bore	MW 9	318.0	Group
LIMERICK	56	R706 363	Hospital WS	Bore	MW 9		Public
LIMERICK	57	R705 365	Hospital WS	Bore	MW 9	505.0	Public
LIMERICK	62	R360 370	Kilcolman WS	Well	MW10		Public
LIMERICK	82	R727 563	Moroe WS	Wells	SH 16	650.0	Public
LIMERICK	89	R764 440	Pallasgreen WS	Well	SH 16	382.0	Public
LIMERICK	105	R370 344	Clonagh		MW 10		Public
LIMERICK	109	R650 405	Lough Gur		MW 9		Public
LIMERICK	110	R710 268	Martinstown-Ballinvreena GWS		MW 9		Group
LIMERICK	111	R318 280	South West RWS	Spring / Well	MW 10	1250.0	Public
LONGFORD	9	N005 638	Formoyle GWS	Bore		27.0	Group
LONGFORD	12	N140 625	Keenagh WS	Spring	SH 5	520.0	Public
LONGFORD	13	N008 695	Lanesboro RWS	Bore	SH 6	2000.0	Public
LONGFORD	14	N035 584	Newtowncashel WS	Spring	SH 6	436.0	Public
LONGFORD	25	N102 657	Lisrevagh	Bore			
LOUTH	2	O070 823	Brownstown GWS	Bore	E 1	25.0	Public
LOUTH	9	O065 925	Greenmount WS	Bore	E 2		Public
LOUTH	12	O069 788	Killineer GWS	Bore	E 3	45.0	Group
LOUTH	17	O012 768	Sheepgrange GWS	Bore	E 3	76.0	Group
LOUTH	18	O041837	Tenure GWS	Bore	E 2	70.0	Group
LOUTH	20	O024 781	Tullyallen GWS	Bore	E 3	500.0	Group
LOUTH	22	J194 062	Ardtullybeg (Cooley RWS)	Bore	E 1		Public
LOUTH	23	O078 758	Boyne Valley Honey	Bore	E 3	15.0	Private
LOUTH	32	J041 075	Harris Ireland	Bore	E 1	730.0	Private
LOUTH	56	O091 770	Yellowbatter	Bore	E 3		Public
LOUTH	57	N957 903	Ardee	Bore	E 2		Public
MAYO	2	M363 696	Ballindine	Spring	W 9	450.0	Private
MAYO	4	M492 791	Ballyhaunis WS	Spring	W 9	718.0	Public
MAYO	12	G101 168	Crossmolina WS	Well	W 2	900.0	Public
MAYO	16	M442 923	Kilkelly WS	Spring	W 4	250.0	Public
MAYO	24	M385 980	Swinford WS	Spring	W 4	850.0	Public
MAYO	32	M290 681	Lisatava GWS	Spring	W 1	100.0	Group
MAYO	46	M243 948	Bellavary GPS	Spring	W 5	150.0	Group

Table 2 (continued)

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit	Quantity m ³ /d	Ownership
MAYO	47	M456 996	Charlestown WS	Spring	W 3	800.0	Public
MAYO	48	G110 172	Crossmolina	Well	W 2	0.1	Private
MAYO	49	G104 321	Glenedagh	Bore	W 1	0.1	Private
MAYO	50	G200 303	Killala	Bore	W 2	0.1	Private
MEATH	9	N850 820	Castletown Housing	Bore	E 2	23.0	Public
MEATH	12	N774 413	Enfield WS	Bore	E 4	240.0	Public
MEATH	15	N791 890	Kilmainhamwood GWS	Bore	E 2	54.0	Public
MEATH	16	N887 573	Kilmessan Housing	Bore	E 4	7.0	Group
MEATH	20	N828 861	Nobber WS	Bore	E 2	100.0	Public
MEATH	21	N794 492	Rathmolyon Housing	Bore	E 4	7.0	Public
MEATH	23	N962 737	Slane WS	Bore	E 3	535.0	Public
MEATH	26	O033 557	Curragha	Bore	E 5		Public
MEATH	71	N638 406	O'Connor, T	Bore	E 4	19.0	Private
MEATH	93	N648 452	Clonard	Bore	E 4		Public
MEATH	99	O014 675	Garballagh	Bore	E 5		Private
MEATH	102	N868 699	Kilsaran Concrete, Navan	Bore	E 3		Private
MEATH	106	N731 488	Mick Byrne	Bore	E 4		Private
MEATH	107	N623 416	O'Conner Park	Bore	E 4		Private
MEATH	111	N779 528	Trim Golf Club	Bore	E 4		Private
MONAGHAN	8	H679 346	MonaghanTown WS(E)	Bore	NW 1		Public
MONAGHAN	10	H589 307	Smithborough WS	Bore	NW 1	330.0	Public
MONAGHAN	11	H577 407	Tydnavey GWS	Bore	NW 1	545.0	Group
MONAGHAN	13	H600 453	Braggan Water	Bore	NW 1		Private
MONAGHAN	21	H582 312	Grove Farm	Bore	NW 1		Private
MONAGHAN	39	H504 251	Meadow Meats	Bore	NW 1		Private
MONAGHAN	80	N839 997	Limestone Ltd	Bore	E 2	14.0	Private
MONAGHAN	103	H674 345	Dawn Pork	Bore	NW 1		Private
MONAGHAN	104	N780 995	Drummond GWS	Bore	E 2	14.0	Group
MONAGHAN	105	H678 444	Silver Hill Ducklings	Bore	NW 1	436.0	Private
OFFALY	3	N029 140	Banagher (Lusmagh) RWS	Bore	SH 2	320.0	Public
OFFALY	4	S169 970	Clareen GWS	Spring	SH 2	380.0	Group
OFFALY	5	N074 197	Cloghan WS	Bore	SH 3	170.0	Public
OFFALY	10	S062 848	Dunkerrin WS	Springs	SH 2	880.0	Public
OFFALY	11	N118 233	Ferbane-Belmont WS	Bores	SH 3	295.0	Public
OFFALY	13	N450 215	Geashill WS	Spring	SH 3	230.0	Public
OFFALY	19	N274 266	Rahan WS	Bore	SH 3	1475.0	Public
OFFALY	21	N267 233	Rahan WS	Spring	SH 3	1475.0	Public
OFFALY	23	N516 317	Rhode RWS	Spring	SE 4	2520.0	Public
OFFALY	27	N522 211	Walsh Island WS	Spring, Bore	SE 4	410.0	Public
OFFALY	28	N309 094	Clonaslee	Bore	SH 4	2072.0	Public
OFFALY	29	N645 335	Edenderry WS	Bore	SE 4	450.0	Public

Table 2 (continued)

County	Plot No.	National Grid Ref.	Name	Source	Aquifer Unit	Quantity m ³ /d	Ownership
ROSCOMMON	10	M574 742	Ballybane (Ballinlough-Loughglynn RWS)	Bore	SH 12	3400.0	Public
ROSCOMMON	16	M700 795	Castlerea WS	Spring	SH 12	1600.0	Public
ROSCOMMON	17	M690 790	CastlereaRws	Spring	SH 12	2545.0	Public
ROSCOMMON	19	M675 952	Cloonmagunaun	Spring	SH 10	1100.0	Public
ROSCOMMON	27	M934 597	Keadew WS	Spring	SH 9	159.0	Public
ROSCOMMON	29	M934 597	Knockcroghery RWS	Spring	SH 13	760.0	Public
ROSCOMMON	30	M964 551	Lecarrow	Spring	SH 13	675.0	Public
ROSCOMMON	32	M821 524	Mount Talbot RWS	Spring	SH 12	2345.0	Public
ROSCOMMON	39	M818 678	Roscommon WS	Spring	SH 12	2045.0	Public
ROSCOMMON	42	M887 406	South Roscommon RWS	Spring	SH 12	4275.0	Public
ROSCOMMON	43	M927 800	Strokestown WS	Spring	SH 11	409.0	Public
ROSCOMMON	45	N052 791	Whitehall WS	Bore	SH 6	46.0	Public
ROSCOMMON	55	M827 997	Croghan GWS	Spring	SH 10	223.0	Group
ROSCOMMON	73	M917 290	Coolderry GWS (2)	Bore	SH 12		Group
SLIGO	3	G684 444	Benbulbin GWS	Spring	NW 9	27.0	Group
SLIGO	8	G719 187	Carrowagark GWS	Spring	NW 8	23.0	Group
SLIGO	10	G706 431	Drum East GWS	Spring	NW 9	168.0	Group
SLIGO	13	G660 125	Gulfadda GWS	Spring	NW 8	165.0	Group
SLIGO	19	G710 328	Tobernalt	Spring	NW 9		Private
SLIGO	27	G691 174	Gorman, Mgt	Bore	NW 8	0.3	Private
TIPP. NTH	14	R927 934	Borrisokane RWS	Bore	SH 1	500.0	Public
TIPP. NTH	27	R966 880	Cloughjordan WS	Spring	SH 1	320.0	Public
TIPP. NTH	37	S089 541	Holycross	Bore	SE 11	25.0	Public
TIPP. NTH	47	S178 541	Littleton WS	Bore	SE 11	130.0	Public
TIPP. NTH	50	S155 495	Moycarkey-Horse and Jockey	Bore	SE 11	160.0	Public
TIPP. NTH	52	S183 673	Moyne GWS	Bore	SE 10	50.0	Group
TIPP. NTH	73	S126 591	Thurles WS	Spring	SE 11	250.0	Public
TIPP. NTH	81	S120 820	Clonakenny GWS	Bore	SE 7		Group
TIPP. NTH	82	S022 560	Drombane WS	Bore	SE 10		Public
TIPP. NTH	83	R955 972	Eglis	Bore	SH 1		Public
TIPP. NTH	84	S206 858	Knock GWS	Bore	SE 7		Group
TIPP. NTH	85	N045 032	Riverstown	Spring	SH 1		Public
TIPP. STH	17	R914 469	Ironmills	Bore	SE 10	1200.0	Public
TIPP. STH	24	S272 512	Coalbrook WS	Bore	SE 8	546.0	Public
TIPP. STH	26	R905 341	Cordangan WS	Bore	SE 11		Public
TIPP. STH	28	R986 218	Kilcoran	Bore	SE 12		Private
TIPP. STH	29	S231 319	Kiltinan Castle	Spring	SE 11		Private
TIPP. STH	31	S377 221	Miloko	Bore	SE 12		Private
TIPP. STH	35	S080 496	Toberdorah	Spring	SE 11		Private
TIPP. STH	38	S108 130	Crohan	Spring	SE 12		
TIPP. STH	44	S080 140	Poulatar	Spring	SE 12		Private

Table 2 (continued)

County	Plot No	National Grid Ref.	Name	Source	Aquifer Unit	Quantit y m ³ /d	Ownership
TIPP. STH	45	S006 394	Springmount	Springs			Public
TIPP. STH	46	S276 486	Ballincurry	Bore	SE 8	227.0	Public
TIPP. STH	47	S280 335	Cloran	Spring	SE 12		Public
TIPP. STH	50	S224 344	Mullenbawn		SE 11		Public
WATERFORD	15	X026 913	Ballymoate WS	Bore	S 20	20.0	Public
WATERFORD	33	X132 849	Clashmore WS	Spring	S 21	115.0	Public
WATERFORD	42	S503 025	Dunhill WS	Bore	SE 13	5.0	Public
WATERFORD	51	X132 892	Goish	Bore	S 20	14.0	Public
WATERFORD	55	X172 817	Grange-Ballybrusa WS	Bore	S 21		Public
WATERFORD	60	X142 938	Keereen WS	Bore	S 19	10.0	Public
WATERFORD	70	S303 009	Kilrossanty WS	Bore	SE 13	55.0	Public
WATERFORD	73	S324 017	Knockyelan WS	Spring	SE 13		Public
WATERFORD	86	S237 211	Poulnagunoge	Bore	SE 12	27.0	Public
WATERFORD	95	W999947	Tallow Hill WS	Spring	S 20	30.0	Public
WATERFORD	108	X135 976	Ballyhane	Bore	S 19		Public
WATERFORD	109	S602 050	Ballykinsella	Bore	SE 12		Public
WATERFORD	111	X115 928	Cappoquin	Bore	S 20		Public
WATERFORD	112	X236 948	Dungarvan	Bore	SE 13		Public
WATERFORD	113	X106 975	Lafanta	Bore	S 19		Public
WESMEATH	5	N090 465	Glasson GWS	Well	SH 4	6.0	Group
WESMEATH	7	N562 562	Lewinstown GWS	Bore	E 4	10.0	Group
WESMEATH	9	N214 389	Moate	Spring	SH 3	1136.0	Public
WESMEATH	12	N417 628	Multyfarnham GWS	Spring	SH 5	165.0	Group
WESMEATH	17	N491 763	Ballymanus Piggeries	Spring	SH 5	82.0	Private
WESMEATH	25	N686 644	Craddanstown Lodge	Bore	E 4		Group
WEXFORD	6	S947 325	Bree WS	Bore	SE 2	100.0	Public
WEXFORD	8	T075 523	Camolin WS	Bore	SE 2	91.0	Public
WEXFORD	9	S831 245	Carrigbyrne	Bore	SE 3	204.0	Public
WEXFORD	14	T187 702	Coolgreany	Bore	SE 1	600.0	Public
WEXFORD	36	T074 275	Ballina	Bore	SE 1		Public
WEXFORD	37	S711 178	Ballinamona	Bore	SE 6		Public
WEXFORD	39	T150 420	Ballygarran	Bore	SE 1		Public
WEXFORD	41	T135 557	Barnadown	Bore	SE 1		Public
WEXFORD	42	S923 572	Bradys Hill-Gurteen	Bore	SE 2		Public
WEXFORD	44	T012 142	Busherstown 3	Bore	SE 3		Public
WEXFORD	45	S960 342	Edermine	Bore	SE 2		Public
WEXFORD	46	T050 136	Orristown	Bore	SE 3		Public
WEXFORD	47	T032 139	Rathmacknee	Bore	SE 3		Public
WEXFORD	49	S756 214	Tellerought	Bore	SE 3		Group
WEXFORD	50	T137 415	Newtown		SE 1		Public
WICKLOW	26	T250 840	Redcross	Bores	E9	180.0	Public
WICKLOW	27	O187 034	Roundwood	Spring, Bore	E 9	135.0	Public
WICKLOW	33	N975 140	Ashtown GWS (Blessington)	Bore	E 8		Group
WICKLOW	43	S878 878	Baltinglass WS	Bore	SE 4	450.0	Public
WICKLOW	44	O292 077	Bulford Farm		E 9	50.0	Private
WICKLOW	47	S995 677	Kerry Foods (Shillelagh)	Well	SE 2	600.0	Private

APPENDIX 1

LIST OF GROUNDWATER SOURCES IN THE USER RELATED MONITORING NETWORK FOR WHICH DATA ON NITRATES ARE AVAILABLE (November 1996)

APPENDIX 1

LIST OF GROUNDWATER SOURCES IN THE USER RELATED MONITORING NETWORK FOR WHICH DATA ON NITRATES ARE AVAILABLE (November 1996)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
CARLOW	1	S713 620	Bagenalstown WS	Spring	165
CARLOW	4	S728 555	Ballinkillen WS	Bore	
CARLOW	5	S695 543	Ballyellen GWS	Bore	23
CARLOW	6	S648 720	Bilboa WS	Bore	
CARLOW	7	S642 762	Carlow WS	Spring	909
CARLOW	8	S964 763	Clonmore Housing	Bore	10
CARLOW	24	S673 747	Ballinabrannagh GWS	Bore	20
CARLOW	25	S745 692	Ballyloo	Bore	21
CARLOW	27	S656 654	Old Leighlin	Bore	
CARLOW	28	S930 826	Ticknock	Bore	
CAVAN	1	N719 967	Bailieboro WS	Spring	100
CAVAN	2	H298 185	Ballyconnell WS	Spring	364
CAVAN	4	H218 190	Bawnboy WS	Bore	45
CAVAN	5	H072 370	Blacklion old WS	Spring, bore	54
CAVAN	9	H180 282	Swanlinbar WS	Spring	182
CAVAN	65	H600 142	Cootehill Poultry	Bore	100
CAVAN	71	H310 069	Killashandra Co-op	Bore	1640
CLARE	2	R585 714	Broadford WS	Spring	
CLARE	3	R582 709	Broadford WS	Spring	82
CLARE	4	M28 6003	Carron WS	Spring	
CLARE	7	R406 886	Crusheen WS	Bore	91
CLARE	9	R334 791	Ennis WS (Drumcliff)	Springs	5909
CLARE	10	R569 932	Flagmount WS	Well	23
CLARE	11	Q88 0595	Kilkee WS	Bore	23
CLARE	12	R681 729	Killaloe	Gallery, Spring	280
CLARE	13	R105 640	Kilmihil WS	Bore	89
CLARE	19	R423 740	Quin WS	Bore	18
CLARE	20	R412 746	Quin WS	Bore	36
CLARE	22	R490 800	Tulla	Bore	164
CLARE	23	R727 881	Whitegate WS	Spring	30
CLARE	27	R136 986	Lisdoonvarna	Spring	
CLARE	29	M219 062	Ballyvaughan WSS	Bore	230
CLARE	38	R280 885	Corofin Creamery	Well	16
CLARE	43	R232 588	Kildysart Creamery	Well	15
CLARE	45	R113 640	Kilmihil Creamery	Well	8
CLARE	58	R639 838	Scarriff Creamery	Wells	9
CORK NTH	1	R393 141	Allow RWS	Bore	2000
CORK NTH	3	R495 021	Ballyclough RWS	Spring	455
CORK NTH	4	R150 140	Ballydesmond WS	Bore	130
CORK NTH	7	W611 985	Ballymagooly WS	Spring	114
CORK NTH	10	W566 932	Balnamona-Mourne Abbey	Well	10
CORK NTH	11	W360 938	Banteer WS	Spring, Bore	240

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
CORK NTH	13	W611 885	Barrack-Burnfoot WS	Bore	55
CORK NTH	19	W480 889	Bweeng WS	Well, Spring.	15
CORK NTH	20	W179 871	Caherbarragh GWS	Spring	5
CORK NTH	21	W517 897	Carrigacleana WS	Bore	15
CORK NTH	25	R686 037	Castletownroche RWS	Spring	1455
CORK NTH	26	R530 147	Charleville RWS	Bores	2500
CORK NTH	28	W919 934	Conna Village WS	Spring, Bore	
CORK NTH	30	W920 926	Coone WS	Spring	36
CORK NTH	31	W440 950	Cregan-Gortmore GWS	Spring	41
CORK NTH	32	W440 950	Creggane WS	Spring	130
CORK NTH	34	R662 074	Doneraile-Slanballymore (Buttevant-Doneraile RWS)	Spring	3200
CORK NTH	35	W508 940	Dromahane WS	Spring	500
CORK NTH	37	R762 073	Glanworth-Ballyenihan-Derryvillane	Spring	841
CORK NTH	38	R885 113	Glenduff WS	Spring	
CORK NTH	39	W558 955	Gortnagraigue WS	Bore	30
CORK NTH	41	R590 150	Heatherside RWS	Spring	364
CORK NTH	42	W558 955	Ketragh WS	Spring	130
CORK NTH	44	R694 140	Kildorrery WS	Spring	114
CORK NTH	45	R723 109	Kildorrery WS	Bore	450
CORK NTH	46	W649 982	Killavullen WS	Bore	360
CORK NTH	47	W890 971	Kilmagner WS	Bore	10
CORK NTH	50	R830 040	Kilworth Village WS	Spring	136
CORK NTH	51	R198 039	Kiskeam WS	Well	37
CORK NTH	54	-----	Knockbrack-Burnfoot	Bore	30
CORK NTH	56	W190 980	Knocknagree WS	Spring	91
CORK NTH	58	W409 922	Lyre WS	Spring	100
CORK NTH	62	W260 924	Millstreet WS	Well	662
CORK NTH	63	R829 095	Mitchelstown old WS	Spring	545
CORK NTH	66	W559 917	Monaparson WS	Bore	10
CORK NTH	67	W597 940	Monee-Knockbrack WS	Bore	45
CORK NTH	69	R493 019	Mountnorth-Ballyclogh WS	Spring	1100
CORK NTH	70	W428 909	Nad WS	Well	10
CORK NTH	71	W585 990	Olivers Cross WS	Bore	200
CORK NTH	72	W455 980	Pallas GWS	Bore	36
CORK NTH	73	R603 969	Rahan WS	Spring	60
CORK NTH	75	R230 160	Rockchapel WS	Well	150
CORK NTH	77	W823 968	Strawhall WS	Bore	
CORK NTH	79	R355 179	Tullylease WS	Bore	110
CORK NTH	81	W782 842	Watergrasshill WS	Spring	
CORK NTH	82	W778 983	Fermoy UDC	Gallery	
CORK NTH	101	R813 133	Galtee Food Products	Bores	227
CORK NTH	135		Newmarket-Kanturk	Spring	
CORK NTH	137	W382 954	Toreen (Banteer) WS	Spring	160
CORK STH	1	W444 776	Aghabulloge WS	Bore	38
CORK STH	4	W841 820	Ballincurrag-Top Cross-Lisgoold WS	Bores	200
CORK STH	5	W563 515	Ballinadee WS	Bore	14
CORK STH	6	W368 815	Ballinagree WS	Bore	30

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
CORK STH	7	W592 463	Ballinspittle WS	Gallery	30
CORK STH	8	W822 725	Ballintobhar WS	Spring	145
CORK STH	9	X048 706	Ballymacoda WS	Spring	45
CORK STH	10	W220 773	Ballymakeera WS	Spring	109
CORK STH	11	W210 750	Ballymakra-Coolea WS	Gallery	350
CORK STH	13	W661 537	Belgooly WS	Spring	20
CORK STH	15	W675 819	Carrignavar WS	Bore	45
CORK STH	16	W957 768	Castlemartyr-Mogeely WS	Spring	350
CORK STH	19	W295 762	Clondrohid WS	Gallery	73
CORK STH	21	W919 672	Cloyne-Aghada WS	Bores	1360
CORK STH	22	W456 737	Coachford WS	Bore	122
CORK STH	23	W696 791	Coole-East WS	Spring	30
CORK STH	24	W436 660	Crookstown WS	Bore	145
CORK STH	25	W945 801	Dungourney WS	Bores	36
CORK STH	26	-----	Enniskeane WS	Gallery	136
CORK STH	27	W590 460	Garretstown WS	Bore	204
CORK STH	28	W720 887	Glenville Ws	Bore	55
CORK STH	29	W579 844	Grenagh WS	Bore	147
CORK STH	30	W222 655	Inchigeela Ws	Gallery	82
CORK STH	31	W519 474	Kilbrittain WS	Spring	136
CORK STH	32	W996 776	Killeagh WS	Spring	147
CORK STH	34	W255 722	Kilnamartyra	Bore	41
CORK STH	39	W328 792	Macroom U.D. WS	Gallery	1700
CORK STH	41	W750 565	Minane Bridge	Bore	8
CORK STH	43	W405 585	Newcestown	Bore	15
CORK STH	44	W719 521	Nohoval WS	Bore	11
CORK STH	45	W658 581	Riverstick WS	Spring	64
CORK STH	46	W784 551	Roberts Cove WS	Bore	80
CORK STH	48	W417 821	Rylane WS	Bore	90
CORK STH	50	W627 772	Stoneview WS	Bore	27
CORK STH	52	W698 777	Whites Cross WS	Bore	36
CORK STH	65	W592 463	Ballinspittle new	Gallery	
CORK STH	66	W803 731	Carrigtwohill Industrial Estate	Bore	
CORK W	6	V818 380	Kilcrohane WS	Bore	
CORK W	9	V853 310	Toormore GWS	Bore	9
CORK W	12	W260 490	Drinagh Co-op	Bore	45
DONEGAL	1	C296 102	Ardagh WS	Spring	13
DONEGAL	3	-----	Ballymagrorty GWS	Gallery	120
DONEGAL	4	C462 462	Carndonagh WS	Bore	1550
DONEGAL	5	G580 782	Carrick-Teelin WS	Spring	241
DONEGAL	6	C510 463	Cashel-Glenealy WS	Spring	40
DONEGAL	7	C350 274	Fahan WS	Spring	45
DONEGAL	8	G544 855	Glencolumbkille WS	Spring	135
DONEGAL	9	C162 120	Letterkenny WS	Spring	
DONEGAL	10	G520 818	Malinmore-Malinbeg WS	Spring	
DONEGAL	11	C217 200	Ramelton WS	Spring	285
DONEGAL	12	G674 974	Rossbeg WS	Gallery	110
DONEGAL	14	C520 455	Glenealy	Well	200
DUBLIN	2	O033 217	Brittas	Well	
DUBLIN	3	O191 215	Glencullen	Bore	

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
GALWAY	1	M541 402	Abbert GWS	Bore	47
GALWAY	2	M779 381	Ahascragh WS	Spring	655
GALWAY	3	M398 405	Anbally-Cummer GWS	Bore	13
GALWAY	4	M506 272	Athenry	Spring, Bore	800
GALWAY	5	M770 267	Aughrim-Ballinasloe GWS	Well	20
GALWAY	6	M745 343	Ballinabanaba GWS	Spring	50
GALWAY	8	M700 491	Ballinlass GWS	Spring	85
GALWAY	9	M761 522	Ballygar WS	Spring	235
GALWAY	10	M679 712	Ballymoe WS	Spring	327
GALWAY	11	M329 418	Ballyroebugbeg GWS	Bore	53
GALWAY	12	M535 570	Brackloon GWS	Spring	111
GALWAY	14	M337 424	Cahermorris GWS	Bore	22
GALWAY	15	M404 300	Carnmore GWS	Bore	46
GALWAY	16	M394 382	Carraghy-Claregalway GWS	Bore	40
GALWAY	17	M380 345	Claregalway GWS	Spring	114
GALWAY	18	M394 493	Claretuam GWS	Bore	9
GALWAY	20	M750 260	Cloghagalla-Cappataggle GWS	Spring	46
GALWAY	21	M729 390	Clonbrock-Pallas GWS	Bore	50
GALWAY	22		Clonbur WS	Spring	295
GALWAY	23	M965 210	Clonfert GWS	Bore	18
GALWAY	24	M715 387	Cloonatleva GWS	Spring	123
GALWAY	25	M409 514	Cloonfush GWS	Bore	7
GALWAY	26	M757 340	Cloonigney GWS	Spring	106
GALWAY	29	M723 303	Coraneena-Kilconnell GWS	Spring	46
GALWAY	30	M404 390	Corbally GWS	Spring	64
GALWAY	31	M437 431	Corofin-Ballintubber GWS	Bore	114
GALWAY	32	M497 423	Culliagh South GWS	Bore	68
GALWAY	33	M398 441	Cummer GWS	Bore	21
GALWAY	34	M420 448	Curry GWS	Bore	73
GALWAY	35	M740 360	Doon GWS	Bore	36
GALWAY	36	M332 375	Drumgriffin-Tonnegurrane GWS	Bore	37
GALWAY	37	M545 660	Dunmore WS	Spring	250
GALWAY	39	M990 165	Esker-Banagher GWS	Bore	59
GALWAY	40	M914 167	Eyrecourt WS	Spring	164
GALWAY	41	M895 205	Eyrecourt-Laurencetwn GWS	Spring	454
GALWAY	43	M513 529	Gallagh GWS	Bore	523
GALWAY	44	M456 649	Garratrauns GWS	Bore	25
GALWAY	45	M770 280	Garymore GWS	Spring	31
GALWAY	46	M623 647	Glenamaddy WS	Spring	272
GALWAY	47	M475 454	Gortbeg-Ballinstack GWS	Bore	73
GALWAY	49	M466 636	Gortnagoynes, Dunmore GWS	Spring	46
GALWAY	50	M433 339	Grange, Claregalway GWS	Bore	46
GALWAY	51	L987 023	Inisheer	Springs	68
GALWAY	52	L937 051	Inishmann, Aran Islands	Seepage	

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
GALWAY	53	L863 108	Inishmore RWS	Spring	
GALWAY	55	M412 539	Kilbennon GWS	Spring	436
GALWAY	56	M326 586	Kilconly, Tuam GWS	Spring	468
GALWAY	57	M733 316	Kilconnel WS	Spring	127
GALWAY	58	M385 429	Kilcurrivard-Cummer GWS	Bore	46
GALWAY	59	M644 539	Kilkerrin-Moylough RWS	Spring	1094
GALWAY	60	M714 461	Killasolan GWS	Spring	64
GALWAY	61	M543 683	Kilteyna-Dunmore GWS	Spring	39
GALWAY	62	M378 101	Kinvara RWS	Bore	306
GALWAY	63	M747 042	Kylemore Abbey GWS	Spring	36
GALWAY	65	M409 360	Lackaghmore GWS	Bore	91
GALWAY	67	M388 610	Lisanancy-Liskeavey GWS	Bore	59
GALWAY	69	M620 415	Menlough GWS	Bore	82
GALWAY	70	M540 447	Mid-Galway RWS	Spring	3000
GALWAY	71	M423 603	Milltown GWS	Spring	59
GALWAY	72	M533 364	Monivea GWS	Bore	91
GALWAY	73	M665 450	Mountbellew WS	Spring	281
GALWAY	74	M685 024	Moyglass GWS	Bore	90
GALWAY	75	M372 361	Mullaghcutra GWS	Spring	204
GALWAY	76	M750 260	Newcastle-Aughrine GWS	Spring	33
GALWAY	79	M329 588	Ratesh-Kilconly GWS	Spring	24
GALWAY	80	M395 462	Rusheens-Tuam GWS	Bore	109
GALWAY	81	M526 377	Ryehill Monivea GWS	Bore	14
GALWAY	82	M370 385	Slievettinn-Aughcleggan GWS	Bore	29
GALWAY	83	M410 018	Tirneevin GWS	Bore	41
GALWAY	84	M690 653	Toberroe GWS	Spring	45
GALWAY	85	M471 526	Tuam WS	Spring	2273
GALWAY	86	M644 701	Williamstown WS	Spring	364
GALWAY	87	R7109 63	Woodford WS	Spring	136
GALWAY	89	M547 451	Barnaderg GWS	Spring	413
GALWAY	92	M674 279	New Inn GWS	Spring	80
GALWAY	93	M228 474	Ower GWS	Bore	
GALWAY	98	M682 247	Aughrim GWS	Spring	24
GALWAY	99	M467 089	Ballinduff -Fullura GWS	Bore	41
GALWAY	104	M426 195	Clarinbridge	Spring	220
GALWAY	108	M434 078	Crannagh-Gort GWS	Bore	37
GALWAY	113	M571 131	Kilchrest GWS	Bore	43
GALWAY	114	M388 060	Killina-Kinvarra GWS	Bore	29
GALWAY	118	M378 101	Kinvarra WS	Bore	306
GALWAY	125	M404 249	Oranmore WS	Spring	400
GALWAY	126	M856 048	Portumna Mart	Bore	18
GALWAY	128	M332 290	Roadstone Ltd	Bore	227
KERRY	1	Q574 037	Anascaul	Springs	200
KERRY	2	Q782 217	Ardfert	Well	2270
KERRY	3	Q433 102	Ballinevenooragh WS	Well	30
KERRY	5	Q425 078	Ballinloghig WS	Well	27
KERRY	6	Q906 419	Ballybunnion WS	Spring	
KERRY	7	Q885 349	Ballyduff WS	Well	227

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
KERRY	8	Q360 048	Ballyferriter	Bore, Well, Spring	409
KERRY	9	Q399 056	Ballyferriter RWS	Spring	300
KERRY	11	Q356 033	Ballyferriter RWS	Well	300
KERRY	12	R004 444	Ballylongford	Bore	34
KERRY	13	Q964 438	Ballylongford WS	Bore	34
KERRY	14	Q450 040	Ballymore WS	Spring	365
KERRY	15	Q525 149	Brandon	Spring	113
KERRY	17	Q525 132	Cappagh	Wells	45
KERRY	19	Q852 322	Causeway WS	Spring	45
KERRY	20	Q510 113	Cloghane	Wells	40
KERRY	23	Q460 030	Dingle WS	Well	1136
KERRY	30	R055 305	Duagh	Gallery	204
KERRY	31	Q315 005	Dunquin	Spring	114
KERRY	32	V346 980	Fahan WS	Spring	32
KERRY	34	Q730 160	Fenit	Wells	360
KERRY	35	Q430 108	Feoghanagh-Brandon Creek WS	Spring	150
KERRY	38	V333 977	Glenfahan WS	Spring	6
KERRY	40	Q323 028	Graigie-Clogher WS	Spring	36
KERRY	42	W029 723	Kilgarvan WS	Well	91
KERRY	43	Q412 036	Knockavrogeen WS	Spring	45
KERRY	45	R043 211	Knocknagashel WS	Spring	
KERRY	46	W000 898	Lissivigeen GWS	Well	36
KERRY	47	Q906 267	Lixnaw WS	Spring	910
KERRY	49	Q8100 08	Milltown WS	Spring	290
KERRY	50	Q540 035	Minard RWS	Spring	318
KERRY	52	Q438092	Murreagh	Wells, Spring	360
KERRY	53	W161 885	Rathmore	Well	300
KERRY	54	W030 967	Roomore GWS	Well	9
KERRY	55	R003 004	Scartaglin	Spring	50
KERRY	58	R075 464	Tarbert WS	Spring	182
KERRY	59	Q334 032	Teeravane WS	Spring	36
KERRY	61	V996924	Tullig GWS	Bore	23
KERRY	62	V405 770	Valencia Island WS	Spring	30
KERRY	63	R140 185	Brosna WS	Well Spring.	136
KERRY	66	Q768 265	Ballyheigue	Spring	
KERRY	74	V468 766	Caherciveen Creamery	Spring	90
KERRY	75	Q836 028	Castlemaine Creamery	Well	91
KERRY	83	V908 710	Kenmare Creamery	Well	55
KERRY	105	Q982 230	Lyrecrompane Creamery	Deep Well	27
KILDARE	1	S680 945	Athy Town WS	Bore	650
KILDARE	3	S717 905	Ballyroe GWS	Well	22
KILDARE	5	N932 186	Bullock Park	bore	32
KILDARE	6	S805 860	Castledermot WS	Bore	430
KILDARE	7	S625 950	Castlemitchell GWS	Bore	18
KILDARE	8	N696 407	Clonuff Housing WS	Bore	12
KILDARE	9	N662 000	Kilberry Area WS	Bore	12
KILDARE	11	N663 061	Kildangan GWS	Bore	28
KILDARE	13	S737 986	Kilmeade Housing WS	Bore	20
KILDARE	14	N642 125	Monasterevin WS	Spring	

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
KILDARE	15	N647 125	Monasterevin WS	Bore	645
KILDARE	16	N733 000	Ardellis	Bore	
KILDARE	17	S005 900	Belview	Bore	
KILDARE	18	S640 955	Churchtown	Bore	120
KILDARE	19	S822 850	Graney-Castledermot	Spring	
KILDARE	20	N635 064	Lughill-Monasterevin	3 Springs	
KILDARE	21	N973 169	Red Bog Blessington	Bore	
KILDARE	22	N819 394	Newtown-Kilcock	Bore	17
KILDARE	37	-----	Athy Belview	Bore	
KILDARE	38	-----	Bawnogues	Bore	
KILDARE	39	-----	Bullock Park Naas	Bore	
KILDARE	40	N655 390	Clogherinkoe	Bore	11
KILDARE	41	N889 033	Gormanstown	Bore	
KILDARE	44	S680 942	Infiltration Gallery, Athy	Gallery	
KILDARE	45	N774 413	Johnstownbridge	Bore	50
KILDARE	46	S658 993	Kilberry Area WS	Bore	400
KILDARE	47	S740 898	Kilkea	Bore	
KILDARE	48	N988 205	Kilteel	Bore	
KILDARE	49	-----	Lipstown Narraghmore	Bore	
KILDARE	51	S657 933	Quarry	Bore	
KILDARE	53	S679 944	Townsparks Bore, Athy	Bore	
KILDARE	54	N737 115	Tully	Springs	
KILDARE	55	N973 179	Wolfstown	Bore	
KILKENNY	6	S445 710	Ballyragget WS	Gallery	590
KILKENNY	8	S546 444	Bennetsbridge WS	Gallery	2045
KILKENNY	10	S407 442	Callan WS	Spring	840
KILKENNY	14	S547 760	Clogh/Castlecomer RWS	Gallery	820
KILKENNY	18	S660 230	Glenmore WS	Spring	
KILKENNY	19	S660 572	Gowran-Goresbridge-Paulstown	Spring	795
KILKENNY	20	S702 414	Graiguenamanagh RWS	Spring	570
KILKENNY	24	S507 568	Kilkenny WS	Spring	342
KILKENNY	29	S476 256	Piltown-Fiddown WS	Spring	455
KILKENNY	32	S589 415	Thomastown WS	Gallery	
KILKENNY	34	S300 635	Urlingford-Johnstwn	Spring	
KILKENNY	90	S520 738	Castlecomer (old)		
LAOIS	1	S452 841	Abbeyleix WS	Spring	227
LAOIS	4	S655 834	Arless	Spring	
LAOIS	7	S430 789	Ballinakill WS	Bore	210
LAOIS	9	S472 865	Ballyroan WS	Spring	475
LAOIS	10	S243 879	Borris-in-OssoryWS	Well	77
LAOIS	12	N309 094	Clonaslee WS	Spring	46
LAOIS	13	S678 836	Coolenagh	Bore	
LAOIS	14	S403 775	Durrow	Bore	530
LAOIS	16	N526 058	Emo WS	Bores	270
LAOIS	19	N452 059	Mountmellick	Bore	
LAOIS	20	S715 772	Oakley	Bore	
LAOIS	21	N502 007	Portlaois	Bores	
LAOIS	25	S303 777	Rathdowney	Spring	
LAOIS	26	N400 082	Rosenallis	Bore	

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
LAOIS	28	S564 824	Swan-Newtown-Doonane	Bore	520
LAOIS	29	S557 904	Timahoe-Cremorgan	Spring	250
LAOIS	30	N614 005	Vicarstown	Bore	
LAOIS	33	N573 085	Killinard GWS	Bore	
LAOIS	48	S585 882	Luggacurran GWS.	Spring	123
LEITRIM	5	H113 099	Ballinamore WS	Spring	455
LEITRIM	19	G997 122	Drumshanbo WS	Spring	164
LEITRIM	21	G781 379	Fivemilebourne WS	Spring	135
LEITRIM	26	G941 438	Kiltyclogher WS	Spring	90
LEITRIM	27	G843 522	Kinlough-Tullaghan WS	Spring	380
LEITRIM	32	G833 384	Manorhamilton WS	Spring	680
LEITRIM	36	G925 467	Rossinver WS	Spring	60
LIMERICK	1	R273 398	Ardagh WS	Well	273
LIMERICK	2	R558 340	Athlacca North GWS	Well	18
LIMERICK	4	R418 365	Ballingarry WS	Well	318
LIMERICK	5	R218 368	Ballinloughane GWS	Well	5
LIMERICK	6	R718 268	Ballinvreena GWS	Bore	129
LIMERICK	7	R472 280	Ballyagran WS	Bore	218
LIMERICK	8	R651 477	Ballybricken WS	Bore	44
LIMERICK	9	R182 455	Ballyhahill WS	Well	
LIMERICK	10	R188 457	Ballyhahill WS	Bore	46
LIMERICK	11	R780 238	Ballylanders WS	Bore	
LIMERICK	12	R782 228	Ballylanders WS	Bore	169
LIMERICK	13	R683 198	Ballyorgan GWS	Bore	33
LIMERICK	16	R223 308	Barnagh GWS	Well	22
LIMERICK	19	R334 217	Broadford WS	Bore	182
LIMERICK	20	R626 371	Bruff WS	Bore	427
LIMERICK	21	R549 305	Bruree WS	Spring	196
LIMERICK	24	R510 421	Caherass GWS	Well	6
LIMERICK	25	R680 500	Caherconlish WS	Well	436
LIMERICK	27	R382 456	Cappagh GWS	Bore	
LIMERICK	28	R393 463	Cappagh GWS	Bore	16
LIMERICK	30	R624 444	Carnane GWS	Well	208
LIMERICK	32	R207 378	Carrigkerry GWS	Well	55
LIMERICK	36	R284 414	Coolcappagh GWS	Bore	88
LIMERICK	38	R299 460	Creeves-Shanagolden GWS	Well	18
LIMERICK	40	R406 429	Croagh GWS	Bore	8
LIMERICK	41	R508 413	Croom WS	Bore	409
LIMERICK	42	R824 504	Doon WS	Well	
LIMERICK	43	R840 509	Doon WS	Bore	546
LIMERICK	46	R593 445	Fedamore	Well	68
LIMERICK	47	R796 280	Galbally WS	Spring	182
LIMERICK	48	R744 554	Glenstal WS	Well	216
LIMERICK	49	R130 465	Glin WS	Bore	
LIMERICK	55	R685 409	Herbertstown GWS	Bore	318
LIMERICK	56	R706 363	Hospital WS	Bore	
LIMERICK	59	R606 270	Jamestown	Bore, Spring	564

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
LIMERICK	61	R862 155	Kilbeheny	Well	41
LIMERICK	64	R399 513	Kilcornan GWS	Bore	14
LIMERICK	65	R268 248	Kileedy GWS	Well	111
LIMERICK	70	R274 246	Killeedy GWS	Well	97
LIMERICK	72	R618 268	Kilmallock WS	Bore	
LIMERICK	75	R377 297	Kilmeedy GWS	Bore	70
LIMERICK	76	R728 411	Kilteely WS	Bore	
LIMERICK	78	R720 311	Knocklong WS	Bore	
LIMERICK	80	R192 497	Loghill WS	Bore	37
LIMERICK	82	R727 563	Moroe WS	Wells	650
LIMERICK	84	R166 191	Mountcollins	Bore	118
LIMERICK	85	R665 665	Mountpelier WS	Bore	68
LIMERICK	86	R317 452	Newbridge-Cooltomine GWS	Well	40
LIMERICK	87	R498 570	Newtown;Clarina	Well	65
LIMERICK	88	R815 420	Oola WS	Well	337
LIMERICK	89	R764 440	Pallasgreen WS	Well	382
LIMERICK	96	R174 362	Templeathea GWS	Bore	10
LIMERICK	97	R218 292	Templeglantine GWS	Bore	14
LIMERICK	98	R217 243	Toornafulla	Bore	19
LIMERICK	101	R126 351	Athea	Bore Spring	182
LIMERICK	102	R685 205	Ballinlyna	Bore	129
LIMERICK	103	R774 286	Ballynamona	Well	30
LIMERICK	104	R773 514	Cappamore	Spring	
LIMERICK	107	R477 368	Kilfinny GWS	Spring	160
LIMERICK	109	R650 405	Lough Gur GWS	Bore	205
LIMERICK	111	R318 280	South West RWS	Spring Well	1250
LONGFORD	12	N140 625	Keenagh WS	Spring	520
LONGFORD	13	N008 695	Lanesboro RWS	Bore	2000
LONGFORD	14	N035 584	Newtowncashel WS	Spring	436
LOUTH	2	O070 823	Brownstown GWS	Bore	25
LOUTH	3	J179 110	Carlingford	Spring	200
LOUTH	4	-----	Clogherhead	Bore	800
LOUTH	5	O003 815	Collon WS	Bore	660
LOUTH	6	J205 070	Cooley RWS	Bore	875
LOUTH	7	O052 781	Drybridge GWS	Bore	100
LOUTH	8	O097 870	Grangebellew GWS	Bore	75
LOUTH	9	O065 925	Greenmount	Bore	
LOUTH	10	J212 081	Greenore WS	Spring	188
LOUTH	11	J008 083	Kilcurley GWS	Bore	134
LOUTH	12	O069 788	Killineer GWS	Bore	45
LOUTH	14	J009 098	Rathmore GWS	Bore	200
LOUTH	15	J090 128	Ravensdale WS	Spring	4
LOUTH	16	J093 119	Ravensdale WS	Spring	16
LOUTH	18	O041 837	Tenure GWS	Bore	70
LOUTH	20	O024 781	Tullyallen GWS	Bore	500
LOUTH	49	O011 768	Sheepgrange	Bore	
LOUTH	57	N957 903	Ardee	Bore	
MAYO	1	M258 847	Balla WS	Well	180
MAYO	2	M363 696	Ballindine	Spring	450

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
MAYO	3	G087 390	Ballycastle	Spring	220
MAYO	4	M492 791	Ballyhaunis WS	Spring	718
MAYO	5	M365 799	Bllymagibbon GWS	Well	40
MAYO	6	M336 953	Bohola GWS	Spring	200
MAYO	7	M170 993	Castlebar WS	Spring	436
MAYO	8	G484 005	Charlestown WS	Well	300
MAYO	9	M365 696	Claremorris WS	Well	
MAYO	11	M331 611	Crossboyne GWS	Spring	120
MAYO	12	G101 168	Crossmolina WS	Well	900
MAYO	15	M484 977	Hagfield GWS	Well	30
MAYO	16	M442 923	Kilkelly WS	Spring	250
MAYO	19	M262 601	Kilmaine WS	Well	650
MAYO	20	M398 834	Knock WS	Well	
MAYO	21	M268 784	Mayo Abbey GWS	Well	
MAYO	22	M308 684	Purraunes GWS	Well	12
MAYO	23	G532 022	Roskey GWS	Well	160
MAYO	24	M385 980	Swinford WS	Spring	850
MAYO	26	M470 864	Treen-Aughmore GWS	Well	400
MAYO	30	M442 923	Woodfield GWS	Well	100
MAYO	32	M290 681	Lisatava GWS	Spring	100
MAYO	33	G250 196	Ballina Milk Co	Well	30
MAYO	35	F684 328	Belmullet old WS	Well	
MAYO	39	F741 188	Dooyark GWS	Well	20
MAYO	40	L790 806	Louisburg WS	Well	
MAYO	43	F825 390	Ross Port GWS	Well	55
MEATH	2	N720 636	Athboy	Bore	
MEATH	5	N694 561	Ballivor	Gallery	180
MEATH	9	N850 820	Castletown Housing	Bore	23
MEATH	10	O015 426	Dunboyne	Bore Gallery	500
MEATH	12	N774 413	Enfield	Bore	240
MEATH	15	N791 890	Kilmainhamwood GS	Bore	54
MEATH	16	N887 573	Kilmessan Housing	Bore	7
MEATH	19	N733 828	Moynalty	Bore	100
MEATH	20	N828 861	Nobber	Bore	100
MEATH	23	N962 737	Slane	Bore	535
MEATH	24	N841 484	Summerhill	Bore	130
MEATH	25	N827 559	Trim WS	Dug well	223
MEATH	75	N553 803	Oldcastle Creamery	Bore	91
MONAGHAN	1	H833 052	Carrickmacross WS	Bore	1590
MONAGHAN	2	H808 162	Castleblayney WS	Well	563
MONAGHAN	3	H751 304	Clontibret WS	Well	23
MONAGHAN	6	H726 360	Killyniel WS	Bore	18
MONAGHAN	8	H679 346	MonaghanTown WS(E)	Bore	
MONAGHAN	10	H589 307	Smithborough WS	Bore	330
MONAGHAN	11	H577 407	Tydnavey GWS	Bore	545
MONAGHAN	51	H579 295	Smithboro WS	Bore	130
OFFALY	1	N447 220	Ballinagar GWS	Spring	360
OFFALY	2	N204 148	Ballyboy GWS	Spring	50
OFFALY	3	N029 140	Banagher-Lusmagh WS	Bore	320
OFFALY	4	S169 970	Clareen GWS	Spring	380
OFFALY	5	N074 197	Cloghan WS	Bore	170
OFFALY	6	N604 237	Clonbulloge WS	Bore	110

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
OFFALY	7	N377 205	Coneygowan GWS	Bore	600
OFFALY	8	S107 958	Coolderry WS	Bore	8
OFFALY	9	N468 277	Daingean WS	Spring	420
OFFALY	10	S062 848	Dunkerrin WS	Springs	880
OFFALY	11	N118 233	Ferbane-Belmont WS	Bore	295
OFFALY	13	N450 215	Geashill WS	Spring	230
OFFALY	14	N184 142	Kilcormac WS	Spring	350
OFFALY	16	N393 216	Meelaghans GWS	Spring	100
OFFALY	17	S041 825	Moneygall WS	Spring	200
OFFALY	18	N253 155	Mountbolus WS	Well	30
OFFALY	19	N274 266	Rahan WS	Bore, Spring	1475
OFFALY	21	N267 233	Rahan WS	Spring	1475
OFFALY	23	N516 317	Rhode RWS	Spring	2520
OFFALY	24	M974 256	Shannonbridge WS	Bore	67
OFFALY	25	N227 382	Tober GWS	Spring	327
OFFALY	26	N338 285	Tullamore UDC WS	Bore	410
OFFALY	27	N522 211	Walsh Island WS	Spring, Bore	410
OFFALY	28	N309 094	Clonaslee	Bore	2072
OFFALY	29	N645 335	Edenderry	Bore	450
OFFALY	48	N624 307	Ballyfore-Ballykillen	Bores	70
OFFALY	49	N178 297	Boher	Well	
OFFALY	50	N652 182	Bracknagh	Well	200
OFFALY	51	N319 315	Durrow	Bore	5
ROSCOMMON	2	M839 815	Ardkeenagh GWS	Spring	45
ROSCOMMON	3	G924 140	Arigna WS	Spring	118
ROSCOMMON	4	M879 621	Athleague RWS	Spring	4744
ROSCOMMON	5	M830 577	Athleague WS	Bore	59
ROSCOMMON	6	M802 943	Ballinameen GWS	Bore	14
ROSCOMMON	7	G861 131	Ballyfarnan WS	Spring	182
ROSCOMMON	9	M447 220	Bellanagara WS	Spring	3400
ROSCOMMON	11	G830 040	Boyle	springs	2600
ROSCOMMON	12	M800 760	Caran-Castleplunkett GWS	Bore	8
ROSCOMMON	13	M738 726	Carane GWS	Spring	55
ROSCOMMON	14	M879 751	Carroward GWS	Bore	
ROSCOMMON	16	M700 795	Castlereas WS	Spring	1600
ROSCOMMON	17	M690 790	Castlereas RWS	Spring	2545
ROSCOMMON	18	M830 608	Castlestrange GWS	Bore	21
ROSCOMMON	19	M675 952	Cloonmagunaun	Spring	1100
ROSCOMMON	20	M851 840	Cloonyquin GWS	Spring	68
ROSCOMMON	21	M853 525	Coolderry GWS	Bore	6
ROSCOMMON	22	M738 726	Corrastona GWS	Spring	11
ROSCOMMON	23	M905 897	Creeve Hillstreet GWS	Spring	261
ROSCOMMON	24	M791 666	Dunamon GWS	Spring	41
ROSCOMMON	25	M743 905	Frenchpark WS	Spring	120
ROSCOMMON	26	M846 760	Grange Lower GWS	Spring	41
ROSCOMMON	27	M934 597	Keadew WS	Spring	159
ROSCOMMON	29	M934 597	Knockcroghery RWS	Spring	760
ROSCOMMON	30	M964 551	Lecarrow	Spring	675
ROSCOMMON	32	M821 524	Mount Talbot RWS	Spring	2345
ROSCOMMON	33	M819 810	Ogulla GWS	Spring	50
ROSCOMMON	34	N040 350	Oldtwon WS	Bore	8
ROSCOMMON	35	M909 515	Rahara GWS	Spring	19

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
ROSCOMMON	36	M738 726	Rathcarren GWS	Spring	61
ROSCOMMON	37	M887 721	Rathmore GWS	Spring	100
ROSCOMMON	38	N050 869	Roosky WS	Bore	70
ROSCOMMON	39	M818 678	Roscommon WS	Spring	2045
ROSCOMMON	41	G893 161	Rover-Arigna WS	Spring	36
ROSCOMMON	42	M887 406	South Roscommon RWS	Spring	4275
ROSCOMMON	43	M927 800	Strokestown WS	Spring	409
ROSCOMMON	46	M815 705	Ballymacurley GWS	Spring	129
ROSCOMMON	47	M576 974	Brusna GWS	Springs	126
ROSCOMMON	49	M773 810	Carnakit GWS	Bore	4
ROSCOMMON	50	M938 778	Carniska GWS	Bore	34
ROSCOMMON	51	M853 476	Carrowkeel-Dysart GWS	Bore	42
ROSCOMMON	53	M992 908	Clooncommon GWS	Bore	6
ROSCOMMON	55	M827 997	Croghan GWS	Spring	223
ROSCOMMON	59	M877 687	Derrane-Cooteige GWS	Spring	95
ROSCOMMON	60	G563 018	Derrynacartha GWS	Spring	270
ROSCOMMON	62	M804 679	Emlaghmore-Donamon GWS	Spring	10
ROSCOMMON	65	M900 697	Hollywell GWS	Spring	96
ROSCOMMON	66	M855 687	Mullymucks GWS	Bore	34
ROSCOMMON	67	M859 823	Rathcroghan GWS	Bore	350
ROSCOMMON	68	M791 916	Tartan GWS	Spring	52
ROSCOMMON	69	M820 585	Toberavaddy GWS	Bore	10
ROSCOMMON	74	-----	Streamstown	Well	
SLIGO	3	G684 444	Benbulbin GWS	Spring	27
SLIGO	5	G775 378	Calry GWS	Spring	73
SLIGO	9	G437 381	Dromore West GWS	Well	26
SLIGO	10	G706 431	Drum East GWS	Spring	168
SLIGO	11	G352 313	Enniscrone-Easky	Spring	
SLIGO	12	G355 291	Enscrone-Easky WS	Spring	500
SLIGO	14	G647 037	Gurteen WS	Spring	200
SLIGO	15	G770 155	Riverstown WS	Well	270
SLIGO	16	G698 395	Rosses Point WS	Spring	520
SLIGO	17	G644 364	Strandhill WS	Bore	300
SLIGO	24	G660 150	Ballymote Creamery	Well	18
TIPP. NTH	1	M959 044	Abbeyville-Lisgreen GWS	Bore	55
TIPP. NTH	3	R912 934	Ardcroney GWS	Bore	272
TIPP. NTH	4	R913 761	Ballinacloy WS	Bore	
TIPP. NTH	5	R913 760	Ballinacloy WS	Bore	320
TIPP. NTH	7	R984 968	Ballingarry WS	Bore	200
TIPP. NTH	14	R927 934	Borrisokane RWS	Bore	500
TIPP. NTH	15	S055 645	Borrisoleigh WS	Bore	325
TIPP. NTH	16	S062 628	Bouladuff WS	Bore	60
TIPP. NTH	18	M87 8006	Carrigahorig GWS	Bore	
TIPP. NTH	22	S120 820	Clonakenny WS	Bore	5
TIPP. NTH	26	S173 760	Clonmore WS	Bore	30
TIPP. NTH	27	R966 880	Cloughjordan WS	Spring	320
TIPP. NTH	30	S072 684	Drom WS	Bore	30
TIPP. NTH	31	R814 858	Dromineer WS	Bore	83
TIPP. NTH	37	S089 541	Holycross	Bore	25
TIPP. NTH	38	R914 605	Kilcommon WS	Bore	227

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
TIPP. NTH	39	S048 679	Kilfithmone WS	Bore	6
TIPP. NTH	47	S178 541	Littleton WS	Bore	130
TIPP. NTH	48	M920 046	Lorrha WS	Bore	58
TIPP. NTH	50	S155 495	Moycarkey;Horse and Jocke	Bore	160
TIPP. NTH	55	R865 797	Nenagh	Spring	
TIPP. NTH	56	R742 625	Newport RWS	Bore	360
TIPP. NTH	58	R845 865	Puckaun WS	Bore	330
TIPP. NTH	59	M98 0075	Rathcabban WS	Bore	62
TIPP. NTH	64	S121 852	Roscrea	Spring	1600
TIPP. NTH	67	R841 705	Silvermines	Spring	
TIPP. NTH	68	R950 692	Templederry WS	Bore	90
TIPP. NTH	69	S109 693	Templemore	Bore	200
TIPP. NTH	70	S185 707	Templetuohy WS	Bore	107
TIPP. NTH	71	R864 004	Terryglass WS	Bore	65
TIPP. NTH	73	S126 591	Thurles WS	Spring	250
TIPP. NTH	74	S099 584	Thurles WS	Spring	1000
TIPP. NTH	75	S136 570	Thurles WS	Spring	1300
TIPP. NTH	76	R970 773	Toomevara WS	Spring	100
TIPP. NTH	78	R846 776	Tullaheady WS	Bore	20
TIPP. NTH	79	S196 580	Two-Mile-Borris GWS	Bore	62
TIPP. NTH	80	R988 614	Upperchurch WS	Bore	11
TIPP. NTH	82	S022 560	Drombane WS	Bore	
TIPP. NTH	85	N045 032	Riverstown	Spring	
TIPP. NTH	92	R914 942	Borrisokane Co-op	Bore	25
TIPP. NTH	105	S123 855	Glenbeighe Dairy	Spring	15
TIPP. NTH	116	R906 844	Nenagh Golf Course	Bores	60
TIPP. NTH	118	R726 620	Newport Creamery	Bore (Artesian)	36
TIPP. NTH	119	R726 620	Newport Creamery	Bore (Artesian)	36
TIPP. NTH	122	S140 900	Roscrea Bacon	Bore	318
TIPP. NTH	132	S126 591	Thurles Co-op Creamery	Well	180
TIPP. NTH	133	R969 774	Toomevara Co-op	Bore	15
TIPP. NTH	134	R764 788	Tubex Ltd	Springs	5
TIPP. NTH	135	R988 879	Valentine, Mr.	Bore	5
TIPP. NTH	136	S127 592	Valley Ice Cream	Well	650
TIPP. STH	1	S413 294	Ahenny WS	Bore	27
TIPP. STH	2	R983 163	Ardfinnan RWS	Spring	6820
TIPP. STH	3	S366 312	Ballinvir WS	Bore	
TIPP. STH	4	S387 214	Carrick on Suir WS (Coolnamuck)	Bore	513
TIPP. STH	7	S308 528	CommonsWS	Bore	100
TIPP. STH	8	S080 460	Dundrum RWS	Bore	110
TIPP. STH	12	R998 396	Galtee RWS	Spring	1500
TIPP. STH	14	-----	Glengar	Spring	1500
TIPP. STH	16	R936 549	Holyford WS	Spring	50
TIPP. STH	17	R914 469	Ironmills	Bore	1200
TIPP. STH	18	S310 282	Kilcash WS	Spring	27
TIPP. STH	21	R904 341	Tipperary WS	Spring	
TIPP. STH	22	S321 308	Tullowhea WS	Spring	35
TIPP. STH	23	S276 486	Ballincurry WS	Bore	
TIPP. STH	24	S272 512	Coalbrook WS	Bore	
TIPP. STH	27	S265 626	Inchirourke	Spring	
TIPP. STH	34	R920 256	Tipperary Springs WS	Spring	
TIPP. STH	47	S280 335	Cloran	Spring	

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
TIPP. STH	50	S224 344	Mullenbawn	Spring	
WATERFORD	2	W979 960	Aglish (Glencairn) WS	Spring	54
WATERFORD	4	X197 845	Ardmore WS	Bore	
WATERFORD	7	S482 102	Ballyduff-Kilmeaden WS	Spring	250
WATERFORD	8	X200 967	Ballyduff-Ballylemon WS	Spring	386
WATERFORD	14	S195 109	Ballymacarbry WS	Bore	200
WATERFORD	33	X132 849	Clashmore WS	Spring	115
WATERFORD	41	X236 948	Dungarvan	Bore	
WATERFORD	46	S341 029	Garrahylish WS	Spring	3
WATERFORD	48	S211 211	Glennagad WS	Bore	20
WATERFORD	55	X172 817	Grange-Ballybrusa WS	Bore	
WATERFORD	56	X238 972	Inchindrisla-Kilgobnet	Bore	20
WATERFORD	58	S388 187	Joanstown WS	Bore	18
WATERFORD	64	S396 059	Kilmacthomas WS	Spring	160
WATERFORD	68	X263 979	Kilnafrehan WS	Bore	11
WATERFORD	73	S324 017	Knockyelan WS	Spring	
WATERFORD	78	X131 978	Lismore-Cappoquin RWS	Bore	400
WATERFORD	79	X255 854	Loskeran-Old Parish WS	Spring	55
WATERFORD	80	S235 208	Lyreanearle	Bore	10
WATERFORD	85	S459 121	Portlaw WS	Spring	400
WATERFORD	87	S339 173	Rathgormack WS	Bore	15
WATERFORD	90	S404 068	Scrahan WS	Bore	10
WATERFORD	95	W999 947	Tallow Hill WS	Spring	30
WATERFORD	111	X115 928	Cappoquin	Bore	
WATERFORD	112	X236 948	Dungarvan	Bore	
WESMEATH	1	N099 336	Ballinahown WS	Well	10
WESMEATH	2	N317 610	Ballynacargy	Gallery	87
WESMEATH	4	N645 684	Clonmellon	Spring	94
WESMEATH	6	N565 508	Killucan-Rathwire-Raharney WS	Gallery	590
WESMEATH	9	N214 389	Moate	Spring	1136
WESMEATH	10	N129 427	Mount Temple GWS	Well	94
WESMEATH	12	N417 628	Multyfarnham GWS	Spring	165
WESMEATH	16	N411 385	Tyrrellspass	Gallery	364
WEXFORD	2	S977 221	Ballyhine	Bore	25
WEXFORD	3	S966 307	Ballyhogue WS	Bore	50
WEXFORD	4	T003 189	Ballymorris	Bore	25
WEXFORD	6	S947 325	Bree WS	Bore	100
WEXFORD	7	S987 098	Bridgetown	Bore	
WEXFORD	8	T075 523	Camolin WS	Bore	91
WEXFORD	9	S831 245	Carrigbyrne	Bore	204
WEXFORD	12	S854 320	Clonroche WS?	Bore	130
WEXFORD	14	T187 702	Coolgreany	Bore	600
WEXFORD	18	S969 409	Ennisclorthy WS	Bore	200
WEXFORD	19	T010 120	Fardystown RWS	Bores	9050
WEXFORD	20	T015 504	Ferns WS	Bore	204
WEXFORD	21	S921 281	Galbally WS	Bore	10
WEXFORD	22	S973 270	Glynn WS	Bore	75
WEXFORD	24	T137 415	Kilmuckridge RWS	Bore	400

Appendix 1 (continued)

COUNTY	PLOT NO.	NATIONAL GRID REF.	NAME	SOURCE	QUANTITY m ³ /d
WEXFORD	26	S837 477	Kiltealy	Springs	91
WEXFORD	27	T140 350	Knocknasilloge	Bore	25
WEXFORD	28	S827 218	Newbawn	Bore	
WEXFORD	30	T090 410	Oulart	Bore	30
WEXFORD	31	T130 122	Rosslare Harbour WS	Bore	
WEXFORD	33	T055 270	Sow RWSS	Bore	
WEXFORD	36	T074 275	Ballina	Bore	
WEXFORD	37	S711 178	Ballinamona	Bore	
WEXFORD	38	T045 162	Ballkilliane	Bore	
WEXFORD	39	T150 420	Ballygarran	Bore	
WEXFORD	40	T050 155	Ballykelly	Bore	
WEXFORD	41	T135 557	Barnadown	Bore	
WEXFORD	43	S923 572	Bunclody WS	Bore	
WEXFORD	44	T012 142	Busherstown	Bore	
WEXFORD	45	S960 342	Edermine	Bore	
WEXFORD	46	T050 136	Orristown	Bore	
WEXFORD	47	T032 139	Rathmacknee	Bore	
WEXFORD	48	S915 201	Taghmon WS	Bore	
WEXFORD	50	T137 415	Newtown		
WEXFORD	62	T052 217	Wexford Gas Co	Bore	218
WICKLOW	2	T163 776	Ballycoogue	Bore	27
WICKLOW	4	S860 884	Baltinglass WS	Spring	
WICKLOW	8	T267 862	Barndarrig	Bore	34
WICKLOW	10	N999 058	Carrigacurra GWS	Spring	
WICKLOW	11	T070 692	Coolboy /Coolafancy WS	Spring	90
WICKLOW	12	S999 983	Donard	Gallery	135
WICKLOW	13	N875 007	Dunlavin	Springs	340
WICKLOW	14	-----	Glenealy	Springs	295
WICKLOW	15	S843 948	Grangecon	Bore	18
WICKLOW	16	N945 056	Hollywood WS	Spring, Gallery	270
WICKLOW	22	S928 854	Kiltegan	Bore	90
WICKLOW	23	T122 899	Kirikee	Bore	32
WICKLOW	24	T013 814	Knockananna WS	Bore	70
WICKLOW	26	T250 840	Redcross	Bores	180
WICKLOW	27	O187 034	Roundwood	Spring, Bore	135
WICKLOW	29	S915 918	Stratford-Clonmoney	Spring, Gallery	135
WICKLOW	31	N991 057	Valleymount	Spring	40
WICKLOW	32	O266 137	Windgates-Templecarrig WS	Springs	70
WICKLOW	33	N975 140	Ashtown GWS / Blessington	Bore	
WICKLOW	43	S878 878	Baltinglass WS	Bore	450
WICKLOW	44	O292 077	Bulford Farm	Bore	50
WICKLOW	47	S995 677	Kerry Foods (Shillelagh)	Well	600

Insert Map 2