

**WELLAND  
AND  
NENE  
RIVER  
AUTHORITY**

**SIXTH  
ANNUAL  
REPORT  
1970-1971**





WELLAND AND NENE RIVER AUTHORITY

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ANNUAL REPORT

1970-1971

*Chairman*

T. R. PICK, Esq., O.B.E.

*Vice Chairman*

COUNTY ALDERMAN H. C. L. WARWICK

OUNBLE  
Peterborough

D. S. AKROYD  
*Clerk of the Authority*

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## PREFACE

This Report is published as required by section 110 of the Water Resources Act 1963, and is in the form and contains particulars as directed by the Minister of Agriculture, Fisheries and Food and the Minister of Housing and Local Government.

The Welland and Nene River Authority were constituted by the Welland and Nene River Authority Constitution Order 1964 (S.I. No. 1030) made by the Minister of Housing and Local Government and the Minister of Agriculture, Fisheries and Food in exercise of the powers conferred on them by sections 3, 7 and 134 of the Water Resources Act, 1963.

That Order provided that the number of local authority members should be as follows:

<i>County</i>	<i>No. of Members</i>
Bedford .. .. .	None
Buckingham .. .. .	None
Cambridgeshire and Isle of Ely .. .. .	One
Huntingdon and Peterborough .. .. .	Two
Leicester, Rutland .. .. .	One jointly
Lincoln, Parts of Holland .. .. .	One
Lincoln, Parts of Kesteven .. .. .	One
Norfolk .. .. .	None
Northampton .. .. .	Six
<i>County Borough</i>	
Northampton .. .. .	Two

One of the two members appointed by Huntingdon and Peterborough County Council shall be from among persons nominated by Peterborough Municipal Borough Council.

One of the six members appointed by Northampton County Council shall be from among persons nominated by Corby Urban District Council.

The Minister of Agriculture, Fisheries and Food in accordance with the provision of section 6 (3) of the Water Resources Act, 1963 made five appointments of persons qualified in respect of land drainage, two appointments of persons qualified in respect of fisheries, and two appointments of persons qualified in respect of agriculture.

The Minister of Housing and Local Government in accordance with the provision of that section made two appointments of persons qualified in respect of public water supply and two appointments of persons qualified in respect of industry other than agriculture.

The River Authority came into existence on the 15th October, 1964 (S.I. No. 1267) and took over the functions assigned to them on the 1st April, 1965. The first meeting was held at Peterborough on the 17th November, 1964. The second re-constitution took place on the 1st November, 1970, and the present appointments will expire on the 31st October, 1973.

The Area comprises 1,547 square miles, of which 934 square miles are in the Nene Hydro-metric area and 613 square miles are in the Welland Hydrometric area. The total length of main river on the 31st March 1971 was 617 miles, the length of the River Nene and tributaries being 330 miles and the length of the River Welland and tributaries being 287 miles. The estimated penny rate product for 1970-71 was £140,398. The precept of the County and County Borough Councils for the year ended 31st March 1971 was 2.85 pence, and produced £400,151. The contribution required of internal drainage boards amounted to £84,584. Annual loan charges amounted to £159,097.

## MEMBERSHIP

### 1. MEMBERSHIP OF THE AUTHORITY

#### CHAIRMAN OF THE AUTHORITY

T. R. Pick Esq., O.B.E.

#### VICE CHAIRMAN OF THE AUTHORITY

County Alderman H. C. L. Warwick

### MEMBERS AND APPOINTING AUTHORITIES

#### Appointed by Cambridgeshire and Isle of Ely County Council

County Councillor M. H. T. Carter

#### Appointed by Huntingdon and Peterborough County Council

County Alderman Lt. Col. the Hon. P. E. Brassey, J.P., D.L.

Alderman G. A. Foster (*appointed on the nomination of Peterborough Municipal Borough Council*)

#### Appointed by Leicester and Rutland County Councils, jointly

County Alderman J. A. E. Bryan, O.B.E. (*to 31st October 1970*)

The Rt. Hon. the Earl of Gainsborough (*from 1st November 1970*)

#### Appointed by Lincoln (Parts of Holland) County Council

County Alderman H. Waltham

#### Appointed by Lincoln (Parts of Kesteven) County Council

County Councillor G. A. Griffin (*to 31st October 1970*)

County Alderman J. H. Lewis (*from 1st November 1970*)

#### Appointed by Northampton County Council

County Alderman P. Campion, M.B.E. (*to 31st October 1970*)

County Councillor J. R. Carr (*appointed on the nomination of Corby Urban District Council*)

Alderman C. E. Goode

County Alderman Mrs. D. P. Oxenham, C.B.E., J.P.

County Councillor T. A. Thorpe (*from 1st November 1970*)

County Alderman H. C. L. Warwick

County Alderman E. E. Wright, M.B.E.

#### Appointed by Northampton County Borough Council

Alderman T. H. Cockerill

Alderman J. B. Corrin

**Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Land Drainage**

R. J. Berry, Esq.  
G. H. Hoyles, Esq.  
Major J. E. Piccaver, J.P. (*from 1st November 1970*)  
T. R. Pick, Esq., O.B.E.  
A. C. Pyrah, Esq., J.P.  
H. Cole Tinsley, Esq., M.B.E. (*to 31st October 1970*)

**Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Fishery Interests**

R. Edgley, Esq. (*from 1st November 1970*)  
P. H. Tombleson, Esq., F.Z.S.  
L. G. Turnill, Esq. (*to 31st October 1970*)

**Appointed by the Minister of Agriculture, Fisheries and Food as being qualified in respect of Agriculture**

H. J. T. Carter, Esq.  
D. Whittome, Esq. (*to 31st October 1970*)  
D. L. Parker, Esq. (*from 1st November 1970*)

**Appointed by the Minister of Housing and Local Government as being qualified in respect of Public Water Supply**

Councillor C. S. Bowering  
L. H. Brown, Esq., B.Sc., F.I.C.E., M.I.W.E.

**Appointed by the Minister of Housing and Local Government as being qualified in respect of Industry other than Agriculture**

G. C. S. Oliver, Esq. (*to 31st October 1970*)  
N. A. Pearce, Esq., B.E.M.  
A. J. W. Scopes, Esq. (*from 1st November 1970*)

**2. MEMBERSHIP OF  
STATUTORY AND STANDING COMMITTEES**

**Finance and General Purposes Committee**

T. R. Pick, Esq., Chairman

County Alderman H. C. L. Warwick, Vice-Chairman

R. J. Berry, Esq.	H. Cole Tinsley, Esq.
Lt. Col. the Hon P. E. Brassey	( <i>to 31st October 1970</i> )
H. J. T. Carter, Esq.	P. H. Tombleson, Esq.
Alderman T. H. Cockerill	( <i>from 1st November 1970</i> )
Alderman J. B. Corrin	L. G. Turnill, Esq.
Alderman G. A. Foster	( <i>to 31st October 1970</i> )
( <i>from 1st November 1970</i> )	County Alderman H. Waltham
County Alderman Mrs. D. P. Oxenham	County Alderman E. E. Wright
N. A. Pearce, Esq.	

**Land Drainage Committee**

H. J. T. Carter, Esq., Chairman

R. J. Berry, Esq., Vice Chairman

County Alderman J. A. E. Bryan	D. L. Parker, Esq.
( <i>to 31st October 1970</i> )	( <i>from 1st November 1970</i> )
County Alderman P. Champion	Major J. E. Piccaver
( <i>to 31st October 1970</i> )	( <i>from 1st November 1970</i> )
County Councillor M. H. T. Carter	T. R. Pick, Esq.
H. Cole Tinsley, Esq.	A. C. Pyrah, Esq.
Councillor G. A. Griffin	County Councillor T. A. Thorpe
( <i>to 31st October 1970</i> )	( <i>from 1st November 1970</i> )
The Rt. Hon the Earl of Gainsborough	County Alderman H. Waltham
( <i>from 1st November 1970</i> )	County Alderman H. C. L. Warwick
G. H. Hoyles, Esq.	D. Whittome, Esq.
County Alderman J. H. Lewis	( <i>to 31st October 1970</i> )
( <i>from 1st November 1970</i> )	

(Mr. R. J. Berry resigned as Chairman on 15th July 1970 when Mr. H. J. T. Carter was appointed in his place. Mr. Berry was appointed Vice Chairman on 3rd December 1970 in place of Mr. H. Cole-Tinsley whose appointment expired on the 31st October 1970.)



**Fisheries and Pollution Prevention Committee**

Alderman G. A. Foster, Chairman (*from 1st November 1970*)  
(Vice-Chairman *to 31st October 1970*)

P. H. Tombleson, Esq., Vice-Chairman (*from 1st November 1970*)

Councillor C. S. Bowering	T. R. Pick, Esq.
Alderman P. Campion	A. C. Pyrah, Esq.
( <i>to 31st October 1970</i> )	A. J. W. Scopes, Esq.
County Councillor J. R. Carr	( <i>from 1st November 1970</i> )
Alderman J. B. Corrin	County Councillor T. A. Thorpe
R. Edgley, Esq.	( <i>from 1st November 1970</i> )
( <i>from 1st November 1970</i> )	L. G. Turnill, Esq.
Alderman C. E. Goode	(Chairman <i>to 31st October 1970</i> )
( <i>from 1st November 1970</i> )	County Alderman H. C. L. Warwick
G. C. S. Oliver, Esq.	D. Whittome, Esq.
( <i>to 31st October 1970</i> )	( <i>to 31st October 1970</i> )
N. A. Pearce, Esq.	

**Water Conservation Committee**

Lt. Col. the Hon P. E. Brassey, Chairman

Alderman E. E. Wright, Vice Chairman

Councillor C. S. Bowering	Alderman C. E. Goode
L. H. Brown, Esq.	G. C. S. Oliver, Esq.
County Alderman J. A. E. Bryan	( <i>to 31st October 1970</i> )
( <i>to 31st October 1970</i> )	County Alderman Mrs. D. P. Oxenham
Alderman P. Campion	D. L. Parker, Esq.
( <i>to 31st October 1970</i> )	( <i>from 1st November 1970</i> )
County Councillor J. R. Carr	T. R. Pick, Esq.
( <i>from 1st November 1970</i> )	A. J. W. Scopes, Esq.
Alderman T. H. Cockerill	( <i>from 1st November 1970</i> )
Alderman G. A. Foster	County Alderman H. C. L. Warwick

**Rutland Project Committee**

Lt. Col. the Hon. P. E. Brassey, Chairman

L. H. Brown, Esq., Vice-Chairman

R. J. Berry, Esq.	T. R. Pick, Esq.
Alderman G. A. Foster	County Alderman H. Waltham
( <i>from 1st November 1970</i> )	County Alderman H. C. L. Warwick
The Rt. Hon. the Earl of Gainsborough	County Alderman E. E. Wright
( <i>from 1st November 1970</i> )	

**STAFF****1. PRINCIPAL OFFICERS**

Office	Name
Clerk of the Authority ..	D. S. Akroyd, LL.B., Solicitor.
Chief Engineer .. ..	H. W. Clark, A.M.I.Struct.E., M.I.W.E.
Deputy Chief Engineer ..	G. E. Bowyer, B.Sc., M.I.C.E., M.I.W.E.
Treasurer .. ..	A. E. Lane.
Chief Fisheries and Pollution Prevention Officer .. ..	R. E. Field, A.M.Inst.W.P.C.

**2. OTHER OFFICERS**

(as at 31st March, 1971)

**Clerk's Department and General Administration**

Chief Assistant .. ..	Principal Officer 1
Clerical Assistant .. ..	Clerical 3/4
Clerical Assistant .. ..	Clerical 1
Field Officers (2) .. ..	Misc. 5/7
Secretary .. ..	Senior Scale B
Typists (9) .. ..	Scale as appropriate
Telephonist .. ..	Scale as appropriate

**Chief Engineer's Department**

Senior Engineers (4) .. ..	Principal Officer 1
Divisional Engineers (3) ..	Senior Officer
Engineer, Services .. ..	Senior Officer
Senior Assistant Engineers (2) ..	Senior Officer
Assistant Hydrologist .. ..	AP 3/4
Chief Draughtsman .. ..	T 6
Chief Clerk .. ..	AP 3
Assistant Engineers and Technical Assistants (23) ..	AP 1/5 or T 1/6 as appropriate
Secretary .. ..	Senior Scale B
Clerks and Machine Operators (5) ..	Clerical 1
Typists/General Clerk (3) ..	Scale as appropriate

**Treasurer's Department**

Chief Assistant .. ..	AP 4/5
Senior Assistants (2) .. ..	AP 3/4
Clerical Assistants (9) .. ..	Clerical 1/3 as appropriate

**Fisheries and Pollution Prevention Department**

Chemist .. ..	Senior Officer
Assistant Chemist .. ..	AP 4
Senior Assistant Inspector .. ..	AP 5
Assistant Inspector .. ..	T 4
Trainee Inspector .. ..	T 3/4
Laboratory Assistants (2) .. ..	T 1/2 as appropriate
Shorthand Typist .. ..	Scale as appropriate

*Non-established appointments***Chief Engineer's Department**

Design Engineers (2) .. ..	Senior Officer
Assistant Engineers/ Technical Assistants (4) .. ..	AP 3/5 as appropriate
Draughtsmen (3) .. ..	T 5/6 as appropriate
Junior Assistants (7) .. ..	T 1
Clerk .. ..	Clerical 1

**Treasurer's Department**

Clerical Assistants (3) .. ..	Scales as appropriate
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**3. WATER BAILIFFS**

Water Bailiffs (2) .. ..	Misc. 4
Honorary Water Bailiffs (45)	

**4. LABOUR FORCE***(as at 31st March, 1971)*

Tradesmen .. ..	14
Foremen and Under Foremen .. ..	25
Plant Drivers .. ..	48
Storekeepers, Sluicekeepers, Tollkeepers, etc. .. ..	6
Labourers .. ..	88
	<hr/>
	181

**WATER RESOURCES****1. GENERAL REVIEW**

Empingham Reservoir is the largest project undertaken by any River Authority, and it will be the biggest man made lake in England, so inevitably it has once again dominated the important but routine work directed to the accumulation of data and the management and control of water resources.

The staff have been concerned in preliminary discussions and planning in connection with the development of the Lincolnshire Limestone aquifer and the Wash Estuarial Storage Scheme, and it is satisfactory to see that other positive tasks are taking shape.

The Chief Officers took part in the discussions leading to the establishment of SECRA, the South East Central River Authorities, and the Vice Chairman of the Water Conservation Committee and of the Rutland Project Committee were appointed to the newly constituted SECRA Committee. The importance of co-ordinating water conservation work between the Wash and the Thames Estuary is fully recognised, but with the uncertainty created by the Central Advisory Water Committee's Report, the impending publication of a White Paper, and the limitation (particularly as regards financing regional works) inherent in the present legislation it was not possible to concur in the suggestion that an Engineering Consortium should be set up to investigate projects of regional significance, and to undertake the planning.

It was considered that (until the present uncertainties have been resolved) the several River Authorities must accept responsibility for, and proceed with, the projects in their respective Areas in consultation with each other as may be necessary on projects of mutual concern, with the Water Resources Board providing the overall co-ordination.

Once again it is satisfactory to record that close co-operation has been maintained with the Water Resources Board, and their guidance and assistance is appreciated.

**2. PERIODIC SURVEY**

It is regretted that it has still not been possible to publish the First of the Periodic Surveys. The data has been assembled, but more essential commitments have delayed the editing and printing.

**3. HYDROMETRIC SCHEMES**

Expenditure on Part I of the Hydrometric Scheme amounted to £7,767, bringing the aggregate to £80,788, and the work was substantially completed.

Low flow gauging stations were installed on the Langton, Medbourne and Morcott Brooks, and on the R. Jordan, all tributaries of the Welland. On the Nene tributaries low flow gauging stations were installed on the Southwick, Grendon and Slade brooks, and on the head waters at Surney Bridges and Brixworth. Gauging Stations on the Nene at Wollaston and Lilford were completed.

The Water Resources Board approved low flow gauging stations at Lower Weedon (upper Nene) Chesterton (middle Nene) and Corby (Willow Brook north arm) to complete the Nene network.

Forty-one gauging stations of various types are now in operation, and at most of them autographic and digital water level recording instruments have been installed.

The Road Research Laboratory completed their research on the Flore Study Catchment established in connection with the M1 Motorway, and the Water Resources Board agreed to



its being taken over. The apparatus comprises a trapezoidal flume with an autographic recorder, three rain gauge enclosures, and one tilting siphon rain gauge. The small catchment is in many respects typical of the Upper Nene Catchments.

Two new rain gauging stations were established, while one was discontinued, and further additional manual rain gauges were planned.

#### 4. INVESTIGATION OF WATER IN UNDERGROUND STRATA

As was stated in the Water Resources Board's Report on the Ground Water of the Lincolnshire Limestone:

"The future planning and management of the Lincolnshire Limestone as a ground-water reservoir is handicapped by the lack of hydrological data. There is a need to study the flow regime of the River Glen in more detail than has been possible in this report, and to determine the various factors that control the discharge of the river. A knowledge is required of the contribution of the West and East Glens to the total flow of the river below their confluence throughout the year, together with the flow of water from the water-cress beds at Greatford and Wilsthorpe and the boreholes overflowing at Kate's Bridge."

Research is being prepared or is proceeding accordingly, and a ground water observation network is to be set up. Existing wells and boreholes suitable for this purpose will be utilised, and eight new observation boreholes are to be drilled. The gauging stations at Kates Bridge (River Glen) and Shillingthorpe (River West Glen) are to be improved. A new low flow gauging station at Hollywell (West Glen tributary) and a full range flat-vee station near Easton Wood (West Glen tributary) where boulder clay overlies the limestone are to be constructed. It is hoped that the Water Resources Board will be able to approve the proposals in the coming year.

In the meantime work is proceeding in collaboration with the Lincolnshire River Authority in obtaining ground water profiles and ground water samples from the available sources. Ground-water is analysed for total dissolved solids, total hardness, non-carbonate hardness, alkalinity and chlorides. It is intended to determine the location and the seasonal fluctuation of the saline interface—the demarcation between salt and fresh water—and the extent to which it is affected by different patterns of abstraction. South Lincolnshire Water Board are providing regular readings of the water level, and samples from their six principal sources of supply for analysis. Soil moisture content is also being measured, and its dependence (if any) on the limestone aquifer is being assessed, which is of agricultural interest on the western edge of the overlying Fen Land deposits in the Baston and Langtoft District.

No River Gravel tests were made, but assistance was given to Higham Ferrers and Rushden Water Board in investigating ways and means of augmenting their resources.

The following table supplements the records in the previous Annual Reports:

GROUND WATER—RIVER GRAVEL INVESTIGATIONS

Site	Grid Reference	Length of Test	Yield		Remarks
			m.g.d.	g.p.h.	
Cotterstock	TL048902	7 days	0.65	2800	Existing wells public water supply
Woodford	SP972759	7 days	0.4	1800	Existing wells. Yield high, possibly due to site being flooded prior to test. Indications that the rate of abstraction would seriously deplete the aquifer
Ringstead	SP975725	7 days	0.48	2200	Jet well test. Appears to be suitable for limited development subject to test of longer duration.
Pilton	TL025838	7 days	0.005	200	Jet well test. Possible use for local agricultural supply

#### 5. MINIMUM ACCEPTABLE FLOW

While a "working" minimum acceptable flow has been determined for the various streams, no action has been taken to prescribe a statutory minimum acceptable flow as required by section 19 of the Water Resources Act 1963.

#### 6. RESEARCH AND EXPERIMENTAL WORK

Research and experimental work proceeding or in preparation, is referred to under the appropriate headings.

#### 7. LICENCES

##### (a) Abstraction Licences

The Table on page 14 records the Licences of Right (with some variations) extant at 31st March.

Forty-one Licences of Right, twenty-five being for spray irrigation, were revoked at the request of the Licence Holders.

It is evident from these figures, similar to those for the previous year, that spray irrigators are continuing to examine their requirements in relation to cost. In addition to the twenty-five spray irrigation licences surrendered a further twenty-five were reduced by an aggregate of 91 million gallons per annum by farmers who had obtained licences of right for quantities substantially in excess of their actual requirements. It would appear that the Charging Scheme has resulted in more realistic assessments being made.

Where licences are surrendered, or where the authorised quantities are reduced, licence holders are reminded that they cannot obtain a new licence, or cannot revert to the previous higher authorised quantity, at short notice in the event of a drought.

Reference was made in the Fifth Annual Report to the first two prosecutions for unauthorised abstractions when, as expected, the Courts dealt leniently with the defendants.

Five prosecutions were taken during the year for unauthorised abstractions or impounding for spray irrigation. The Spalding Court imposed fines of £5 in two cases, and the Bourne Court imposed fines of £15, £30 and £40 with advocates fees of 5 gns. in three cases.

It is recognised that there may be those who have overlooked the requirements as to licences for spray irrigation, and understandably a rural court must look with sympathy on a farmer who not having a licence irrigates a crop which may be withering for lack of water. Those who in that predicament telephone Head Office in the hope that they can obtain an immediate licence are advised "to do what they may think best". But many farmers regard payment of charges for spray irrigation as a form of insurance against a dry spell, the annual premium for which can be as much as £290. Three days spray irrigation may cost £15. There is little to encourage farmers to comply with the provisions of the Act—and of more importance it is hardly fair to those who do—if the penalty for illegal spray irrigation is less than the cost of the water used.

Six Licences of Right lapsed, and thirty Licences were transferred to new occupiers. Solicitors and agents appear to be more generally aware of the difficulties which arise where a new occupant fails to give notice as required by section 32 within one month of the change of occupancy.

Twelve applications for new Licences were received, and ten licences were issued in appropriate terms. In one case an abstraction for spray irrigation from an internal drain was dependent on the regulation of inlets under the control of the Internal Drainage Board, and as the Board could give no assurance that they could maintain sufficient water the application had to be refused. There is a potential conflict between internal drainage boards who wish to keep water



**LICENCES OF RIGHT  
extant at 31st March, 1971**

Area	Agriculture (other than spray irrigation)		Agriculture and Domestic		Agricultural and Horticultural Spray Irrigation		Industrial (other than water cooling abstractions)		Industrial Cooling (C.E.G.B.)		Domestic (not exempt)		Public Supply		Miscellaneous		Totals	
	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction	No.	Authorised annual abstraction
31/1	4	1,146	3	1,052	1	450	4	490,200					1	290,000	1	1,000	4	1,146
2	4	1,936				806	2	44,074									14	784,638
3	8	1,087	2	605													12	45,967
4	4	1,355	2	7,700													6	9,480
5	5	1,755	2	4,905	1	25											8	9,480
6	5	1,709	6	2,240													11	6,614
7	8	1,189	6	2,240													15	2,003,429
8	10	4,478	12	6,595													28	271,730
9	26	3,946	9	6,159	2	325	1	2,000,000									48	612,200
10	13	2,769	12	8,400	4	4,930	2	260,000									34	371,399
11	10	1,826,651	15	10,047	1	500	3	143,235									53	1,982,893
12	10	1,220,568	9	10,140	4	790	2	21,500									28	3,440,708
13	9	1,332	1	300	3	7,800	11	933,065									49	2,204,350
14	17	197,235	19	4,332	10	31,520	13	915,297									110	4,135,756
TOTAL	133	3,267,156	96	62,475	24	45,590	41	4,920,821									420	15,872,270
32/1	7	1,328	7	3,215													14	4,543
2	12	6,157	11	4,087													26	25,559
3	11	2,328	15	6,017	1	3,200	2	12,115									50	7,047,160
4	5	3,620	4	1,653	5	23,150	7	523,500									13	8,504,423
5	7	1,059	4	5,000	7	5,865	2	15,900									34	15,661,400
6	12	6,477	4	3,727	5	1,781	9	218,085									32	838,804
7	4	583	7	9,757	1	90	9	224,900									14	13,117
8	7	2,780	3	8,235	1	77	2	1,120,000									17	1,134,545
9	44	14,177	12	7,890	8	7,330	24	1,542,982									114	2,520,442
10	9	2,515	2	201	3	1,645	1	2,500									25	219,335
11	8	1,438	1	1,200	5	10,740	11	734,535									52	9,786,827
TOTAL	126	42,462	70	50,982	30	27,528	67	4,394,517									391	45,756,155
TOTAL 31 & 32	259	3,309,618	166	113,457	54	73,118	108	9,315,338									811	61,628,425

\*Part of one licence (Mid-Northamptonshire W.B.)

(Quantities in 1000 gallons)

**LICENCES NOT OF RIGHT  
issued during year**

Agriculture (other than spray irrigation)	Agriculture and Horticultural Spray irrigation	Industrial Uses Significant losses	Industrial Uses Water cooling Sand and gravel Other minimum losses	Domestic (not exempt)	Public Supply	Miscellaneous	Totals
Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction
<b>Nene Hydrometric area</b>							
1 1,095	4 13,700		3 106,250				8 121,045
<b>Welland Hydrometric area</b>							
	1 500	1 70,000					2 70,500
1 1,095	5 14,200	1 70,000	3 106,250				10 191,545

(Quantities in 1000 gallons)

**LICENCES NOT OF RIGHT  
extant at 31st March 1971**

Agriculture (other than spray irrigation)	Agriculture and Horticultural Spray irrigation	Industrial Uses Significant losses	Industrial Uses Water cooling Sand and gravel Other minimum losses	Domestic (not exempt)	Public Supply	Miscellaneous	Totals
Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction	Authorised annual No. abstraction
<b>Nene Hydrometric area</b>							
5 4,892	13 27,201	5 144,970	11 2,209,150	2 6,300	4 621,750		40 3,014,263
<b>Welland Hydrometric area</b>							
5 879	6 7,803	4 269,460	4 177,140		1 730,000	1 27,000	21 1,212,282
10 5,771	19 35,004	9 414,430	15 2,386,290	2 6,300	5 1,351,750	1 27,000	61 4,226,545

(Quantities in 1000 gallons)

levels low at all times in anticipation of a sudden storm, and the spray irrigator. It is perhaps forgotten that in the Land Drainage Act the definition of drainage includes "the supply of water".

A licence was required for a short period for drilling trial boreholes when surveying the route for the Empingham aqueduct. In accordance with Part III of the Water Resources (Licences) Regulations 1965, the proposals in the form of a draft licence were placed on deposit, and subsequently confirmed.

The net effect of revocations, variations and new Licences is an increase in the aggregate abstraction of 1,383,025 thousand gallons per annum. The Tables on page 15 shew the Licences not of Right issued during the year, and those extant at 31st March.

**(b) Impounding Licences**

No applications for impounding Licences have been received.