

5. MINIMUM ACCEPTABLE FLOW

No action has been taken to prescribe a "Minimum acceptable flow" pursuant to section 19 of the Water Resources Act 1963. As stated in the Third Annual Report, particular consideration has been given to the problems only in relation to the proposed abstractions for Empingham Reservoir, otherwise minimum acceptable flow has been used as a working yard stick for local problems.

6. RESEARCH AND EXPERIMENTAL WORK

The lifting of the "foot and mouth" restrictions early in 1968 enabled the staff to resume their assistance at the Road Research Laboratory's Flore Experimental Catchment near the M1 above Northampton. The Road Research Laboratory have obtained basic hydrological data as to rainfall and run-off from a small upland catchment severed by the Motorway.

7. LICENCES

(a) Abstraction Licences

The Table on page 17 records the Licences of Right (with some variations) extant at 31st March.

Twenty five Licences of Right were revoked at the request of the Licence Holders. Nine of the Licences were for spray irrigation, which in seven cases had been discontinued, while in two cases the water was found to be unsuitable due to salinity. Twelve Licence of Right in respect of minor and disused local sources were revoked at the request of Mid-Northamptonshire Water Board, as the protected rights were no longer considered to be worth the fees and charges payable. British Railways Board surrendered a Licence for 25 million gallons, which was no longer required after the withdrawal of all steam locomotives. Generally the quantities authorised by these Licences were only small.

It must be recorded that the application for a Licence of Right made by the Central Electricity Generating Board in respect of the Peterborough Land Reclamation Scheme has not yet been disposed. The Generating Board are bringing in by rail fuel ash from Midlands Power Stations to fill in the disused brick pits to the south of Peterborough, and water is abstracted from Stanground Lode (a stream) for fluming the ash through a system of pipe lines to the various pits as required. The application presented particular difficulty, but it is hoped that it will soon be resolved.

Another wet summer coupled with annual accounts for licence fees again caused a number of spray irrigators to reconsider the value of holding a Licence, and it is obvious that the impact of the Charging Scheme will give a much greater impetus to this tendency. It appears that many Licences of Right were applied for "just in case", and that some applicants may only have abstracted (if at all) to establish a claim under section 34. As was anticipated, the Licences of Right may not provide a realistic indication of the abstractions which are taking place and the water demands which have to be met. Putting a "price" on water has provided much needed data.

The surrendering of unnecessary Licences is to be welcomed, although it may well vitiate the costings on which the Charging Scheme was based, and make a revision under section 61 necessary before the end of the first quinquennium.

Those who are proposing to surrender their Licences because a protected right is not worth the cost are reminded that new Licences can not be obtained in less than two or three months, the procedure contained in section 28 must be complied with, and there can be no assurance that water will be available when required.

LICENCES OF RIGHT
extant at 31st March, 1969

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. abstraction	No. abstraction	Summer	All Year	No. abstraction	No. abstraction	No. abstraction	No. abstraction	No. abstraction	No. abstraction
31/1	4	1,146	1	450	4	490,200		1	1,000	4
2	4	1,936	2	806	2	44,074				14
3	8	1,087								12
4	4	1,355								6
5	5	1,755								8
6	5	1,709	1							11
7	8	1,189								17
8	10	4,478			1	2,000,000				29
9	26	3,946			2	260,000	2			50
10	14	2,819	4	1,725	4	152,435	332	4		58
11	11	1,826,741	3	3,530	4	21,500		5		62
12	10	1,220,568	6	15,900	2	113,450		4		125
13	9	1,332	21	40,720	3	933,065		4		464
14	18	197,735	4	15,650	11	915,297		1		
			53	132,211	13			5		
TOTAL	136	3,267,796	131	287,335	42	4,930,021	5	19	4	16,344,374
32/1	7	1,328	1	3,200	3	12,165		2		14
2	12	6,157	9	34,525	8	524,000		3		27
3	11	2,328	1	3,000	4	526,300		1		56
4	5	3,620	4	12,475	9	218,085	1	8,000		15
5	7	1,059	4	60,192	11	890,800		3		35
6	13	6,732	9	2,900				1		40
7	4	583	2	13,611	2	1,120,000		1		15
8	7	2,780	6	80,867	26	1,550,382	1	525		19
9	46	17,767	24	42,374	1	2,500	1	277		130
10	9	2,515	9	64,994	10	584,535		3		28
11	11	1,478	34					2		63
TOTAL	132	46,347	99	318,138	74	5,428,767	3	19	8	67,093,256
TOTAL	268	3,314,143	230	605,473	116	10,358,788	8	38	12	83,437,630
31 & 32										

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

(Quantities in 1000 gallons)

LICENCES NOT OF RIGHT
issued during year

<i>Agriculture (other than spray irrigation)</i>	<i>Agricultural and Horti- cultural Spray irrigation</i>	<i>Industrial Uses Significant losses</i>	<i>Industrial Uses Water cooling Sand and gravel Other minimum losses</i>	<i>Domestic (not exempt)</i>	<i>Public Supply</i>	<i>Miscellaneous</i>	<i>Totals</i>
<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>
Nene Hydrometric area							
1 400	3 11,300		1 86,400		1 9,200	1 expired 4,375	7 111,675
Welland Hydrometric area							
1 100	2 3,090	1 192,720				1 expired 1,875	5 197,785
2 500	5 14,390	1 192,720	1 86,400		1 9,200	2 6,250	12 309,460

(Quantities in 1000 gallons)

LICENCES NOT OF RIGHT
extant at 31st March 1969

<i>Agriculture (other than spray irrigation)</i>	<i>Agricultural and Horti- cultural Spray irrigation</i>	<i>Industrial Uses Significant losses</i>	<i>Industrial Uses Water cooling Sand and gravel Other minimum losses</i>	<i>Domestic (not exempt)</i>	<i>Public Supply</i>	<i>Miscellaneous</i>	<i>Totals</i>
<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>	<i>Authorised annual No. abstraction</i>
Nene Hydrometric area							
5 3,872	10 15,661	3 131,970	6 1,502,400	2 6,300	5 630,950		31 2,291,153
Welland Hydrometric area							
5 879	5 6,303	1 192,720	2 13,940	1 729	1 365,000	1 27,000	16 606,571
10 4,751	15 21,964	4 324,690	8 1,516,340	3 7,029	6 995,950	1 27,000	47 2,897,724

(Quantities in 1000 gallons)

Twelve Licences of Right were varied, including four held by a statutory water undertaking who asked that the authorised quantities should be reduced.

Eight Licences lapsed because new occupiers of land failed to give notification as requested by section 32. Every possible effort has been made to bring the harsh provisions of this section to the attention of those concerned, but with little apparent effect. A blind eye can be turned in the case of minor abstraction for agricultural purposes other than spray irrigation, but in cases where third parties—known or unknown—may wish to take advantage of a lapsed Licence there is obviously no alternative but to enforce the provisions of the Act. Until such time as this exacting requirement is modified Licence Holders relinquishing land should hand the Licences to the new occupier and draw attention to the Notes thereon. The National Farmers' Union and others concerned are asked to assist in publicising this difficulty.

Thirteen applications for new Licences were received. Two were for general agricultural purposes, six for agricultural or horticultural spray irrigation, one for industrial purposes, two for the hydraulic testing of gas mains, one for public water supply, and one for a heat pump at a municipal swimming pool.

Those who ask for application forms are invited to discuss their proposals before making a formal application, and (subject to due consideration of any objections which may be received in response to the statutory notices) this practice avoids the expense of advertising an application likely to be rejected. In consequence it was only necessary to refuse one application, which was in respect of spray irrigation from a Fen drain.

The net effect of the revocations, variations and new Licences is a decrease of 1,207,407 thousand gallons per annum. The Tables on page 18 shew the Licences Not of Right issued during the year, and those extant at 31st March.

Of the outstanding appeals against the decisions on Licences of Right, the two holding appeals by the Central Electricity Generating Board pending agreement as to means of measurement were withdrawn when it was agreed to adopt the "heat loss" method. A third appeal was withdrawn. As was mentioned in the Third Annual Report, the Minister's decision on an appeal by a smallholder on the Ministry of Agriculture's Sutton Bridge Estate was awaited. The Minister had decided that the Authority were right in refusing the application as submitted, but he permitted the applicant to amend his application and make further submissions. The Minister decided that pumping plant had been installed in anticipation of future requirements, and he directed that a Licence for an abstraction of 157,500 gallons p.a. should be granted in place of the Licence for an abstraction of 18,000 gallons p.a.

(b) Impounding Licences

No applications for impounding Licences have been received.

8. CONSERVATION WORKS

Rutland Project

(Note: In view of the important developments which had taken place after 31st March 1968 it was considered advisable when writing the Third Annual Report to record the position reached at the 31st August 1968. Reference should therefore be made to that Report for developments in the first five months of the year under review. This part of the Report brings the record up to the 30th November.)

After a prodigious effort by the Staff, Parliamentary Agents, the Consulting Engineers, Land Agents and the Map Printers, preparations were completed so that the Petition could be presented and the Bill deposited as required by Parliamentary Standing Orders.

Petitions against the Bill in respect of the River Authority's Works (the Bill also includes Special Provisions relating to the Mid-Northamptonshire Water Board) were presented by Rutland County Council, by Oakham Rural District Council, jointly by the Rutland and Stamford Branch of the National Farmers' Union and the Country Landowners' Association, the Council for the Preservation of Rural England, and Huntingdon and Peterborough County Council. The last mentioned Petition was subsequently withdrawn on an Undertaking.

The Bill was given a Second Reading on the 2nd April by a vote of 114 to 66. The debate was opened by Mr. Tom Bradley, Member of Parliament for Leicester North East (and a former member of Mid-Northamptonshire Water Board), and appreciation must be recorded of the very able way in which he mastered difficult statistical data and presented the case. Mr. John Temple, M.P., a Vice President of the Association of River Authorities, and Sir Harry Legge-Bourke, M.P., gave particularly valuable support. The Minister for Planning and Land recommended that the House should give the Bill a Second Reading.

The Committee Stage opened on the 29th April, and lasted nine days. Mr. Peter Boydell, Q.C., Mr. Frank Layfield, Q.C., and Mr. Gerard Ryan appeared on behalf of the Promoters.

The Minister of Housing and Local Government had reported to the Select Committee that he considered there was an urgent need to augment the water resources in South East England, that a reservoir was required to satisfy the need both in the short term and the long term; and that it would give much needed flexibility in the use of water resources in the area. He also considered that the saving in cost and the higher yield justified preferring a reservoir at Empingham to one at Manton, despite its relative shallowness which necessitated a much greater usage of agricultural land. He accordingly strongly supported the proposal for a reservoir at Empingham, and he recommended that the Bill be allowed to proceed.

The Water Resources Board (in a report appended to the Minister's Report) had advised that in their view the difference in estimated costs between Empingham (£16.9m. for 50 m.g.d., that is £336,000 per 1 m.g.d.) and Manton (18.5m., for 40 m.g.d., that is £462,500 per 1 m.g.d.) was decisive, and they supported the River Authority's choice of Empingham.

The Petitioners accepted the evidence as to the growth of population, except in relation to the time scale of the Peterborough expansion, and they did not seriously contest the estimates of per-capita demand.

It appeared that the Petitioners had been advised that in eight years time there would be no alternative to a pumped storage reservoir, but that the Dutch Engineers, ILACO (retained by the National Farmers' Union some months earlier) has not had sufficient time to study alternative sites. The Petitioners therefore suggested that a meeting should be held to discuss arrangements whereby their Consultants and the Authority's Consultants could make a joint study of the problem with a view to arriving at an agreed solution.

The Petitioners were informed that, while the Promoters were prepared to consider any specific alternatives they had to suggest, it was not possible to withdraw the Bill to enable a general exploration of the problems to be made.

The only alternative suggested by the Petitioners to the Select Committee was what came to be known as the "truncated Empingham", the construction of an upstream embankment on the Northern arm and a second embankment on the Southern arm on a line a little to the east of the Hambleton—Nether Hambleton road to exclude from inundation some 400 acres and 1,100 acres respectively. The tributary streams would have had to be channelled around these embankments, and the land between the channels and the embankments would have had to be pumped. In the course of the proceedings the Petitioners withdrew their suggestion that the Northern Arm should be truncated. The yield would have been reduced by about 34 per cent, but the Petitioners suggested that if it was eventually found that a reservoir of 3,000 acres was required then the embankment could be removed. Truncation would have resulted in a saving in road works and in diverting overhead cables, and the net cost would have been about £2m. or about £1,470 per acre excluded. If the embankments were only to be temporary then the truncation would have proved even more expensive.

The Select Committee rejected the Petitioners' truncated reservoir, and approved the proposals as contained in the Bill. The Committee made a special report to the House as follows:

"Your Committee have sat for nine days and have heard evidence adduced by the promoters of the Bill and by the petitioners against the Bill. Your Committee have passed the Bill with Amendments, but consider it their duty to bring to the attention of the House their view that there is an urgent necessity to study alternative supplies of water. They therefore strongly recommend that a feasibility study of the Wash Barrage be undertaken immediately."

The Select Committee was given an assurance that the Authority accepted financial

responsibility for carrying out landscape works as recommended by the Landscape Consultant, and for providing car parks and lavatories in relation to the sailing and fishing clubs. It was subsequently agreed with the County Council that the Authority will at their expense, and from time to time as may be necessary to meet the demand, provide not more than ten public car parks with aggregate space for not less than 3,000 motor vehicles, together with adjacent public conveniences as may be reasonably required. Car Parks will be located in accordance with the advice of the Landscape Consultant, planning considerations, convenience of access, availability of land within the limits of deviation, and the need to minimise further encroachment on agricultural land.

The Bill was given a Third Reading in the House of Commons on the 1st July, when the voting was 75 to 65. The debate took place on the evening of the Royal Investiture, and as there was no important Government business on the Order Paper the support of 39 members who had voted on Second Reading was not available.

It was learned that the Bill would be opposed in the Upper House, and as there was not sufficient time to prepare for that before the summer recess a "carry over" motion was obtained.

The only Petitions against the preamble of the Bill in the House of Lords were by Rutland County Council and Oakham Rural District Council, and it is understood that those Petitions will be withdrawn when satisfactory Undertakings have been given to the two councils in respect of road works and car parks, and of sewage works respectively. Peterborough City Council have also petitioned on the grounds that the proposed abstraction from the Nene will diminish the river flow available to dilute the effluent discharged to tidal river from their Fengate Sewage Disposal Works.

The Bill was given a Second Reading in the House of Lords by 42 to 22 on the 11th November.

It was moved by Lord Ilford and the Authority are very grateful to him and to Lord Nugent of Guildford for their great interest and their invaluable help. The Authority were fortunate in having the support of Lord Sinclair of Cleeve, Lord Mitchison, Lord Milne and Lord Allerton.

The House was concerned that as it was likely that the Bill would not be opposed in principle before a Select Committee it should nevertheless be thoroughly examined, and a Special Reference to be agreed by the Authority and the National Farmers Union is to be made.

A model of the Reservoir was exhibited in the Royal Gallery for three days before the Debate and it invoked great interest among their Lordships.

The Vice Chairman and Chief Planning Officer of the Countryside Commission visited the proposed site, and it is anticipated that the Commission will offer advice and assistance both to the Authority and to the County Council on the possible development of recreational and amenity facilities.

Discussions had been completed with the Earl of Ancaster, the Diocesan Authorities, and the Church Commissioners as to Normanton Church.

The Church is a Parish Church built by Lord Ancaster's ancestors. His Lordship is Patron of the Living and has contributed generously to the upkeep of the building. Some 20 people live in the Parish, and services are held only infrequently. Lord Ancaster desired that the West front of the Church, with the cupola tower, should be rebuilt some 2/300 yards above top water level, but it proved impossible to overcome the financial difficulties, and if the Bill is enacted the Church will be demolished.

9. AGREEMENTS UNDER SECTION 81 AND ORDERS UNDER SECTION 82

No agreements or orders were made under sections 81 and 82.

10 CHARGES

As was stated in the Third Annual Report, the first Charging Scheme had been submitted to the Minister for his approval. A public Inquiry was held on the 25th June.

The scheme as submitted provided for three "Purpose Groups" namely, Group I where 90 per cent or more of the water abstracted was returned to the source, Group II for public water supply and industrial and other uses with a greater "loss", and Group III where 10 per cent or less of the water was returned. The Scheme also provided for four "sources of supply" characteristics, namely: non-tidal rivers including water in the river gravels, tidal rivers, artificial watercourses and particularly the Fen Drains, and Ground water.

The Schedule was as follows:

CATEGORIES OF PURPOSE, PERIOD OF ABSTRACTION AND SOURCE OF SUPPLY WITH RELATIVE FACTORS

Purpose		Winter Abstraction			Summer Abstraction			Annual Abstraction			Tidal Waters
		Non-tidal river	Ground water	Artificial water-course	Non-tidal river	Ground water	Artificial water-course	Non-tidal river	Ground water	Artificial water-course	
Group I	Relative Factor	0.04	0.01	0.06	0.4	0.1	0.6	0.2	0.05	0.3	0.004 0.0035d
	Maximum Charge	0.0348d	0.0087d	0.0522d	0.348d	0.087d	0.522d	0.174d	0.0435d	0.261d	
Group II	Relative Factor	0.2	0.05	0.3	2.0	0.5	3.0	1.0	0.25	1.5	
	Maximum Charge	0.174d	0.0435d	0.261d	1.74d	0.435d	2.61d	0.87d	0.2175d	1.305d	
Group III	Relative Factor	0.8	0.2	1.2	8.0	2.0	12.0	4.0	1.0	6.0	
	Maximum Charge	0.696d	0.174d	1.044d	6.96d	1.74d	10.44d	3.48d	0.87d	5.22d	

It was stated at the Public Inquiry that the estimated expenditure to be charged to the Water Resources Account was as follows:

	1969/70	1970/71	1971/72	1972/73	1973/74
	£	£	£	£	£
Hydrometric Works					
(i) Gauging Stations	6,750	9,600	2,250	5,500	5,500
(ii) Automatic Instrumentation ..	8,250	1,060	1,100		
(iii) Groundwater Investigation ..	10,000	7,000	6,000	6,000	6,000
Contingencies	1,500	1,066	335	500	500
Maintenance	5,720	7,720	7,875	8,200	8,400
Administration	38,700	42,600	46,800	51,000	56,000
Rutland Project	10,000	10,000	10,000	10,000	10,000
Total Expenditure	80,920	78,451	74,360	81,200	86,500

It was pointed out that the provision for the Rutland Project—Empingham Reservoir—was only in respect of site investigation and preliminary works. The Reservoir will have a very substantial impact on the Water Resources Account, but at that time a decision had not been taken on the Parliamentary powers which were to be sought, the financial implications had only been considered in outline, and it was impossible to make any significant provision for the Reservoir, or to envisage the form which subsequent Charging Schemes might take. It was then hoped that the Reservoir might be in commission in the first quinquennial period, but that now seems unlikely. Under section 92 of the Water Resources Act, 1963 loan charges may be capitalised for a period of five years, or until the Reservoir is in production, which ever period is less, but "interest on interest", will have to be met.

The Public Inquiry was told that the annual licensed abstractions as at 1st April 1968 amounted to 86,613,323 thousand gallons, divided as follows:

Group I Purpose				
C.E.G.B. ....	..	..	..	49.10
Gravel Washing ..	..	..	..	1.91
Industrial cooling ..	..	..	..	4.57
Others .. ..	..	..	..	0.15
Group II Purpose				
Public Supply .. ..	..	..	..	30.33
Industry other than cooling ..	..	..	..	12.25
Others .. ..	..	..	..	0.13
Group III Purpose				
Spray irrigation .. ..	..	..	..	0.83
Others .. ..	..	..	..	0.75
Total ..				100.00

The Percentages of the total charge based on the factors was as follows:

Group I Purpose				
C.E.G.B. ....	..	..	..	21.452
Gravel Washing ..	..	..	..	0.382
Industrial Cooling ..	..	..	..	2.117
Others .. ..	..	..	..	0.038
Group II Purpose				
Public Supply .. ..	..	..	..	31.575
Industry and other cooling ..	..	..	..	24.793
Others .. ..	..	..	..	0.072
Group III Purpose				
Spray Irrigation .. ..	..	..	..	13.025
Others .. ..	..	..	..	6.573
Total ..				100.000

A standard unit charge of 0.5 pence per thousand gallons was estimated to produce £85,571/1/-.

It had been decided that it would be unwise to anticipate the extent of any section 60 agreements before the Charging Scheme was approved, and so the reduction in revenue as a result of such agreements could not be forecast, and consequently at the Public Inquiry it was impossible to estimate with a high degree of accuracy the Standard Unit Charge. If all chargeable licences were priced at their face value a Standard Unit Charge of 0.47d would produce £80,000 and the maximum Standard Unit Charge of 0.87d would produce £150,000. There was thus a margin of 0.4d or £70,000 to cover contingencies, and section 60 agreements.

The principal objections were as follows:

Higham Ferrers and Rushden Water Board and the Nene and Ouse Water Board opposed the proposal to include water in the river gravels in the definition of "non-tidal river".

Higham Ferrers and Rushden Water Board also considered that the differentiation between Group I and II was too great, or alternatively that the differentiation between Group II and III was insufficient. The Board also considered that the Scheme would operate inequitably in relation to Sywell Reservoir.

Mid-Northamptonshire Water Board made a holding objection, primarily on the ground that the seasonal factor should not be applied to reservoirs. The objection was withdrawn on an undertaking that the problems would be considered in relation to a section 60 agreement.

Central Electricity Generating Board contended that the factor for cooling water was too high.

Isle of Ely branch of the National Farmers' Union contended that the charges for spray irrigation from fenland drains were excessive.

The Inspector's conclusions were as follows:

- “ 1. The River Authority's estimates of future expenditure are reasonable.
2. The scheme should be amended so as to provide for payment by instalments.
3. The principle of placing abstraction from non-tidal surface sources and river gravels in the same category is acceptable, but the definition of non-tidal rivers in paragraph 2 (a) (i) is such as to give rise to the possibility of dispute. Anyone aggrieved by such definition, however, has a remedy in Section 60 of the Act.
4. It is reasonable to assume that the diversion of summer surface water flows into an extensive fen drainage system for the purpose of supplying the needs of agriculture results in a high loss to resources by evaporation. The extent of that loss has not been measured, and there is insufficient evidence on which to suggest a source factor different from that selected by the River Authority. Notwithstanding the difficulty of justifying that factor it should be accepted in the present scheme, unless it is considered appropriate to change it in the interests of consistency.
5. With the exception of that which relates to direct cooling, the purpose factors are reasonable and should be accepted.
6. Because of the high proportion of return and the very small change in quality there is a case for ascribing a lower factor to direct cooling water abstraction even although it would involve the creation of an additional purpose group.
7. Since both the River Authority and Higham Ferrers and Rushden Water Board are prepared to discuss agreements under Section 60 of the Act, there is no need at this stage for you to accede to the Board's request to issue a direction in respect of Sywell reservoir.”

The Minister approved the Scheme subject to the deletion of “ artificial watercourse ” as a separate source of supply and the addition of a new Purpose Group I (the other Groups being re-numbered accordingly) to provide a factor of 0.12 instead of 0.2 for abstractions for direct cooling purposes and other abstractions where there was no loss.

The Schedule as amended by the Minister was as follows:

SCHEDULE

Categories of Purpose, Period of Abstraction and Source of Supply with Relative Factors, and Corresponding Maximum Rates of Charge expressed in Pence Per Thousand Gallons

Purpose	Winter Abstraction		Summer Abstraction		Annual Abstraction		Tidal Waters
	Non-tidal river	Ground water	Non-tidal river	Ground water	Non-tidal river	Ground water	
GROUP I { Relative Factor Maximum Charge	0.024 0.0209d	0.006 0.0052d	0.24 0.2088d	0.06 0.0522d	0.12 0.1044d	0.03 0.0261d	Relative Factor 0.004 Maximum Charge 0.0035d
GROUP II { Relative Factor Maximum Charge	0.04 0.0348d	0.01 0.0087d	0.4 0.348d	0.1 0.087d	0.2 0.174d	0.05 0.0435d	
GROUP III { Relative Factor Maximum Charge	0.2 0.174d	0.05 0.0435d	2.0 1.74d	0.5 0.435d	1.0 0.87d	0.25 0.2175d	
GROUP IV { Relative Factor Maximum Charge	0.8 0.696d	0.2 0.174d	8.0 6.96d	2.0 1.74d	4.0 3.48d	1.0 0.87d	

The result of the Minister's amendments was to reduce the maximum amounts payable by the Central Electricity Generating Board on the Licences of Right as applied for from £18,330 to £11,000. The reduction will have to be met by an increase on the charges payable by all other abstractors.

Mid-Northamptonshire Water Board applied for a section 60 agreement (i) to avoid the “ double charging ” which would otherwise arise in the case of water abstracted from the Nene for storage in the Pitsford Impounding Reservoir, itself a “ source of supply ”, and (ii) to reduce the charges in respect of reservoir storage, which they contended was primarily “ winter ” water.

Corby (Northants) & District Water Company—which supplies Stewarts & Lloyds Corby Steel Works from Eye Brook Reservoir—applied for a section 60 agreement on the grounds that the aggregate authorised abstraction by the Water Company and by Stewarts & Lloyds Ltd. from their other sources of supply exceeded their actual requirement—the “ over insurance ” argument.

Higham Ferrers & Rushden Water Board applied for a section 60 agreement on the grounds that reservoir water is primarily winter water, and also on the grounds that Sywell Reservoir made a beneficial contribution to water conservation works in the Area. This request was refused and the Water Board appealed to the Minister.

Mid-Northamptonshire Water Board were offered a section 60 agreement to avoid double charging. Further discussions with that Board and with Corby (Northants.) & District Water Company were deferred until the Minister's decision on the Higham Ferrers Appeal is known.

RAINFALL GAUGING STATIONS

RECORDS TAKEN BY THE AUTHORITY

Station	National Grid Reference	Station No. B.R.O.	Height of gauge above sea level in feet	Duration of records
Surfleet Reservoir *	TF 280 293	156328	12	5 years
Oundle (Nene Wharf) *	TL 044 888	163092	66	36 years
Oundle (Head Office) *	TL 042 883	163091	106	4 years
Oundle (Head Office) (R)	TL 042 883	—	106	Sept. 1968
Wellingborough (Nene Wharf) .. *	SP 899 664	160801	136	36 years
Northampton (South Bridge)	SP 755 595	—	197	36 years
Bassingthorpe (R)	SK 967 286	—	330	May 1968

RECORDS SUPPLIED TO THE AUTHORITY BY OTHER PERSONS OR ORGANISATIONS

Hovenden House, *	TF 398 262	156940	15	9 years
A. H. Worth (Fleet) Ltd.				
Bingham Lodge, Mr. F. H. Bowser .. †	TF 391 322	157045	10	36 years
Manor Farm, Mr. F. H. Bowser .. †	TF 355 241	156677	10	36 years
Fosdyke (Major's Farm), *†	TF 346 310	156836	12	14 years
H. C. C. Tinsley Limited				
Algarkirk, Messrs. Denis's Farms Ltd. ..	TF 311 355	—	12	5 years
Spalding, South Holland Drainage Bd. .. *	TF 259 239	154773	10	12 years
Weston, Mr. C. Ostler *	TF 275 184	166114	10	25 years
Pode Hole, Deeping Fen, Spalding and Pinchbeck I.D.B.	TF 214 219	154720	12	141 years
Tongue End, Deeping Fen, Spalding and Pinchbeck I.D.B.	TF 151 185	156194	11	21 years
Deeping St. Nicholas, T. R. Pick Ltd. .. †	TF 213 157	154528	10	49 years
Peterborough Sewage Works, Peterborough Corporation .. †	TF 201 984	164364	10	34 years
Sutton Bridge, South Holland Drainage Bd. .. *†	TF 476 201	166869	21	54 years
Norfolk House Farm, Mr. J. E. Piccaver	TF 441 287	—	11	9 years
Sutton St. James, South Holland Drainage Board .. *	TF 389 181	166569	5	2 years
Gedney Hill, Mr. A. Depear	TF 337 118	—	8	5 years
Marholm, Mr. Smedley	TF 155 024	—	50	5 years
Ufford, Mr. S. G. Faulkner *¶	TF 093 045	153908	81	5 years
Wilsthorpe, South Lincs. W.B. .. † ..	TF 081 148	155989	50	84 years
Lound, South Kesteven R.D.C. .. *†	TF 079 194	156215	134	8 years

Station	National Grid Reference	Station No. B.R.O.	Height of gauge above sea level in feet	Duration of records
Stamford Sewage Works, Stamford Corporation *	TF 041 075	153155	77	7 years
Tixover, Nene and Ouse Water Board .. †	SK 974 001	152742	104	7 years
Seaton, Mr. R. E. Richardson *	SP 908 977	152542	150	28 years
Oakham, Agricultural Executive Com. .. *	SK 863 085	153334	350	27 years ¹
Gunthorpe Hall, Mr. R. Thorp .. *†	SK 869 057	153244	420	21 years
Uppingham, Mr. G. E. Stokes .. *†	SP 859 998	152367	535	12 years
Caldecott, Messrs. Stewarts & Lloyds Ltd. .. †	SP 864 932	4341	174	12 years
Hallaton, Mr. W. T. Mowsen .. *\$	SP 789 967	151874	353	5 years
Ashley, Mr. T. Kerby *	SP 796 908	151845	241	5 years
Great Bowden, Mrs. G. P. Nowell .. †	SP 746 888	151347	250	8 years
Market Harborough, Mr. A. D. F. Wooldridge .. †	SP 733 879	151238	345	28 years
Market Harborough, U.D.C. †	SP 735 870	151237	260	63 years
Kibworth Harcourt, Mrs. A. M. Briggs .. †	SP 682 945	151472	408	49 years
Sibbertoft, Mr. E. J. Middleton *	SP 681 826	151026	560	5 years
Apethorpe, Messrs. William Tomkins Ltd. .. *	TL 022 961	163737	128	20 years
Corby, Messrs. Stewarts & Lloyds Ltd. .. *	SP 901 885	163465	320	32 years
Harrowden Hall, Mr. A. W. Gilbey *	SP 882 709	161562	291	25 years
Lamport Hall, Sir Gyles Isham *	SP 759 746	159493	481	32 years
Northampton Power Station, Central Electricity Generating Board* ..	SP 762 598	160204	190	34 years
Orlingbury, Messrs. William Tomkins Ltd. .. *†	SP 843 715	161496	389	12 years
Bugbrooke Mill, Messrs. Heygates Ltd. .. *	SP 680 588	158802	229	18 years
Litchborough Rectory, Mr. M. Etheridge*†	SP 633 542	158712	486	32 years
Stanground Sluice, Middle Level Commissioners .. †	TL 209 973	196880	16	63 years
Raunds, Mr. T. C. Smith	SP 991 721	4382	194	28 years
Wollaston, Messrs. Scott Bader & Co. Ltd. .. *	SP 911 631	160775	277	21 years
Blisworth, British Waterways Board	SP 720 550	159147	297	19 years
Norton Junction, British Waterways Board	SP 602 657	158443	359	19 years
Brigstock, Messrs. Stewarts & Lloyds Ltd. .. *	SP 944 852	162681	171	11 years
Kelmarsh Hall, Col. C. G. Lancaster, M.P. .. *	SP 735 795	160838	413	10 years
Bulwick Hall, Mr. G. T. G. Conant *	SP 958 940	163646	225	11 years

Station	National Grid Reference	Station No. B.R.O.	Height of gauge above sea level in feet	Duration of records
Yardley Hastings, Forestry Commission*§	SP 852 572	160521	332	10 years
Flore, Mr. J. Champion*	SP 649 601	158618	285	45 years
Duston (Primary School), Mr. F. W. Harrison	SP 717 623	—	327	4 years ²
Islip Furnaces, Messrs. Stewarts & Lloyds Ltd. ..*	SP 970 783	162361	163	55 years
Mowsley, Mrs. Clegg*	SP 647 891	151389	510	1 year ³
Preston, Mrs. Bloomfield*	SK 871 024	152993	454	1 year
Casterton, Casterton Village College ..*	TF 003 094	153677	166	1 year
Clipsham, Mr. J. Clayton*	SK 970 161	155234	302	1 year
Kilsby, Kilsby School*	SP 563 710	450355	432	1 year
West Haddon, Mrs. Porteus*	SP 629 719	158203	553	1 year
Little Houghton, Mr. R. C. Deacon ..*	SP 805 598	160279	259	1 year
Grafton Underwood, Mr. D. Walpole ..*	SP 924 805	—	295	1 year ⁴
Lilford, Mr. Waterfield*	TL 035 828	162500	139	1 year
Stibbington, Stibbington County Primary School *	TL 085 986	163949	58	1 year
Braunston, Rev. P. R. Gatenby*	SK 829 067	—	401	June '68
Tilton-on-the-Hill, Mrs. Wrake ..*||	SK 745 057	—	682	1 year
Cranford, Deans Primary School*	SP 925 770	—	217	Jan '69
Welby, Miss Elliott .. ..R	SK 976 382	—	328	May '68

¹ Records ceased October 1968

² Records ceased June 1968

³ Records ceased December 1968

⁴ Records ceased December 1968

* Records from these stations are made to the British Rainfall Organisation

† Indicates that all records are not available at Head Office.

‡ Break in records, July to December 1964 and June to August 1965.

§ Existing site, records are available for nearby site for previous 9 years.

¶ Gauge resited June 1966

§ Gauge resited at Hallaton Hall (SP 791 966) January 1969.

|| Gauge read weekly.

R Recording rain gauge.

RAINFALL FOR 1968
River Nene Hydrometric Area

1968	Above Northampton (Litchborough)	Northampton (Hardingstone)	Wellingborough (Nene Wharf)	Oundle (Nene Wharf)	Peterborough (Stanground)
	inches	inches	inches	inches	inches
January	1.95	1.98	1.69	1.72	1.38
February	1.15	1.22	1.20	1.33	0.90
March	0.56	0.72	0.75	0.51	0.71
April	2.08	2.70	1.88	1.85	1.97
May	2.24	2.23	1.71	2.25	1.78
June	3.43	3.45	2.57	2.41	2.76
July	3.39	3.80	4.94	5.21	5.24
August	2.65	2.86	3.64	4.31	4.35
September	3.85	2.99	3.90	4.04	4.39
October	2.11	1.97	1.93	1.91	1.67
November	2.23	2.43	2.27	1.77	1.99
December	2.52	1.92	1.54	1.63	1.50
1968 Total	28.16	28.27	28.02	28.94	28.64
1967	24.74	24.31	22.54	22.05	20.68
1966	31.33	28.91	26.75	28.07	25.82
1965	30.62	26.79	24.09	24.12	25.30
1964	17.42	15.63	15.41	16.68	17.54
Average 1916-1950	25.99	22.95	23.07	23.09	21.72

Comparative Table

Year	Per cent of average
1968	121
1967	98
1966	121
1965	112
1964	71

RAINFALL FOR 1968

River Welland Hydrometric Area

1968	Market Harborough	Caldecott Pumping Station	Oakham (River Gwash)	Stamford Sewage Works	Pode Hole (Fen Area)
	<i>inches</i>	<i>inches</i>	<i>inches</i>	<i>inches</i>	<i>inches</i>
January ..	2.28	1.74	1.90	1.80	1.46
February ..	1.56	1.40	1.09	1.16	0.75
March ..	0.71	0.73	0.64	0.72	0.67
April ..	1.98	2.44	2.64	2.42	2.55
May ..	1.83	1.78	2.20	2.00	1.94
June ..	2.85	2.26	2.54	2.70	2.21
July ..	4.19	3.63	4.35	4.36E	4.28
August ..	3.06	2.92	3.35	3.58	3.25
September ..	3.73	4.67	3.92	3.46	3.46
October ..	1.87	1.76	1.93	2.05	1.97
November ..	3.00	2.09	2.61e	2.61	2.47
December ..	2.09	1.65	1.72e	1.27	1.31
1968 Total ..	29.15	27.07	28.89e	28.13	26.32
1967 ..	25.86	22.67	24.01	22.28	20.42
1966 ..	29.00	24.83	27.55	26.78	26.50
1965 ..	29.53	24.62	32.98	25.65	25.96
1964 ..	18.02	15.85	20.39	17.51	16.77
Average 1916-1950	24.33	22.66	24.68	23.02	23.70

e = No records for Oakham, Gunthorpe records used.
E = Estimated

Comparative Table

Year	Per cent of average
1968	118
1967	97
1966	114
1965	117
1964	75

RIVER AND STREAM GAUGING

(a) Automatic Gauging Stations recording water level and rate of discharge

Station	M= Main River T= Tributary	National Grid Reference	Catchment Area in Sq. Miles	Type of Measurement	Duration of Records
WELLAND CATCHMENT					
Kate's Bridge	T	TF 106 149	132	Standing wave flume	10 years
King Street Bridge	T	TF 109 106	132	Standing wave flume	9 years
Tixover	M	SP 971 998	156	Current Meter (over 150 cusecs)	7 years
Barrowden	M	SP 948 999	154	Simple Crump-type weir (below 150 cusecs)	1 year
Tallington Main Weir	M	TF 095 078	277	Compound broad crested weir	1 year
Lolham Mill Stream	M	TF 096 078	277	Simple Crump-type weir	3 years
West Deeping Mill Stream	M	TF 094 078	277	Simple Crump-type weir	3 years
Belmesthorpe	T	TF 038 097	57.9	Simple Crump-type weir	2 years
North Brook	T	SK 957 089	14.1	Simple Crump-type weir	2 months
Foster's Bridge	T	SK 961 030	26.6	Compound Crump-type weir	1 year
Burton Coggles	T	SK 987 261	12.2	Simple Crump-type weir	2 months
Little Bytham	T	TF 016 179	9.6	Simple Crump-type weir	2 months
Irnham	T	TF 038 273	27.6	Simple Crump-type weir	2 months
Grimsthorpe	T	TF 046 203	8.1	Simple Crump-type weir	2 months
Shillingthorpe	T	TF 074 113	66.8	Simple Crump-type weir	11 months
Manthorpe	T	TF 068 160	52.6	Simple Crump-type weir	1 year
NENE CATCHMENT					
Orton U/S	M	TL 166 972	631	Weir and sluices (to approx 1,000 cusecs)	29 years
Orton North Dyke	M	TL 166 972	631	Sharp edged rectangular weir	1 year
Orton South Dyke	M	TL 166 967	631	Sharp edged rectangular weir	1 year
Wansford	M	TL 080 995	590	Current meter (over 1,000 cusecs)	30 years
Willow Brook	T	TL 067 933	34.6	Standing wave flume	30 years
Harper's Brook	T	SP 983 799	28.7	Compound Crump-type weir	30 years
Harrowden	T	SP 898 715	74.9	Compound Crump-type weir	25 years
Wollaston	M	SP 887 647	249	Weir (below 60 cusecs)	25 years
Northampton	M	SP 755 597	220	Current meter (over 1,000 cusecs)	Level for 35 years. Discharge occasional for 26 years
Lady Bridge	T	SP 736 571	20.6	Simple Crump-type weir	July, 1968
St. Andrews	T	SP 747 617	89.9	Standing wave flume	30 years
Upton	T	SP 721 592	86.1	Standing wave flume	29 years
Dodford	T	SP 627 607	41.3	Simple Crump-type weir	24 years

Records from the above, other than those for Northampton (where only water levels are recorded) and Wollaston (where only drought discharges are recorded) are/will be published in the Surface Water Year Book.

When the Greatford Flood Relief Channel is in use, the natural discharge of the River Glen at Kate's Bridge is obtained by adding the discharges at Kate's Bridge and King Street.