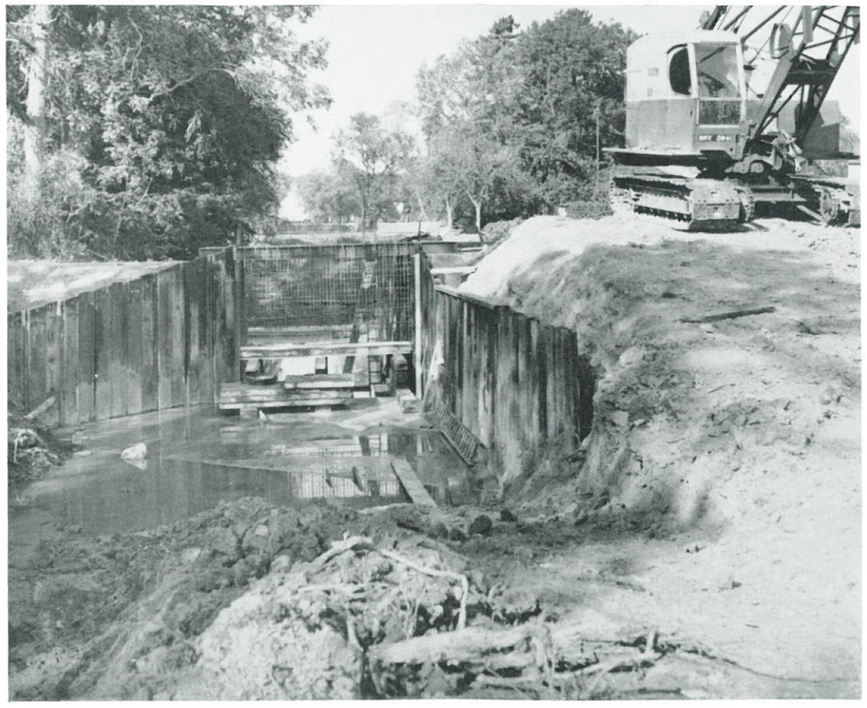

(*above*) **Bugbrooke Flood Alleviation Scheme**
Bridge under-pinning

(*below*) **River Jordan Flood Alleviation Scheme**
Reservoir Control Structure

	*Ram Dyke**		*Brook Drain*		*South Drain*	
	Suspended Solids mg/l	*B.O.D. mg/l*	*Suspended Solids mg/l*	*B.O.D. mg/l*	*Suspended Solids mg/l*	*B.O.D. mg/l*
1965/66 ..	252	160	147	108	86	74
1966/67 ..	83	91	60	39	25	17
1967/68 ..	58	91	50	43	19	25
1968/69 ..	71	33	28	12	20	6·9
1969/70 ..	41	54	20	9	15	6·5
1970/71 ..	35	32	28	17	20	7·1

* In dry weather the flow in Ram Dyke consists mainly of paper mill effluent.

Bourne Eau

Three surveys showed Bourne Eau was "fairly clean" over most of its length. Sewage effluent from Bourne works had a noticeable, but localised, effect on raising the biochemical oxygen demand and lowering the dissolved oxygen content.

River Glen

Three surveys showed the lower reaches to be "fairly clean", but during the summer months the upper reaches had a high biochemical oxygen demand as there was little dilution for the several discharges of effluent.

River Welland—Tidal

The biochemical oxygen demand on three of four surveys was satisfactory, but that on the fourth (which coincided with the sugar beet campaign at Spalding) was exceptionally high.

River Nene—Non-tidal

Six surveys indicated some improvement in the overall condition of the river compared with previous years, as shown by the following table:

	1968/69		1969/70		1970/71	
	No. of Samples	*Per Cent*	*No. of Samples*	*Per Cent*	*No. of Samples*	*Per Cent*
Satisfactory	60	57	71	60.5	94	74·5
Unsatisfactory ..	45	43	47	39.5	32	25·5

(Note: A sample is regarded as "satisfactory" if the 5-day Biochemical Oxygen Demand does not exceed 5.0 mg/1.)

The following table confirms that the trend is an increase in the number of satisfactory samples, but further improvements are still necessary:

	Source to Billing		*White Mills to Ringstead*		*Thrapston to Dog-in-a Doublet Sluice*	
	Samples	*% Satisfactory*	*Samples*	*% Satisfactory*	*Samples*	*% Satisfactory*
1968/69 ..	30	70	34	35.5	35	74
1969/70 ..	30	93	41	41.5	48	56
1970/71 ..	36	97	42	45	48	77

River Ise

Four surveys showed that the stream above Kettering sewage outfall was generally clean, but below the outfall it remained unsatisfactory. The following table shows the steady deterioration over the last four years:

Year	*No. of Satisfactory samples*	*No. of Samples*	*Average B.O.D. mg/l.*
1967/68	2	5	5.8
1968/69	2	6	6.9
1969/70	2	6	7.8
1970/71	3	10	7.6

Kettering sewage effluent has deteriorated over the past four years, as is shown by the following average analyses:

	Suspended Solids mg/l.	*Biochemical Oxygen Demand* mg/l.
1967/68	41	17
1968/69	67	31
1969/70	55	27
1970/71	59	30

Harpers Brook

Surveys in May and October showed that the Brook was " clean/fairly clean " over most of its length.

Willow Brook

Three surveys showed the Northern, Central and Southern streams to be unsatisfactory in biochemical oxygen demand and dissolved oxygen. The middle and lower reaches continued to have a high biochemical oxygen demand, but the oxygen saturation was nevertheless satisfactory.

Thirty-four analyses were made of the water over-spilling from Deene Lake to monitor the level of zinc. The mean value of zinc was 2·1 mg/l, the concentration ranging from 0·09-8·90 mg/l. A seasonal winter peak in zinc concentration was again observed.

South Holland Main Drain

High biochemical oxygen demands associated with supersaturated oxygen conditions were recorded on four surveys, which is typical for this fenland dyke.

River Nene—Tidal

Four surveys showed the tidal river was in a reasonable condition.

2. STANDARDS APPLIED TO EFFLUENTS

The Royal Commission's recommendations are usually prescribed for fully treated discharges of sewage and trade effluent, but more stringent standards are being increasingly applied where circumstances warrant. Lower standards have been prescribed for some Section 1 discharges, but applicants have been reminded in those cases that when the conditions are reviewed the requirements will be raised. Greatly increased discharges of sewage effluent from " new town " and overspill development in the Nene Valley will make it necessary to prescribe higher standards if the wholesomeness of the river is to be maintained—let alone improved. Sewage authorities have been advised of higher standards which may be required from some sewage disposal works in the future.

Fifty-seven applications under the Rivers (Prevention of Pollution) Acts, and the Water Resources Act were dealt with, the classification being as follows:

Sewage effluent (treated)	14
Storm sewage efluent	5
Emergency overflows	2
Surface water discharges	12
Trade effluents	2
Farm effluents	1
Discharges to underground strata	21

One Consent was varied under Section 5(i) of the Rivers (Prevention of Pollution) Act, 1961. The practice of previous years was generally followed.

3. SAMPLES AND ANALYSES OF EFFLUENTS

During the year 1,299 samples of effluent were analysed, of which 1,163 were from sewerage and sewage disposal works, the remainder being from trade premises. Miscellaneous analyses numbered 67, the majority being spring or pond waters. A further 42 samples were taken for bacteriological examination.

Three statutory samples, one of sewage and two of trade effluent, were analysed.

Effluent from sewage disposal works discharging more than 25 litres/sec. and from smaller works which are known to include trade waste containing metals are regularly analysed for chromium, copper, lead and zinc. Trade discharges are similarly analysed.

	Number	*Per cent*
Sewage Works generally producing satisfactory effluent	137	52
Sewage Works generally producing unsatisfactory effluent	128	48
Trade Premises generally producing satisfactory effluent	12	28
Trade Premises generally producing unsatisfactory effluent	31	72

In listing the number of sewage works generally producing satisfactory effluent it is important to realise that some 35 per cent of the total number of works discharge to Fenland Drains having no connection with the non-tidal Nene or Welland. There are 64 such works in East Elloe and Wisbech Rural Districts, and, on inspection it is not unusual to find that there is no discharge from many of these works. In such circumstances the works are not listed as producing either satisfactory or unsatisfactory effluent. Hence the slight variation in the number of works each year.

Unfortunately many of the small plants generally produce unsatisfactory effluent, probably causing very localised pollution in a dyke which is quite likely to be dry some fifteen yards downstream Adequate maintenance of 42 plants in one Rural District presents a major problem.

The overall effect of sewage effluent on the freshwater Nene is reflected in the quality of river water, and in this respect reference should be made to page 45 where it can be seen that 74·5 per cent of river water samples taken this year were satisfactory as against 60·5 per cent last year and 57 per cent the previous year.

4. SEWAGE AND TRADE EFFLUENTS

Numerous complaints of minor pollutions were investigated, and many found to be due to discharges of oil from surface water sewerage systems. Considerable help and co-operation was received from the staff of several local authorities in the difficult task of trying to trace sources of such contamination.

The Rural Development Studies published by the Northamptonshire County Planning Department have indicated those villages where sewage disposal facilities are necessary in advance of the planned development, and the rural sewage authorities have had their attention drawn to the need for new schemes. County Planning Authorities have again been asked to

withhold planning permission for development which might seriously overload a sewage disposal works, where the sewage authority concerned has had no proposals for dealing with the situation.

The Department was consulted on 332 planning applications, and in 37 cases the County Planning Officer was advised that development was undesirable.

The Eastern Sea Fisheries Committee invited the Chief Pollution Prevention Officer to attend a Committee appointed " to review existing information, discuss and make investigations related to the shell fisheries of the Wash ".

The Committee came to the conclusion that there was no significant industrial pollution in the waters fished commercially, but that sewage discharges were a matter for some concern. Although there was some improvement in the treatment and disposal of sewage effluent the Committee could not foresee any substantial reduction in the bacterial pollution of the Wash.

The Department of the Environment have completed the River Pollution Survey, and a draft outline of a report was received for comment.

Maps were prepared on which the rivers have been classified in colour, according to quality, as follows:

CLASS 1 (blue)
Rivers unpolluted and recovered from pollution.

CLASS 2 (yellow)
Rivers of doubtful quality and needing improvement.

CLASS 3 (red)
Rivers of poor quality requiring improvement as a matter of some urgency.

CLASS 4 (black)
Grossly polluted rivers.

The classification of rivers with the respective mileage is as follows:

Watercourse	*Class* 1	*Class* 2	*Class* 3	*Class* 4	*Total*
River Nene	86·1	99·6	8·5	nil	194·2
River Welland	140·2	46·0	1·4	1·4	189·0
Grand Union Canal	41·4	nil	nil	nil	41·4
Total	267·7	145·6	9·9	1·4	424·6

The classification was not based on a single criterion, but took account of the location and frequency of polluting discharges, biochemical oxygen demand, dissolved oxygen, turbidity, fish life and frequency of complaints.

The draft outline report states:

" RESERVATION ON QUALITY CRITERIA

After the quality survey had been completed, representations about the definition of Chemical Class were made by three River Authorities in East Anglia. The material points in the representations by the Welland and Nene River Authority were as follows:

' Many lowland rivers are Class 2 and it is practically and economically impossible to bring them to Class 1. The implication in the Class 2 definition that " something should be done " is misleading.'

The points made (by the three River Authorities) were accepted as being valid, but to have changed the definition at that stage would have necessitated a re-appraisal by all river authorities and so it was decided not to make any changes.

Whilst, therefore, the definition applied to Class 2 would usually be appropriate to the state of the river, there will be cases where the Class is more the result of natural characteristics than of man's activities and this should be borne in mind particularly in flat and low-lying areas."

Boston Rural District

Work is proceeding satisfactorily on the sewerage and sewage disposal scheme for Sutterton and Wigtoft.

Bourne Urban District

Localised drain pollution at Bourne ceased when a vegetable washing plant closed. When the plant was later re-opened vegetable washing water was passed to the sewer.

A pollution of Bourne Eau, with a slight fish mortality, was caused by 15-20 gallons of creosote.

A Fellmongery in Bourne was closed. A nearby Animal By-Products Company are to construct a lagoon for the re-circulation of condenser water, which will eliminate a direct discharge to the stream.

The inadequate sewage treatment plant at Bourne Chest Hospital was closed when the effluent was diverted to the public sewer.

Corby Urban District

Storm tanks at Corby sewage disposal works were used as balancing tanks during a major reconstruction. The extensions are virtually completed, and a new micro-strainer has been installed. The improvement has not been significant, and it appears that another micro-strainer may be necessary if the prescribed conditions are to be met.

The Department of the Environment held an informal hearing into the Council's proposals to sewer the Oakley district to the main sewage disposal works.

Contaminated surface water from a Potato Crisp Factory was diverted to the foul sewer, and the Company cleansed the stream of the accumulated effect of the polluting discharge.

Pollution of a tributary of Willow Brook occurred when a football blocked the sewer so that there was a premature operation of a storm sewage overflow.

Daventry Municipal Borough

Eight of the eleven analyses taken from the new temporary sewage works at Daventry complied with prescribed conditions, but the analyses from the old works were all unsatisfactory ! The Council were asked to divert more sewage from the old works to the temporary works, pending the construction of a new works to provide for the substantial increase in sewage resulting from the overspill expansion.

Daventry Rural District

The Long Buckby works was brought into operation at the beginning of the year, and sewage from the Watford Motorway Service Area was diverted from Watford to Long Buckby. A good effluent has been produced by both the Long Buckby and the Watford works.

East Elloe Rural District

Holbeach sewage disposal works was brought into operation in May, and after some initial trouble produced effluent complying with prescribed conditions.

A pollution at Gedney Hill was traced to slaughter-house waste. The butcher was

prosecuted before the Spalding Justices when he was fined £40 and ordered to pay an advocate's fee of £10. Subsequently the volume of the effluent was reduced by diverting some clean surface water, and the slaughter-house waste was passed to a blind ditch.

Higham Ferrers Municipal Borough

There was a considerable deterioration in the effluent whilst the lagoons were out of use for improvement.

Irthlingborough Urban District

For some five years the Council and the County Planning Committee have been asked to restrict development in the town, as the sewage works have been substantially overloaded and an inferior effluent has had to be accepted. In addition some 50 per cent of the effluent from a tannery has been discharged direct to the river with little treatment because of the inadequacy of the sewage works.

As was explained in the Fifth Annual Report, the provision of tertiary lagoon treatment resulted in a substantial improvement in quality. In consequence the Council agreed to gradually accept more of the tannery effluent until the optimum acceptable was reached, and the Pollution Prevention Committee withdrew their objection to the building of an estate of 24 houses which the Council considered an essential part of their housing programme.

Kettering Municipal Borough

A slight improvement following the use of a storm tank as an extra humus tank has not been maintained, and of eleven analyses of samples from this works only three complied with prescribed conditions. The situation is likely to deteriorate further as planning consents have been granted for at least 1,200 housing units yet to be constructed.

Consultants have prepared proposals for extending the sewage disposal works, but it appears that the work is unlikely to be completed for at least four years.

Ketton Rural District

Immediate and successful steps were taken to soak up 2,500 gallons of DDA7 (a phenolic type substance) and D 250 (vegetable oil) spilled at a large cement works. Only thirty gallons reached the River Chater when about 120 roach, mostly fry, were killed.

Market Harborough Urban District

The Council now provide tertiary land irrigation for the sewage effluent, and there has been a great improvement.

Pollution of a tributary ditch of the River Welland at Market Harborough occurred when a fuel pipe from an underground oil storage tank burst, allowing about 1,500 gallons of oil to escape. Most of the oil was recovered before it contaminated the main River Welland.

Norman Cross Rural District

Inadequate filtration at the Elton and the Sibson-cum-Stibbington works due to too rapid dosing was corrected, and both works are now producing satisfactory effluent.

Northampton County Borough

Work proceeded satisfactorily on the additional preliminary treatment at the Northampton sewage disposal works, necessary to maintain a reasonably satisfactory effluent pending completion of Stages 1 and 2 of the large scale extensions.

In spite of overloading, by balancing the flow over 24 hours the works have produced effluent complying with prescribed conditions.

A minor fish mortality in the Grand Union Canal was caused by a discharge of trade effluent containing chromium from the surface water sewerage system on an industrial estate. The Estate Developers had connected a foul sewer to the surface water sewerage system.

Several small discharges from Northampton Gas Works to the Jack Dyke have been eliminated as the Plant has been closed down.

An oil pollution of the Nene was traced to a bulk oil storage depot separated from the river by an expanse of marshy ground and a railway embankment. After a normal check the oil company were unable to detect any loss, but after 23 borings had been made to trace the source of the oil a leak in a high pressure pipe was discovered. It was subsequently calculated that some 18,000 gallons of diesel oil had escaped, and about 2,000 gallons were trapped in a ditch dug along the bank of the river.

Oakham Urban District

Oakham sewage disposal works was completed at the beginning of the year, and a satisfactory effluent has been produced.

Old Fletton Urban District

British Sugar Corporation have cleared a tip at their Peterborough factory, which had been a cause of localised pollution, and it is hoped that there will be no further cause for complaint. In spite of an attempt to prevent nutrient-rich liquor from the factory draining to the River Nene fungus growths have again been reported, and further work has been carried out.

Tar production ceased at the Tar Distilling Company's premises, and only storage and pre-heating of tar prior to tanker loading is now carried out there.

Oundle and Thrapston Rural District

Satisfactory progress was made in sewering Glapthorn to Oundle sewage disposal works.

A sewerage and sewage disposal scheme for Barnwell and Polebrook has been approved by the Department. Work is proceeding satisfactorily on the Apethorpe and Woodnewton scheme, and the Thrapston District scheme should be completed early in the coming year.

The Hog Dyke at Ringstead was polluted by a discharge of gravel washing water from a new quarry, but the discharge was eliminated as recirculation from the worked out area became possible. The Gravel Company removed the siltation from the stream.

Oundle Urban District

Extensions at Oundle sewage works to cater for the normal expansion and for the sewage from Glapthorn proceeded satisfactorily.

Peterborough Municipal Borough

Pollution of the Middleholme Drain was caused by contaminated drainage from Fengate Refuse Tip, but the repair of a retaining wall prevented any further discharge and subsequent inspections have shown that the pollution has been eliminated.

Several thousand bleak, chub, bream, roach and pike died in the Electricity Cut at Peterborough as a result of deoxygenation, almost certainly caused by the failure of a pump at a nearby sewage pumping station resulting in the premature operation of a storm sewage overflow. De-oxygenated river water was taken in to the Central Electricity Generating Board's cooling water system and discharged to the Electricity Cut.

Peterborough sewage effluent continued to comply with prescribed conditions.

Peterborough Rural District

The improved operation of the effluent treatment plant at a Paper Mill in Helpston was maintained. Fungus growths still occurred in the stream below the mill, but it is inevitable from the nature and volume of the trade effluent.

Raunds Urban District

Raunds Urban District Council were fined £25 with £5 costs when prosecuted for an unsatisfactory and avoidable discharge from the Raunds works.

South Kesteven Rural District

On completion of Ryhall sewage extensions a plant serving an Essendine factory became obsolete, as all domestic sewage and trade effluent was passed to the Ryhall works.

A pollution of the East Glen was caused by an overflow from a septic tank serving the premises of John Taylor, Bulby. Despite warnings no improvement was effected, and the occupier was prosecuted. He was fined £15 for knowingly permitting a polluting discharge, £15 for obstructing the Authority's officers when they delivered a statutory sample to him, and a further £15 for causing malicious damage to the Authority's property as a thermometer was broken when he kicked the Inspector's sampling kit across his yard.

It is expected that a scheme for sewering Swayfield, Swinstead, Creeton, Castle and Little Bytham to a new works at Little Bytham will be completed in the coming year.

Spalding Urban District

Preventative measures at a fruit and vegetable packing factory to reduce pollution by contaminated drainage from land previously used for waste vegetable disposal achieved complete success.

Boiler blowdown and vehicle washdown water from a food cannery, and trade effluent from a laundry have been connected to the foul sewer.

Pollution of the South Holland Main Drain by Thionazin, an organo-phosphate used in the treatment of tulip bulbs, once again resulted in fish mortality. Contaminated water was traced back for 17 miles along several minor drains to the premises of a horticulturist. In view of the long time that elapsed before the effect of the pollution became apparent it was decided not to prosecute.

Stamford Municipal Borough

Stamford Borough Council were supported in an appeal against the refusal by Huntingdon and Peterborough County Council of planning permission for a sewage disposal works in Barnack.

Wellingborough Rural District

In spite of the construction of two new filters at Wollaston sewage disposal works there was no improvement in the effluent.

A new effluent lagoon at Earls Barton sewage works has resulted in a consistently satisfactory effluent.

Wellingborough Urban District

The Department of the Environment held a Public Inquiry into the Council's proposed sewage scheme,including their appeal against the consent prescribed for the discharge under Section 7 of the Rivers (Prevention of Pollution) Act, 1951.

The Secretary of State's decision was received in May, 1971, but it is appropriate to refer to it here. He commended the Council's choice of a site which will permit their sewage works to fulfil a regional function, and stated that because of advantages which a regional sewage works offers for effective treatment of sewage and trade effluents, connection to the new works must be expected in course of time to offer neighbouring local authorities a cheaper means of meeting consistently the standards of discharges to the river which protection of the quality of the river will demand than would be open to them by independent local treatment.

The Secretary of State agreed that a suitable quality of effluent to require in the first instance would be such that suspended solids should not exceed 20 mg/1 and biochemical oxygen demand should not exceed 15 mg/1, but he would give no formal direction until he had considered data as to the quantity of infiltration water and any submissions in this respect which either the Council or the River Authority desired to make.

He hoped that in view of his observations the Authority and the Council would be able to agree on the terms of a consent, and the appeal might then be withdrawn.

Whittlesey Urban District

The Ministry investigated a sewerage and sewage disposal scheme for Whittlesey, but only two of the Pumping Stations are in this Area.

Wisbech Municipal Borough

The Minister of Housing and Local Government refused planning permission for a new sewage disposal works at Walton Dam to serve Wisbech, and the Council submitted an amended planning application to the Norfolk County Council.

Wisbech Rural District

Three hundred gallons of gas oil escaped when vandals broke the feed pipe from a storage tank to the burners at a fish shop in Leverington. The oil was caught in a drain, and removed by firing.

5. REMEDIAL ACTION

Leicester City Council

Representatives of the Department and of the Severn and Trent River Authorities sat on a Working Party to consider pits and quarries which might be suitable for refuse disposal.

The River Authority representatives emphasised the need to consider each site independently on the merits.

Market Harborough Rural District

The Minister of Housing and Local Government rejected an appeal against a planning refusal to construct four houses at Lubenham pending the extension of Lubenham sewage disposal works.

Northamptonshire—County Planning

Planning problems in relation to overloaded sewage disposal works and proposed development were discussed with the County Planning Department.

The Planning Department were given details of those Districts where sewage disposal facilities are inadequate. The District Councils are to be informed of the advice that has been given, and warned that further development will be resisted until some improvement is effected.

6. STATISTICS RELATING TO POLLUTION CONTROL

DISCHARGES INTO STREAMS REQUIRING CONSENT UNDER SECTION 7 OF THE 1951 ACT

	Consents and notices issued during year	*Refusals during year*
(a) Effluents from local authority sewage disposal works and other domestic sewage effluents ..	15	nil
(b) Effluents from storm sewage overflows and storm sewage tanks	3	nil
(c) Effluents from trade premises	2	nil
(d) Farm effluents	1	nil
Totals	21	nil

DISCHARGES INTO TIDAL WATER REQUIRING CONSENT UNDER SECTION 7 OF THE 1951 ACT AS EXTENDED BY SECTION 1 OF THE 1960 ACT

	Consents and notices issued during year	*Refusals during year*
(a) Effluents from local authority sewage disposal works and other domestic sewage effluents ..	nil	nil
(b) Effluents from storm sewage overflows and storm sewage tanks	nil	nil
(c) Effluents from trade premises	nil	nil
(d) Farm effluents	nil	nil
Totals	nil	nil

REVIEWS OF CONDITIONS OF CONSENT UNDER SECTION 5 OF THE 1961 ACT

	Consents reviewed during year	*Consents varied during year*
(a) Effluents from local authority sewage disposal works and other domestic sewage effluents ..	3	nil
(b) Effluents from storm sewage overflows and storm sewage tanks	1	nil
(c) Effluents from trade premises	nil	nil
(d) Farm effluents	nil	nil
Totals	4	nil

DISCHARGES INTO UNDERGROUND STRATA REQUIRING CONSENT UNDER SECTION 72 OF THE 1963 ACT

	Consents issued during year	*Refusals during year*
(a) Effluents from local authority sewage disposal works and other domestic sewage effluents ..	19	nil
(b) Effluents from storm sewage overflows and storm sewage tanks	nil	nil
(c) Effluents from trade premises	nil	nil
(d) Farm effluents	2	nil
(e) Other miscellaneous discharges	nil	nil
Totals	21	nil

EXISTING DISCHARGES INTO STREAMS UNDER SECTION 1 OF THE 1961 ACT

	Consents and notices issued during year	*Refusals during year*
(a) Effluents from local authority sewage disposal works and other domestic sewage effluents ..	11	nil
(b) Effluents from storm sewage overflows and storm sewage tanks	4	nil
(c) Effluents from trade premises	nil	nil
(d) Farm effluents	nil	nil
Totals	15	nil

7. RESEARCH

No research work was carried out.

RIVER NENE—ANALYTICAL RESULTS

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
1. Non-Tidal Sampling Points												
Dodford Road Bridge	5	Average Values	—	13	17	0·11	2·9	1·3	2·55	109	10	
		Maximum Values	8·4	19	20	0·19	4·45	2·8	3·4	122	14	
		Minimum Values	8·1	7	14	0·04	1·50	0·6	2·0	99	3	
Weedon A.45 Road Bridge	—	Average Values	—	16·5	35	0·17	4.4	2·4	2·9	116	10·5	0·32
		Maximum Values	8·6	42	47	0·43	5.0	5·4	3·4	151	15	0·59
		Minimum Values	8.0	5	23	0.04	3·5	0·6	2·2	94	3	0.14
Kislingbury	12	Average Values	—	10	30	0·44	3·7	2·9	4·1	105	11	0.85
		Maximum Values	8·55	19	36	0·97	5·0	4·4	5·3	130	16	1·52
		Minimum Values	7·8	5	25	0·13	3·0	1·6	3·3	65	2·5	0·36
Boughton Crossing	—	Average Values	—	15·5	34	0·24	8·75	3·4	3·55	103	10·5	0·70
		Maximum Values	8·3	22	40	0·58	9·9	4·2	4·5	117	16	1·32
		Minimum Values	7·8	8	24	0·09	7·65	1·6	2·0	84	3	0·34
Nunn Mills	—	Average Values	—	11	36	0·27	5·8	2·5	3·25	95	12·0	
		Maximum Values	8·3	15	43	0·58	7·1	4·2	4·1	99	17	
		Minimum Values	7·9	8	30	0·04	4·45	1·6	2·3	86	2·5	
Billing Bridge	22	Average Values	—	11·5	38	0·18	4·65	2·4	3·6	103	13·5	1·91
		Maximum Values	8·6	20	44	0·23	6·7	3·6	4·8	116	17	3·45
		Minimum Values	8·1	6	34	0·09	trace	1·4	1·9	96	6	0·81
White Mills	25	Average Values	—	8·5	47	1·26	7·2	4·0	4·85	88	13	
		Maximum Values	8·4	12	66	3·10	9·8	5·8	9·0	108	17	
		Minimum Values	7·7	5	38	0·13	5·0	1·8	2·4	68	4·5	
Hardwater Mill	27	Average Values	—	8·5	55	2·35	8·3	5·0	5·45	76	13·0	
		Maximum Values	8·25	14	74	6·1	12·0	6·6	7·3	101	17·5	
		Minimum Values	7·45	5	41	1·0	4·5	3·0	3·4	32	3·5	
Wollaston Mill	—	Average Values	—	8	53	1·8	8·2	4·3	5·3	85	12·5	
		Maximum Values	8·15	11	70	4·2	11·5	5·6	6·0	98	18·5	
		Minimum Values	7·3	5	41	0·09	5·55	2·6	4·2	33	3·0	
Wellingborough Road Bridge	30	Average Values	—	8·5	53	1·76	8·35	4·5	5·5	99	13	
		Maximum Values	8·25	12	70	4·20	11·5	6·0	8·4	113	18	
		Minimum Values	7·45	5	40	0·13	5·0	3·0	3·6	65	3·5	
River Ise, Wellingborough	—	Average Values	—	12	51	0·90	6·7	5·3	7·0	95	12·5	0·75
		Maximum Values	8·4	17	75	1·80	8·15	11·4	9·4	150	18	1·17
		Minimum Values	7·5	5	35	0·13	6·05	2·2	4·2	61	3	0·35
Ditchford Mill	32	Average Values	—	10·5	52	1·35	7·55	3·95	4·9	96	12·5	
		Maximum Values	8·25	15	70	4·2	9·2	6·8	7·0	129	18·5	
		Minimum Values	7·5	5	39	0·09	5·0	1·6	3·1	58	3	
Irthlingborough Old A6 Road Bridge	34½	Average Values	—	9·5	59	1·39	8·2	4·5	5·65	85	13	
		Maximum Values	8·2	13	78	3·6	9·8	6·8	8·7	106	18·5	
		Minimum Values	7·4	4	43	0·18	6·05	2·8	2·9	56	3	
Ringstead Lower Lock	38	Average Values	—	10·5	67	1·42	8·35	4·15	5·6	95	13	
		Maximum Values	8·4	16	90	3·9	9·8	6·8	8·6	142	18·5	
		Minimum Values	7·4	4	45	0·09	6·05	2·4	3·3	29	3	
Thrapston	42	Average Values	—	14	65	1·06	7·75	4·6	5·05	93	12·5	
		Maximum Values	8·3	17	88	3·2	9·8	6·6	7·7	110	18	
		Minimum Values	7·4	9	45	0·09	5·0	3·6	3·7	72	3	
Oundle New Bridge	55	Average Values	—	8·5	62	0·7	7·10	3·4	3·6	100	12·5	
		Maximum Values	8·5	11	79	2·4	7·65	5·6	5·2	129	18	
		Minimum Values	7·55	5	42	0·09	6·05	1·6	2·4	78	3	

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
Fotheringay	59	Average Values	—	9	60	0.57	6.95	3·7	3·15	105	12·5	
		Maximum Values	8·5	11	72	1·9	8·15	5·4	5·0	132	18	
		Minimum Values	7·8	5	40	0·09	6·05	2·4	1·7	82	3	
Elton Lock	—	Average Values	—	9	60	0·49	6·95	3·4	3·65	104	12·5	
		Maximum Values	8·55	12	77	1·4	8·7	4·8	6·3	135	18	
		Minimum Values	7·6	5	41	0·09	5·55	2·0	1·8	92	3	
Willow Brook, Fotheringhay	—	Average Values	—	18	124	1·35	8·15	3·55	4·6	110	12·5	0·70
		Maximum Values	8·4	26	138	4·2	9·2	4·4	6·5	137	18	0·91
		Minimum Values	7·55	8	108	0·13	6·6	2·4	2·8	90	3	0·55
Elton/Nassington Road Bridge	—	Average Values	—	9·5	75	0·58	7·2	3·25	3·5	107	12·5	
		Maximum Values	8·5	12	89	1·8	9·2	4·4	5·0	125	18	
		Minimum Values	7·8	5	46	0·09	6·25	2·6	1·8	91	3	
Wansford Old A1 Road Bridge	66	Average Values	—	10	70	0·60	7·2	3·65	3·3	106	12·5	
		Maximum Values	8·35	17	92	2·0	9·2	5·2	6·3	115	18	
		Minimum Values	7·8	5	47	Nil	6.05	2·4	1·7	93	3	
Peterborough Bridge	77	Average Values	—	16	68	0·76	7·1	3·5	4·35	100	12·5	5·91
		Maximum Values	8·3	25	85	2·9	9·2	5·8	6·3	105	18	9·13
		Minimum Values	7·9	12	50	0·13	5·0	2·2	2·5	90	3	1·91
Dog-in-a-Doublet Upstream of Sluice	82	Average Values	—	14·5	66	0·68	6·9	3·3	3·4	97	12·5	
		Maximum Values	8·4	21	83	2·6	9·2	4·4	4·2	109	18	
		Minimum Values	7·9	8	49	0·09	5·55	1·4	2·7	88	3	
2. Tidal Sampling Points												
Dog-in-a-Doublet Road Bridge	82	Average Values	—	28	70	0·34	6·65	3·85	4·65	92	12·5	
		Maximum Values	8·6	57	86	0·43	8·7	6·2	7·7	106	19	
		Minimum Values	7·9	15	33	0·23	4·5	1·4	1·8	80	7	
Guyhirne Road Bridge	91	Average Values	—	104	79	0·40	6·4	5·95	5·2	76	12·5	
		Maximum Values	8·35	189	104	0·52	8·15	8·8	7·5	86	19	
		Minimum Values	7·9	40	37	0·33	4·5	2·6	3·7	61	7	
Wisbech Town Bridge	97	Average Values	—	89	83	0·38	5·95	6·4	5·4	69	12·5	
		Maximum Values	8·35	130	102	0·48	7·65	8·0	9·7	83	19	
		Minimum Values	7·9	49	33	0·28	4·45	4·0	3·7	56	7	
Sutton Bridge	105	Average Values	—	80	950	0·31	4·8	6·35	5·1	57	12·5	
		Maximum Values	8·15	93	2020	0·43	7·1	9·2	8·2	84	19	
		Minimum Values	7·6	54	165	0·18	3·55	4·2	3·8	32	7	

RIVER WELLAND—ANALYTICAL RESULTS

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
Lubenham/Marston Trussel Road Bridge	4	Average Values	—	12·5	25	0·26	3·5	2·45	3·4	101	12	
		Maximum Values	8·45	18	28	0·38	7·65	3·2	4·3	129	18·5	
		Minimum Values	7·6	9	20	0·04	Nil	1·8	2·4	85	4	
A427 Road Bridge downstream of Market Harborough	7½	Average Values	—	12	34	0·21	2·7	2·65	5·0	132	13	
		Maximum Values	8·8	28	47	0·33	7·65	3·2	8·6	202	20·5	
		Minimum Values	7·85	4	22	0·09	Nil	2·0	2·1	68	4·5	
Welham	12	Average Values	—	22	41	0·47	6·25	4·9	4·55	119	13·5	
		Maximum Values	8·6	53	54	1·10	7·55	7·4	5·7	157	22·0	
		Minimum Values	7·9	7	23	0·18	4·9	3·2	3·7	91	4·5	
Ashley	15	Average Values	—	42	42	0·33	5·7	5·15	3·9	115	13·5	
		Maximum Values	8·8	78	56	0·58	7·65	6·8	4·2	160	22·0	
		Minimum Values	7·9	8	23	0·18	4·0	3·6	3·5	91	4·5	

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
Rockingham	21¼	Average Values	—	48	41	0·24	5·2	3·6	4·15	124	14	
		Maximum Values	8·9	125	56	0·43	7·10	4·4	5·1	143	22·5	
		Minimum Values	7·9	10	26	0·04	3·0	3·0	3·4	96	4	
Eyebrook at Caldecote	—	Average Values	—	10	25	0·21	3·3	3·25	2·8	101	13·5	
		Maximum Values	8·5	20	28	0·28	6·6	4·2	3·8	105	22·0	
		Minimum Values	8·05	4	18	0·13	Nil	2·0	1·4	93	4	
Gretton, Upstream Of Sluice	24½	Average Values	—	49	40	0·17	4·45	3·7	3·3	108	14·5	
		Maximum Values	8·6	152	52	0·23	6·6	5·6	4·1	137	22·5	
		Minimum Values	8·0	11	30	0·04	1·0	2·6	2·3	97	4·5	
Wakerley/Barrowden Road Bridge	—	Average Values	—	59	40	0·18	4·5	4·55	4·6	125	15	1·45
		Maximum Values	9·0	183	50	0·28	6·6	6·4	6·1	171	23	3·60
		Minimum Values	8·0	18	30	0·04	1·5	3·2	2·5	100	5	0·27
Collyweston Bridge	39	Average Values	—	32	42	0·16	4·45	2·8	4·9	150	14	
		Maximum Values	8·75	78	53	0·23	6·05	3·4	8·7	236	21	
		Minimum Values	8·0	5	35	0·09	2·0	2·2	2·1	102	5	
Chater at Station Road, Ketton	—	Average Values	—	22	27	0·21	7·2	1·6	2·6	105	12·5	0·34
		Maximum Values	8·2	64	29	0·38	8·0	2·6	3·1	117	18	0·75
		Minimum Values	7·8	4	23	0·09	6·05	0·8	1·9	98	5	0·08
Tinwell Mill	—	Average Values	—	27	41	0·16	5·2	2·3	5·3	166	14·5	
		Maximum Values	8·85	50	51	0·19	6·6	3·0	10·8	263	22·5	
		Minimum Values	8·1	9	36	0·09	2·5	1·6	1·3	106	5	
Stamford Swimming Baths	43¾	Average Values	—	29	40	0·12	4·45	2·5	5·2	142	14·5	
		Maximum Values	8·9	61	50	0·19	5·55	3·6	9·5	213	21	
		Minimum Values	8·0	7	34	0·04	2·5	2·0	3·0	89	5	
Gwash at Newstead Mill	—	Average Values	—	24	32	0·15	6·15	1·7	3·8	135	14·5	0·95
		Maximum Values	8·7	66	34	0·23	7·65	3·6	6·9	160	21	1·84
		Minimum Values	8·4	5	28	0·04	4·0	0·6	1·8	114	5	0·37
Uffington	46¼	Average Values	—	20	37	0·25	5·65	2·55	4·6	132	14·5	
		Maximum Values	8·8	34	42	0·43	7·10	3·2	7·6	189	21	
		Minimum Values	8·1	8	34	0·04	4·0	1·6	2·0	83	4	
Deeping St. James Crown and Anchor	53	Average Values	—	27	35	0·16	4·85	2·45	5·7	140	14	3·95
		Maximum Values	8·7	76	39	0·23	7·10	4·2	11·8	191	21	9·40
		Minimum Values	8·15	4	30	0·04	2·0	0·2	2·6	112	4	0·90
Deeping St. James Railway Bridge	—	Average Values	—	24	36	0·13	5·2	2·7	6·2	137	14·5	
		Maximum Values	9·1	51	39	0·19	7·65	4·6	11·0	183	21	
		Minimum Values	8·4	7	32	0·04	2·5	0·8	2·5	113	4	
Crowland Bridge	59	Average Values	—	28	39	0·17	4·35	3·15	7·15	143	14·5	
		Maximum Values	8·95	47	42	0·28	7·10	5·6	17·1	250	21	
		Minimum Values	8·2	11	37	0·04	1·0	1·0	2·1	92	4	
Inlet to Coronation Channel	67½	Average Values	—	27	36	0·16	3·8	2·4	6·25	135	14·5	
		Maximum Values	8·7	41	40	0·33	7·65	3·4	8·1	162	21	
		Minimum Values	8·3	16	29	0·04	trace	0·8	4·6	102	4	
Tidal Sluice Coronation Channel	70	Average Values	—	41	47	0·16	3·45	3·4	7·35	144	14	
		Maximum Values	8·6	72	54	0·28	6·6	4·4	9·9	171	20	
		Minimum Values	8·1	24	38	0·04	trace	1·6	4·4	97	4	
Fosdyke Bridge (Tidal Section)	—	Average Values	—	181	6210	0·36	1·95	4·85	9·0	89	14	
		Maximum Values	8·3	205	15100	0·67	4·9	6·8	26·0	112	20	
		Minimum Values	7·8	122	1360	0·09	Nil	3·4	2·7	75	4	

RIVER ISE—ANALYTICAL RESULTS

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
Clipston and Oxendon Station	3	Average Values	—	18	37	0·27	5·5	5·85	3·7	74	10	
		Maximum Values	8·0	30	52	0·38	7·1	9·4	5·2	99	16	
		Minimum Values	7·9	9	17	0·04	2·7	2·6	2·7	41	5	
Newbottle Bridge	6	Average Values	—	9	29	0·18	3·5	3·85	2·2	84	9·5	
		Maximum Values	8·1	13	36	0·23	8·7	5·6	2·7	114	16	
		Minimum Values	7·9	5	17	0·04	0·9	2·2	1·3	60	4	
Rushton Bridge	10	Average Values	—	12	47	0·29	5·75	3·95	3·9	70	10	
		Maximum Values	8·05	16	65	0·48	8·7	4·8	4·5	104	17	
		Minimum Values	7·8	10	23	0·13	3·1	2·6	3·1	54	5	
Geddington A43 Road Bridge	13½	Average Values	—	7	39	0·19	5·3	2·9	2·4	98	10·5	
		Maximum Values	8·2	10	50	0·33	8·7	3·6	2·9	120	16	
		Minimum Values	8·0	5	25	0·04	3·1	2·0	1·9	75	5	
Warkton	15	Average Values	—	8	39	0·32	5·55	3·05	3·2	95	10·5	
		Maximum Values	8·05	13	47	0·53	8·7	4·0	3·7	116	16	
		Minimum Values	8·0	4	25	0·04	3·55	2·6	2·5	77	5·5	
Barton Seagrave	17	Average Values	—	8·5	38	0·22	5·0	2·8	3·25	92	11	
		Maximum Values	8·2	12	45	0·33	8·15	3·0	4·6	135	17	
		Minimum Values	8·0	6	26	0·09	2·7	2·4	2·1	46	5	
Slade Brook at A504 Road Bridge	—	Average Values	—	50	44	0·7	5·95	7·45	11·05	97	11	
		Maximum Values	8·2	166	67	1·4	9·2	20·0	31·0	110	17	
		Minimum Values	7·7	9	27	0·28	0·9	2·6	4·0	67	6	
Isebrook Cottage	19½	Average Values	—	10	40	0·28	5·0	3·05	2·5	108	12	
		Maximum Values	8·5	15	48	0·53	8·7	3·8	3·0	139	17	
		Minimum Values	8·1	8	26	0·13	2·7	2·6	1·6	85	7	
Harrowden Road Bridge	21	Average Values	—	23	57	3·03	7·95	9·35	13·2	67	12·5	
		Maximum Values	7·8	30	68	7·5	10·3	13·0	21·0	110	18·5	
		Minimum Values	7·6	16	31	0·23	3·5	5·0	7·4	19	8	
Finedon Road Bridge	22	Average Values	—	16·5	53	1·28	7·3	5·85	6·0	76	12·5	0·64
		Maximum Values	8·0	23	64	2·75	9·8	7·6	7·6	110	18	1·35
		Minimum Values	7·7	10	33	0·18	5·55	4·0	4·4	41	7	0·27
British Leyland Wellingborough	22½	Average Values	—	21	56	1·45	7·55	8·6	8·45	59	12	
		Maximum Values	7·85	42	67	2·9	9·8	11·6	11·5	107	18	
		Minimum Values	7·6	7	32	0·58	4·5	4·0	4·8	38	7	

HARPER'S BROOK—ANALYTICAL RESULTS

Sampling Point	Miles from Source		pH	Suspended Solids	Chloride (Cl.)	F & S Ammonia (N.)	Nitrates (N.)	4 hrs. P.V.	5 day B.O.D.	D.O. % Saturation	Water Temp. °C	Flow cumec
Pipewell	2½	7.5.70	8·1	10	35	0·09	4·0	2·4	4·3	115	13	
		6.10.70	8·0	26	42	0·33	trace	7·6	9·5	52	11	
Spread Eagle A6003 Road Bridge	4	7.5.70	8·3	8	35	0·09	3·55	2·4	4·2	115	13	
		6·10·70	8·2	17	35	0·67	1·0	1·4	6·0	144	12·5	
Little Oakley Road Bridge	6	7.5.70	8·05	6	35	0·04	2·7	1·6	3·2	125	12·5	
		6.10.70	8·0	18	25	0·33	Nil	1·0	2·2	69	11·5	
Brigstock, Grafton Road Bridge	10	7.5.70	8·1	7	36	0·04	3·1	0·8	3·7	129	12·5	
		6.10.70	7·9	7	26	0·23	2·0	0·6	1·0	76	11	
Sudborough	12	7·5·70	8·3	6	36	0·09	3·55	2·0	3·1	127	13	
		6·10·70	8·3	9	31	0·19	2·0	0·2	0·8	94	11	