

LOWER LEE FISH MORTALITIES
ASSOCIATED WITH RAINFALL
including the event of 7/8th September 1993

HO

by
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ENVIRONMENT AGENCY



042420

1. **Introduction**
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1. INTRODUCTION

This report describes the drainage history of the Lower Lee (Tottenham to the Thames) relating to its development as a fishery and summarises fish mortality incidents associated with rainfall from 1986 to 1993.

It also details the particular event of 7/8th September 1993 when thousands of fish died following a late evening storm.

2. HISTORICAL BACKGROUND

In the 1960's the Lower Lee was almost devoid of fish life. This was principally due to free ammonia concentrations being in excess of that tolerable by fish for most of the time.

The main source of the ammonia was the various sewage treatment works in the north London area, owned and operated by Local Authorities. They did not nitrify for either or both of two reasons:-

- a) The works were dilapidated/overloaded.
- b) The influent included gas liquors. The process of gasification of coal produced effluents including such toxins as phenols, cyanide and thiocyanate.

In the early 1970's the Greater London Council constructed a large regional works at Deephams together with a trunk sewer network linking back to the various problem works.

The commissioning of Deephams STW occurred at about the same time as the arrival of North Sea gas and the resultant cessation of gas liquor discharges to the sewer.

The result was a fully nitrified effluent from Deephams and a Lower Lee free from ammonia. Although most, if not all, the upland flow was being abstracted at Chingford by the Metropolitan Water Board, fish did get swept past the intakes in times of spate flows and the Lower Lee soon became naturally stocked.

The tidal reaches, influenced by the quality of the Thames tideway during low flow conditions, benefited by the improvements effected at Beckton and Crossness STW's and also gained a healthy fish population.

Since the establishment of fish there have been increasing numbers of mortalities during the warmer months associated with intense rainfall, usually following a dry period.

Table 1 shows when significant mortalities have occurred in the 1986 - 1993 period.

	May	June	July	August	September	October
1986			*			*
1987						
1988				*		
1989	*		*	*		
1990				*		
1991						
1992	*					
1993		*			*	

TABLE 1. Each * represents a significant fish mortality.

The incident report summaries for these ten events are included as Appendix 1.

The most recent incident is dealt with in detail in Section 4.

3. THE CATCHMENT

The catchment of the Lower Lee is shown on Figure 1. It covers approximately 100 square km and ranges from the urban fringe area in the north to dense urban development in the south, adjacent to the central London combined drainage area.

It comprises much of the London Boroughs of Enfield and Haringey and about half of Barnet. Most of the area is drained on the separate system and includes an estimated 4 million road gullies plus many other surface water drains.

Some 85% of the catchment drains into the Lee via the Pymmes Brook just downstream of Tottenham Locks. The remainder enters about one km downstream via the Stonebridge and Old Moselle Brooks.

The cumulative dry weather flow of the brooks is about 0.5 cumecs.

The flow from Deephams STW is 200,000 m³ per day which averages out at 2.3 cumecs. The night-time flow is somewhat less than that during the day so it can be readily seen that Deephams STW contributes at least 80% of the dry weather flow during the daytime.

Given that, during the summer (and much of the winter) all of the clean upland flow is abstracted at Chingford by TWUL, then the water quality of the Lower Lee during dry weather is dominated by the effluent from Deephams STW.

The Pymmes and Salmon Brooks, upstream of Deephams effluent are classified 2B, as is the tidal Lee from Lea Bridge Weir to the Thames. The Pymmes and Salmon Brooks, once they include Deephams effluent, are classified 3/2B, as is the Lee Navigation from Tottenham to Bow Locks. None of the Lower Lee is classified under the E.C. Fisheries Directive.

The Lower Lee catchment on the east side of the river is much smaller, is drained partially by the semi-combined system and enters the tidal Lee via the Flood Channel and the Dagenham Brook.

Relative to the discharge from the western part, the discharge from the east has usually been considered insignificant.

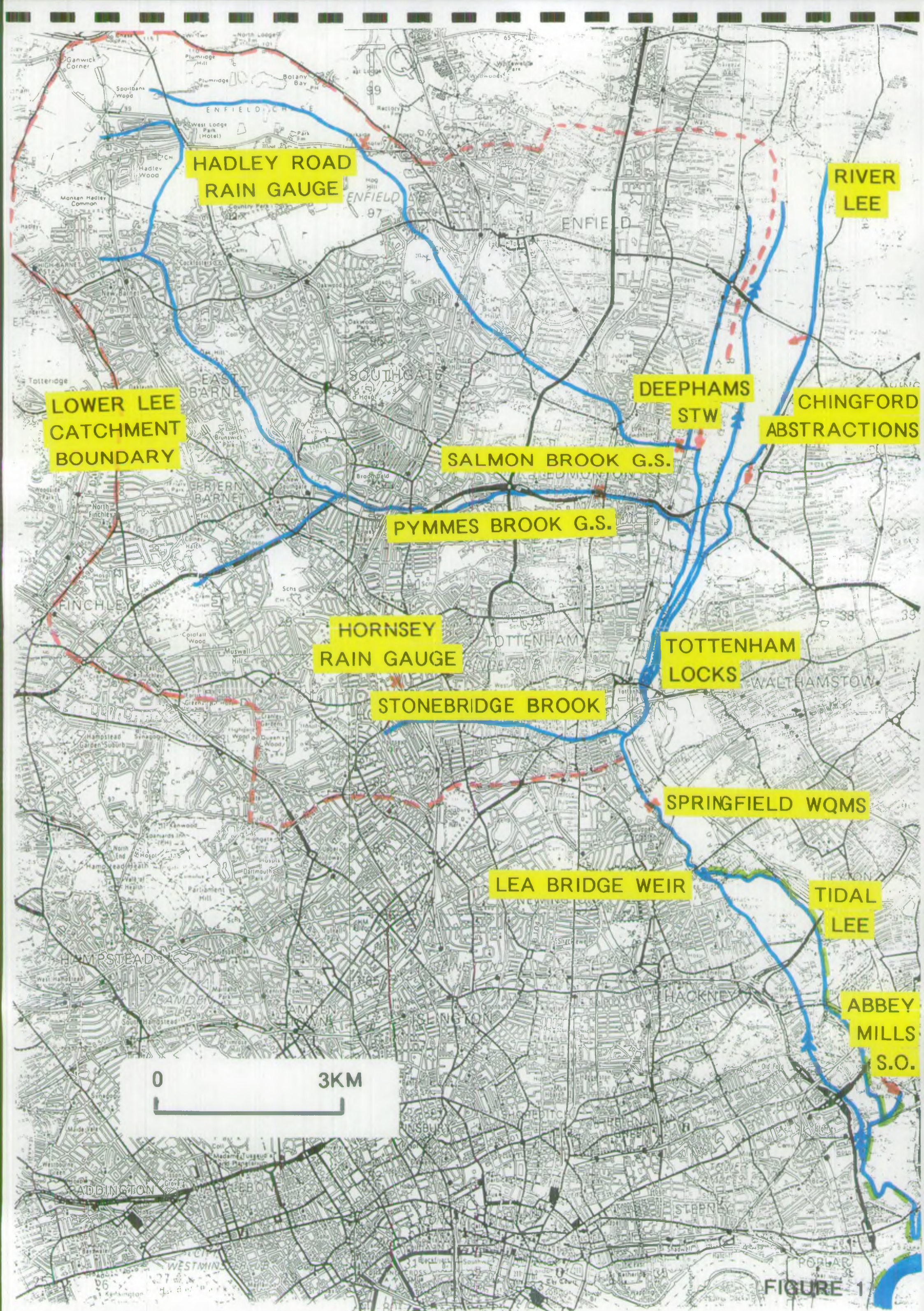


FIGURE 1

4. THE EVENT OF 7/8TH SEPTEMBER 1993

4.1 HYDROLOGICAL DATA

Tables 2 and 3 show the rainfall data, in 15 minute increments, at Hornsey and Hadley Road raingauges. They can be located on Figure 1.

The storm lasted about 1 1/2 hours with a total of 9.2 mm being recorded at Hornsey and 10.6 mm at Hadley Road.

The responses of the Pymmes and Salmon Brooks were measured at their gauging stations (Figure 1) and these are shown numerically in Tables 4 and 5 and graphically in Figure 2.

The flow in both brooks peaked at around the time the rainfall ceased, 23.00 hours, the Pymmes reaching 15 cumecs and the Salmon about 3 cumecs.

The flow through Deephams quickly reached the maximum for full treatment of 600,000 m³ per day (7 cumecs). The remainder being diverted to storm tanks (from which there was no discharge).

All upland flow was being abstracted at Chingford by TWUL so the River Lee's contribution at Tottenham was negligible. *even during storm?*

The flow response in the River Lee Navigation at the Lea Bridge is shown numerically in Table 6 and graphically in Figure 3. A peak flow of about 22 cumecs was reached at midnight. Urban runoff accounts for approximately 68% of this maximum.

On passing over Lea Bridge Weir the river becomes tidal and the situation with regards to flows and dilutions becomes less clear.

The small contribution from the eastern side of the catchment enters about 1km below Lea Bridge but the most significant contribution to the tidal reach is from Abbey Mills Pumping Station storm overflow. A total of 159,134 m³ was pumped to the river that night between 23-10 hrs and 02.30 hrs, equivalent to about 13 cumecs over that period.

Other storm sewage discharges to the Thames tideway may have contributed to a deterioration in the quality of the tidal Lee.

D1235 Raingauge Data

Site Id : 0110

HOBNSFY

MO Day : 07/09/93

	00	15	30	45		00	15	30	45
	==	==	==	==		==	==	==	==
0900	0.0	0.0	0.0	0.0	2100	0.0	0.0	1.0	2.2
1000	0.0	0.0	0.0	0.0	2200	2.8	1.8	0.8	0.2
1100	0.0	0.0	0.0	0.0	2300	0.0	0.0	0.0	0.0
1200	0.0	0.0	0.0	0.0	0000	0.0	0.0	0.0	0.0
1300	0.0	0.0	0.0	0.0	0100	0.0	0.0	0.0	0.0
1400	0.0	0.0	0.0	0.0	0200	0.0	0.0	0.0	0.0
1500	0.0	0.0	0.0	0.0	0300	0.2	0.0	0.0	0.0
1600	0.0	0.0	0.0	0.0	0400	0.0	0.0	0.0	0.0
1700	0.0	0.0	0.0	0.0	0500	0.0	0.0	0.0	0.0
1800	0.0	0.0	0.0	0.0	0600	0.0	0.0	0.0	0.0
1900	0.0	0.0	0.0	0.0	0700	0.2	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0	0800	0.0	0.0	0.0	0.0

Cycle = 45894 : Start & End Counts = 3712 3758 : Total = 9.2 (mm)

Values are rainfall amounts (mm)

Printed at 10:15 on 18-NOV-93

D1235 Raingauge Data

Site Id : 0159

HADLEY ROAD

MO Day : 07/09/93

	00	15	30	45		00	15	30	45
	==	==	==	==		==	==	==	==
0900	0.0	0.0	0.0	0.0	2100	0.0	0.0	0.2	1.6
1000	0.0	0.0	0.0	0.0	2200	2.6	3.4	1.6	0.8
1100	0.0	0.0	0.0	0.0	2300	0.0	0.0	0.0	0.0
1200	0.0	0.0	0.0	0.0	0000	0.0	0.0	0.0	0.0
1300	0.0	0.0	0.0	0.0	0100	0.0	0.0	0.0	0.0
1400	0.0	0.0	0.0	0.0	0200	0.0	0.0	0.0	0.0
1500	0.0	0.0	0.0	0.0	0300	0.0	0.0	0.0	0.0
1600	0.0	0.0	0.0	0.0	0400	0.0	0.0	0.0	0.0
1700	0.0	0.0	0.0	0.0	0500	0.0	0.0	0.0	0.0
1800	0.0	0.0	0.0	0.0	0600	0.0	0.0	0.2	0.2
1900	0.0	0.0	0.0	0.0	0700	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0	0800	0.0	0.0	0.0	0.0

Cyclic = 12888 : Start & End Counts = 8383 8436 : Total = 10.6 (mm)

Values are rainfall amounts (mm)

Printed at 10:16 on 18-NOV-93

PYMES BROOK AT SILVER STREET

Station 5369

Daily Summary

Day 7

September 1993

Grid TQ340925

Catchment 42.6 Sq.kms

I.H.No. 38022

Head (metres)

	.00	.15	.30	.45		.00	.15	.30	.45
9		0.064 2	0.064 2	0.064 2	10	0.064 2	0.064 2	0.064 2	0.064 2
11	0.064 2	0.064 2	0.064 2	0.064 2	12	0.064 2	0.064 2	0.064 2	0.064 2
13	0.064 2	0.064 2	0.064 2	0.064 2	14	0.064 2	0.064 2	0.064 2	0.063 2
15	0.064 2	0.064 2	0.064 2	0.064 2	16	0.064 2	0.064 2	0.064 2	0.064 2
17	0.064 2	0.064 2	0.064 2	0.064 2	18	0.064 2	0.064 2	0.064 2	0.064 2
19	0.064 2	0.064 2	0.064 2	0.064 2	20	0.064 2	0.064 2	0.064 2	0.064 2
21	0.064 2	0.064 2	0.064 2	0.074 2	22	0.144 2	0.291 2	0.672 2	0.926 2
23	0.937 2	0.823 2	0.713 2	0.631 2	24	0.567 2	0.509 2	0.456 2	0.396 2
1	0.350 2	0.308 2	0.275 2	0.244 2	2	0.221 2	0.201 2	0.186 2	0.176 2
3	0.166 2	0.160 2	0.153 2	0.148 2	4	0.144 2	0.140 2	0.136 2	0.133 2
5	0.129 2	0.126 2	0.124 2	0.120 2	6	0.118 2	0.116 2	0.114 2	0.112 2
7	0.109 2	0.108 2	0.106 2	0.104 2	8	0.103 2	0.102 2	0.102 2	0.105 2
9	0.109 2								

Maximum = 0.937 @ 23:00 Minimum = 0.063 @ 14:45

Day 7

Discharge (cumecs)

	.00	.15	.30	.45		.00	.15	.30	.45
9		0.187R	0.187R	0.186R	10	0.186R	0.187R	0.186R	0.186R
11	0.186R	0.187R	0.186R	0.186R	12	0.186R	0.186R	0.186R	0.186R
13	0.186R	0.186R	0.186R	0.186R	14	0.186R	0.186R	0.186R	0.181R
15	0.186R	0.186R	0.186R	0.186R	16	0.186R	0.186R	0.186R	0.186R
17	0.186R	0.186R	0.186R	0.186R	18	0.186R	0.186R	0.186R	0.186R
19	0.186R	0.186R	0.186R	0.186R	20	0.186R	0.186R	0.186R	0.186R
21	0.186R	0.187R	0.187R	0.235R	22	0.688r	2.077r	8.248r	14.303r
23		11.696r	9.130r	7.412r	24	6.189r	5.187r	4.306r	3.416r
1	2.795r	2.275r	1.897r	1.569r	2	1.342r	1.156r	1.024r	0.940r
3	0.858r	0.810r	0.756r	0.718r	4	0.688r	0.659r	0.630r	0.609r
5	0.581r	0.545R	0.531R	0.504R	6	0.490R	0.478R	0.465R	0.453R
7	0.433R	0.429R	0.415R	0.402R	8	0.397R	0.391R	0.391R	0.410R
9	0.435R								

Maximum = 14.686 @ 23:00 Minimum = 0.181 @ 14:45 Mean = 1.286

r - pressure tapping used

Lower case letter - modular flow

Upper case letter - non-modular flow

Crump

Date Run 10:19 18 Nov 1993

N R A - T H A M E S R E G I O N

SALMON BROOK AT EDMONTON GREEN

Station 5357

Daily Summary

Day 7

September 1993

Grid TQ343937

Catchment 22.4 Sq.kms

I.H.No. 38014

Head (metres)

	.00	.15	.30	.45		.00	.15	.30	.45
9		0.098	0.098	0.097	10	0.098	0.098	0.098	0.099
11	0.098	0.098	0.098	0.098	12	0.098	0.097	0.097	0.097
13	0.097	0.096	0.096	0.096	14	0.096	0.096	0.096	0.095
15	0.095	0.095	0.095	0.095	16	0.095	0.095	0.095	0.095
17	0.095	0.095	0.095	0.095	18	0.095	0.095	0.095	0.095
19	0.095	0.095	0.095	0.095	20	0.095	0.095	0.095	0.095
21	0.095	0.095	0.095	0.098	22	0.119	0.167	0.327	0.452
23	0.564	0.582	0.532	0.465	24	0.403	0.362	0.323	0.288
1	0.267	0.255	0.245	0.236	2	0.228	0.221	0.215	0.209
3	0.203	0.199	0.195	0.191	4	0.187	0.183	0.179	0.176
5	0.174	0.171	0.168	0.167	6	0.165	0.163	0.161	0.159
7	0.159	0.158	0.158	0.157	8	0.155	0.155	0.154	0.152
9	0.151								

Maximum = 0.582 @ 23:15 Minimum = 0.095 @ 14:45

Day 7

Discharge (cumecs)

	.00	.15	.30	.45		.00	.15	.30	.45
9		0.046	0.046	0.044	10	0.046	0.046	0.046	0.047
11	0.046	0.046	0.046	0.046	12	0.046	0.044	0.044	0.044
13	0.044	0.043	0.043	0.043	14	0.043	0.043	0.043	0.042
15	0.042	0.042	0.042	0.042	16	0.042	0.042	0.042	0.042
17	0.042	0.042	0.042	0.042	18	0.042	0.042	0.042	0.042
19	0.042	0.042	0.042	0.042	20	0.042	0.042	0.042	0.042
21	0.042	0.042	0.042	0.046	22	0.074	0.175	0.926	1.877
23	2.949		2.623	1.992	24	1.473	1.165	0.901	0.688
1	0.572	0.510	0.461	0.420	2	0.384	0.355	0.331	0.308
3	0.286	0.272	0.259	0.245	4	0.233	0.220	0.208	0.200
5	0.194	0.186	0.177	0.175	6	0.170	0.164	0.159	0.154
7	0.154	0.152	0.152	0.150	8	0.145	0.145	0.143	0.138
9	0.136								

Maximum = 3.139 @ 23:15 Minimum = 0.042 @ 14:45 Mean = 0.293

Flat-V

Date Run 10:06 6 Dec 1993

RIVER LEE AT LEA BRIDGE

Station 5390

Daily Summary

Day 7

September 1993

Grid TQ352872

Catchment 170 Sq.kms

I.H.No. 0

Head (metres)

	.00	.15	.30	.45		.00	.15	.30	.45
9		5.828	5.826	5.828	10	5.824	5.830	5.832	5.835
11	5.838	5.841	5.850	5.858	12	5.852	5.861	5.862	5.860
13	5.869	5.860	5.848	5.851	14	5.847	5.843	5.840	5.832
15	5.842	5.845	5.848	5.852	16	5.857	5.846	5.848	5.839
17	5.840	5.841	5.846	5.845	18	5.858	5.850	5.850	5.842
19	5.844	5.835	5.837	5.839	20	5.844	5.849	5.855	5.862
21	5.853	5.856	5.848	5.846	22	5.866	5.887	5.908	5.924
23	5.924	5.920	5.931	5.929	24	5.930	5.922	5.910	5.881
1	5.872	5.855	5.852	5.848	2	5.848	5.848	5.845	5.836
3	5.834	5.826	5.822	5.825	4	5.824	5.832	5.836	5.845
5	5.850	5.854	5.858	5.851	6	5.852	5.842	5.837	5.831
7	5.824	5.830	5.835	5.842	8	5.848	5.856	5.866	5.857
9	5.856								

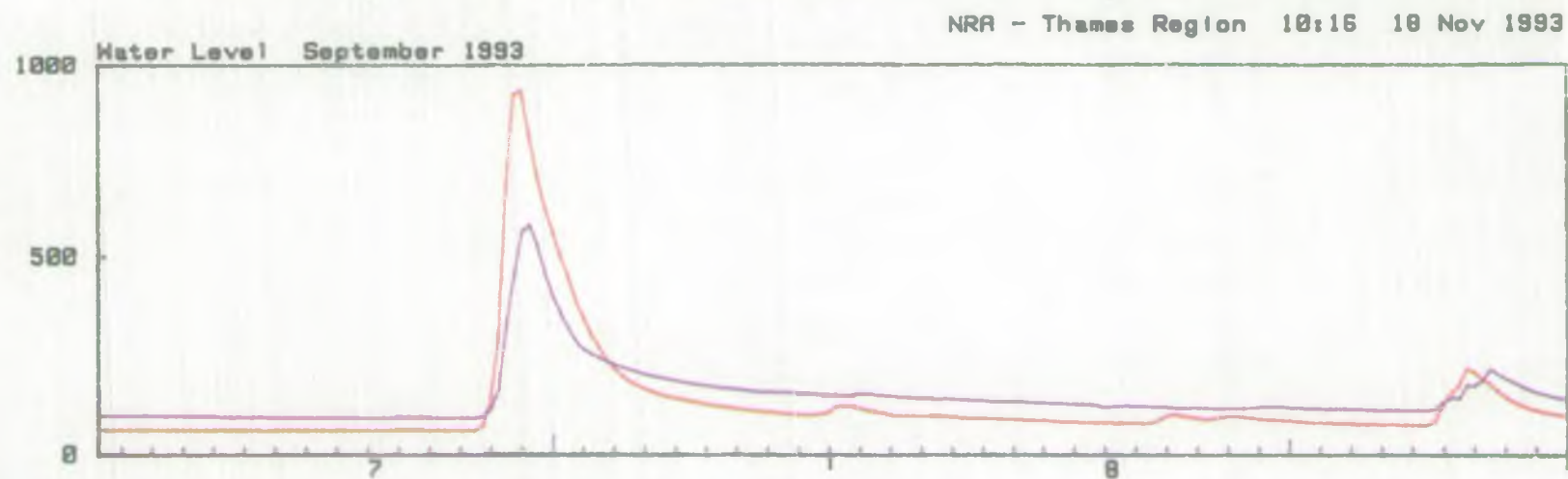
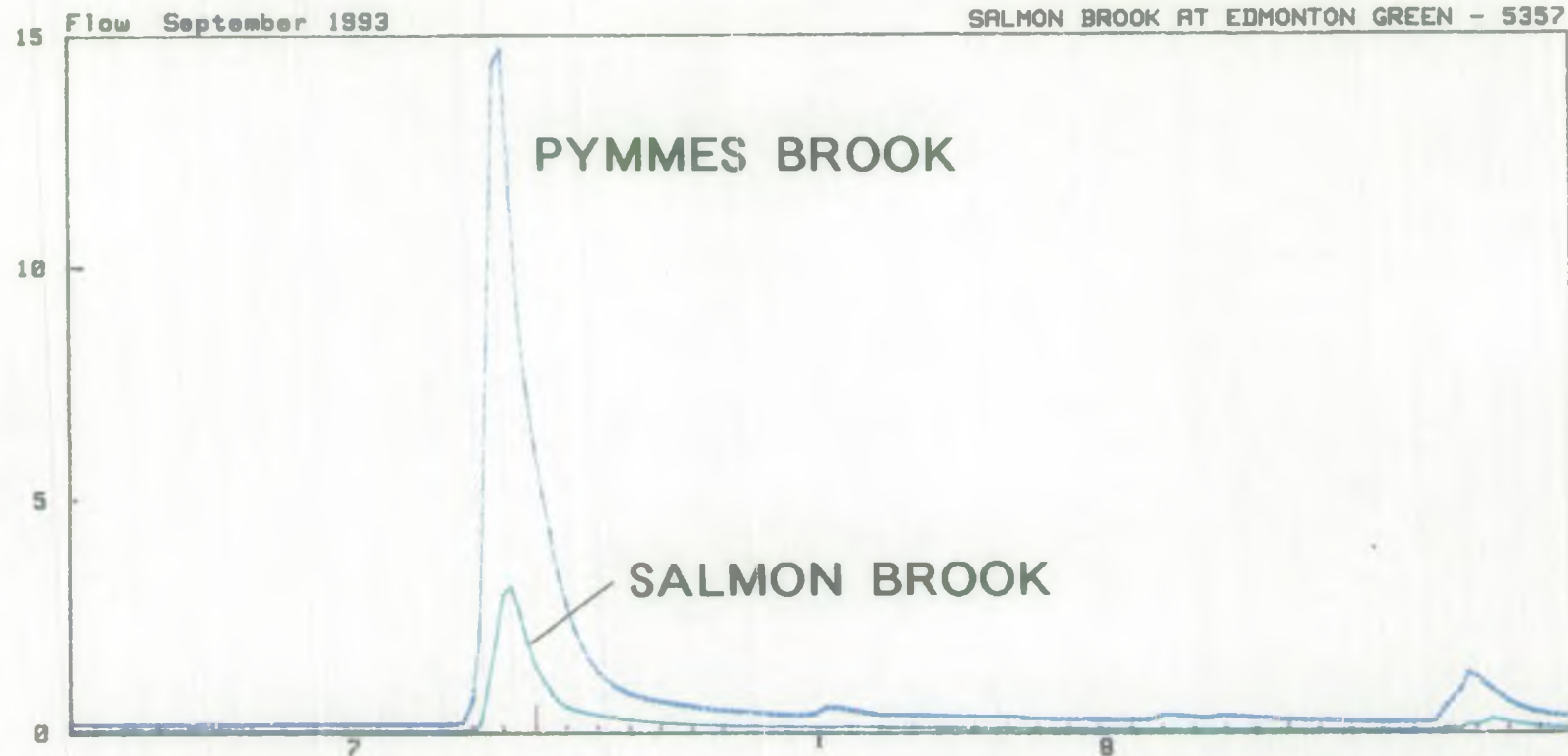
Maximum = 5.931 @ 23:30 Minimum = 5.822 @ 03:30

Day 7

Discharge (cumecs)

	.00	.15	.30	.45		.00	.15	.30	.45
9		3.370	3.290	3.270	10	3.190	3.450	3.520	3.650
11	3.650	3.700	3.970	3.850	12	3.870	3.850	4.230	4.500
13	4.550	4.810	5.490	4.680	14	4.630	4.480	4.730	4.500
15	3.850	3.370	3.720	3.450	16	3.570	4.580	4.250	4.380
17	4.050	3.520	3.500	3.290	18	3.420	3.750	3.320	4.250
19	4.130	4.180	3.620	3.090	20	3.020	3.020	3.140	3.220
21	4.550	4.330	4.680	5.230	22	5.110	8.660	11.780	14.580
23	16.290	18.580	20.140	21.730	24	21.980	21.980	21.430	20.390
1	19.180	17.650	15.980	14.750	2	13.770	12.790	11.780	11.250
3	10.250	9.260	8.180	7.020	4	6.470	5.810	5.280	4.810
5	4.860	4.580	4.930	5.610	6	5.360	5.330	5.410	5.110
7	4.830	4.600	3.770	3.670	8	3.320	3.390	3.220	4.780
9	4.500								

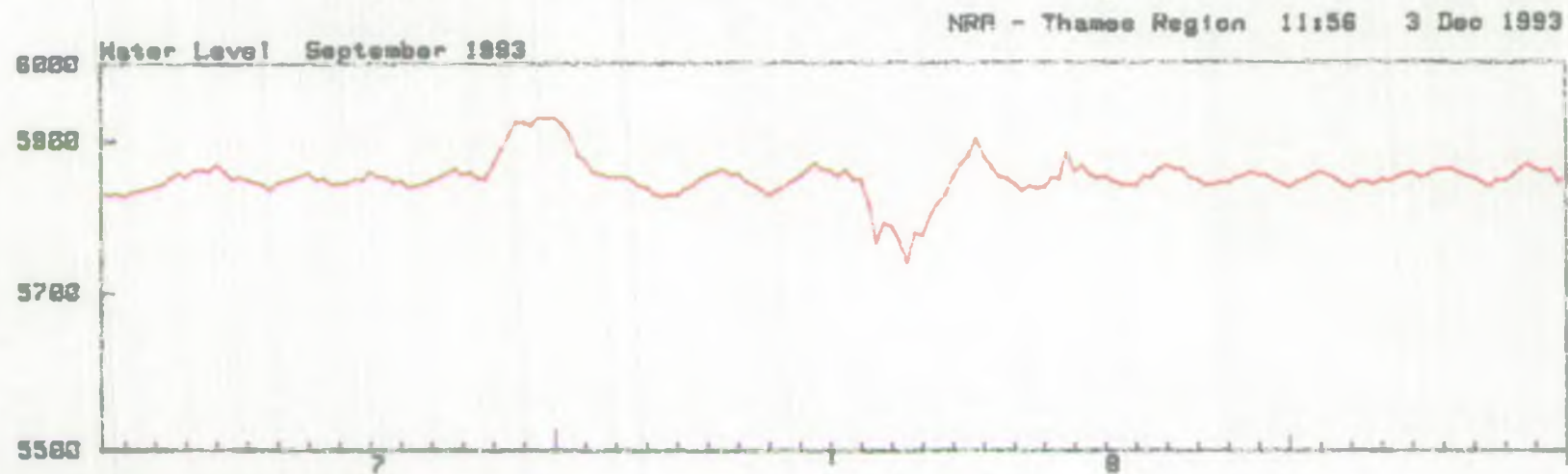
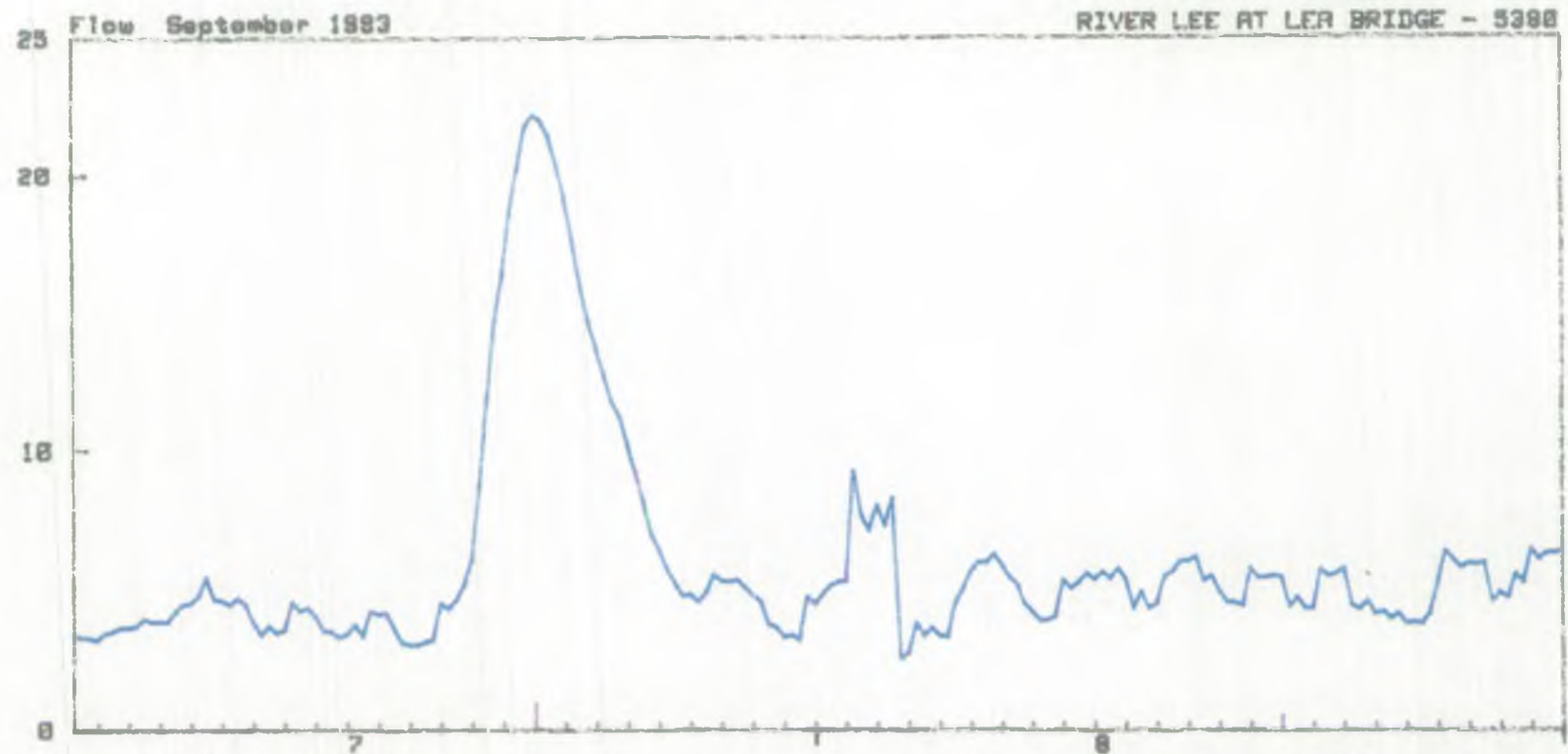
Maximum = 22.180 @ 00:00 Minimum = 3.020 @ 20:00 Mean = 6.823
 Ultrasonic Date Run 11:59 3 Dec 1993



Weir 1 Flow	Weir 1 Head	Weir 1 Flow	Weir 1 Head
Station 3369	Station 5369	Station 5357	Station 5357

midnight
9:15 a.m.

FIGURE 2



Weir 1 Flow
Station 5398
Weir 1 Head
Station 5398

midnight
9:15 a.m.

FIGURE 3

4.2 THE EFFECT ON THE RIVER

By 09.45 hrs on the 8th September reports were being received concerning dead and distressed fish between Tottenham and Springfield. These were confirmed on inspection.

Field dissolved oxygen measurement at Springfield showed the concentration to be 0% but at Tottenham it was already rising significantly. By 11.00 hrs Fisheries were installing an aerator but the D.O. rose rapidly before it could be brought into action and the exercise was abandoned .

Figures 4, 5, and 6 show the print-outs from the Automatic Water Quality Monitoring Station at Springfield. Figure 4 demonstrates that the D.O. plunged to zero from 07.00 to 10.00 hrs by which time the flow had dropped to near normal. On Figure 5 the Conductivity reached at minimum at 03.00 hrs and the pH dipped to 6.1 at about 13.00 hrs. Figure 6 shows that the ammoniacal nitrogen reached a peak of 2.6 mg/l at 10.00 hrs.

Whilst there are a number of storm overflows in the Barnet area it is thought that the volumes involved and their distance from Tottenham of (8 km or more) renders them of minor significance in this event.

It may be reasonable to assume that a significant proportion of the ammonia came from Deephams as the retention time in the aeration units was rapidly reduced to a third of normal.

If this is the case, with Deephams effluent contributing about one third of the peak flow, the ammonia concentration in the effluent may have reached as much as 10 mg/l. In reality it is likely that a proportion of the ammonia came from diffuse sources.

The plug of nil D.O. water passed over Lea Bridge Weir from approximately 13.00 hrs to 16.00 hrs, no doubt re-aerating as it did so. It met a rising tide, sufficient to create low velocities and a resultant further plunge in D.O. levels. The tide was a large one (6.4m) and peaked at approximately 18.00 hrs.

As the tide turned the low D.O. plug then rapidly flowed down into the Thames.

During that evening reports were received of dead and distressed fish in the tidal Lee and whilst most had been swept into the Thames many were left above the water level by the falling tide.

Within 24 hours the river had recovered to normal.

Springfield Park AWQMS

7-9-93 to 9-9-93

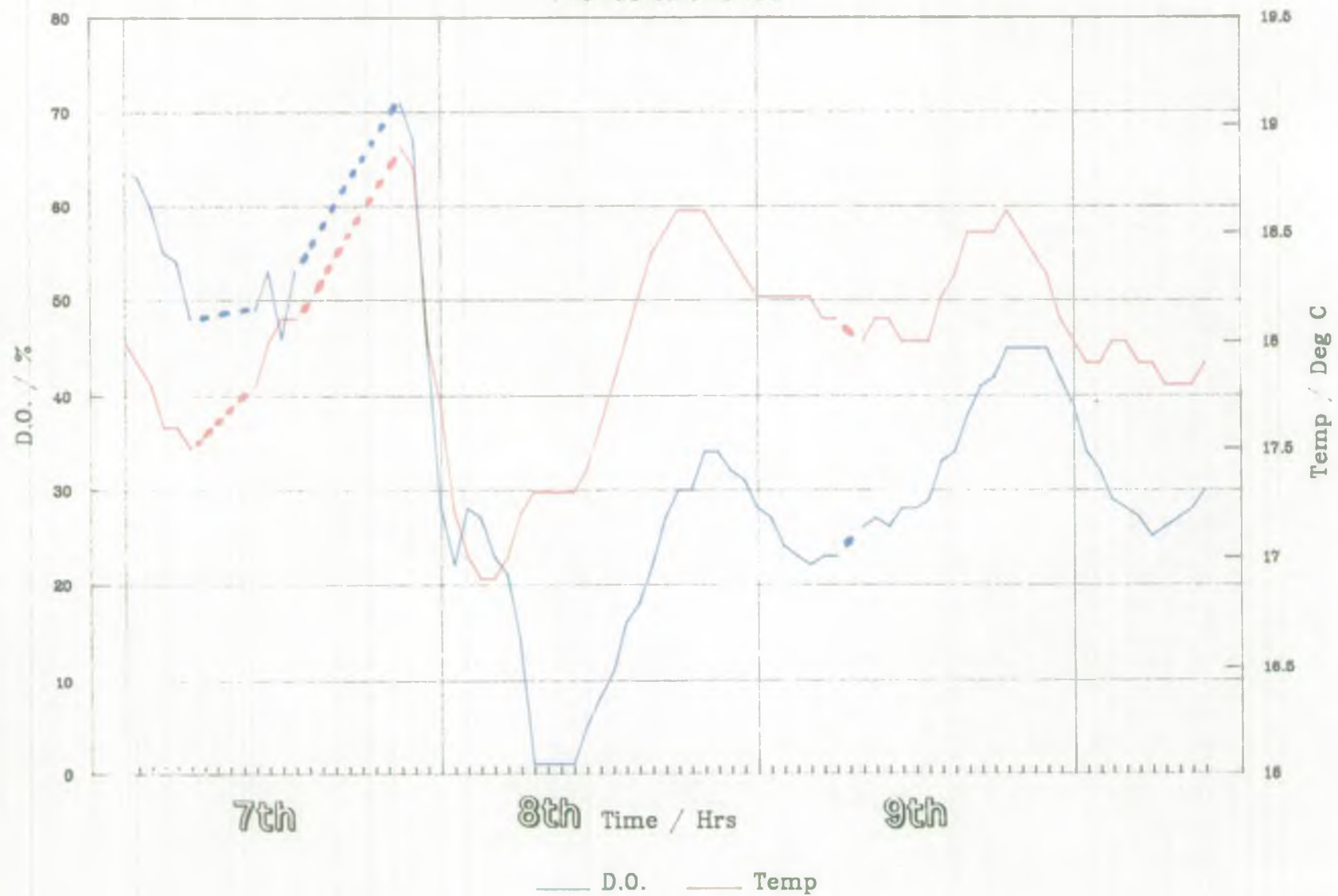


FIGURE 4

Springfield Park AWQMS

7-9-93 to 9-9-93

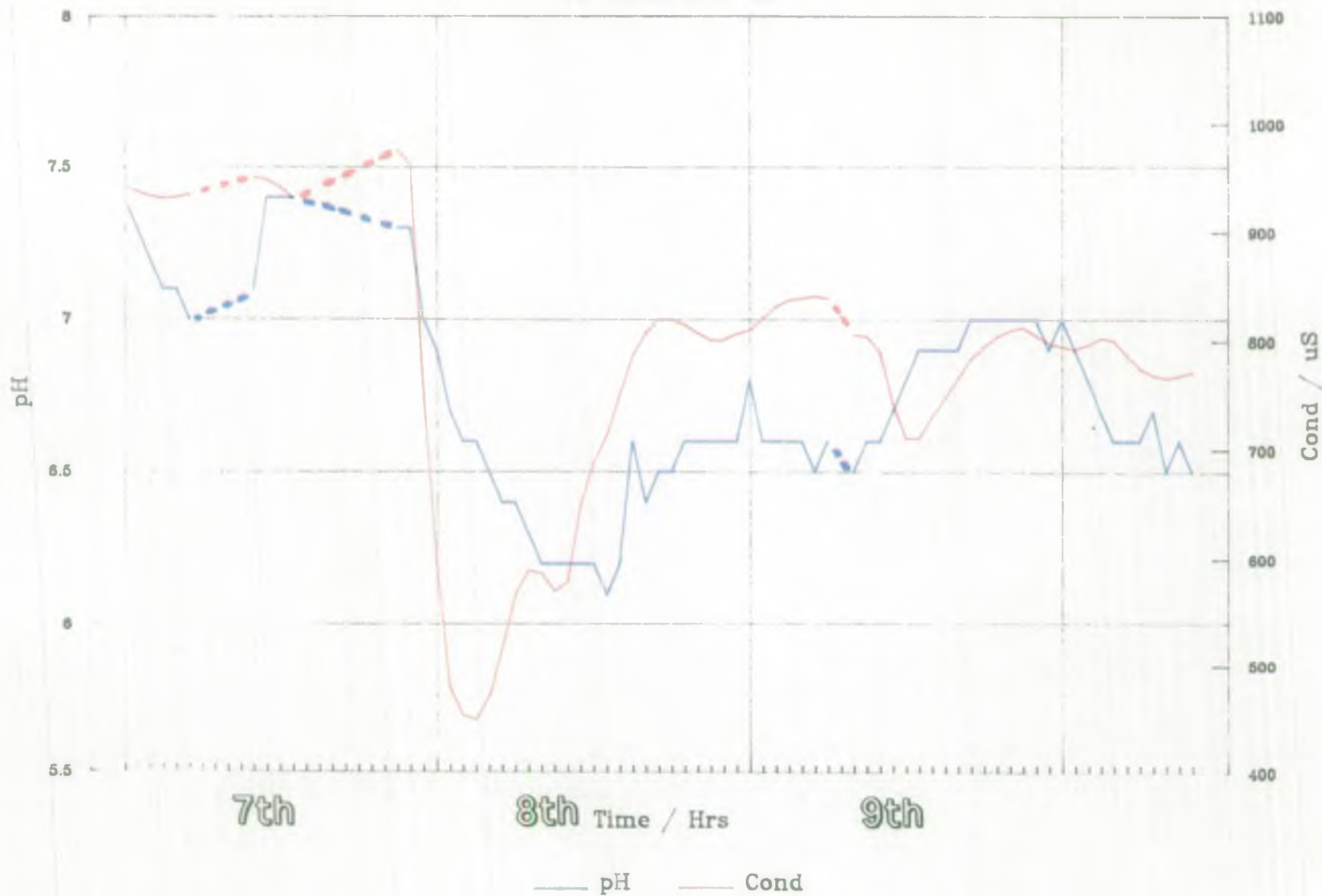


FIGURE 5

Springfield Park AWQMS

7-9-93 to 9-9-93

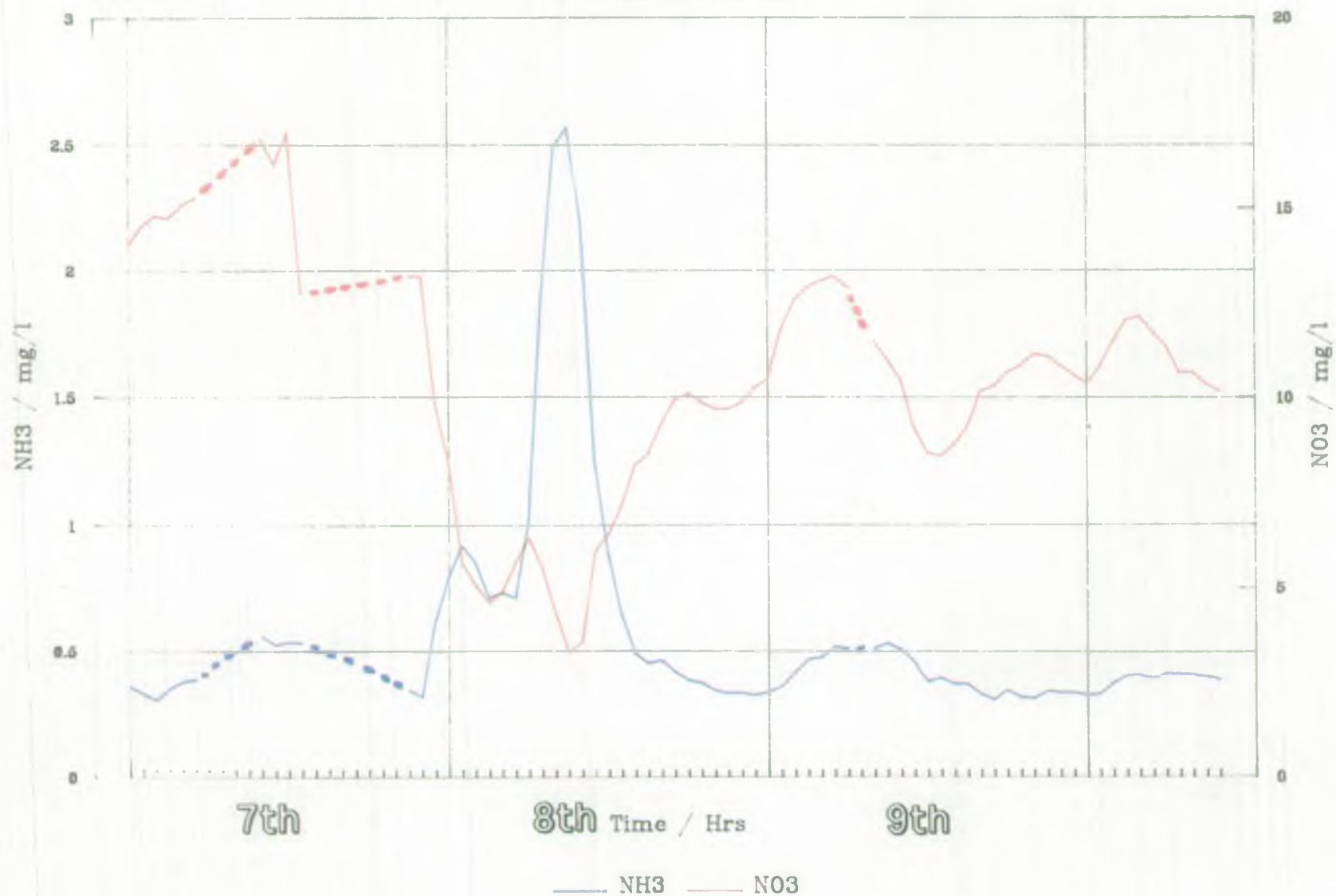


FIGURE 6

5. CONCLUSIONS AND RECOMMENDATIONS

Personal experience of living in the catchment and keeping daily rainfall data from 1976 to 1992 has shown that about 10mm of short duration rainfall following a dry spell provides the worst scenario in terms of dissolved oxygen and fish deaths.

Comment

Rainfall totals above or below this figure have less effect.

The event of 7/8th September fell into this worst scenario category and many thousands of fish died.

The river clearly failed its RQO of 3/2B (Tottenham to Lea Bridge) or 2B (Lea Bridge to the Thames).

It has always been assumed that urban runoff provides most of the B.O.D. in such events and that the more recent lack of gully cleansing is a major factor but before remedial measures can be considered the B.O.D. contributions from the various sources need to be quantified.

N R A Thames Region - Environmental Quality

Incident Report NE930607

Printed on Tuesday 23/11/1993

File Ref NE2/53B/607/93

Dealt with by DJM

Incident Details

Informant Terry Mansbridge
7 Warren Rd
E.4

081 524 0869
Location Tottenham-Thames

Grid Reference TQ34708770

Reported Date 08/09/1993

Time 09:45

Watercourse R.Lee Navigation

Catchment Lee-Lea Valley Road/Thames

Incident Class Major Category 1

Type Urban Runoff

Sub-Type No Sub-Type

Fish Kill Greater than 1000

Tripartite No

Response Details

Polluter Urban runoff

Pollution Yes

Response Date 08/09/1993

Time 10:00

Arrival Site 08/09/1993

Time 10:25

Follow Up No

Priority Immediate

Recommendation No Further Action

Nature & Action Taken

Dead and distressed fish, R.Lee Navigation, Tottenham - Lea Bridge.

Several complaints following overnight storms. All clean, upstream flow being abstracted at Chingford.

At Tottenham Locks the Pymmes Brook was in spate with urban runoff. It was murky with an oil film but not sufficient to affect the many geese. The D.O. was 50%. No dead or distressed fish seen.

At Springfield the D.O. was 10% and many dead and distressed fish were apparent - mainly roach and perch up to 20cm.

Fisheries contacted and they set about the installation of aeration equipment. In the meantime Lea Bridge was inspected. D.O. 30% No dead or distressed fish seen. Likewise throughout the tidal reaches.

Returned to Springfield where Fisheries were setting up the aerators but the D.O. had risen to 25% and the distressed fish had recovered so the exercise was abandoned.

Two further calls received during the evening regarding dead fish in the tidal Lee. Confirmed on inspection - many (perhaps thousands) dead roach and eels on a falling tide. D.O. approx 15%. Apparently the low D.O. slug passed over Lea Bridge Weir and met a rising tide, allowing the D.O. to drop to virtually nil again.

D. Maddocks.

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE930406

Printed on Tuesday 23/11/1993

File Ref NE2/53B/406/93

Dealt with by DJM

Incident Details

Informant Inspector Jones
RSPCA

Reported Date 10/06/1993
Time 23:22

Watercourse Lee Nav

Catchment Lee-Lea Valley Road/Thames

081-653 3420

Incident Class Signif'nt Category 2

Location Clapton Springfield

Type Urban Runoff

Sub-Type No Sub-Type

Grid Reference TQ35008740

Fish Kill 501-1000

Tripartite No

Response Details

Polluter Urban runoff

Pollution Yes

Response Date 11/06/1993

Time 09:00

Arrival Site 11/06/1993

Time 10:00

Follow Up No

Recommendation No Further Action

Priority Next Working Day/Later

Nature & Action Taken

Fish mortality, lower Lee, following storms.

Late night call regarding fish in distress and dying at Harrington Rd.E5, about 1 km above Lea Bridge Weir.

Not unexpected as there had been storms during the day and the whole upland flow was being abstracted at Chingford.

The Lower Lee from Tottenham to the Thames was all around 50% dissolved oxygen, and rising, with a considerable volume of clean water starting to pass the intakes at the time of the inspection.

I saw no dead fish above Lea Bridge Weir but with the tide out some 50 or more dead roach (plus the odd flounder and gudgeon) could be seen stranded on mud banks at Three Mills and by Bow Locks.

I estimate the mortality to have been hundreds to a few thousands, mainly roach.

D.Maddocks.

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE920274

Printed on Tuesday 23/11/1993

File Ref NE2/43/274/92

Dealt with by KAD

Incident Details

Informant R.Walker
NRA WX

Reported Date 29/05/1992
Time 09:30

Watercourse Lee

Catchment Lee-Lea Valley Road/Thames

0992 645050

Incident Class Minor Category 3

Location Hackney, Lea Bridge Weir

Type Urban Runoff

Sub-Type Not Found

Grid Reference TQ35708660

Fish Kill 11- 200

Tripartite No

Response Details

Polluter

Pollution Yes

Response Date 29/05/1992

Time 09:35

Arrival Site 29/05/1992

Time 11:30

Follow Up No

Recommendation No Further Action

Priority Immediate

Nature & Action Taken

Urban runoff on Lower Lee

A massive storm had caused DO levels to fall at Springfield on the autometer. I took DO readings along the Lower Lee at various points.

Pymmes Brook Ferry Lane 11:50 DO=65%

Lee New Cut, Ferry Lane 11:55 DO=66%

Lee Springfields 12:15 DO=48%

Lee Lea Bridge Weir 12:30 DO=25%

Fish were in distress at Lea Bridge Weir. The water was black and silty. I took a sample KD076.

Reasons for Incident Classification

No Information.

N R A Thames Region - Environmental Quality

Incident Report NE900341

Printed on Tuesday 23/11/1993

File Ref EQ5/43/341/90

Dealt with by KAD

Incident Details

Informant Mr. Berg,
172 Albion Road,
Stoke Newington, N8

Reported Date 15/08/1990
Time 17:10
Watercourse River Lee
Catchment Lee-Lea Valley Road/Thames
Incident Class Minor Category 3
Type Urban Runoff
Sub-Type Not Found
Fish Kill 201- 500
Tripartite No

071 241 6301

Location Hackney u/s and d/s Lea Bridge
Weir

Grid Reference TQ35708660

Response Details

Polluter

Pollution Yes
Response Date 15/08/1990
Time 17:10
Arrival Site 15/08/1990
Time 17:45
Follow Up Follow Up Completed
Priority Immediate

Recommendation No Further Action

Nature & Action Taken

Fish gasping at Lea Bridge Weir

The dissolved oxygen levels at the weir were only 6%.
The reduction was caused by rainfall after about a months dry weather.

K A DOUSE
17.09.90

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE890347

Printed on Tuesday 23/11/1993

File Ref EQ5/43/347/89

Dealt with by SJM

Incident Details

Informant Mr Tate
46 Queensland House,
North Woolwich

Reported Date 11/08/1989
Time 14:20
Watercourse Lee - Bow Creek
Catchment Lee-Lea Valley Road/Thames
Incident Class Signif'nt Category 2
Type Sewage
Sub-Type Storm Overflow (Sewer)
Fish Kill 201- 500
Tripartite No

Location Canning Town, Bow Creek

Grid Reference TQ39608070

Response Details

Polluter Abbey Mills Pumping Station

Pollution Yes
Response Date 11/08/1989
Time 16:10
Arrival Site / /
Time 00:00
Follow Up No
Priority No Information

Recommendation No Information

Nature & Action Taken

REPORT OF HUNDREDS OF DEAD DACE IN THE LEE AT BOW CREEK, 11/8/89.

A sample of the Lee at Carpenters Rd. at 16:10 contained 71% D.O. No dead fish were seen. Other sites inspected were Three Mills Lane, 16:20, Canning Town, 16:35, and Orchard Place, 17:00 hours. No samples could be taken at these points as the level of tide was too low.

No dead fish were seen throughout the inspection although there was evidence of foul sewage in the river at Orchard Place.

A call to Abbey Mills revealed that a storm discharge was made between 09:45 and 15:00 hours on 10/8/89, the major part being from 12:30 onwards. This means that the discharge started on the out going tide and continued until the tide was rising again. Low tides on the 11/8/89 were at 01:00 and 13:00 hours so the inspection started 3 hours after the second low tide. Any dead fish were expected to have been washed into the tideway by the time of my inspection.

The complainant did not leave a phone number and so cannot be contacted.

S. Mitchell

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE890327

Printed on Tuesday 23/11/1993

File Ref EQ5/43/327/89
Dealt with by KAD

Incident Details

Informant	Mr. Poole, 253 Everying Road, Clapton. E5	Reported Date	27/07/1989
		Time	09:10
		Watercourse	Lee Navigation
		Catchment	Lee-Lea Valley Road/Thames
Location	01-806-8945 Walthamstow Marsh, Springfield Marina	Incident Class	Minor Category 3
		Type	Natural
Grid Reference	TQ34808760	Sub-Type	Dissolved Oxygen Level
		Fish Kill	11- 200
		Tripartite	No

Response Details

Polluter	Pollution	No
	Response Date	27/07/1989
	Time	10:00
	Arrival Site	/ /
	Time	00:00
Recommendation	Follow Up	No
No Information	Priority	No Information

Nature & Action Taken

A report was received from Mr. Poole on 27/7/89 about dead fish at Springfield Marina.

An inspection of the area revealed various species of dead fish around boats moored on the river Lee (Navigation). The dissolved oxygen level at 10:40 was only 24%. Automatic D.O. readings showed levels down to zero on 26/7/89 and only rising to a maximum around 20% over the next few days. This confirmed there had been a significant reduction in dissolved oxygen levels. Toxicity test showed the water to be non-toxic after aeration.

Mr. Maddocks had dealt with an incident further upstream on the New Cut involving dead fish, the previous day. Apparently there had been local storms in the area. Therefore a combination probably, of urban run-off and a large amount of the flow deriving from Deephams STW increasing the B.O.D. were assumed to be the cause of the low dissolved oxygen levels and resulting fish deaths.

K. Douse

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE890239

Printed on Tuesday 23/11/1993

File Ref EQ5/43/239/89

Dealt with by JEA

Incident Details

Informant Mr Ewings
27 York Road
London E17

Location 01-521-5294
Hackney, Lea Bridge Road,
Essex Wharf.

Grid Reference TQ35508670

Reported Date 28/05/1989
Time 13:45
Watercourse Lee
Catchment Lee-Lea Valley Road/Thames
Incident Class Minor Category 3
Type Natural
Sub-Type Dissolved Oxygen Level
Fish Kill 11- 200
Tripartite No

Response Details

Polluter

Pollution No
Response Date 28/05/1989
Time 15:45
Arrival Site / /
Time 00:00
Follow Up Follow Up Completed
Priority No Information

Recommendation No Information

Nature & Action Taken

Hundreds of dead fish.

NOTE, please include as an appendix to JEA report when completed.

On the evening of Friday the 26 May 1989 a telephone complaint regarding the above was passed to me by the Radio Room.

I contacted the complainant who explained that within the stretch of the River Lee Navigation downstream of the Springfield marina he had seen about 100 dead sticklebacks. No other fish species appeared to be affected.

The incident seemed to be connected with the recent heavy rain in North London and resultant low D.O. conditions downstream of Tottenham Locks (see previous incident no. 05890232 SJM) and it was decided an inspection would not be necessary.

P. Rudd

On 28th May, 1989 a Mr. Ewing of York Road, Tottenham reported many dead fish on the Lee Navigation in the vicinity of Lea Bridge Road.

Inspection within TLOS did not substantiate this. The Lee Navigation was checked at Tottenham Locks, Springfield and upstream of Lea Bridge Weir. No distressed fish were observed.

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE890239 (Continued)

Six dead sticklebacks seen at Lea Bridge Weir.

Breeding/spawning stress, low D.O. and high percentages of Deephams effluent in this vicinity can account for small numbers of dead fish.

J. Arikans

Reasons for Incident Classification

No Information.

N R A Thames Region - Environmental Quality

Incident Report NE880356

Printed on Tuesday 23/11/1993

File Ref ECE/43/5/356/88

Dealt with by DJM

Incident Details

Informant MR LANSTON
124 ALBERT ROAD
ILFORD
ESSEX
01-987-9597
Location CANNING TOWN, A13

Grid Reference TQ39208140

Reported Date 31/08/1988
Time 20:40
Watercourse LEE (BOW CREEK)
Catchment Lee-Lea Valley Road/Thames
Incident Class Minor Category 3
Type Urban Runoff
Sub-Type Not Found
Fish Kill 11- 200
Tripartite No

Response Details

Polluter URBAN RUNOFF

Pollution Yes
Response Date / /
Time 00:00
Arrival Site / /
Time 00:00
Follow Up No Information
Priority No Information

Recommendation No Information

Nature & Action Taken

Mr. Langston reported that he had seen about 40 dead dace in the River Lee at Canning Town some hours earlier.

Inspection of the tidal reaches some two tides later failed to reveal any dead fish.

The D.O. from Lea Bridge to the Thames was around 50% following heavy showers the previous afternoon.

D. Maddocks
7.10.88

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE860328

Printed on Tuesday 23/11/1993

File Ref ECE/43/5/328/86

Dealt with by PJR

Incident Details

Informant MEMBER OF THE PUBLIC

Reported Date 15/10/1986

Time 00:00

Watercourse RIVER LEE

Catchment Lee-Lea Valley Road/Thames

Incident Class Signif'nt Category 2

Type Sewage

Location STRATFORD

Sub-Type Storm Overflow (Sewer)

Grid Reference

Fish Kill 11- 200

Tripartite No

Response Details

Polluter ABBEY MILLS PUMPING STATION
STRATFORD

Pollution Yes

Response Date 15/10/1986

Time 00:00

Arrival Site / /

Time 00:00

Recommendation No Information

Follow Up No

Priority No Information

Nature & Action Taken

FISH MORTALITY RIVER LEE, STRATFORD.

On the morning of the 15th October, 1986 a report was received from a member of the public regarding the appearance of dead fish on the River Lee at Stratford.

Initial inspection suggested that the cause of the mortality was due to heavy overnight rains which began at approximately 20:00 hours on the previous evening and continued until approximately 09:00 hours. Rainfall measurements suggested that in some areas in excess of 17 mm of rain fell during this period.

Further investigations revealed that a significant quantity of storm sewage was discharged from Abbey Mills Pumping Station into the Abbey Creek between the hours of 03:00 and 08:00 hours (see attached report).

Station	Time of discharge (BST)	Volume mg/d
A	04.40 - 07.30	39
B	04.00 - 06.30	
D	02.45 - 04.00	5

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE860328 (Continued)

Water quality and bacteriological samples were taken for analysis and the results, which are attached to this report, confirm the suspicion that storm sewage causing low dissolved oxygen levels was responsible for the fish mortality.

The actual number of dead fish appears in this case to be small however, it is believed the reason for this is linked to the storm sewage discharging into a falling tide. Had the situation been reversed the consequences would have been more serious.

Conversations with the Works Superintendent, Mr. Adkins, at Abbey Mills revealed that the instruction to "go to storm" was in this instance due to Beckton Sewage Works being unable to cope with the increased flow. Furthermore it appears that Beckton may not have consent to discharge storm sewage into the Barking Creek. I believe therefore that further discussions should take place on this matter.

In addition to the above, I believe that the shift engineers at Beckton who authorised the storm discharge from Abbey Mills should be made aware of the possible consequences of their instructions and if possible should take into account the tidal condition prevalent at the time.

P. Rudd

Reasons for Incident Classification

No Information.

N R A Thames Region - Environmental Quality

Incident Report NE860209

Printed on Tuesday 23/11/1993

File Ref ECE/43/5/209/86

Dealt with by CTM

Incident Details

Informant RECEIVED VIA RADIO ROOM
READING.

Reported Date 05/07/1986
Time 13:00

Watercourse R. LEE

Catchment Lee-Lea Valley Road/Thames

Incident Class Minor Category 3

Type Urban Runoff

Sub-Type Not Found

Fish Kill Greater than 1000

Tripartite No

Location BOW, WARTON ROAD

Grid Reference

Response Details

Polluter UNSURE

Pollution Yes

Response Date / /

Time 00:00

Arrival Site / /

Time 00:00

Follow Up No

Recommendation No Information

Priority No Information

Nature & Action Taken

FISH MORTALITY R. LEE AT BOW LOCKS AND DOWNSTREAM.

On Saturday 5th July, whilst working at The Grange a radio message was received that there were hundreds of dead fish in the R. Lee at Warton Road, Bow.

Mr. P. Rudd and myself left Waltham Cross at 13:00 hours to investigate. Inspections of the R. Lee at Hackney Marsh, Carpenters Road, Warton Road, Bow Locks and A13 revealed appreciable quantities of dead and dying fish. Eels were gasping and the water surface, and at Bow Locks many species were seen dead.

Various water quality samples were taken, as listed below.

SAMPLE NO CM124

R. Lee at Carpenters Road, cloudy with some suspended solids.
LER .0057, 14:00 hours, 20°C, 30% DO.

SAMPLE NO CM125

R. Lee at Bridgewater Road, some suspended solids 25% DO, 20°C, 14:20 hours.

Continued...

N R A Thames Region - Environmental Quality

Incident Report NE860209 (Continued)

SAMPLE NO CM126*

R. Lee at A13, 8% DO, 21oC, 16:00 hours, LER .0056

SAMPLE NO CM127*

R. Lee at Bow Locks 16:45 hours, 21oC, 10% DO

*Dead fish at these locations.

It was believed that the low DO% had been caused by the exceptional storm the previous evening, flushing out the surface water system into the R. Lee whose water levels already low due to lack of rainfall.

Fish taken gasping from the river recovered when placed into clean water. Samples of various fish species were collected (alive) and given to the Biology Department.

A visit was made to Abbey Mills sewage pumping station to determine the volume of sewage allowed into the River Lee (via their consented storm overflow) no appreciable volume of sewage had entered the river from the Canning Town pumping station storm overflow but it was impossible to determine what effect this had had upon the river.

A further inspection was carried out the following morning when the river was seen to be more normal, dissolved oxygen levels of 50 and 60% were obtained and no dead fish or fish gasping were seen. Those fish that were already dead were washed into the Tideway and on Monday 7th July various reports were received regarding these.

C. T. Millikin

Reasons for Incident Classification

No Information.