

catchment management plan



RIVER STOUR third annual review January 1996 - December 1996



**ENVIRONMENT
AGENCY**

River Stour Catchment Management Plan (CMP)

Previous CMP Documents

River Stour CMP Consultation Report
December 1992 (out of Stock)

River Stour CMP
Summary Leaflet - December 1992

The River Stour Final Plan - December 1993

First Annual Review - February 1995

Second Annual Review - February 1996

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FOREWORD

On the 1 April 1996 the National Rivers Authority (NRA) was merged with Her Majesty's Inspectorate of Pollution, Waste Regulation Authorities and several small units from the Department of the Environment, to form the Environment Agency. This merger results in a more comprehensive approach to the protection and management of the environment by combining many aspects of the regulation of land, air and water. It also provides a single point of contact for its customers.

Catchment Management Plans were used by the former NRA to manage the water environment in an integrated way. The plans take a particular river catchment, identify different uses and activities within the area and highlight the problems and issues that need to be resolved. The objective is to work towards a healthy and diverse water environment managed in an environmentally sustainable way, balancing the needs of all users of water. This work has continued in the Environment Agency.

This is the third Annual Review of the River Stour Catchment Management Plan. Its purpose is to highlight the progress that has been made by the Agency and others, in tackling the issues and problems identified in the Consultation Report and the Final Plan. I am pleased to report that good progress has been made and this reflects the commitment of all those involved in the plan.

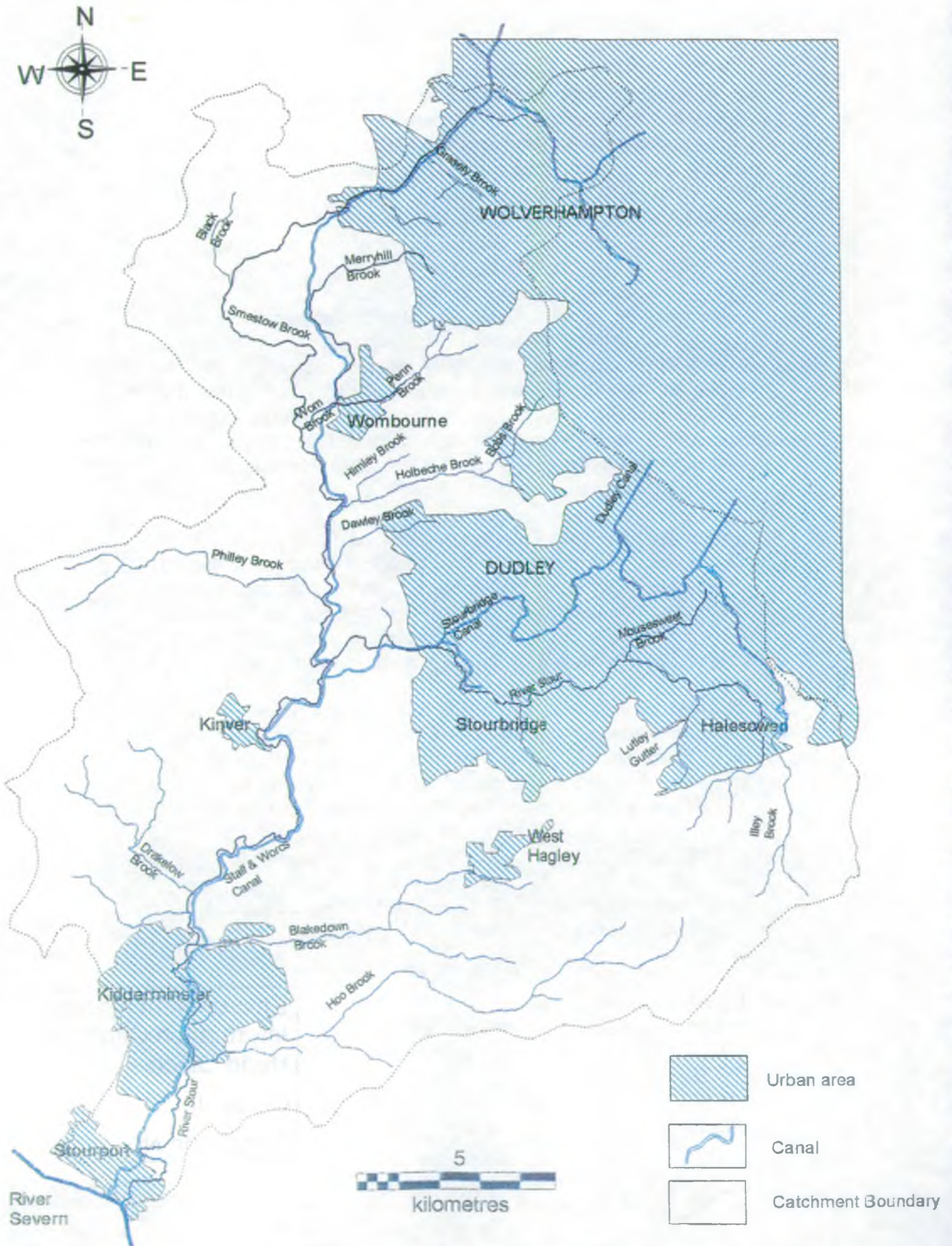
The next annual review will be the final progress report for the catchment, bringing to a close this Catchment Management Plan. The Environment Agency is committed to environmental planning and is building on the strengths of the CMP process in its new Local Environment Agency Plans (LEAPs). The Stour LEAP will follow on from this CMP and the Consultation Report will be available in 1998.

I look forward to working together towards safeguarding and enhancing our environment in the coming year.

John Kalicki
Area Manager - Upper Severn Area

Environment Agency
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EXECUTIVE SUMMARY

This Annual Review summarises the progress made in achieving targets to improve the water environment in the Stour Catchment in the year since publication of the 1995 Annual Review, and covers the period January 1996 to December 1996. Generally good progress has been made by responsible parties in carrying out the actions planned for this year including a number of collaborative actions.

Of the 67 actions planned for the third year (including ongoing actions) progress has been made on 66, with 5 completed. For the outstanding action no specific projects were undertaken in the catchment and it has been deferred to next year.

Of particular note has been the improvement in water quality compliance with both short and long term objectives. Good progress has been made on improving the conservation and recreational value of various riverside sites and otters have been seen on the River Stour for the first time in many decades.

The operational test results for the Blakedown compensation borehole came out in August 1996. It is hoped to licence the borehole in 1997 which will then be used to alleviate the low flows in a tributary of the Blakedown Brook.

Further discussions have taken place and progress has been made on, the proposals to redevelop Kidderminster town centre with the aim of establishing an improved watercourse corridor.

The Stour Catchment was selected as one of eight pilot catchments in England and Wales to test the operation of Statutory Water Quality Objectives. Consultation on the proposals for the Stour Catchment was carried out from March to June 1996 which led to recommendations being made to the Department of the Environment in October 1996.

The tables in Section 4.0 form an integral part of this review, and should be referred to for a summary of progress on each action.

CONTENTS

	Page No:
Foreword	i
Executive summary	iii
Section 1.0 Vision for the Catchment	1
Section 2.0 Introduction	1
2.1 Environment Planning	
2.2 A Brief description of the catchment	2
2.3 Key objectives of the River Stour CMP	3
2.4 Assessment of the catchment and major changes during 1996	3
Section 3.0 Summary of Progress	6
3.1 Notable achievement and disappointments	6
3.2 Summary of the Agency's routine work in the catchment	7
Section 4.0 Actions Update and Action tables	8-17
Section 5.0 Future Reviews	18
Appendices	
Appendix 1 Current Status of Development Plans	19
Appendix 2 Pollution Incidents 1993 - 1996	20
Appendix 3 River Water Quality Objectives Schemes	21
Maps	
Map 1 River Stour Catchment	ii
Map 2 Current River water quality compliance with long term objectives	5

1.0 Vision for the Catchment

The Environment Agency's vision for the Stour Catchment is to restore streams and rivers to a sustainable condition closer to a natural state by:

- addressing poor water quality and the problems caused by over abstraction and flooding.
- extending green river-corridors through urban areas.
- increasing easily accessible water based amenities and recreation.

2.0 Introduction

2.1 Environment Planning

Catchment Management Planning was the means by which the former National Rivers Authority undertook integrated planning for the water environment. The Environment Agency's overall aim is to protect and enhance the whole environment thus contributing to the world wide environment goal of sustainable development. Environmental planning as a whole will be a principal tool in delivering this objective. This forward planning in the Agency will be undertaken for the full spectrum of our responsibilities and it will build on the Catchment Management Planning process. The plans will be known as Local Environment Agency Plans (LEAPs) and will include the new functions of Integrated Pollution Control (IPC) and Waste Regulation.

Integrated Pollution Control (IPC) was introduced by the Environmental Protection Act (1990) and is a method by which complex industrial processes having the greatest potential for causing pollution are regulated. This includes the regulation of sites, which use, store or dispose of radioactive material. A main feature of IPC is that it takes account of all releases to air, water and land, in order to achieve the best overall environmental outcome.

Waste Regulation includes the setting of consistent standards for waste management, to regulate the treatment, storage, movement and disposal of controlled waste.

The timetable for achieving LEAP coverage for all the catchments in England and Wales is by the end of 1999.

The Stour CMP

The first stage of the CMP was the production of a Consultation Report in December 1992. This outlined the Issues within the catchment and options for their solution. Following a period of consultation, a final Action Plan was produced in December 1993. This included a programme of actions for improvements to the water environment. It outlined areas of work and investment proposed by the former NRA and others.

An important part of the CMP process is to monitor the Action Plan to ensure that targets and actions are achieved and that the plan continues to address relevant and significant issues in the catchment in an appropriate manner.

This third Annual Review summarises the progress made since the publication of the second Annual Review, and covers the period January 1996 to December 1996.

The action tables in Section 4.0 have been carried forward from the second Annual Review. Notes on progress are included in the final column of each table. Actions completed prior to the date of publication of the second Annual Review (February 1996) do not appear. Since publication of the Final Plan the Agency has introduced new schemes for reporting and planning water quality which were described in the second Annual Review. Details of these schemes are available in other Agency documents, but a brief update on the Statutory Water Quality objectives (SWQOs) Scheme is given in 2.4.2.

2.2 A brief description of the Catchment

The River Stour drains a surface area of 373 square kilometres and lies mostly within the counties of Hereford and Worcester, Staffordshire and the West Midlands. The Stour flows west from its source in the Clent Hills, towards Stourton and its confluence with the Smestow Brook, before flowing south to join the River Severn at Stourport. The River Stour and its main tributaries total 214 kilometres in length.

A section of the Staffs & Worcester Canal runs south through the catchment, parallel to the Smestow Brook and then the River Stour, linking the Shropshire Union and Birmingham Canal networks with the River Severn.

Most of the catchment is underlain by a Sherwood sandstone aquifer, which has a significant influence on river flows and land use within the catchment. The aquifer is an important water resource, abstracted for public water supply and both agricultural and industrial uses.

Around two-thirds of the catchment is rural, supporting a mixed agriculture. However, a significant proportion of the catchment is highly urbanised.

To the north and east, the catchment overlaps the West Midlands conurbation, and includes a large proportion of the Black Country. Historically, the area has been a significant industrial and residential centre, and still has important light engineering and manufacturing industries. In recent years, technology business parks and out of town shopping centres have been established. Kidderminster, in the lower reaches of the River Stour, has a number of large carpet factories, a sugarbeet processing plant and other light industrial works.

Intensive arable agriculture dominates the rest of the catchment with localised areas of pasture, particularly on the urban fringes. Satellite photography shows 35% of the catchment area is arable land, over 29% is urban, and 18.5% grassland.

2.3 Key Objectives of the River Stour CMP

Key objectives are to:-

- Minimise the adverse effect of urban development on the water environment.
- Improve water quality in the 35% of the catchment's rivers which fail to comply with their quality objective.
- Progressively improve and maintain water quality and the water environment throughout the catchment.
- Ensure that development of waste disposal sites or redevelopment of contaminated land does not compromise groundwater quality.
- Encourage more efficient use of existing groundwater sources and ameliorate low flow patterns.
- Increase biological diversity of the water environment and improve site management of wetland SSSIs and Prime Sites.
- Improve damaged landscape areas related to the water environment and improve records on relevant archaeological sites.
- Improve fish stocks throughout the catchment.
- Increase scope for recreational uses within the catchment.
- Implement improvement scheme to alleviate flooding in Kidderminster, depending on redevelopment of riparian land.
- Implement schemes to alleviate periodic flooding at a number of sites in the catchment.

2.4 Assessment of the Catchment and Major Changes during 1996

Since December 1995 there have been no major changes in the catchment to warrant new issues being raised at this time.

2.4.1 Local Authority development Plans

There have been changes in the status of Local Authority Development Plans in the catchment during 1996. Of note is the adoption of the Wyre Forest Local Plan and the West Midlands Forum's proposals for new house provision in the West Midlands. The current status of Development Plans within the catchment area is summarised in Appendix 1.

2.4.2 Water Quality and Statutory Water Quality objectives

Since the last Annual Review in 1995 there has been an improvement in catchment compliance with both short and long term objectives. In 1995 seven stretches of watercourse failed to meet their short term targets but in 1996 all stretches were compliant. Most notable in this case is the improvement of six stretches of the River Stour itself. Compliance with long term objectives also improved from nineteen fails in 1995 to thirteen in 1996. These have target dates for compliance of either the year 2000 or 2006 and will require investment to meet these. Map 2 shows river water quality compliance together with the long term targets.

All canal stretches within the plan area are currently meeting their water quality objectives. This compliance is especially noted on the Staffordshire and Worcester Canal for the four stretches from the A41 new Bridge to the confluence with the River Severn.

Compliance with long-term and short-term objectives is assessed using three previous years water quality data. Some of the improvements above are from failure to marginal compliance and will not be sustainable without further investment.

For further detail on the River Ecosystem Water Quality Criteria see Appendix 3.

The Stour river system has been selected as one of eight pilot catchments in England and Wales to test the operation of Statutory Water Quality Objectives (SWQO) Scheme. Draft proposals were drawn up in 1995 and included in a consultation document-"The Worcestershire Stour catchment, Severn - Trent Region, Proposals for Statutory Water Quality objectives, National Rivers Authority 1996". Informal consultation on the proposals was carried out between March and June 1996. Having taken account of comments received, the Agency made recommendations to the Department of the Environment (DoE) in October 1996, on the SWQOs to be set for the pilot catchments. These recommendations are currently being considered by the Secretary of State. The next step in the process will be a formal public consultation by the Secretaries of State for the Environment and for Wales and finally the setting of the SWQOs. The timetable for this legal process has not yet been published. Further details will be announced in due course and will be updated in the next annual review.

2.4.3 Additional groundwater monitoring

A Department of Transport shallow borehole is being monitored to assess groundwater levels in the Hurcott Site of Special Scientific Interest (SSSI).
See Issue E1(c).

2.4.5 Erratum

In last year's Annual review (page 5) the Pendleford Premium site in South Staffordshire was incorrectly referred to as being in the Stour Catchment.

Compliance with Long Term River Water Quality Objectives

Map 2



3.0 Summary of Progress

Of 67 actions (including ongoing actions) planned for this year, progress has been made on all but 1 action, and 5 were completed. Many of the actions have involved organisations working in collaboration with others.

For details of progress for each action, please refer to the 'progress' column in the tables in Section 4.0.

3.1 Notable Achievements and Disappointments

Notable achievements:-

- Blakedown compensation borehole operational tests came out in early August. It is hoped to be licensed during 1997. The advertising procedure has been completed.
- A wetland has been created on the Wom Brook. This has made an improvement in landscape and nature conservation terms.
- A feasibility report for the creation of a reed bed on the Graislely Brook has been completed. A reed bed at this location would fulfil the dual purpose of creating a valuable wetland habitat and in mitigating water pollution problems in the brook. Work was started on the first phase of the project near to the confluence of the brook with the River Stour and will be completed by March 1997. Agency funding for an exclusive reed bed area is being sought for 1997/98. This multi-functional project is well supported by Wolverhampton Metropolitan Borough Council, together with numerous local conservation bodies.
- Otters were seen in the River Stour on a number of occasions around Brintons carpet factory. Otter spraint was also found downstream at Wilden Marsh. This is the first record of otters on this river for many decades and is a welcome early sign of the recovery of this important species.
- Ongoing discussions have taken place between the Agency, Wyre Forest District Council at A & J Mucklows Ltd. and English Nature over the creation of a local nature reserve at Puxton Marsh in Kidderminster. All parties have been working together to produce the management plan which is required for a Section 106 planning agreement for environmental improvements at the site. Some work has been started on pollarding and other tree maintenance which will benefit the marsh communities.
- There were improvements in water quality compliance with both short and long term objectives, with notable improvements to six stretches of the Stour itself.
- Discussions have continued between the Agency and developers' Agents regarding the Kidderminster Town Centre Redevelopment Site based on the Brintons site with the aim of establishing an improved watercourse corridor.

There have been some disappointments:-

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- Development approved by Bromsgrove District Council in Hagley could lead to further deterioration in the Blakedown Brook catchment due to loss of base flow by the possible abandonment of the treated sewage discharge, decrease of aquifer recharge and increased water demands.
- It was hoped to licence the abstractions at Blakedown Boreholes 1 and 2 (See Issue E1 b), but this has not been possible and it is expected that during 1997 the licence will be issued.
- There has been a slight increase in the number of reported pollution incidents (Class 1-3) during 1996. A total of 155 pollutions were reported during 1996 compared to 141(Class 1-3) in 1995. See Appendix 2 for further detail.

3.2 Summary of the Agency's routine activities in the Stour Catchment

The strategic nature of the CMP as a long-term planning tool, directing manpower and financial resources to resolving environmental problems, means that the plan is not designed to reflect fully on routine activity within the catchment. Our everyday work, of which examples are given below, commits substantial resources to managing the water environment.

Enforcement and routine monitoring work are important in achieving the Agency's objective to progressively improve water quality throughout the catchment, and protect against risk of pollution (Action 15). These operations and regulatory responsibilities form the basis of our work.

During 1996 there were 2 successful prosecutions brought against polluters in the Stour catchment and one formal caution. Formal cautions are given where it is deemed inappropriate to prosecute but it is clear that a significant offence has been committed. Other pollutions are dealt with by warning letters. (Action B15c).

Routine monitoring work includes site inspections throughout the catchment. During 1996, 274 site inspections were carried out at sewage works (private and water company), 107 inspections of combined sewer overflows, 403 inspections of industrial sites, 83 inspections of contaminated land and waste disposal sites, 22 inspections at farms, 484 river inspections and 82 inspections categorised as 'other' (Action B15b). There were 1446 water samples taken for chemical analysis and 115 for biological determination.

The responsibilities for water resources include licence determination, charging, policing and enforcement. Through these responsibilities an integrated approach is taken that aims to strike a balance between the needs of abstractors and the environment. During 1996 there was one licence holder prosecuted for six offences of unlawful abstraction and impoundment in the catchment. 4 warning letters were issued and a total of 25 enforcement visits and 11 investigations into source deficits were carried out. 1 new abstraction licences was issued to British Waterways for abstraction from the Staffordshire & Worcester canal.

It is our policy not to issue any further groundwater licences in the major sandstone aquifer on this Catchment. Licences for surface water abstraction are issued subject to conditions that the flow must be greater than a prescribed level before abstraction can commence. This surface water abstraction licensing policy applies to the whole of the Catchment.

4.0 Actions Update

The following Action Plan tables have been taken from the Final Plan document, and updated to show progress and any changes that have occurred since the Final Plan was published. Progress for each action is summarised in the column on the right hand side.

Notes on Abbreviations

AMP2 Asset Management Plan 1995-2000	MBC Metropolitan Borough Council
BW British Waterways	NSA Nitrate Sensitive Area
CoCo Countryside Commission	NVZ Nitrate Vulnerable Zone
DoE Department of the Environment	PPPG Policy and Practice for the Protection of Groundwater (NRA) 1992
DoT Department of Transport	SSSI Site of Special Scientific Interest
EN English Nature	STP Sewage Treatment Plant
GWU Groundwater unit	STW Ltd Severn Trent Water Ltd
LA Local Authority	UWWTD Urban Wastewater Treatment Directive
LPA Local Planning Authority	
MAFF Ministry of Agriculture, Fisheries and Food	

Key:

- C S Commercially sensitive
 - P Project costs yet to be identified
 - R Recurring costs
 - U Unknown or unavailable costs
 - # Costs from within normal budget
 - * Under AMP2, approximately £40 million has been allocated to 4 STPs in the Stour Valley (Freehold, Caledonia, Roundhill and Kidderminster)
 - < Less than
 - > Greater than
 - Final Plan timescale
 - Revised timescale
- Costs (£k) for the year have been shown in the year column

Notes on Additions and Alterations to the Plan Table

As indicated previously, this is an ongoing Plan and it has been necessary to make some adjustments to it as a result of the past year's activities. Some routine actions were deleted from the tables during the 1995 Review as CMPs are not designed to reflect fully on routine activity within the catchment (refer Section 3.2). However, this work is continuing and routine actions have been retained in the tables where it is considered they are particularly relevant to resolving the issue and/or where progress can be reported. Where Actions for specific issues have been completed, and the issue resolved (pre 1996) these actions have also been deleted from the table.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
A1	Seek to minimise the adverse effects of urban development on the water environment	a) Persuade Local Planning Authorities to include policies designed to protect the water environment and the Agency's interests in development plans	E Agency Local Planning Authorities (LPAs)	R U	●	●	●	Policies for protecting the water environment appear in adopted development plans.
		b) Encourage environmental enhancement as part of development/redevelopment and as part of the Agency's duty to enhance the environment under the Water Resources Act 1991	Local Planning Authorities Developers E Agency	U U R	●	●	●	Discussions regarding Kidderminster Town centre redevelopment site continue. Environmental gain was sought in the redevelopment of a site over the River Stour in Stourbridge.
B1	Improve 4km of River Stour from Cradley to Freehold (RE4)	a) Investigate and identify causes of pollution	E Agency	6 #	○			4 km stretch now achieving water quality objective. Water quality monitoring ongoing.
		b) Secure improvements where appropriate	Dischargers	U				Dependent on above.
B2	Improve 7.5km of River Stour from Freehold STP to confluence with Smestow Brook (RE4 (2000))	a) Improve Freehold Sewage Treatment Plant (STP) and Caledonia STP	Severn Trent Water Ltd (STW Ltd)	*	○	○	○	Sewerage work, to convey part of this effluent to Roundhill STP, has started.
		b) Investigate performance of sewage overflows and negotiate improvements to sewerage system	E Agency STW Ltd	5 # CS	○	○	○	70% of the unsatisfactory combined storm overflows (CSOs) under AMP II have been agreed and work commenced.
B3	Improve 16.3 km of River Stour from Smestow Brook confluence to Kidderminster (RE4 (2000))	Improve Roundhill STP	STW Ltd	*	○	○	○	Outline consent agreement reached, Roundhill STP to be enlarged by the end of AMP2.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
B4	Improve 5km of River Stour from Kidderminster to River Severn (RE4 (2000))	a) Secure upstream improvements in STPs	STW Ltd	*	○	○	○	See B3
		b) Ensure compliance with agreed action plan for progressively reducing discharge of pesticides from carpet industry	E Agency STW Ltd Carpet Industry	2 # U U	○			Good compliance with action plan, but new type of pesticide now being detected. See below.
		c) Produce action plan for progressive reduction in discharge of sheep dip residues	E Agency STW Ltd DoE MAFF Textile Manufactures	U	○			Similar problems identified in three other regions. National multi-industry team set up to consider way forward.
B5	Improve 2.2km of Mousesweet Brook to ensure compliance with EC Dangerous Substances Directive (for Chromium), and long term RQO. (RE5), (RE4 Long Term)	a) Investigate and identify source of contamination and reason for failure to comply with long term RQO	E Agency	20	○			Monitoring has revealed chrome contamination of groundwater adjacent to one factory. Monitoring to continue.
		b) Negotiate improvement scheme with landowner/discharger subject to adequate legal provision	Landowner Discharger	U	○			Negotiations have started with factory owner to reduce contamination to the aquifer.
B6.1	Improve 2km of Smestow Brook from Aldersley Stadium to Compton (RE5), (RE4 Long term)	Investigate and identify reason for failure to comply with long term RQO	E Agency	2 #	○			Some wrong connections discovered. New sewer at one factory estate to be installed.
B6.2	Improve 3.5km of Smestow Brook from Compton to Trescott (RE4 (2000)). Improve 11.3 km from Trescott to confluence Holbeche Brook (RE5/4), (RE4 Long Term)	a) Improve Barnhurst STP	STW Ltd	CS	○	○	○	Works nearing completion on improvements to storm tank settlement and plant refurbishment.
		b) Improve Trescott STP	STW Ltd	U				No plans within next five years for Trescott due to lack of financial approval by DoE.
B7	Improve 2km of Wom/Penn Brook from Gospel End to The Wodehouse (RE5), (RE4 Long Term)	a) Improve Gospel End STP	STW Ltd	U				As for Trescott above, no plans within next 3 years. Consideration being given for inclusion in AMP3 investment.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
B8	Improve 0.5km of Wom/Penn Brook from Wombourne to confluence with River Stour (RE5 (2000)), (RE4 Long Term)	a) Improve Wombourne STP	STW Ltd	CS	○	○	○	Money allocated to improve works within AMP2 timescale.
B9.1	Improve 0.5km of Bobs Brook from Lower Gornal to Holbeche Brook confluence (RE5)	Improve Lower Gornal STP	STW Ltd	U				As for Trescott STP (B6b), no plans within next 3 years. Expect to maintain present performance. Consideration being given for inclusion in AMP3.
B9.2	Improve 3.3 km of Holbeche Brook from Bobs Brook confluence to Smestow Brook (RE5), (RE4 Long Term)	Investigate and identify reason for failure to comply with long term RQO	E Agency	2 #	○			Reappraising site to see if it is representative of stretch of watercourse.
B10	Improve 3.2km of Gallows Brook from Hagley STP to confluence with Blakedown Brook	Improve Hagley STP	STW Ltd	U	○	○	○	Some money allocated to improve works, but may not be sufficient to upgrade Blakedown brook. Some improvements done.
B11	Improve 5km of Blakedown Brook from Gallows Brook confluence to River Stour confluence (RE4/3), (RE2 Long Term)	a) Secure improvement to Hagley STP (see above)	STW Ltd	U	○	○	○	Some money allocated, as B10 above.
		b) Improve Blakedown STP and/or	STW Ltd	U				No money to be allocated in next 3 years.
		c) Protect existing stream baseflow	E Agency Abstractors	U U	○	○	○	
B12	Establish reason for apparent deterioration in quality of Hoo Brook. (RE3), (RE2 Long Term)	a) Investigate and identify cause	E Agency	2 #				Analysis shows watercourse back in objective class.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
B12 (Cont)		b) Secure improvements where appropriate	Dischargers	U				See B12a).
B13	Improve 11.2km of Staffs & Worcs Canal from Tettenhall to Swindon (RE4). Improve 26.2 km of canal from Swindon to confluence with R Severn (RE3)	a) Improve Barnhurst STP	STW Ltd	CS	○	○	○	Money allocated by DOE to ensure compliance with EC Fisheries Directive. Outline agreement reached with STW Ltd.
		c) Undertake removal of contaminated sediments from canal bed	British Waterways (BW)	U	○			BW costing out amount of silt to be removed.
		d) Carry out additional monitoring to assess implications of delay in (c)	E Agency	1	○			Agency monitoring proceeding.
B14	Investigate use of settling lakes to treat urban run-off	Commission desk study	E Agency	7.5				Feasibility study carried out on the Graisleys brook, proposals being prepared for reed bed and settlement.
B15	Progressively improve water quality throughout catchment and protect against risk of pollution incidents	b) Continue to inspect high risk sites eg: pesticide stores and give advice to developers	E Agency Developers	R	●	●	●	Ongoing. See section 3.2
		c) Monitoring and enforcement	E Agency	R	●	●	●	Ongoing. See section 3.2
C1	Ensure that development of waste disposal sites or redevelopment of contaminated land sites does not compromise groundwater quality	a) Provide guidance to Developers/Landowners as part of the Agency's statutory duties, and to Local Waste Disposal and Local Planning Authorities as a statutory consultee	E Agency Developers Landowners LPAs	R U U U	●	●	●	Ongoing as before.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
C2	Ensure that any activity does not compromise groundwater quality	Encourage farmers to adopt alternative farming practices to reduce nitrate pollution	E Agency Farmers Ministry of Agriculture Fisheries & Food	R U U	●	●	●	All existing NVZs being reviewed and new sites considered for designation by 31 December 1997.
D1	Encourage more efficient use of existing sources	a) Develop winter storage for agricultural use	E Agency Landowners	R U	●	●	●	1 further winter storage reservoir with an abstraction licence issued.
		b) Improve leakage control for public water supply	E Agency STW Ltd South Staffordshire Waterworks Co (SSWC)	R U U	●	● ●		Significant reduction in leakage levels after 1995 drought.
		c) Investigate further joint use of groundwater and surface water sources	E Agency STW Ltd SSWC	R	●	●	●	Model contract being let.
D2	Reduce licensed abstractions, initially to arrest further decline in the water table and later to promote a return of baseflow to currently affected streams	a) Promote use of alternative sources	E Agency STW Ltd SSWC	R U U	●	●	●	Discussions with water companies on development of water resource strategies so as to reduce groundwater abstraction.
		b) Refuse further licensing of resource in over licensed groundwater units	E Agency	R	●	●	●	No licences issued for abstraction in over-licensed groundwater units.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
D2 (Cont)		d) Develop Groundwater Model to assess resources	E Agency	100	●	○		Model contract being let.
		e) Seek legislative change to gain greater control over licences	E Agency Department of the Environment (DOE)	R U	●	●	●	Under National Review
E1	Ameliorate low flow problems	a) As Issue D2	E Agency Abstractors	R U	●	●	●	Draft outline proposal for AMP3 completed.
		b) Undertake localised short-term compensation measures to augment flows by means of 2 boreholes in Blakedown Valley	E Agency	90		●10		Borehole No.2 operational tests completed.
		c) Undertake an investigation to establish water level control at Hurcott Pools (SSSI)	E Agency	10 U U	○	○		Little further progress - ownership resolved - scoping work proposed for 97/98
		d) Undertake remedial works to restore more natural flow regime in Blakedown Valley Pools	E Agency	<20	○	○		Work continues on operational rules for Blakedown boreholes - to be completed during 1997.
		e) Assess water resources implications of discharge of Barnhurst STP effluent on Smestow Brook	E Agency	R	○	○		No significant impact.
F1	Increase biological diversity of water environment	a) Improve underlying water quality (see also Issues B & C)	E Agency STW Ltd LA	R U U	●	●	●	As Issues B & C.
b) Improve water resources/low flows (see also Issues D & E)		E Agency STW Ltd	R U	●	●	●	As above.	
c) Improve physical habitat in association with flood defence works		E Agency	10	●	5	●	Environmental baseline data collected for the main river lengths of Upper Stour tributaries.	

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
F2	Improve damaged landscape areas related to water environment	a) Identify damaged sites	E Agency	5				Completed. Future updates planned.
		b) Implement improvements	E Agency	10	●	5	●	Improvements to Wom Brook, Dawley Brook and Graisle Brook landscapes.
F3	Improve educational conservation facilities	Develop local nature reserve by River Stour in Kidderminster	E Agency Wildlife Trusts English Nature (EN)	10 U 2				Puxton Marsh site under development as partnership project.
F4	Improve site management on wetland SSSIs and Prime Sites	b) Implement site management plans	E Agency EN LA Wildlife Trusts	28 U U U	●	10	●	Habitat improvements at Black Brook, Valley Park, Wilden Marsh and Hoo Brook.
		c) Safeguard existing wetland wildlife sites	E Agency	5	●	2	●	Environmental audit of Lutley Gutter, protection of wetland habitat at Warstones Brook.
F5	Improve knowledge on typical landscape styles to enable protection and enhancement to be done	a) Upgrade E Agency information	E Agency	<5				Completed March 1996.
		b) Develop landscape strategy and guidelines for all NRA activities	E Agency	<5				Completed March 1996.
F7	Improve protection, interpretation of and access to sites of industrial heritage significance	c) Undertake projects to protect and interpret important sites	E Agency English Heritage LA	5 U U	●	5	●	Feasibility study for landscape restoration at Leasowes Park Implementation 1997.
G1	Increase fish stocks throughout catchment	a) Improve underlying water quality (see also Issues B & C)	E Agency STW Ltd LA	R U U	●	●	●	As Issues B & C.
		b) Improve water resources/low flows (see also Issues D & E)	E Agency STW Ltd	R U	●	●	●	As Issues D & E. (Blakedown boreholes)
		c) Improve physical habitat in association with flood defence works	E Agency	10	●	●	●	No appropriate Flood Defence works this year.
		d) restock suitable species in improved reaches	E Agency	<5	●	1	●	1750 chub, dace, barbel stocked in November 1996.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
G2	Provide adequate information on canal fish stocks (to monitor compliance with EC Directives and Statutory Water Quality objectives)	Carry out surveys on Staffs and Worcs Canal	E Agency	9		2		Survey to be undertaken March 1997.
H1	Increase scope for recreational uses within catchment	a) Improve underlying water quality (see also Issues B & C)	E Agency STW Ltd LA	R U U	●	●	●	As Issues B & C.
		b) Improve water resources/low flows (see also Issues D & E)	E Agency STW Ltd	R U	●	●	●	As Issues D & E (Blakedown borehole).
		c) Improve physical habitat in association with flood defence works	E Agency	5	●	< 1	●	Continuation of tree work on Hoo Brook and of Congreaves.
		d) Improve access for able and disabled anglers	E Agency Sports Council Landowners LAs	10 U U U				Disabled anglers platforms constructed at Warrens Hall/ Bumblehole site.
		e) Improve access for other recreational use by collaborative projects eg Stour Valley Walkway	E Agency Sports Council Landowners LAs	10 U U U		○	●	Continuation of Wom Brook walk project.
		f) Promote angling opportunities.	E Agency Sports Council Landowners	5 U U				Dependent on future water quality improvements and improvements in fish stocks.
		g) Promote other recreational opportunities	E Agency Sports Council Landowners CoCo	5 U U	●	○	●	Established provision for riverside access at Kidderminster through Planning Process.
		i) Encourage outside bodies/groups to undertake bank clean up campaigns where appropriate	E Agency LAs Volunteer Groups	5 U U		○		No specific projects undertaken in 1996.

No	Issue/Objective	Action	Responsibility	Total Cost (£k)	1996/97	1997/98	1998/99	Progress
HI (Contd)		j) Determine legal status of navigation of Lower Stour	E Agency	<5				Unlikely to provide cost effective benefits.
I	Protect people, property and land from flooding to standards which are practical, economic and appropriate. Potential flooding in Kidderminster	a) Implement improvement scheme, pending redevelopment of riparian land	E Agency Landowner Developer))1,700)				Dependent on redevelopment, progress expected in 1997.
		b) Provide flood forecasting and warning	E Agency LA Police Flood Wardens	R U U U	●	●	●	From 1 September 1996 flood warnings for the Stour in Kidderminster are issued directly to the public.
J	Periodic flooding of Wolverhampton Racecourse and properties in Aldersley area	Increase channel capacity of the Smestow Brook by either construction of a bypass culvert or instream channel improvement	Wolverhampton MBC STW Ltd E Agency))2,800)	○			Some improvements completed in 1996.
K	Periodic flooding at 16 specific locations	a) Restore flow to natural regime through source control and surface water balancing where appropriate	E Agency LAs Landowners Developer	R U U U	●	●	●	Ongoing as development opportunities arise. Some opportunities being fulfilled as a result of Issue J.
		b) Improve watercourses to increase capacity	E Agency LAs Landowners Developer	R U U U	●	●	●	Review of locations ongoing.
		c) Improve access through redevelopment opportunities	E Agency LAs Landowners Developer	R U U U	●	●	●	Ongoing as development opportunities arise.
		e) Undertake surveys of flooding problems as required under the Water Resources Act 1991	E Agency	R	○	○		Section 105 survey to be carried out in 1997 and then reviewed on a 5 year basis.
		f) Prevent encroachment of development into flood plain by seeking inclusion of appropriate policies in development plans	E Agency	R	●	●	●	Satisfactory flood plain policies have been retained in South Staffs, Wyre Forest and Bromsgrove DC Local Plans.

5.0 Future Reviews

We will review progress again next year and aim to publish our 4th and final Annual Review of the River Stour CMP in February 1998. Work is expected to commence later this year on the Stour Local Environment Agency Plan which will look at water, land, air and wildlife and heritage issues in the area. The Consultation Report is due in 1998 following the fourth Annual review. Any outstanding issues or actions will be reviewed in the forthcoming LEAP.

APPENDIX 1

Current Status of Development Plans in the Stour Catchment

Local Authority	Area (Km ²)	Development Plan
Wolverhampton Metropolitan Borough	29.8	Wolverhampton Unitary Development Plan adopted September 1993.
Dudley Metropolitan Borough	89.4	Dudley Unitary Development Plan adopted November 1993.
Sandwell Metropolitan Borough	10.3	Sandwell Unitary Development Plan adopted January 1995.
West Midland Metropolitan Boroughs	129.5 (35%)	RPG 11 - Regional Planning Guidance for the West Midlands, September 1995 covering the counties of Hereford and Worcester, Shropshire, Staffordshire and Warwickshire in addition to the West Midland Metropolitan Boroughs.
Wyre Forest District Council	81.8	Wyre Forest District Local Plan adopted May 1996.
Bromsgrove District Council	40.3	Bromsgrove District Local Plan Deposit Draft November 1993, Inspector's report following Public Inquiry February 1997.
Hereford & Worcester County Council	122.1 (33%)	Hereford and Worcester County Structure Plan 1986-2001, Second Alteration operative March 1993, review commenced. Hereford and Worcester County Minerals Local Plan Deposit Draft September 1991, Inspector's Report from second Inquiry August 1996, Adoption due April 1997. County Waste Local Plan commenced.
South Staffordshire District Council	114.7	South Staffordshire District Local Plan adopted December 1996.
Staffordshire County Council	114.7 (31%)	Replacement Staffordshire Structure Plan 1986-2001 operative April 1991, review commenced. Staffordshire Aggregates Local Plan adopted March 1996. Staffordshire Minerals Local Plan and Staffordshire Waste Local Plan currently being produced to Deposit Plan status.
Bridgnorth District Council	3.7	Bridgnorth District Local Plan adopted September 1994.
Shropshire County Council	3.7 (<1%)	Shropshire County Structure Plan 1989-2006 operative January 1993, review commenced. Shropshire Minerals Local Plan Deposit Draft April 1996, Inquiry due June 1997. Shropshire Waste Local Plan consultation draft due 1997.

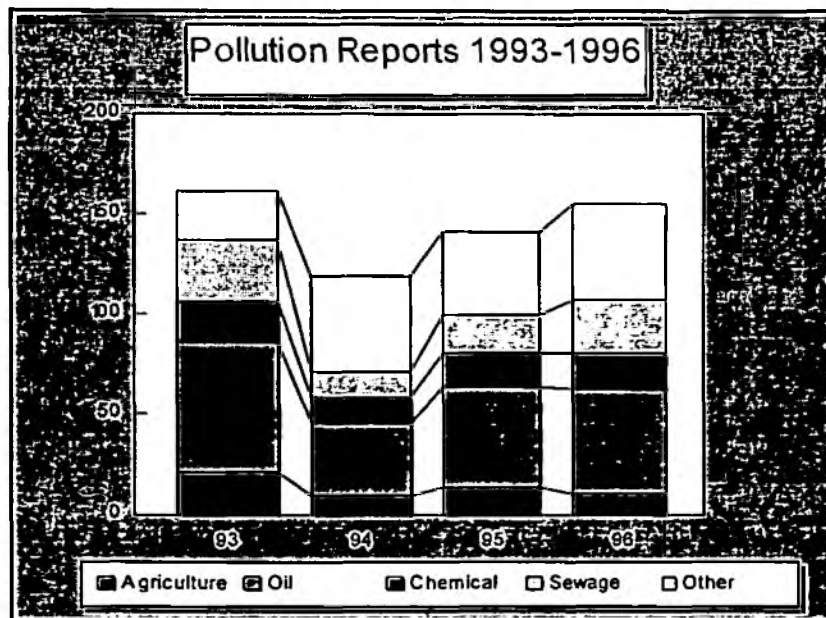
APPENDIX 2

Pollution Incident Reports - Stour Catchment January 1996 - December 1996

		Class 1	Class 2	Class 3	Cumulative Total
TYPE	Agriculture	0	0	11	11
	Oil	0	7	45	63
	Chemical	1	0	17	81
	Sewage	0	1	25	107
	Other	0	0	48	155
CAUSE	Industry & Commercial	1	7	39	47
	Agriculture	0	0	7	54
	Water Utility Company	0	1	28	83
	Other	0	0	72	155

Class 1- Major incident Class 2- Significant incident
Class 3-Minor incident

The histogram below shows the overall trend of reported pollution incidents by type 1993 - 1996



APPENDIX 3 - River Water Quality Objectives Schemes

In May 1994, the River Ecosystem (RE) Use of the Statutory Water Quality Objectives (WQOs) was introduced by *The Surface Waters (River Ecosystem) (Classification) Regulations 1994*.

WQOs will be used for long term planning and target setting for the use of the river.

Until WQOs are formally established by legal notice served by the Secretary of State (and therefore exist on a statutory basis), they will be applied on a non-statutory basis through appropriate RE classes with target dates. These non-statutory RQOs will form the basis from which to develop Statutory WQOs (SWQOs).

Five uses have been proposed for rivers under the WQO scheme, of which the River Ecosystem (RE) use is the first to have been introduced. The five uses include; River Ecosystem (general river health); Special Ecosystem (for example SSSI); Abstraction for Potable Supply; Agricultural/Industrial Abstraction; and Watersports.

Five Classes have been established for the RE use:

Class RE1:	Water of very good quality (suitable for all fish species).
Class RE2:	Water of good quality (suitable for all fish species).
Class RE3:	Water of fair quality (suitable for high class coarse fish populations).
Class RE4:	Water of fair quality (suitable for coarse fish populations).
Class RE5:	Water of poor quality (which is likely to limit coarse fish populations).
Unclassified:	Water of bad quality (in which fish are unlikely to be present), or insufficient data available by which to classify water quality.

Water quality criteria of the R E Classification Scheme.

Class	Dissolved Oxygen % saturation 10 percentile	BOD (ATU) mg/l 90 percent- tile	Total Ammonia mg N/l 90 percentile	Un-ionised Ammonia mg N/l 95 percentile	pH lower limit as 5 percentile; upper limit as 95 percentile	Hardness mg/l Ca CO ₃	Dissolved Copper µg/l 95 percentile	Total Zinc µg/l 95 percentile
RE1	80	2.5	0.25	0.021	6.0 - 9.0	≤10 >10 and ≤50 >50 and ≤100 >100	5 22 40 112	30 200 300 500
RE2	70	4.0	0.6	0.021	6.0 - 9.0	≤10 >10 and ≤50 >50 and ≤100 >100	5 22 40 112	30 200 300 500
RE3	60	6.0	1.3	0.021	6.0 - 9.0	≤10 >10 and ≤50 >50 and ≤100 >100	5 22 40 112	300 700 1000 2000
RE4	50	8.0	2.5	-	6.0 - 9.0	≤10 >10 and ≤50 >50 and ≤100 >100	5 22 40 112	300 700 1000 2000
RE5	20	15.0	9.0	-	-	-	-	-

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